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Disorganized attachment mediates the link from early trauma to externalizing behavior in adult relationships

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ABSTRACT

This study investigates the mediating effects of attachment disorganization in adulthood, along with the organized attachment styles of anxiety and avoidance, to determine whether the connections between early childhood traumatic experiences and externalizing behaviors in adult romantic relationships can be explained by an attachment model that directly assesses a dimensional measure of adult disorganization. In our study, we used 510 adults who were U.S. citizens, all of whom completed online scales that provided retrospective information about childhood trauma, attachment working model information, and current experiences regarding relationship patterns. Our results indicated that adult disorganization mediated the effects between childhood and adult experiences. We also contrasted fearful avoidance with disorganization as mediators, demonstrating that they appear to be different constructs (as is sometimes contested in the literature) and can provide conflicting information about childhood to adult linkages. Our findings suggest that disorganization in adulthood mediates important relationships between early trauma and later adult externalizing outcomes, similar to outcomes seen for disorganization in childhood and adolescence. We therefore extend the existing literature, demonstrating that results from developmental psychology are relevant to social psychologists who study attachment theory in romantic relationships.

1. Introduction

Disorganized attachment (disorganization) has been studied extensively in the developmental psychology infant and childhood literature, but it has only been briefly touched upon in social psychology by those who study attachment theory. In this paper, we examine the notion of disorganized attachment in adulthood, demonstrating that it provides important linkages between early trauma and outcomes for adults, particularly in romantic relationships.

Disorganized attachment was proposed as a fourth category of infant attachment (Main & Solomon, 1990), distinct from the "organized" categories of avoidance, anxiety (resistance) and security seen in infants in Ainsworth and colleagues' Strange Situation paradigm (Ainsworth, Blehar, Waters, & Wall, 1978). Infants in the disorganized category displayed fearful, conflicted, apprehensive, disoriented, abortive, and other odd behaviors that could not be recognized as organized categories for coping with distress upon separation and reunion from the mother. Infants placed in the disorganized category also receive a secondary placement in an organized category, because the apparent disorganized behavior often is seen as occurring briefly or momentarily in conjunction with other organized reactions.[1]

Disorganization has also been observed in childhood and adolescence. For example, some disorganized children behave punitively toward their parents, seeking to challenge or humiliate them, while others adopt a caregiving stance, taking the role of the parent and attempting to soothe or comfort them (Bureau, Easterbrooks, & Lyons-Ruth, 2009; Main & Cassidy, 1988). Both of these forms of behavior are seen as controlling. Other forms of disorganized behavior include manifesting fear toward or having difficulties in addressing or interacting with the parent, exhibiting behavior that invades parental intimacy, engaging in self-injuring behaviors or markers for dissociation, and preferring strangers to attachment figures (Bureau et al., 2009). Meta-analyses have indicated small to moderate behavioral consequences for disorganized children, particularly for externalizing behaviors (e.g., delinquency, aggression, oppositional behavior, hostility; Fearon, Bakermans-Kranenburg, van IJzendoorn, Lapsley, & Roisman, 2010). Disorganization has also been measured in adolescents and has been found to be associated with delinquency and/or aggressive

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[1] Approximately 19% of infants in the Strange Situation are labeled disorganized. Approximately 46% of the secondary placements are anxious, 34% are avoidant, and 15% are secure (van IJzendoorn, Schuengel, & Bakermans-Kranenburg, 1999).

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behaviors (Lecompte & Moss, 2014; Obsuth, Hennighausen, Brumariu, & Lyons-Ruth, 2014).

The primary causes associated with early disorganization appear to be attributed to fear-arousing behaviors by the parental attachment figures (Main & Solomon, 1990), or communicative behaviors that would be confusing for the infant or child (Lyons-Ruth & Jacobvitz, 2008), such as seeking comfort from the infant/child, eliciting approach from the infant/child but then withdrawing from him or her. A particularly important, more distal, factor in the development of disorganization is childhood maltreatment or abuse, which research has demonstrated to be a strong correlate of disorganization (Cicchetti & Barnett, 1991). No matter the cause, disorganization results because of frightening, confusing, or traumatic behavior by attachment figures that promotes avoidance on the part of the infant,[2] which is in direct conflict with the evolutionary attachment system that encourages the infant to approach its attachment figure when frightened and distressed.

Recently, Paetzold, Rholes, and Kohn (2015) have argued that disorganization plays an important part in the adult attachment system. In addition to the dimensions of anxiety and avoidance typically studied, Paetzold et al. have argued that fear of the attachment figure him- or herself and a resulting confusion about relationships are the central features of disorganization in adulthood.[3] This fear is believed to be different from fear associated with the organized attachment styles. Although persons who are more anxious fear that their romantic partners will abandon them or be unresponsive in times of need, their fear pulls them toward their romantic partners in an effort to get their needs met. And although persons who are more avoidant fear rejection by their partners, this fear causes them to distance themselves from their partners to minimize their rejection experiences. Disorganization, on the other hand, leads to an approach–avoidance conflict in the fear of the partner, which parallels the fearful confusion, disorientation, and other odd or conflicting behaviors as seen in disorganized infants and children.

Paetzold et al. (2015) have argued that disorganized attachment should be part of the adult working model of attachment, and should represent fears that generalize across situations and are stable over time, just like the fears of anxiety and avoidance. Disorganization is believed to be a dispositional characteristic of the person and not a response to contemporary conditions within a current relationship. Using a nine-item scale to assess disorganization in adults, Paetzold et al. (2015) demonstrated that disorganization predicted feelings and beliefs of depression and anxiety, as well as anger and aggression toward people in general, not specific attachment figures. They further argued that disorganization should exist in conjunction with organized attachment styles, just as it does in infancy. Thus, they found that disorganized attachment worked in conjunction with organized strategies to predict these outcomes.

1.1. Overview of the present research

First, we hypothesize that disorganization plays a significant and positive mediating role in linking childhood maltreatment, a key cause of disorganized attachment, to two important externalizing behavior outcome variables that have been demonstrated to relate to disorganization in the developmental literature. For our purposes, these outcomes are anger toward romantic partners, and aggression and violence tendencies toward romantic partners. Because attachment anxiety and avoidance may also play important roles in linking childhood maltreatment to those outcomes, we hypothesize that all three aspects of adult attachment may be simultaneously important. As a check that disorganization is a dispositional element of the person and not a mere reflection of contemporary frightening behavior on the part of the attachment figure, we examine partner abuse as a control variable in one set of analyses. In other words, we investigate whether disorganization will continue to mediate our relationships even when partner abuse is controlled.

Second, we hypothesize that fearful avoidance and disorganization are distinct constructs that will play different mediating roles in our analyses. In earlier research, Mikulincer and Shaver (2007) and Simpson and Rholes (2002) argued that disorganization may be a particular form of avoidance known as fearful avoidance. This arguments stems from a characterization of adult attachment based on a measure known as the Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991), in which avoidance was split into either dismissing or fearful avoidance. People seen as fearful avoidant fear closeness to their partners because of the possibility of rejection, but "wish they did not have to feel this way" (Mikulincer & Shaver, 2007, p. 42), which is often described as having a mixed attachment strategy, one that is high on both the anxiety and avoidance dimensions.[4]

Disorganization is seen by Paetzold et al. (2015) as distinct from a mixture of organized attachment strategies because it involves fear of the attachment figure as a person, something that neither attachment anxiety nor avoidance include. Thus, a final hypothesis of this study is that fearful avoidance and disorganization will be distinct in their ability to mediate at least some of the linkages between childhood maltreatment and our externalizing behavior variables.

2. Method

2.1. Participants and procedure

Participants included 510 adults who were U.S. citizens (58% women) and registered for and recruited via Amazon's Mechanical Turk (AMT; www.MTurk.com). Each participant who completed the survey, which was about their romantic relationships, personality, emotions, behaviors, and life events, received $1. Most participants were white (79%), with 9% identifying themselves as African American, 5% as Asian American, and 3% as Hispanic. On average, participants were 34.1 years old ($SD = 11.3$), with ages ranging from 21 to 80 years old. Half of participants (51%) had a college degree, and 47% reported having a full-time job. Most participants (78%) reported being in a current dating or marital relationship.

2.2. Measures

2.2.1. Disorganization

Disorganized attachment was measured using the Adult Disorganized Attachment scale (ADA) (Paetzold et al., 2015). The ADA consists of 9 items, each rated on a 7-point scale, from 1 (*strongly disagree*) to 7 (*strongly agree*). Sample items include "I find romantic partners to be rather scary," "It is normal to have traumatic experiences with the people you feel close to," "Strangers are not as scary as romantic partners," and "Compared to most people, I feel generally confused about romantic relationships." Cronbach's alpha for the current sample was .91.

2.2.2. Attachment orientations

The Experiences in Close Relationships Scale (ECR; Brennan, Clark, & Shaver, 1998) was used to assess attachment orientation. The 36-item

[2] Recent research has suggested that there is a sub-group of disorganized infants who are not characterized by fright of their caregiver, but may have been born with a compromised emotional regulation system (Padrón, Carlson, & Sroufe, 2014) that led to disorganization. This suggests that there may be different routes to disorganization in adulthood as well. Our research is concerned only with disorganization resulting from fear.

[3] This would parallel the "fright without solution" (Main & Solomon, 1990) experienced by disorganized infants in the Strange Situation.

[4] Interestingly, however, social psychologists who use dimensional measures for anxiety and avoidance do not investigate which, if any, participants can be viewed as "high" on both anxiety and avoidance. Nor is it clear whether this refers to an additive or multiplicative effect of being high on both.

scale contains two subscales measuring anxious attachment style (α = .95) and avoidant attachment style (α = .95). Participants rated how well each item describes their feelings in close relationships. Each item was rated on a 7-point scale, from 1 (*strongly disagree*) to 7 (*strongly agree*). Eighteen items assessed anxiety and 18 items assessed avoidance, with higher dimensional scores indicating either greater anxious or avoidant attachment. We also collected data on the Fearful Avoidance Scale dimension of the Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991), with instructions telling participants to focus on close relationships.

2.2.3. Childhood maltreatment experiences

Childhood experiences of maltreatment and neglect were measured retrospectively using the Child Trauma Questionnaire (Bernstein et al., 1994). The 25-item scale (α = .95) asked participants to rate how often they experienced five components of childhood trauma: emotional maltreatment, physical maltreatment, sexual maltreatment, emotional neglect, and physical neglect. Items were rated on a 5-point scale, from 1 (*never true*) to 5 (*very often true*). Scores were summed across the subscales and had a possible range of 25 to 125, with higher scores indicating greater frequency and variety of childhood trauma.

2.2.4. Anger toward romantic partners

Anger was measured using the anger–arousal subscale of the Multidimensional Anger Inventory (Siegel, 1986). The scale was adapted so that participants responded to the scale to measure anger toward romantic partners (α = .86). They were instructed to respond based on how they generally feel toward romantic partners, not toward any specific romantic partner. The scale contained 12 items, rated on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*). A sample item was, "I am surprised at how often I feel angry at my partner." For each scale, scores were averaged so that higher scores indicated greater anger.

2.2.5. Aggression and violence tendencies toward romantic partners

We used two different measures of aggression and violent tendencies because they are both widely used in the literature. First, the Buss–Perry Aggression Questionnaire (Buss & Perry, 1992), which is made up of five subscales, was employed. These subscales were adapted so that participants responded to the 29-item scale to assess aggression toward romantic partners. Items were rated on a 7-point scale, from 1 (*extremely uncharacteristic of me*) to 7 (*extremely characteristic of me*). The scale contained 9 items measuring physical aggression, 5 items measuring verbal aggression, 7 items measuring anger, and 8 items measuring hostility. Respondents were told to answer based on aggressive behaviors toward romantic partners in general (not just one's current partner). Sample items included, "I have threatened a partner," "Given enough provocation, I may hit a partner," and "If a partner hits me, I hit back." The subscales were totaled for an overall measure of aggression toward the partner, with higher scores indicating more aggression. Second, the Conflict Tactics Scale (Straus, 1979) measured two tactics used to determine a tendency toward violence in conflict with romantic partners: verbal aggression and violence (we omitted the reasoning subscale). The scale asked participants to respond based on conflicts or disagreements occurring in the last year of their current or most recent romantic relationship. Participants rated how often they used each tactic to respond to conflict on a 6-point scale, from 0 (*never*) to 5 (*more than once a month*). *Verbal aggression* (α = .85) was measured using 5 items (e.g., "I argued heatedly, but short of yelling"). *Violence* (α = .94) was measured using 5 items (e.g., "I pushed, grabbed, or shoved my partner"). For each subscale, scores were summed, with higher scores indicating more frequent use of the tactic.

3. Results

Table 1 contains descriptive statistics (M and SD) and correlation coefficients for the study variables. It is apparent that disorganization is correlated with both anxiety and avoidance, as expected, because disorganization is believed to work in association with these organized attachment styles (Paetzold et al., 2015). However, neither avoidance nor anxiety explain more than half of the variability in disorganization (i.e., each correlation squared is less than .5). Finally, fearful avoidance has a relatively low level of correlation with disorganized attachment (i.e., it explains about 21% of the variance in disorganized attachment), indicating that fearful avoidance and disorganization appear to be different constructs. Fearful avoidance also has lower correlations with the other study variables than does disorganization.

To test our first simultaneous mediation hypothesis we used Hayes' (2013) PROCESS software, considering attachment anxiety, attachment avoidance, and disorganization as our three parallel mediators, childhood maltreatment as the antecedent, and anger, Buss–Perry aggression, and the two Strauss conflict tactic scales as our outcome variables. See Fig. 1. We relied on 10,000 bootstrapped samples, using 95% bias corrected bootstrapped confidence intervals (CIs) for our results. We used the same methodology for our second hypothesis, except that our two parallel mediating variables were fearful avoidance and disorganization. See Fig. 2. We report only significant indirect effects and confidence intervals below.

We found that when anger toward partners was the externalizing behavior outcome, both attachment anxiety [effect = .003; CI = (.001, .005)] and disorganization [effect = .008; CI = (.050, .011)] provided significant mediating pathways linking maltreatment to anger, but the mediating pathway for disorganization was stronger (i.e., the CIs did not overlap). For Buss–Perry aggression toward the partner as the externalizing outcome, both attachment anxiety [effect = .015; CI = (.009, .024)] and disorganization [effect = .027; CI = (.017, .039)] also provided significant mediating pathways. There was no discernible difference in strength of the mediation in this case [contrast effect = − .011; CI = (−.024, .000)]. For the verbal aggression subscale of conflict tactics, both attachment anxiety [effect = .018; CI = (.009, .030)] and disorganization [effect = .020; CI = (.008, .034)] were significant mediators, again with no difference in strength between the pathways [contrast effect = − .002; CI = (−.018, .0150)]. Finally, for the violence subscale of conflict tactics, only disorganization [effect = .021; CI = (.010, .035)] provided significant mediation. Thus, disorganization was a significant and positive mediator from childhood trauma to externalizing behaviors in adult relationships when avoidance and anxiety were included in the mediating model.[5]

When we controlled for current partner abuse, the only result that changed was that disorganization no longer mediated the relationship between childhood maltreatment and verbal aggression, as measured by the conflict tactic scale [effect = .005; CI = (−.007, .018)]. Disorganization was still a significant mediator for violence, however [effect = .009; CI = (.001, .019)]. Disorganization thus remained a somewhat important link between childhood maltreatment and current partner tactics even when controlling for current partner abuse.[6]

Finally, we tested our hypothesis that fearful avoidance and disorganization are different constructs that will mediate the relationship between childhood trauma and our externalizing outcome variables differently. See Fig. 2. For anger toward romantic partners, fearful avoidance provided weak mediation [effect = .002; CI = (.000, .003) (this interval only appears to contain 0 because of rounding to three decimal places)], and disorganization was clearly a much stronger mediator

[5] In addition, we checked to see if sex moderated the mediating relationship between childhood trauma and all of our outcome variables, because there was some slight evidence of sex differences in the childhood and adolescent literature. We found no evidence of sex differences.

[6] When we controlled for current partner abuse (on the right side of the mediating model, between disorganization and the outcome measures), our only dependent measures were those that reflected the current partner relationship (i.e., the Conflict Tactics measures). Current partner abuse could not reflect behavior against previous partners, and thus would not be a suitable control measure in those mediating relationships reflecting more general behavior patterns toward partners.

Table 1
Means, Standard Deviations, and Correlations of Study Variables.

Measures	*M*	*SD*	1	2	3	4	5	6	7	8	9	10
1. Disorganized attachment	2.31	1.24	–									
2. Avoidant attachment	2.91	1.30	.66	–								
3. Anxious attachment	3.19	1.39	.52	.38	–							
4. Fearful avoidance	11.15	4.67	.46	.57	.44	–						
5. Partner abuse	42.34	19.58	.56	.37	.31	.25	–					
6. Childhood maltreatment	43.12	19.83	.33	.28	.27	.25	.45	–				
7. Anger toward partner	2.97	1.10	.56	.41	.44	.35	.41	.23	–			
8. BP total aggression	10.65	4.13	.58	.41	.52	.37	.50	.35	.65	–		
9. Conflict verbal aggression	6.58	5.66	.39	.27	.39	.29	.44	.27	.52	.65	–	
10. Conflict violence	1.54	3.89	.40	.29	.19	.07	.54	.38	.33	.45	.48	–

Note. All correlations are significant at the .001 level, except for that between conflict violence and fearful avoidance, which is not significant.

[effect = .009; CI = (.006, .013)]. For Buss–Perry aggression toward romantic partners, both fearful avoidance [effect = .006; CI = (.002, .011)] and disorganization [effect = .033; CI = (.022, .047)] were mediators, with disorganization once again being a much stronger mediator [contrast (fearful avoidance–disorganization) effect = −028; CI = (−.042, −.016]. When verbal aggression toward romantic partners (conflict tactics subscale) was the outcome variable, both fearful avoidance [effect = .009; CI = (.003, .018)] and disorganization [effect = .026; CI = (.014, .040)] mediated, and disorganization was determined to be significantly stronger [contrast (fearful avoidance-disorganization) effect = − .016, CI = (−.034, −.002)]. Finally, for violence as a conflict tactic against romantic partners, fearful avoidance and disorganization displayed opposite relationships. The pathway for fearful avoidance was negative [effect = − .008; CI = (−.014, −.004)], indicating that as people in the sample report more childhood trauma, they are expected to engage in *less* violence as a result of experiencing higher levels of fearful avoidance. For disorganization, however, the relationship was positive, as expected [effect = .025; CI = (.015, .038)].

4. Discussion

Our findings expand on the current literature by demonstrating that externalizing behaviors in close adult relationships (e.g., romantic relationships) can be explained via disorganized attachment, resulting from early childhood trauma. Although developmental psychologists have studied this issue in two pieces, first showing disorganized attachment as apparently resulting from early trauma, and then showing externalizing behaviors in childhood and adolescence as resulting from disorganized attachment, we have provided one analysis to establish that an overall, mediating linkage appears to hold in adult relationships as well. Importantly, we have used a scale measure of adult disorganization, comparable to measures of attachment anxiety and avoidance, which is consistent with attachment theory research in social psychology. This will be of benefit to those researchers who are interested in studying close, romantic relationships.

We attempted to address two additional issues regarding disorganized attachment in adults. The first issue is whether scores on the disorganization measure indicate a dispositional aspect of persons or a situational factor, such as elements existing in a current relationship. For example, it may be that a person scoring high on disorganization is involved in a relationship in which his or her partner displays abusive, fear-arousing behavior. If so, responses to the disorganization measure may simply reflect reactions to this partner instead of a dispositional characteristic of the individual. We attempted to address this possibility by conducting a set of mediational analyses for two Conflict Tactics with the current partner in which partner abuse was a control variable. If the relationship between disorganization and these outcome variables is due to a dispositional characteristic, then controlling for a partner's abusive behavior should not change the mediational analyses reported above. Consistent with this logic, the analyses in which partner abuse was used as a control variable show that only one of these mediational pathways—verbal aggression—demonstrated a lack of mediational effects. This means that partner abuse toward an individual provides a strong situation that can break the tendency for someone with higher levels of disorganization to engage in verbal aggression against that partner, but cannot break the tendency for someone with higher levels of disorganization to engage in violence toward that partner.

A second issue concerns the relationship between disorganization and Bartholomew and Horowitz's (1991) measure of fearful avoidance. Because fearful avoidance contains elements of attachment anxiety and avoidance both, it has been sometimes linked to the concept of disorganization (Mikulincer & Shaver, 2007; Simpson & Rholes, 2002). Fearful avoidance represents a mixture of anxious and avoidant behaviors; thus, it should sometimes motivate approaches to the partner (anxiety)

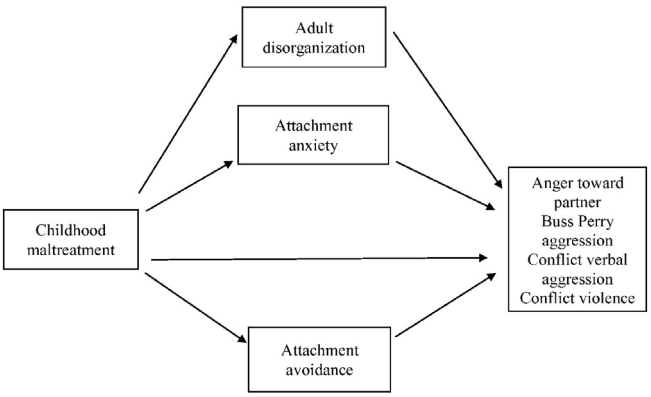

Fig. 1. Mediating model for hypothesis 1.

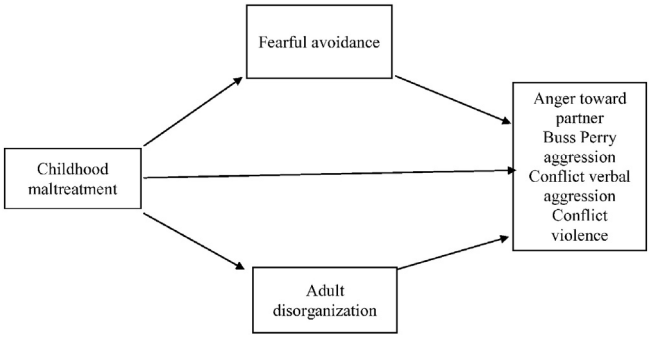

Fig. 2. Mediating model for hypothesis 2.

and sometimes motivate avoidance of the partner, with situational factors perhaps determining which strategy emerges. Fearful avoidance is, thus, a merger of two organized strategies for dealing with attachment figures. Disorganization is different in that it represents an inability to engage, at least momentarily, in any organized strategy because of the insoluble conflict between fear of the attachment figure and the need for the attachment figure. Thus, the two constructs appear to differ theoretically, and our analyses indicate that disorganization and fearful avoidance differ empirically as well. Disorganization was a stronger mediator when both mediated in the positive direction, and for the link between early trauma and later romantic relationship violence, fearful avoidance did not mediate in the expected direction, while disorganization did.

Finally, we note that attachment anxiety, unlike avoidance, was a mediator in virtually all of the models (when anxiety, avoidance, and disorganization were considered as simultaneous mediators), despite the fact that it had a moderately high level of correlation with disorganization. This goes along with our belief that disorganization coexists with the organized attachment framework. In particular, disorganization's focus on fear may overlap less with attachment anxiety (which is about fear of losing one's partner). Being higher in attachment anxiety tends to promote approach to the attachment figure (as compared with being lower in anxiety, which would represent a higher level of attachment security), allowing both pathways to provide important explanations for the relationship between childhood trauma and adult externalizing behaviors in close relationships.

Our study has both strengths and limitations. Although considering simultaneous mediation (as opposed to separate mediating models) is a strength of our research, one limitation is that our mediating pathways are not independent. This is common in simultaneous mediator research (Hayes, 2013). One of the benefits of considering simultaneous mediation models even though the mediators are correlated is that there is additional power to test the indirect effects. According to Hayes (2013), that permits comparison of the indirect effects through the different mediators. It is also a strength of our research that we relied on a sample that was relatively large and more representative of the general population than a college student sample. This means that many of the relationships studied in this sample were longer-term, allowing us to generalize beyond the short-term relationships that are often studied in social psychology attachment studies. Because the data are survey data, however, they rely on self-report, and some of that is based on retrospective recall. Additionally, none of the data are longitudinal. However, there is an implied causal direction in our data; early childhood experiences are believed to affect attachment orientation and disorganization in adulthood, which in turn are believed to be related to the outcomes we have measured. Future research might benefit from other methods of obtaining information about early childhood experiences. It would also be beneficial to examine relationship data from both partners in follow-up studies. Future research could also focus on a broader range of relationship variables, such as levels of marital satisfaction, caregiving, support-seeking, and inter-partner violence.

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