

Social Psychology

Does Romantic Partner Support Buffer the Effect of Attachment Insecurities on Negative Emotions? A Systematic Review

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We systematically reviewed the empirical research on whether a romantic partner's support buffers the positive association between attachment insecurity and negative emotions. PubMed, PsychInfo, and Web of Science were searched for English, peer-reviewed articles that were published from 1969 to September 2020; included empirical studies on healthy human adults ($M_{age} \geq 18$) who were in a romantic relationship; and tested the interaction between actor adult attachment and partner support in predicting actor emotions. We used descriptive vote counting to synthesize and report the results of 27 included articles, including 31 studies (2689 couples and 191 individuals) and 151 analyses. Partner support buffered the effect of attachment insecurity on emotions in nine percent of all analyses. We discuss theoretical implications and directions for future research. Specifically, the current findings underscore the call for a more nuanced and differentiated view of partner support as a buffer against attachment insecurities.

Introduction

Most human beings aspire to a satisfying romantic relationship, known to benefit health and longevity (Robles et al., 2014). The formation and maintenance of romantic relationships are strongly influenced not only by emotions such as love, happiness, and jealousy (Randall & Schoebi, 2018), but also by how romantic partners manage their emotions (Cameron & Overall, 2018). The experience and management of emotions are strongly influenced by adult attachment—i.e. a sense of security an adult experiences in their close relationships (Joel et al., 2020; Mikulincer & Shaver, 2019). Whereas secure attachment is linked to positive emotion experiences and effective regulation of emotions (Goodall, 2015; Mikulincer & Shaver, 2019), insecure attachment is associated with higher levels of negative emotions (Joel et al., 2020), and the use of potentially maladaptive strategies to regulate emotions, such as withdrawing from romantic partners (Mikulincer & Shaver, 2019; Overall et al., 2022). Insecure attachment is also associated with lower emotion regulation flexibility (Mosannenzadeh et al., 2024), meaning lower ability in adjusting emotion

regulation strategies based on situational demands (Aldao et al., 2015). These emotion outcomes associated with attachment insecurity can have a pervasive and detrimental impact on both individual and romantic relationship well-being (Chopik et al., 2013; Collins & Feeney, 2010; Simpson et al., 2007), highlighting the importance of considering attachment security in the context of emotional well-being in romantic relationships.

Recent theories on the *partner buffering of attachment insecurity* suggest that the detrimental impact of attachment insecurity on emotion outcomes can be buffered by a romantic partner's supportive behaviors (Arriaga et al., 2018; Overall & Simpson, 2015; Simpson & Overall, 2014). More broadly, partner buffering theories propose that attachment insecurities can be reduced, and attachment security can be enhanced, when a romantic partner responds in ways that genuinely signal care and responsiveness (e.g. Arriaga et al., 2018). One specific and important way in which partners may buffer attachment insecurities is by providing responsive support when negative emotions arise in the other (Overall & Simpson, 2015; Simpson & Overall, 2014). As we will explain in more detail, in this manner,

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having a responsive partner should reduce or *buffer* the impact of attachment insecurities on negative emotions. This is important not only for its immediate positive effects on emotion outcomes but also because if repeated, it theoretically plays an essential role in fostering trust and a more secure attachment in the long run, which can ultimately result in better health outcomes for both individuals and couples (Arriaga et al., 2018; Overall et al., 2022; Simpson & Overall, 2014).

However, support is not always effective in buffering attachment insecurities. Indeed, its effectiveness depends on several boundary conditions such as support recipients' specific needs and motivations (Eller & Simpson, 2020). A comprehensive review of the literature on partner buffering of attachment insecurity on emotions can help to better understand this effect and its boundary conditions. This can advance the buffering theories and offer insights into strategies that may enhance the emotional resilience of individuals with attachment insecurities.

The current paper aims to systematically review and summarize the extant empirical research that explicitly or inexplicitly examined the role of (perceived and experimentally manipulated) partner support on emotions as a function of attachment (in)security. Specifically, we investigate whether and how romantic partner support moderates the link between attachment insecurity and emotions. In doing so, we also draw theoretical implications and identify empirical gaps in research on this topic that should guide an agenda for future research. To provide a solid background for our review, we begin with an explanation of attachment in adulthood and its association with emotions in intimate relationships. We then explain the partner buffering of attachment insecurity on emotions and the empirical and theoretical complexities associated with it before presenting our specific research questions.

Adult Attachment and Emotions in Intimate Relationships

Rooted in Bowlby's attachment theory (Bowlby, 1969), adult attachment theory describes the relationship between romantic partners as an attachment bond that can vary in the level of security and safety partners experience in their relationship (Hazan & Shaver, 1987). Such individual differences in adult attachment are measured through two independent dimensions (i.e., orientations) called attachment anxiety and attachment avoidance (Brennan et al., 1998); each associated with specific views of self and the social world (Carnelley & Janoff-Bulman, 1992; Collins & Read, 1990), and consequently with specific experiences of emotions in romantic relationships.

Adults with higher attachment *anxiety* tend to view themselves as unworthy of love and close others as irresponsible to their needs (Bartholomew & Horowitz, 1991). Consequently, they have a heightened fear of abandonment by their romantic partner (Gillath et al., 2016a), which makes them hypervigilant about any signs of a threat to themselves or their romantic relationships (Gillath et al., 2016a). Higher attachment anxiety has been linked to higher distress (Campbell et al., 2005; Diamond & Hicks,

2005) and lower positive emotions in the context of a romantic relationship (Simpson, 1990). Attachment anxiety is also associated with hyperactivating emotion regulation strategies such as rumination on negative feelings (Mikulincer & Florian, 1998), self-blame (Pascuzzo et al., 2013), and catastrophizing (Pascuzzo et al., 2013), all resulting in more negative emotions (Gentzler et al., 2010).

Individuals with higher attachment *avoidance* tend to view their romantic partner as unwilling or incapable of providing support in times of need (Brodie et al., 2019; Mcneil, 2012), believing that their attachment needs will be unmet (Mcneil, 2012). Therefore, to protect themselves from rejection-related stress and vulnerability (Nielsen et al., 2017), they tend to avoid relying on others (Mosannen-zadeh et al., 2024), and seek excessive self-reliance and autonomy (Mikulincer & Shaver, 2019).

Empirical findings on the association between attachment avoidance and negative emotional experience are somewhat inconsistent. While several studies found no significant association between attachment avoidance and experience of emotions such as distress (Diamond & Hicks, 2005; Simpson et al., 1996) or jealousy (Huelsenitz et al., 2018), other studies found that higher attachment avoidance was associated with higher self-reported negative affect (Stanton et al., 2017), more anger (Rholes et al., 1999), and less positive emotions (Ben-Naim et al., 2013) but also with lower sadness (Ben-Naim et al., 2013). This inconsistency in empirical research may arise from deactivating emotion regulation strategies of individuals high in attachment avoidance (Mikulincer & Shaver, 2019), such as denial or suppression (Brodie et al., 2019; J. A. Feeney & Karantzas, 2017; Mikulincer & Shaver, 2019), which mask or distort the experience and expression of negative emotions (Mikulincer & Shaver, 2016). Indeed, Diamond and Hicks (2006) found evidence that individuals high in attachment avoidance may inhibit the conscious subjective experience of negative emotion but cannot inhibit the neuroendocrine emotional responses that may take place at an unconscious level.

Partner Buffering of Attachment Insecurity

Recent theory and research on partner buffering of attachment insecurity suggest that interpersonal processes between partners may alter the effects of attachment insecurities on individual and relationship outcomes (Arriaga et al., 2018; Eller & Simpson, 2020; Overall et al., 2022; Overall & Simpson, 2013; Stanton & Campbell, 2014). Specifically, Arriaga and colleagues's (2018) Attachment Security Enhancement Model (ASEM) highlights three key premises: (1) relationships vary in the security they provide (e.g., Mikulincer & Shaver, 2016); (2) momentary insecurities and related thoughts and feelings can be alleviated when partners tailor their responses effectively—for instance, offering gestures of care and commitment to individuals with high attachment anxiety, or respecting the need for distance for individuals with high attachment avoidance (e.g., Kim et al., 2018; Lemay & Dudley, 2011); and (3) long-term security is built when protective responses are combined with consistent support that reshapes mental models of self

and others, fostering trust and self-worth (e.g., Mikulincer & Shaver, 2016).

In the current work, we focus on one prominent outcome of attachment insecurity, namely emotions. According to Overall and Simpson (2015), enacted or perceived romantic partner's support (e.g., being available, attentive, and caring) lowers the heightened negative emotions of insecurely attached individuals in interpersonal situations. In a nutshell, while higher attachment insecurities tend to be associated with the experience of stronger negative emotions, a supportive partner can help weaken this association (Arriaga et al., 2018; Overall & Simpson, 2015). If this happens repeatedly, it creates trust, promotes a safe haven, and fosters securer working models of attachment (Arriaga et al., 2018; Overall & Simpson, 2015).

Although the reasoning for the partner buffering of attachment insecurity is sound and promising and attracts growing scientific attention, there exist both empirical and theoretical gaps in the current literature. Empirically, the findings are mixed. For example, in support of partner buffering, Overall and colleagues (2013) found that although individuals high in attachment avoidance showed greater anger in response to their partner's demand for change, those whose partners showed more responsive behaviors experienced less anger. Similarly, in another study (Kim et al., 2018), where jealousy was induced in romantic partners, receiving affectionate touch from the partner buffered feelings of jealousy for highly anxious individuals. These results were however not replicated in a similar observational couple study (Campbell et al., 2005), where the amount of support from a romantic partner did not influence the heightened distress of participants with higher attachment anxiety. Participants with lower attachment anxiety, however, reported experiencing less distress if they received more (compared to less) support from their partner.

Such mixed results highlight that, theoretically, the role of partner support to buffer the impact of attachment insecurity on emotions is not straightforward. The effectiveness of partner support may increase or decrease due to at least two boundary conditions (Eller & Simpson, 2020). First, not all types of support are equally effective for all people as individuals differ in their needs, motivations, and preferences regarding the reception of support (Eller & Simpson, 2020; Gardner & Cutrona, 2004; McLeod et al., 2020). For example, partner buffering theorists (Arriaga et al., 2018; Overall et al., 2022; Simpson & Overall, 2014) suggest that individuals high in attachment anxiety should benefit more from supportive behaviors that address the underlying fears of rejection and abandonment, reassuring them that they are loved and supported (Overall et al., 2022; Simpson & Overall, 2014). In contrast, individuals high in attachment avoidance should benefit more from supportive behaviors that address distrust and the need for autonomy, do not trigger vulnerability, and allow them to maintain their independence (Eller & Simpson, 2020; Overall et al., 2022). Accordingly, some literature suggested that emotional support (e.g., empathetic remarks) should better buffer the effect of attachment anxiety, and non-emotional and instru-

mental support (e.g., offering practical solutions) should better buffer the effects of attachment avoidance on negative emotions (Simpson et al., 2007).

A second and related boundary condition that influences the effectiveness of support and complicates the partner buffering effect on emotions is that the partner's supportive behaviors tend to be perceived and interpreted through an 'attachment lens' themselves. For example, in an experimental paradigm where partner support was manipulated in the context of a stressful task, insecure (anxious and avoidant) participants who received a somewhat ambiguous support note from their partners, rated their partner's note as being more negative, and rated a previous interaction with their partner as less supportive, as compared to more securely attached participants (Collins & Feeney, 2004). The authors concluded that people perceive their partner's support in a way that is consistent with their attachment-related views of others (see also Florian et al., 1995). Thus, people high in attachment insecurity may interpret a partner's benign and genuine support attempts as being less responsive and supportive, preventing partner support from buffering the negative impact of insecurity on negative emotions.

The Current Study and Research Questions

Research on the interplay between partner support and attachment orientations on emotions offers important theoretical developments with important practical implications, suggesting that a romantic relationship itself can buffer against the negative emotions associated with attachment insecurity. However, as outlined above, it is not yet clear if and how exactly attachment insecurity and partner support interact to predict emotions.

In the current study, we systematically summarized and reviewed the empirical research that intentionally or unintentionally investigated whether the effect of attachment insecurities on negative emotions was moderated by partner support. In existing empirical literature on the topic, partner support has been conceptualized in a variety of manners and with differing levels of specificity. For example, it has been operationalized as the mere presence (vs absence) of a partner (e.g., Carpenter & Kirkpatrick, 1996), as a general, broad perception of partner support (e.g., Stanton et al., 2017), or, in some cases, distinctions have been made between emotional, instrumental, or physical support (e.g., Simpson et al., 2007). Very few studies have gone further in specification and defined specifically buffering behaviors (e.g., Overall et al., 2013). According to partner buffering theories, broad indicators of partner support may not fully capture the nuances of the buffering effect, as it should be most effective when tailored to the needs of the support receiver (Arriaga et al., 2018; Overall et al., 2022; Simpson et al., 2007). Therefore, in the current review, we included all studies that employed any operationalizations of partner support within the scope of our work. We investigated the effect of support not only broadly defined, but beyond that, we attempted to fine-tune the categorization of support types as much as possible with respect to liter-

ature and individual study measurements (see Method section, sub-section data pre-processing).

Specifically, our main research question (Main RQ) was: whether and how do adult attachment and partner support interact to predict negative emotions? Conceptually, this means that the positive association between attachment insecurity and negative emotions should become weaker when (more) partner support is present. This is tested by a significant statistically negative interaction between attachment insecurity and partner support in predicting negative emotions. Furthermore, we explored whether the interaction patterns between attachment insecurities and support in predicting negative emotions may depend on (and therefore differ across) attachment orientations (Exploratory Research Question 1; ERQ1), the specific types of support (ERQ2), and the ways in which support was measured (ERQ3), as well as the types of emotion responses (ERQ4) and the ways in which emotions were measured (ERQ5). In addition, we explored ERQ2 to ERQ5, separately for each attachment orientation (e.g., whether the partner buffering of attachment anxiety on negative emotions differs across different types of partner support).

Finally, we explored the main effects of both adult attachment and partner support on negative emotions. Namely, we explored whether adult attachment is associated with negative emotions (ERQ6), and whether this association differs across different attachment orientations (ERQ6') and different ways emotion was measured (ERQ6''). We also investigated whether partner support is associated with negative emotions (ERQ7), and if this association differs across different specific types of romantic partner support (e.g., emotional, instrumental; ERQ7') and different ways partner support was measured (e.g., perceived support, observer-rated; ERQ7'').

Methods

The current systematic review is part of a larger systematic review project on adult attachment and emotion processes in romantic relationships. The protocol for the larger project was prepared, following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols (PRISMA-P; Moher et al., 2015) statement, and was pre-registered at the PROSPERO database. The current systematic review specifies the third research objective of the pre-registered protocol: "to explore the role of romantic partner's availability and responses in the association between adult attachment orientations and emotion processes in romantic relationships in the short and the long term". That is, focusing on the moderation effect of a romantic partner's availability and support on the association between adult attachment orientations and negative emotions. We followed PRISMA reporting guidelines (Page et al., 2021) for the final report. All data and research materials (including the protocol) are available at an OSF link (<https://osf.io/g84am/>).

Inclusion Criteria

Several inter-related research questions were included in the larger project (for more details, see the OSF link: <https://osf.io/g84am/>). For the larger project, the papers were included in the systematic review if they (1) were published in an English, peer-reviewed journal; (2) were published from 1969 (when attachment theory was first published) to September 2020 (the time the review search was being held); (3) included an empirical study; (4) included human adult participants (mean age ≥ 18 and minimum age ≥ 16) who were in a romantic relationship at the time the study was performed; (5) measured adult attachment (global or to romantic partner) and at least one of the outcome variables of the larger systematic review (incl., emotion; for the complete list of the outcome variables, see online protocol, section 13.2. Outcome variables). For the current systematic review, two more specific criteria were added: studies were included if (6) they tested the interaction between one's adult attachment and the partner's support (e.g., partner support/responsiveness/care-giving) in predicting one's emotions (e.g., positive/negative emotions, anger, etc.); and (7) participants were not reported to suffer from chronic mental or physical health issues.

Literature Search

The literature search was carried out on 23 September 2020. To identify studies, first, relevant electronic databases (i.e., Pubmed, PsychInfo, and Web of Science) were searched. We included title, abstract, and keywords as search areas, and limited the search to peer-reviewed journals, English language, publication year from 1969 on, and human studies. For exact search terms see [Figure 1](#).

Literature search results (title, authors, abstract) from all sources were imported to Distiller Systematic Review (DSR) Software for screening. [Figure 2](#) presents the screening stages. All screening stages were performed by two reviewers independently. Before each stage of screening, standardized screening forms and an instruction manual were developed and imported into DSR (for the forms, see OSF link: <https://osf.io/g84am/>). In all the screening stages, any discrepancies among the reviewers were resolved through discussion among the reviewers until a unanimous agreement was reached. Since we screened a large number of articles and continuously resolved discrepancies through discussion, we did not calculate a final inter-rater reliability score. Some additional decisions regarding the inclusion or exclusion of articles were made throughout the screening phase (see the OSF link: <https://osf.io/g84am/>).

Upon the completion of the screening phase, the reference lists of all the included studies were reviewed to find potential studies that met our criteria but were not included in the first step. We also checked the reference lists of existing review papers on related topics (i.e., Eller & Simpson, 2020; McLeod et al., 2020; Overall et al., 2022; Stanton & Campbell, 2014) for additional studies. Furthermore, since the review process took long and relevant articles could have been published after our initial search, we planned to adopt relevant new studies that we came across

Concept	Exact search terms
Attachment	TS = (attachment AND ("intimate relation*" OR "romantic relation*" OR "romantic couple*" OR "dating couple*" OR "couple relation*" OR "romantic partner*" OR "intimate partner*" OR "adult relation*" OR marriage OR "married couple*" OR marital OR spous* OR dyad*) AND ("proximity seeking" OR hyperactiv* OR deactiv* OR emotion* OR affect* OR feeling* OR attention OR appraisal OR stress* OR threat* OR distress* OR "regulatory flexibility" OR "regulatory variabilit*" OR cope OR coping
Romantic relationship	OR "partner* presen*" OR "partner* availab*" OR respons* OR support* OR care* OR "caring behav*r"))
Emotion (regulation)	
Partner support	
Restrictions	
- Restrict results by languages and document types: English, Article and Review	
- Timespan: 1969 - 2020	

Figure 1. Search Terms and Search Restrictions

Notes. The search was performed in Advance Search in Web Of Science. The search terms in bold are the ones specific to the systematic review presented in this paper. The search terms for PubMed and PsychInfo were slightly different according to the specific guidelines of those databases. For a complete list, see the OSF link: <https://osf.io/g84am/>.

if they were published after the initial review search was performed. We conducted a follow-up literature search on 1 June 2023. No new articles were identified through these processes.

Data Coding Procedure

We developed a standard data extraction form and imported it in DSR where we extracted data from the included papers. Each study was coded for general information (e.g., title), sample characteristics (e.g., participant recruitment pool), design and procedure, as well as analyses and results. [Figure 3](#) presents all the ingredients of the data extraction form. If a paper included several studies, each study that included the interaction effect of interest was separately coded. Furthermore, if a study included several analyses on the interaction effect of interest, each analysis was separately coded. Each reviewer (FM & GK) coded one-half of the papers, which were then checked for the quality of the coding by the other reviewer. Coding discrepancies, if any, were discussed and resolved among the reviewers. Given the large number of analyses and the complexity of coding, we conducted ongoing quality checks throughout the process. As a result, we did not calculate a final inter-rater reliability score (for the complete dataset see OSF link: <https://osf.io/g84am/>).

Data Pre-Processing

The extracted data from the papers were quite heterogeneous in terminology and scales/items that were used to measure conceptually similar variables. For example, for the variables that represented partner support, different

studies used different terms such as "partner responsiveness", "partner emotional support", "partner care-giving" or "partner instrumental support". In addition, similar terms (for example, partner emotional support) were measured using different sets of items in different studies. Furthermore, each variable was measured through a variety of methods such as participants' self-report on questionnaires or observation of behavior by trained coders. Therefore, to analyze data in a meaningful way, we first pre-processed the raw data by coding them into categories that were conceptually and methodologically homogenous. Specifically, raw data on variables was first coded into one of three categories representing our three main variables of interest (i.e., adult attachment and partner support as predictors, and negative emotion as the outcome variable). Then, for our exploratory analysis, sub-categories were created. To identify the sub-categories, we looked at the existing measures in the raw data as well as the existing literature on attachment (Gillath et al., 2016b, p. 5), partner support (McLeod et al., 2020), and emotions (Aldao, 2013; Barthel et al., 2018; Cole & Hollenstein, 2018; Gentzler et al., 2010; Gross, 2015). [Figure 4](#) shows all sub-categories. We coded each variable into a sub-category based on the description of the variable and the items and tools that were used to measure it. For details of the data coding procedure, and to see which exact items were coded into which (sub-)category, see the OSF link (<https://osf.io/g84am/>).

Data Synthesis

To synthesize the results, we used vote counting (similar to Goodson et al., 2006; White et al., 2021) in a descriptive way. That is, for each main or interaction effect, we re-

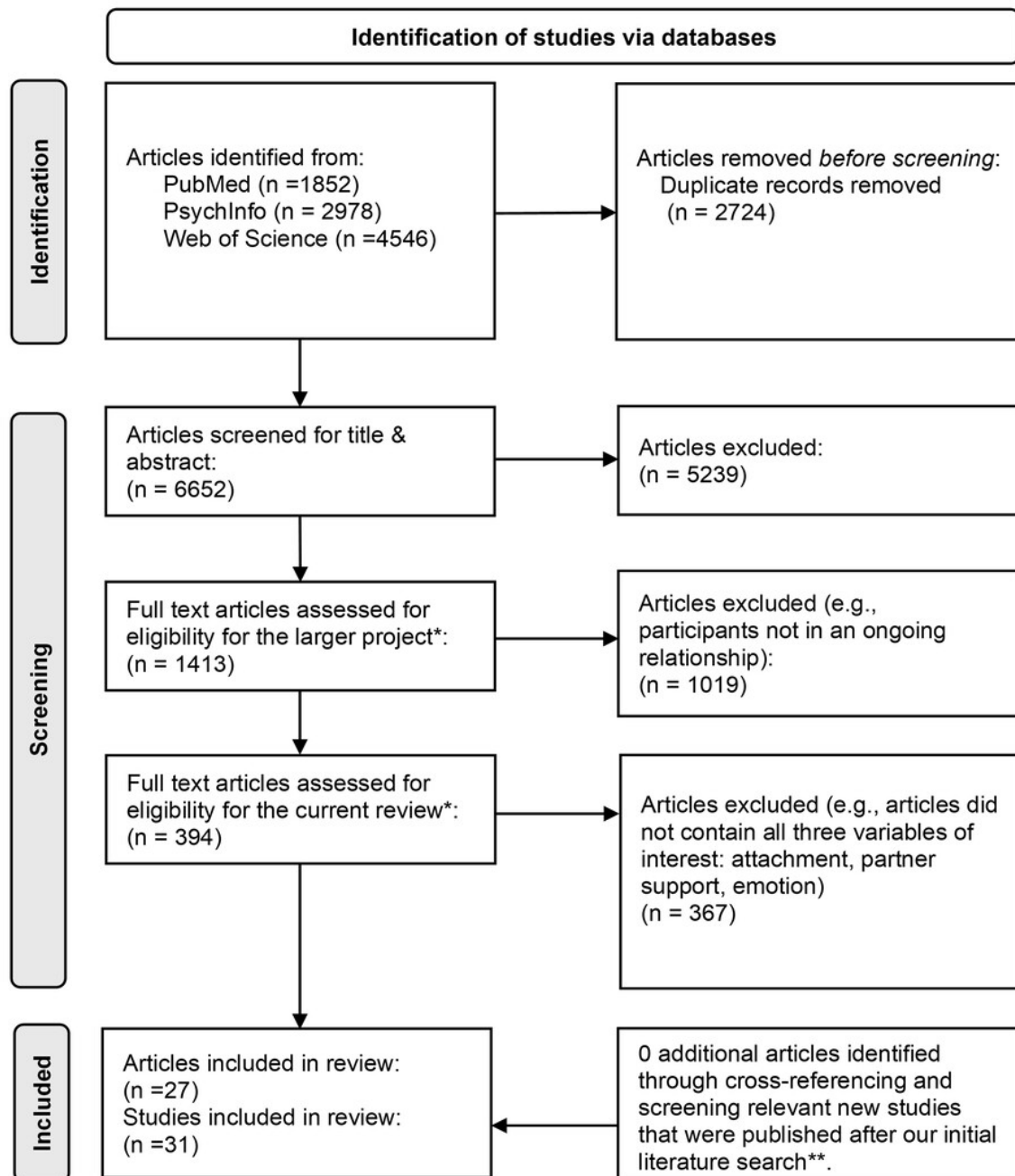


Figure 2. Systematic Review Flow Diagram of the Study Selection Process

Notes. *The current systematic review is part of a larger preregistered systematic review project on adult attachment and emotion processes in romantic relationships. **The last search update was performed on 1 June 2023.

ported the number and percentage of significant positive, significant negative, and null or unreported results. Due to the large heterogeneity in the measures, study designs, and particularly analysis methods across the included papers and studies, other meta-analytic methods, such as summarizing effect estimates, were not expected to be meaningful.

Results

Paper Selection

Twenty-seven papers, including 31 studies were included in the systematic review for further analysis. [Figure 2](#) shows the study selection process.

Characteristics of the Studies, Measurements, and Variables

A final sample of 31 studies (including 2689 couples and 191 individuals) was included in this review. The studies

General Information	- Title of the paper - Authors - Aim - Hypotheses/Research questions - Location (e.g., Canada)	Sample Characteristics	- Participant recruitment pool (e.g., college/university) - Inclusion/exclusion criteria - Final sample size - Unit of participant recruitment (e.g., couples, individuals) - Sample age mean and standard deviation - Gender distribution - Distribution of sexual orientation - Mean relationship duration - Relationship status
Design & Procedure	- Study design; if experimental conditions or couple discussions: • The number, duration, and description of conditions/discussions - Study procedure (summarized) - Variables of interest; for each variable: • Variable name • Variable description • Variable type (continuous or categorical) • Measurement tool (e.g., self-report, sensors on the skin) • Measurement scale and subscales (if any) • Measurement time (i.e., the period the measurement referred to, e.g., stress during the task or in the last week) • Measuring time (i.e., the time the variable was measured, e.g., right after the task, or in a baseline questionnaire)		
Analysis & Results	For each analysis that measured the interaction effect of interest: - Analysis type (e.g., linear regression) - Analysis description (including all the predictor and outcome variables) - Analysis results of the main and interaction effects of interest (including the effect size, variance, significance value, and follow-up analysis, if provided in the paper)		

Figure 3. Data Extraction Form Ingredients

Category	Sub-Categories				
Adult Attachment	- Attachment anxiety (aka ambivalence) - Attachment avoidance - Attachment insecurity (when an aggregate of attachment anxiety and avoidance was used in the analysis)				
Partner Support	<table> <tr> <td>Type</td><td> - Emotional support (incl. items such as understanding, validating, and expressing empathic remarks) - Instrumental support (aka practical support; e.g., offering solutions, giving advice) - Physical support (incl. items such as hugging and kissing) - Presence of partner (when mere physical presence versus absence of partner or versus presence of a stranger was included) - Unspecified (when the items were not specified or when the items included several types of support) </td></tr> <tr> <td>Measurement</td><td> - Perceived partner support (when a participant indicated the extent to which their partner showed support) - Enacted support (when a partner reported how much they provided support to the actor) - Observer-rated (when objective coders rated the amount of partner support) - Experimental condition (when the partner support/presence was experimentally manipulated by the researchers) </td></tr> </table>	Type	- Emotional support (incl. items such as understanding, validating, and expressing empathic remarks) - Instrumental support (aka practical support; e.g., offering solutions, giving advice) - Physical support (incl. items such as hugging and kissing) - Presence of partner (when mere physical presence versus absence of partner or versus presence of a stranger was included) - Unspecified (when the items were not specified or when the items included several types of support)	Measurement	- Perceived partner support (when a participant indicated the extent to which their partner showed support) - Enacted support (when a partner reported how much they provided support to the actor) - Observer-rated (when objective coders rated the amount of partner support) - Experimental condition (when the partner support/presence was experimentally manipulated by the researchers)
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Negative Emotion	<table> <tr> <td>Type</td><td> - Negative emotion (when the general negative affect or mood was measured) - Positive emotion (when the general positive affect or mood was measured, this was reversed) - General emotion (when the general emotion/mood was measured by a single item or an aggregation of positive & negative emotion items) - Distress (including, stress, distress, anxiety, fear, and sadness) - Other discrete emotions (Incl. Anger, Pain*) </td></tr> <tr> <td>Measurement</td><td> - Subjective experience of emotion (measured through self-report) - Behavioral response (e.g., when an objective coder measured one's distress based on their verbal and nonverbal behavior) - Neuroendocrine response (e.g., distress response measured via skin conductance) </td></tr> </table>	Type	- Negative emotion (when the general negative affect or mood was measured) - Positive emotion (when the general positive affect or mood was measured, this was reversed) - General emotion (when the general emotion/mood was measured by a single item or an aggregation of positive & negative emotion items) - Distress (including, stress, distress, anxiety, fear, and sadness) - Other discrete emotions (Incl. Anger, Pain*)	Measurement	- Subjective experience of emotion (measured through self-report) - Behavioral response (e.g., when an objective coder measured one's distress based on their verbal and nonverbal behavior) - Neuroendocrine response (e.g., distress response measured via skin conductance)
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Measurement	- Subjective experience of emotion (measured through self-report) - Behavioral response (e.g., when an objective coder measured one's distress based on their verbal and nonverbal behavior) - Neuroendocrine response (e.g., distress response measured via skin conductance)				

Figure 4. Variable Category and Sub-Categories Used For Data Pre-Processing

Notes. * Pain is not an emotion but we included it in our study as it is generally associated with the experience of (negative) emotions and therefore is relevant to the aims of the current review.

Table 1. Summary of Sample Characteristics of the Studies Included in the Systematic Review

Sample characteristics	<i>n</i>
Sample size	
$N < 50$	10
$50 \leq N < 100$	14
$100 \leq N < 150$	5
$150 \leq N$	2
Unit of participant recruitment	
Dyad (both partners)	21
Individuals accompanied by their partner	6
Individuals with or without their partner depending on the experimental condition	1
Individuals only	3
Recruitment pool	
College/university	18
General population	3
Couples in transition to parenthood	1
General population & college/university	1
Unspecified	8
Gender distribution	
Males $\approx$ Females	16
Females > Males	3
Males = Females = Other	1
Only females	4
Unspecified	7
Average age (years)	
18 to 30	27
30 to 40	3
Unspecified	1
Mean relationship duration	
≤ 6.33 years (min. 3.5 months, max. 6.33 years)	27
= 10.1 years	1
Unspecified	3
Distribution of sexual orientation	
Only heterosexual	15
Both heterosexual and non-heterosexual	5
Unspecified	11

Notes. *N* represents the sample size. *n* represents the number of studies.

were conducted in at least seven different countries, with the majority of the research being conducted in the U.S. ($n = 9$) and New Zealand ($n = 5$). Several studies ($n = 8$) did not provide information on the location of the studied populations. Other sample characteristics are summarized in [Table 1](#) and presented in detail in Supplementary Table S1.

The study designs encompassed primarily experimental conditions ($n = 14$), wherein, for example, stress induction was followed by conditions involving either partner presence or solitude. Additionally, structured observational designs were common ($n = 8$), often featuring couple discussions. A minority of studies employed longitudinal designs ($n = 4$), typically in the form of daily diaries, and fewer

utilized cross-sectional designs ($n = 2$). Three studies employed hybrid approaches, combining for example experimental conditions with observational measures. Study design, measures, and variables are presented in Supplementary material, summarized in Table S2, and detailed in Table S3.

Interaction Between Adult Attachment and Partner Support in Predicting Negative Emotions

We investigated whether adult attachment and partner support interacted to predict negative emotions (Main RQ). Out of 31 studies, the majority ($n = 18$) found mixed results across their multiple analyses (for example, significant and non-significant, or positive and negative direction of effect; most studies included several relevant analyses). Thus, in the following sub-sections, we report the results with reference to the number of *analyses* (not studies).

To ensure accurate representation and avoid inflated percentages, we report results in text only when at least 15 analyses were available for a given effect. This cutoff was determined based on theoretical and practical considerations. Smaller sample sizes risk overemphasizing individual findings, potentially leading to misleading percentages (e.g., 1 significant result out of 5 analyses = 20%). Consistent with guidance from the Cochrane Handbook for Systematic Reviews of Interventions (Higgins et al., 2019), which recommends a minimum of 10 observations for meaningful subgroup analyses, we selected a threshold of 15 analyses. This represents approximately 10% of the total dataset (151 analyses), ensuring that the reported findings are grounded in a substantial portion of the data. Notably, we also explored patterns of findings for effects with fewer than 15 analyses but did not observe strong or consistent patterns across these results.

As presented in [Table 2](#), out of 151 analyses (across 31 studies) that tested the interaction between attachment insecurity and partner support in predicting emotions, only 13 analyses (9% of analyses, across 10 studies) supported the partner buffering of attachment insecurity on negative emotions. The rest of the analyses found either null results ($n = 115$, 76% of analysis), showing no moderation effect of partner support on the link between attachment insecurity and emotions, or suggested alternative moderation patterns to the partner buffering ($n = 23$, 15% of analysis), described in more detail in the following paragraphs.

Partner Buffering Effect. This effect, seen in 13 (9%) of all analyses (across 10 studies), was supported when study results suggested that more partner support buffered against the higher negative emotions associated with higher attachment insecurities. Specifically, three analyses (across two experimental condition studies; B. C. Feeney & Kirkpatrick, 1996) showed that when exposed to a stressful situation, individuals with high (compared to low) attachment anxiety experienced significantly more physiological distress response (i.e., higher blood pressure and heart-rate, B. C. Feeney & Kirkpatrick, 1996), more jealousy (Kim et al., 2018) and less positive emotions (Kim et al., 2018) in a no-support condition. However, in support of the partner buffering effect, when the partner (support) was present, no

Table 2. Adult Attachment and Partner Support influencing Emotions

Explanation	Interaction/Moderation patterns					
	Total	Buffering	Intensifying	Contra-buffering	Other	Null
Number (%) of analyses	151	13 (9%)	15* (10%)	8* (5%)	2 (1%)	115 (76%)
Number of studies	31	10	7	7	2	29
Variable	Main effects					Null or unreported
	Total	Significant positive	Significant negative	Mixed		
Attachment Insecurity	141	24 (17%)	3 (2%)	–		114 (81%)
	31	14	2			28
Partner support	101	4 (4%)	42 (42%)	1 (1%)		54 (43%)
	31	3	21	1		20

Notes. The numbers in parentheses show the percentage of analyses from the total number of analyses in that row. The percentages in a row may add up to 101 due to rounded decimals.

* In 2 analyses, intensifying and contra-buffering effects co-occurred.

significant differences in the physiological response, jealousy, or positive emotions were found between participants with high versus low attachment anxiety. Similarly, in two other analyses (across two studies; Bradford et al., 2017; Rholes et al., 1999), higher attachment avoidance or attachment insecurity predicted more anger (Rholes et al., 1999) and higher depression (Bradford et al., 2017), and this association was weaker when higher (compared to lower) partner support was provided.

Partner buffering was also supported when higher (vs lower) partner support was more beneficial in reducing negative emotions for people with higher (compared to lower) attachment insecurities. Specifically, in one analysis in a couple discussion study (Kordahji et al., 2015), higher support was associated with reduced physiological response (i.e., heart inter-beat interval) to distress over time for individuals with higher attachment anxiety, and with increased physiological distress response for individuals with lower attachment anxiety. Similarly, in three analyses (across three studies; Overall et al., 2013; Simpson et al., 2007; Stanton et al., 2017, study 1), higher partner support was associated with less distress (Simpson et al., 2007) and anger (Overall et al., 2013) in response to a stressful situation, and lower momentary baseline negative affect (Stanton et al., 2017, study 1) only for participants with high attachment avoidance. The association between partner support and observed/experienced emotions was not significant for participants with low attachment avoidance. In three other analyses (across three studies; Overall et al., 2013; Simpson et al., 1992; Stanton et al., 2017, study 2), higher partner support was significantly associated with lower anger (Overall et al., 2013), lower distress (Simpson et al., 1992) and lower negative emotion (Stanton et al., 2017, study 2). This association was stronger for individuals high in attachment avoidance compared to those low in attachment avoidance.

Moderation Patterns that do not Reflect Partner Buffering. Twenty-two analyses found support for moderation patterns that did not reflect the partner buffering effect. In 21 analyses (14% of all analyses), the positive association between attachment insecurities and negative emotions was stronger (rather than weaker/buffered) when

support was higher (vs lower). This was reflected in two distinct moderation patterns.

Firstly, in 15 analyses (10%, across 7 studies), higher support was related to more, rather than less, negative emotions only for insecurely attached individuals. More specifically, in five analyses (across 4 studies; Carpenter & Kirkpatrick, 1996; B. C. Feeney & Kirkpatrick, 1996; Kraus et al., 2019, 2020), individuals with higher attachment anxiety showed a stronger neuroendocrine stress response in the presence of the romantic partner, compared to when they were alone or with a stranger. Similarly, in six analyses (across 3 studies; Carpenter & Kirkpatrick, 1996; Krahé et al., 2015; Kraus et al., 2019), individuals with higher attachment avoidance experienced more pain (Krahé et al., 2015) or showed a stronger neuroendocrine stress response (Carpenter & Kirkpatrick, 1996; Kraus et al., 2019) in the presence of the romantic partner, compared to when they were alone or with a stranger. Similarly, in four analyses (across 2 studies), more partner support was associated with increased distress (self-report in Girmé et al., 2015, study 4; physiological response in Kordahji et al., 2015) for participants high in attachment avoidance; whereas for participants low in avoidance, more support had either no effect on distress or was associated with a lower physiological stress response. In the remainder of this article, we refer to this moderation pattern as the “*intensifying effect*”.

Secondly, in eight analyses (5% of all analyses, across 7 studies; Campbell et al., 2005; Ditzen et al., 2008; Kordahji et al., 2015; Meuwly et al., 2012; Simpson et al., 2007; von Mohr et al., 2018; Wilson & Simpson, 2016), higher (vs lower) support was associated with lower negative emotions *only* for securely attached individuals. In more detail, in four analyses (across 4 studies), in a stressful situation, partner presence (vs being alone), higher emotional support, better-quality physical support, and higher unspecified support were significantly associated with lower distress (Campbell et al., 2005; Ditzen et al., 2008), less pain (von Mohr et al., 2018), and better cortisol recovery (Meuwly et al., 2012) for people with low attachment anxiety, but not for those with high attachment anxiety. Similarly, in four analyses (across 3 studies), higher emotional support was significantly associated with lower distress

(Kordahji et al., 2015; Simpson et al., 2007) and less child-birth pain (Wilson & Simpson, 2016) for people with low attachment avoidance, but not for those with high attachment avoidance. In other words, only individuals with low attachment insecurities benefited from partner support, but individuals high in attachment insecurities did not benefit. In the remainder of this article, we refer to this pattern of findings as the “*contra-buffering effect*”.

Finally, in a daily diary study (Girme et al., 2015, study 4), one analysis showed that participants with lower attachment anxiety reported higher depressed mood on days they perceived higher emotional support from their partners. Participants with higher attachment anxiety, however, reported higher depressed mood regardless of their partner's emotional support. This may suggest that participants with low attachment anxiety perceived to receive more emotional support from their partner in days they felt more depressed, whereas those with high attachment anxiety did not. Since this pattern only appeared in one cross-sectional analysis and we briefly discussed it in the current paragraph, we do not further discuss this pattern.

Figure 5 illustrates a schematic summary of the results. While the majority of the analyses (76% of all analyses) found null results for an interaction effect (see Figure 5, panel a), three distinct moderation patterns appeared across the remainder of the analyses: (1) the association between attachment insecurity and negative emotions was buffered in high (vs low) support (9% of all analyses); that is, partner support buffered the effect of attachment insecurity on negative emotions (the buffering effect; see Figure 5, panel b); (2) the association between attachment insecurity and negative emotions was stronger in high (vs low) support so that those with higher (compared to lower) attachment insecurity experienced intensified negative emotions when partner support was higher than lower (10% of all analyses; the intensifying effect; see Figure 5, panel c); and (3) the association between attachment insecurity and negative emotions was stronger in high (vs low) support so that more support was associated with less negative emotions but only for securely attached individuals (5 % of all analyses; the contra-buffering effect; see Figure 5, panel d; see Table 2).

Exploratory Analyses. We briefly present the notable results from our exploratory analyses, addressing ERQ1 to ERQ5. For details of results see supplementary material (Tables S4, S5, S6). In general, the results of the moderation analyses were quite similar across *attachment anxiety and attachment avoidance* (answering ERQ1). Also, the results of the moderation analyses did not differ considerably across different *types of partner support* (answering ERQ2); except that the presence of the partner (vs absence or presence of a stranger) was most often (20% of analyses) associated with the intensifying effect, compared to other types of support (e.g., Emotional). These moderation patterns did not considerably differ across different attachment orientations. In other words, there were no considerable differences between attachment anxiety and attachment avoidance in moderation patterns across different support types.

The results of the moderation analyses differed across different *measurements of partner support* (answering ERQ3): While both the *buffering* effect and the *contra-buffering* effect mostly appeared when support was reported by independent observers (16% & 13% respectively), the *intensifying* effect mostly appeared when support was manipulated via experimental conditions (16%). Additionally, the percentage of null results was higher when support was *perceived* compared to other measurements of support (86% compared to 75%, 74%, & 71%), suggesting that perceived support least often moderated the effect of attachment insecurities on emotions. These patterns slightly differed across different attachment orientations (see supplementary Table S5 & Table S6): The observer-rated support more often buffered attachment avoidance than attachment anxiety (23% compared to 6%). The experimentally manipulated support intensified the effect of attachment avoidance slightly more often than attachment anxiety (19% compared to 14%). While high perceived support never intensified the effect of attachment anxiety on emotions, in a few cases ($n = 2$, 14% of analyses), it intensified the effect of attachment avoidance.

The results of the moderation analyses did not particularly differ across the two *negative emotion types* that had more than 15 analyses (distress and pain, answering ERQ4). The results of the moderation analyses differed across different *measurements of negative emotions* (answering ERQ5). While the *buffering* effect was mostly found when emotion was self-reported by the participants (i.e., subjective experience, 11.5%), the *intensifying* effect was mostly found when emotion was measured as a neuroendocrine stress response (16%). There were too few analyses on behavioral response making it difficult to make meaningful conclusions.

Main Effects

Although our main focus in this systematic review concerns the question of how attachment insecurity and partner support interact in predicting negative emotions, we also report the results of both the main effect of attachment insecurity and the main effect of partner support on negative emotions in the studies included in our systematic review (see Table 2).

Attachment Insecurity. The majority of the analyses (81%) reported null results or did not report the effect, providing little support for an association between attachment insecurities and negative emotions (answering ERQ6). Nevertheless, higher attachment insecurity was in 17% of analyses associated with higher levels of negative emotions and was rarely (2%) associated with lower levels of negative emotions. The negative association between attachment insecurity and negative emotions was more often found for (1) attachment anxiety than for attachment avoidance (24% compared to 9%, respectively; answering ERQ6'), and (2) when emotion was measured as self-report compared to neuroendocrine responses (30% compared to 3%; answering ERQ6''); for more details, see supplementary Table S7). To summarize, people with higher attachment insecurity either did not significantly differ in their negative emotions

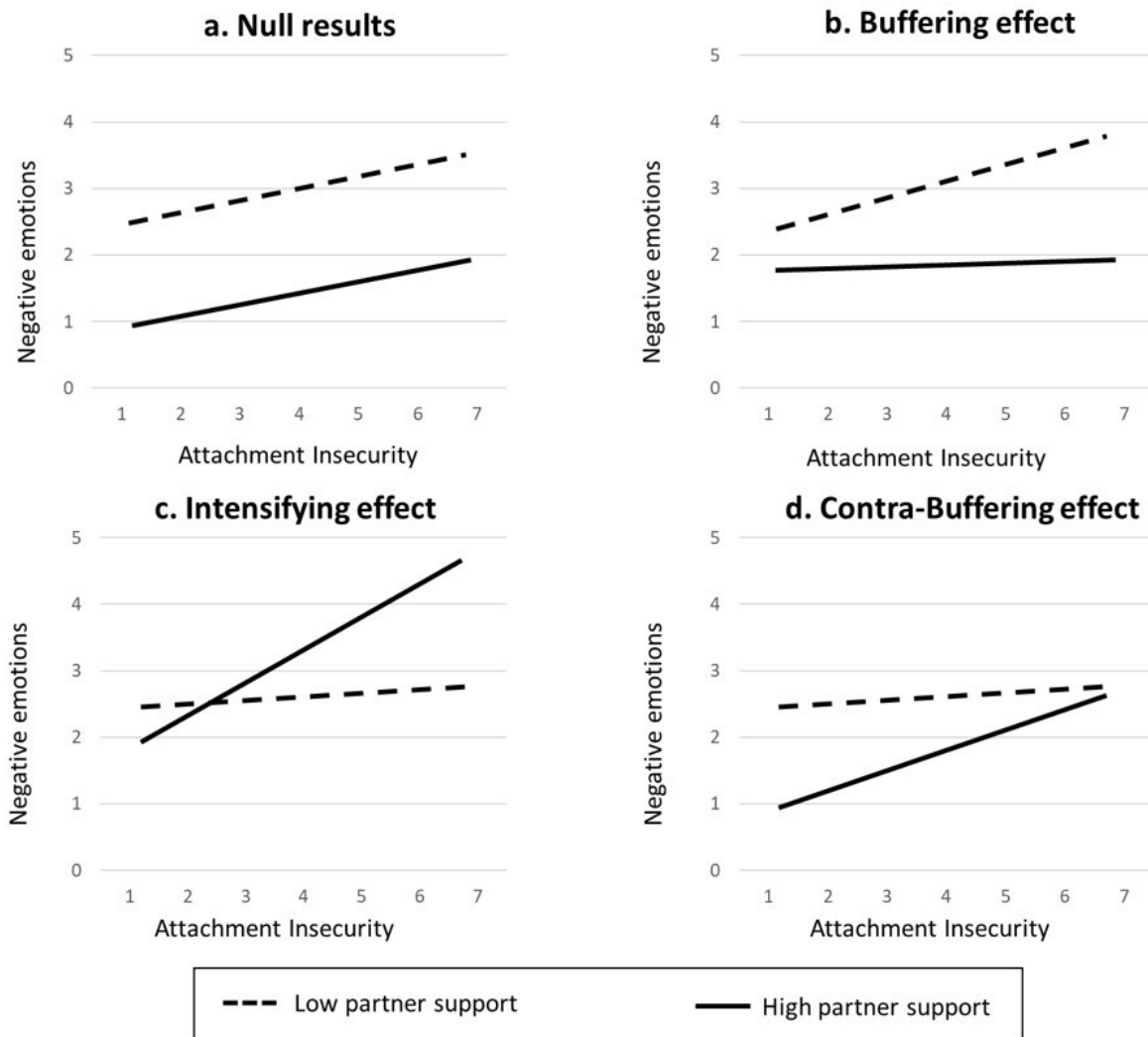


Figure 5. Moderation Patterns Between Adult Attachment and Partner Support in Predicting Negative Emotions

Notes. The graphs are schematic; the exact slopes differ in each study.

compared to those with lower attachment insecurity or experienced more negative emotions, particularly those with higher attachment anxiety.

Partner Support. Forty-three percent (43%) of analyses reported null results or did not report the effect. Higher partner support was in 42% of the analyses associated with lower levels of negative emotions, and rarely (in 4% of analyses) associated with higher negative emotions, and one analysis (1%) found mixed results (depending on gender). The results suggest that receiving more support from a romantic partner is generally associated with less negative emotions (answering ERQ7). Notably, our exploratory analysis showed that higher *emotional* support (among different types of support) and higher *perceived* partner support (among different types of support measurement) were most often (47% & 48% respectively) associated with lower negative emotions (answering ERQ7' & ERQ7" respectively; for more details, see supplementary Table S8). To summarize, higher support, particularly emotional support and particularly if reported (i.e., perceived) by the support recipient, was generally associated with lower negative emotions.

Discussion

We systematically reviewed the empirical research that intentionally or unintentionally investigated whether the effect of attachment insecurity on negative emotions was moderated by partner support. That is, can a romantic partner's support buffer the positive association between attachment insecurity and feeling negative emotions? Our results showed that in nine percent ($n = 13$) of all 151 analyses (across 31 studies), the association between attachment insecurity and negative emotions was buffered in higher (vs lower) partner support, suggesting that partner support buffered the effect of attachment insecurity on negative emotions (see Figure 5, panel b).

In 14% of all analyses ($n = 21$), the association between attachment insecurity and negative emotions was strengthened with higher (vs lower) partner support. This strengthened association appeared in two often distinct moderation patterns: firstly, those with higher (compared to lower) attachment insecurity experienced more (instead of less) negative emotions when partner support was higher (in 10% of all analyses, $n = 15$; Figure 5, panel c); secondly,

higher partner support was associated with less negative emotions for secure and not for insecure people (in 5% of all analyses, $n = 8$; Figure 5, panel d). Notably, the majority of all interaction analyses (76%) reported null results, suggesting that partner support did not moderate the effect of attachment on negative emotions (Figure 5, panel a). In other words, in those cases, partner support neither dampened nor intensified the effect of attachment insecurities on negative emotions.

Here, we delve deeper into our most interesting findings and contextualize them within the broader literature; then, we draw theoretical implications with suggestions for future research. We then acknowledge the methodological limitations of our study and the field at large and propose potential avenues to address these limitations.

How do Adult Attachment and Partner Support Interact in Predicting Negative Emotions?

According to recent theoretical models – namely the dyadic regulation of attachment insecurity (Overall et al., 2022; Overall & Simpson, 2015; Simpson & Overall, 2014) and the attachment security enhancement model (Arriaga et al., 2018) – romantic partner's support, particularly when well-tailored to individual's needs, can mitigate attachment insecurity and related emotion responses in threatening situations. Overall and colleagues (2022) collected evidence that insecurely attached individuals (compared to secure ones) had better individual and relationship outcomes—e.g., less destructive behavior (Tran & Simpson, 2009), and more satisfaction (Raposo & Muise, 2021)—when their partners demonstrated responsive supportive behaviors compared to not showing those behaviors. Our review found relatively little evidence that partner support, when broadly defined, consistently dampens the link between attachment insecurity and negative emotions.

One possible explanation for this finding is that all types of partner support and attachment insecurities were investigated together without making distinctions between them. Buffering theories state that different types of support are beneficial for different types of attachment insecurity (e.g., Girme et al., 2015; Simpson & Overall, 2014). Thus, if one investigates specific types of support that are beneficial for specific attachment orientations, the buffering effect must be more pronounced. This argument could explain our findings to some extent, suggesting that a more fine-grained differentiation of partner support is needed to understand when and for whom partner support buffers attachment insecurities. This argument is however unlikely to fully explain our results for the two following reasons.

Firstly, the pattern of results (low support for the buffering effect) persisted when exploring specific support types and attachment orientations. For instance, while emotional support is often considered particularly beneficial for individuals with attachment anxiety (Simpson et al., 2007), only two out of 19 analyses (11%) showed a buffering effect of emotional support on the link between attachment anxiety and emotions (see Supplementary Table S5). Due to limited data (fewer than 10 analyses), we could not meaningfully assess the impact of physical support for attach-

ment anxiety or instrumental support for attachment avoidance, which previous literature suggests to be more beneficial for these respective attachment orientations (Girme et al., 2015; Simpson et al., 2007).

Secondly, partner support itself was frequently (in 42% of analyses) associated with reduced negative emotions, suggesting that partners often provided support that was beneficial to reduce negative emotions. In the majority (70%) of those cases, the effect of support on emotions was similar for both insecurely and securely attached individuals. Particularly, when support was *perceived* as high by the support recipient, it was most often (in 48% of cases) associated with reduced negative emotions, in line with previous literature (e.g., Reis et al., 2017). In nearly all those cases (10 out of 11), the effect of perceived support on emotions was similar for secure and insecurely attached individuals (as reflected in the high rate of null interactions for perceived support, see Table S4). Therefore, in many cases, partner support did benefit individuals in reducing negative emotions, particularly when well-received (perceived) by the support recipient; and it did so for both securely and insecurely attached individuals to a similar degree.

Another possible explanation for the low number of analyses that support the buffering effect can be that in a large number of our analyses, insecurely and securely attached individuals did not seem to differ in the extent to which they experienced negative emotions (considering the high number of null results for the main effect of attachment on negative emotions, Table S7). One can argue that in those cases, there simply was no negative impact of attachment insecurity on negative emotions to be buffered. Indeed, consistent with theories predicting partner buffering effects, if insecurely attached individuals showed higher negative emotion responses than secure individuals, the percentage of analysis that supported the buffering effect increased to 16%. In this case, higher (vs lower) partner support seemed to dampen heightened negative emotions of insecurely attached individuals to levels similar to those of securely attached people.

Interestingly, we found in a number of analyses that higher partner support was associated with *more intense* negative emotions in insecure as compared to secure people (i.e. *the intensifying effect*, found in 10% of our analyses). This finding is consistent with a literature review of dyadic support interactions (Rafaeli & Gleason, 2009) showing that receiving support from a romantic partner can sometimes intensify, instead of soothing, negative emotions. An important contribution of our results to dyadic support literature is that attachment insecurity is an individual factor that can determine if partner support backfires and intensifies negative emotions.

One possible explanation for the intensifying effect is that receiving support may cause negative emotions by undermining the support recipient's self-esteem or autonomy and making them feel indebted to their partner (Walster et al., 1973). Individuals with higher attachment anxiety are more prone to experience lower self-esteem (e.g., Bylsma et al., 1997) and those with higher attachment avoidance are particularly protective of their autonomy (Gillath et al.,

2016a). Therefore, those with higher attachment insecurity might be more prone to experience an undermining of their self-esteem or autonomy when receiving support. Indeed, Gosnell and Gable (2013) found that highly anxiously attached individuals felt ashamed and indebted when they received support from their partners. Girme and colleagues (2019) also found that avoidantly attached women felt an undermining of autonomy when receiving higher (compared to lower) levels of visible support. Thus, insecurely attached people can feel more negative emotions, when receiving support, because support can trigger certain vulnerabilities associated with attachment insecurities. In terms of partner buffering theory, providing well-tailored support for individuals with high attachment insecurities is perhaps more challenging due to these vulnerabilities.

We found more evidence for the abovementioned argument in our exploratory analysis as the intensifying effect was mostly seen when support was manipulated via experimental conditions, particularly as presence versus absence of the partner (or versus stranger), and more often for people high on attachment avoidance compared to attachment anxiety (see Table S4). Such experimental inductions of partner support reflect an 'involuntary' reception of support; thus, these results support the notion that involuntary reception of partner support, particularly the presence of the romantic partner, may be perceived as threatening to insecurely attached individuals and result in an intensification of negative emotions. This is particularly the case for individuals high in attachment avoidance.

Another explanation for the intensifying effect can be that people with higher attachment insecurities are more likely to appraise supportive attempts as unresponsive and insufficient (Collins & Feeney, 2004; McLeod et al., 2020), and consequently experience more negative emotions. As Collins and Feeney (2004) argued, people perceive their partner's support in a way that is consistent with their attachment-related views of self and others; that is, for insecurely attached individuals, the expectation that others will not be capable or available for support in times of need (see also Florian et al., 1995). Consistent with this, higher received support is shown to worsen health outcomes if it is perceived as unresponsive by the support recipient (e.g., Selcuk & Ong, 2013; Uchino, 2009). Indeed, in our results, the intensifying effect was rarely ($n = 2$, 6%) found when support was *perceived* as high (see Table S4). This finding supports the notion that intensifying effect mostly occurs when support is *perceived* as low. Thus, adults with higher attachment insecurities may perceive supportive attempts as insufficient or unresponsive, and thus benefit less from them or even feel harmed by them.

The abovementioned argument can also provide an explanation for the contra-buffering effect that was found (but only in 5% of analyses), where higher partner support was associated with lower negative emotions only for those with higher attachment security. This moderation pattern resembles classic attachment studies on children's stress recovery in the strange situation paradigm, where as a stressful situation, infants are left alone with a stranger; then, when reunited with their mother, secure children

quickly recover from distress, while anxiously attached children have difficulty calming down (Ainsworth, 1978). Similar patterns are found in physiological stress recovery in anxiously attached children (Borelli et al., 2019; Movahed Abtahi & Kerns, 2017). From an attachment theoretical perspective, it is interesting that we found this pattern in adults only in a small percentage of the reviewed analyses. This might be due to the higher emotion regulation abilities of adults compared to children, as age is found to be positively associated with better emotion regulation (e.g., Sanchis-Sanchis et al., 2020; Schirda et al., 2016). This is probably due to adults having more developed cognitive and social skills and accumulation of life experiences (Schirda et al., 2016).

To summarise the results of our main research question, the patterns in which attachment and partner support interact (or not) to influence negative emotions can take different shapes. Support, particularly emotional support perceived as high by the support recipient, is often associated with lower negative emotions, often independent from attachment insecurity (as reflected in the high number of null results for the interaction between attachment and support in predicting emotions). In some cases, particularly when insecurely attached individuals are more distressed than secure ones, support may buffer the effect of attachment insecurity on emotions. However, in some cases, support may mostly help securely attached people (and not much insecure ones), and in other cases, support may even backfire and increase negative emotions for insecurely attached people (but not for secure ones). In the next section, we further discuss the theoretical implications of our study and accordingly suggest directions for future research.

Theoretical Implications and Directions for Future Research

First and foremost, the current findings underscore a need for further refinement of buffering theories in future research, examining partner buffering of attachment insecurity on negative emotions and its boundary conditions in different contexts; for example, in the presence versus absence of an acute stressor that is related or unrelated to the romantic relationship. Furthermore, partner buffering of attachment insecurity might have different effects across different outcomes. For example, while our study found little empirical evidence for partner buffering on emotion, the effect might be more evident on other outcomes such as perceived partner responsiveness, relationship quality, etcetera. This highlights the importance of refinement of buffering theories in future research across different individual and relationship outcomes.

Secondly, our study highlights the importance of support *perceptions* in support effectiveness. Consistent with theories on partner responsiveness (e.g., Reis et al., 2017), our findings imply that support is probably most effective reducing negative emotions when it is *perceived* as responsive by the support recipient (see Table S8). It is important to distinguish between perceived partner responsiveness and support. In our study, support was broadly defined to include support giver reports, recipient perceptions, observer

ratings, and experimental manipulations (see Methods section). Perceived responsiveness, a subset of support in our study, reflects the recipient's view of their partner's behavior as understanding, validating, and caring (Reis et al., 2017).

Our study did not find much support for previous suggestions that emotional support is more beneficial for individuals high in attachment anxiety and instrumental support is more beneficial for individuals high in attachment avoidance (Mikulincer & Florian, 1998; Simpson et al., 2007). Nonetheless, the number of analyses on instrumental or physical support was limited, making it difficult to draw definitive conclusions. Overall, our review shows that the current literature on this topic cannot yet offer conclusions on what the most effective forms of support are for different individuals and contexts. A key challenge for future research therefore is to systematically investigate what well-tailored support exactly means for individuals with different attachment orientations. In doing so, more refined distinctions, similar to those identified by Overall and colleagues (2013), should be considered, beyond simply categorizing support as emotional, instrumental, or physical.

Thirdly, an important implication of our findings on the intensifying and contra-buffering effects is that in some cases, rather than support moderating the attachment-emotion association, the attachment may moderate the support-emotion association. Insecurely attached individuals may struggle to benefit from support due to (1) perceived insufficiency or unresponsiveness of received support (Collins & Feeney, 2004; McLeod et al., 2020), and (2) feeling threatened by support receipt as their negative views of self and others may get activated (e.g., low sense of self-esteem or particularly autonomy). Future research should investigate or replicate these mechanisms as a step towards helping insecurely attached individuals better benefit from support. For example, in light of our results that the experimentally manipulated (therefore involuntary) presence of the partner was most often associated with the intensifying effect, future research could explore whether voluntary versus involuntary reception of support has different emotional outcomes for insecurely attached individuals.

Interestingly, speculating on our results, it seems that when support is tailored to meet the specific needs and preferences of insecurely attached individuals, it can mitigate the challenges they face in benefiting from support. This argumentation is supported by our results, where highly perceived and theoretically well-tailored support was often similarly beneficial to both secure and insecure individuals. Put together, one could speculate that well-tailored support buffers against attachment insecurity on emotions through two distinct yet compatible processes: firstly, by dampening the heightened negative *emotional reactivity* of insecurely attached individuals (as highlighted by Overall & Simpson, 2015); and secondly, by mitigating difficulties insecure individuals may encounter in deriving benefits from support; therefore, enhancing the effectiveness of support in reducing negative emotions and pro-

moting *emotional recovery*. However, most studies included in our review did not clearly differentiate between these two processes, making it challenging to draw conclusions about the buffering effect. To advance our understanding of the mechanisms underlying the buffering effect of partner support, future research should examine these two distinct pathways in two distinct emotional reactivity and emotional recovery stages.

Our findings reveal that subjective experience of emotions and neuroendocrine responses tell different stories about the interplay between attachment orientations and support in predicting emotions. The buffering effect appeared mostly on subjective emotional experiences, while the intensifying effect appeared mostly in neuroendocrine emotion responses. Limited studies on behavioral responses limit meaningful comparisons across experiential, neuroendocrine, and behavioral manifestations of emotion response. Future research should concurrently measure these responses to address these discrepancies.

Finally, our findings have potentially important implications for therapeutic practice by showing that little is known about how support can be tailored. More refined knowledge on partner buffering of attachment insecurity in future research could enhance clinicians' (particularly those practicing emotionally focused therapy, couple therapy, and family therapy) ability to help partners better understand the underlying mechanisms of their problematic interpersonal emotion processes, provide responsive support, act as a secure attachment figure, and promote positive emotions while reducing negative ones.

Methodological Limitations with Suggestions for Future Research

Despite abundant literature, methodological gaps persist in existing studies. Here, we identify and discuss these gaps, alongside limitations specific to our review, offering insights for future research.

Statistical Validity. A large proportion of studies in our review ($n = 24$, 77%) had sample sizes below 100, and few conducted a-priori power analyses. This likely led to low statistical power for detecting interaction effects, potentially explaining the prevalence of null results in predicting emotions. For instance, in Girmé and colleagues' (2015) paper, while only one of four studies reported a significant interaction between recipient attachment avoidance and partner support in distress prediction, a subsequent meta-analysis yielded significance, likely due to increased power. However, the heterogeneity of studies precluded a meta-analysis within our review. Some studies also lacked complete reporting of non-significant results, particularly older ones, limiting our review. The absence of preregistrations made it impossible to evaluate the potential for reporting bias. Future research should embrace open science practices such as a-priori power analysis and preregistration to enhance transparency and mitigate bias, facilitating a more accurate understanding of partner buffering effects on negative emotions.

External Validity and Constraints on Generality. The generalizability of studies within our systematic review is

constrained by several factors. Primarily, a significant portion ($n = 18$, 58%) recruited participants from college or university settings, potentially limiting representation of the broader population. Consequently, the majority of participants were relatively young, with mean ages ranging from 18 to 30 years, and were in young relationships, with mean relationship durations under 6.5 years. As secure attachment regulation evolves over time through repeated interactions (Arriaga et al., 2018), the dynamics of interpersonal support may vary with relationship age (Hadden et al., 2014), potentially impacting observations of attachment effects. Additionally, a predominant representation of Caucasian ethnicity among reported locations may further restrict the applicability of findings, particularly to more diverse populations.

To enhance generalizability, future research should aim for greater diversity in samples, including individuals from broader age ranges, relationship durations, and ethnic backgrounds. Longitudinal exploration of attachment styles and related emotional responses, especially within long-term relationships, would also contribute to a more comprehensive understanding of these dynamics.

Internal Validity. The internal validity of studies within the systematic review is compromised by methodological heterogeneity. Despite addressing similar research questions, variations in study designs, stress induction methods, and operationalization of variables like emotion and partner support have led to substantial heterogeneity across studies. Furthermore, the use of non-validated or diverse scales, alongside methodological differences in analysis, may have contributed to inconsistent and unreliable findings. It also precluded a meta-analytical synthesis. To address this gap, future research should prioritize the development and use of validated measures and consistent operationalization of study variables such as emotion and partner support. Standardizing stress induction methods would also promote methodological consistency. These would enhance internal validity, thereby facilitating reliable results, and potentially enabling meta-analytical synthesis.

Limitations Specific to This Review. As stated before, we could not perform a meta-analysis. While the initial intention was to statistically combine the findings from included studies, the heterogeneity in measures, study designs, and analysis methods precluded meaningful statistical synthesis. The diversity in methodologies and the limited availability of quantitative data hindered our ability to derive a single, summary effect size, or weighted effect sizes depending on the sample sizes of the studies. As a result, our review primarily relies on showing patterns and variations across the literature, using descriptive vote counting. Notably, this method is less powerful than other synthesis methods mentioned above, and it rules out underpowered studies that do not show a significant effect (Higgins et al., 2019). Additionally, it does not offer information on the size of effects (Borenstein et al., 2009), nor does it account for differences in the relative sizes of the studies (Borenstein et al., 2009).

Additionally, our review was limited to English peer-reviewed studies. Adding Gray literature could increase the comprehensiveness and timeliness of the review and reduce publication bias, providing a richer more balanced image of the available knowledge (Paez, 2017). Adding non-English literature would reduce the risk of bias by providing a culturally richer overview of the literature (Higgins et al., 2019).

We only included basic emotions, excluding analyses with secondary emotions (e.g., feeling appreciated) as an outcome variable. We made this decision due to limited research on each secondary emotion, and anticipating no specific difference in review outcomes after including them. The inclusion of secondary emotions may however provide a more complex and comprehensive answer to the research question. Similarly, we did not include curvilinear interaction between attachment and support in predicting negative emotions as only one paper (Girme et al., 2015) included such effects to our knowledge.

We only investigated how one's own attachment orientation interacts with the partner's support to predict their emotion. Future research may investigate how the partner's attachment orientations interact with their own support to predict one's emotions. Furthermore, we included studies with emotion as the outcome variable and attachment and support as predictors. Other ways in which these three variables can influence one another could be considered in future research. For example, negative emotions can also trigger (cause) support in interaction with attachment orientation. Finally, we did not distinguish studies based on the presence or absence of an acute stressor or based on the type of the stressors (e.g., related to the relationship or not). As stated in the previous section, it is important that future research investigates the buffering effect across different contexts in order to better refine the buffering theories.

Conclusion

Our systematic review shows that the interplay between adult attachment orientations and romantic partner support can take many forms and is complex. Our findings call for further refinement of the partner buffering theories (Arriaga et al., 2018; Eller & Simpson, 2020; Simpson & Overall, 2014), for which the current review provides various leads, as discussed in the implications section. We also identified methodological gaps in the field and drew guides for future research. We hope that the current review inspires future research on this important topic, which should eventually contribute to the development of interventions that improve attachment-related interpersonal processes between romantic partners, helping them enhance their emotional experiences, and thus their individual and relationship health and well-being.

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Contributions

Contributed to conception and design: all authors. Contributed to acquisition of data: FM, GK. Contributed to data coding and analysis: FM, GK. Contributed to interpretation of data: all authors. Drafted and/or revised the article: all authors.

Competing Interests

The Authors declare that there exists no competing interests.

Data Accessibility Statement

All data and research material (including the systematic review protocol, data extraction and coding schemes, deci-

sions made during the process, and data) will be openly accessible at the OSF link (<https://osf.io/g84am/>).

Ethics Statement

This study did not involve testing of human participants.

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