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Attachment traumatology and dyadic completion: Toddler trauma, ten years post-treatment

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Orientation: Research to elucidate trauma as a contagion in *attachment traumatology* began in 2014 with the construct of *dyadic completion* as a therapeutic goal for a traumatised toddler. Further research revealed *secure phylogenetic attachment* (SPA) as the antithesis of trauma, *Attachment Focussed-Somatic Experiencing* (AF-SE) as an efficacious treatment for dyadic trauma and *interpersonal neurosynchronistic phylogenesis* (INP) as a construct to explain how phylogenetic attachment dynamics are transposed neurosynchronistically in dyads throughout communities. These phenomena offer insight into community mental health.

Research purpose: The purpose of the study was to elucidate neurosynchronistic constructs in attachment traumatology to examine treatment outcomes longitudinally.

Motivation for the study: Assessed psychometrically, Little Bill (LB) was reviewed to examine his mental health and phylogenetic attachment dynamics ten years post-treatment.

Research approach and/or design and method: A longitudinal single-case design was followed using psychometric assessments and clinical interviews with three family members.

Main findings: Outcomes support *dyadic completion* as an effective treatment confirmed by long-term efficacy.

Implications for practice: Dyadic completion in AF-SE is an effective treatment for dyadic trauma.

Contribution and/or value-add: Dyadic completion resolves dyadic trauma phylogenetically. Trauma and SPA may now be considered as interpersonal, neurosynchronistic and phylogenetic phenomena impacting attachment and community mental health.

Keywords: attachment focussed-somatic experiencing; attachment traumatology; dyadic trauma; dyadic completion; interpersonal neurosynchronistic phylogenesis; secure phylogenetic attachment.

Introduction and orientation

Childhood trauma and the attachment dyad has been examined as a psychotherapy (Hughes, 2017). From their successful demonstration of dyadic completion with Little Bill (LB)[1], Riordan and his colleagues (2017, 2019) engaged in further research to examine the nature of trauma recovery with dyadic completion in relationships throughout the life cycle and to test dyadic completion as a viable treatment option in a variety of traumatised attachment dyads. From this research, several new constructs in attachment traumatology emerged to explain trauma as a contagion, and its role in widespread loneliness and loss of social cohesion in dyads, families and communities was proposed.

Riordan et al. (2019) introduced the constructs of *Dyadic Trauma, Secure Phylogenetic Attachment (SPA)*, and *Attachment Focussed-Somatic Experiencing* which were confirmed by measurable, quantifiable autonomic pre-treatment and post-treatment changes in a traumatised monozygotic twin pair (Riordan, 2022).

> **Interpersonal neurosynchronistic phylogenesis (INP)** is the interpersonal neurophysiological mechanism of change between members of a dyad during the face–heart connection that is transposed from one member to another and one dyad to another intergenerationally and phylogenetically as either SPA or dyadic trauma. Interpersonal neurosynchronistic phylogenesis is separated into contagious adaptive or maladaptive modalities (Riordan, 2023; Riordan, Blakslee & Levine, 2019)
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> **Attachment Focussed-Somatic Experiencing (AF-SE)** is the process of utilising somatic experiencing (SE) to specifically involve the interpersonal, neurobiological dynamics of SPA to resolve dyadic trauma.

1.To protect the identity of the participant who is a minor, the pseudonym 'Little Bill' is used throughout the article.

> The goal of AF-SE is to reinstate SPA through dyadic completion (Riordan et al., 2019).

Autonomic measures of change after treatment with AF-SE confirmed that trauma, dyadic trauma and neurogenic completion are all contagious in dyads. This discovery was supported by quantifiable data confirming autonomic, neurosynchronistic change in attachment and social cohesion dynamics in the twin pair (Riordan, 2022).

From these publications, a theory of *Attachment Traumatology* (Riordan, 2023) was proposed that introduced the construct of INP as the mechanism by which maladaptive dyadic trauma and adaptive SPA are transposed neurosynchronistically in attachment dyads. Riordan (2023) continues:

> **Interpersonal neurosynchronistic phylogenesis** is the interpersonal neurophysiological mechanism of change between members of a dyad during the face–heart connection that is transposed from one member to another and one dyad to another intergenerationally and phylogenetically as either SPA or dyadic trauma. Interpersonal neurosynchronistic phylogenesis is separated into contagious adaptive or maladaptive modalities.

Levine (2010, 2015) proposed that mammals during and after trauma need to complete their survival imperatives to emerge from a state of fear-immobilisation into healthy whole brain functioning. Survival imperatives identified were *flight*, running from danger; *fight*, to escape from threat; and *freeze*, a primitive survival mechanism in the dorsal vagal complex, a last resort to life threat overwhelm (Porges, 2011). *Neurogenic completion* (Riordan et al., 2019) occurs autonomically when the threat is resolved or when the organism *completes* its survival processes. Neurogenic completion resets the traumatised limbic brain from being locked into cortisol-driven survival functioning. Whole brain integration occurs when *flight-or-fight-or-freeze* shifts to *rest-and-digest*, where a state of relaxed readiness is restored, a dopamine-infused brain and nervous system state where whole brain functioning can respond appropriately to life's social and environmental challenges.

In humans, the complexity of the face-heart connection and the polyvagal paradox (Porges, 2011) are complicit in recovery from trauma in that the most important human survival imperative from birth to death is to engage in a SPA with another. This occurs firstly, with a primary carer (Schore, 2019a) directly after birth who can engage somatically and neurocept for the infant; and secondly, forevermore throughout the life cycle in connection with significant others including parents, romantic partners, children and close friendships. Even other mammals such as dogs or horses can offer attachment soothing through the face-heart connection.

Adverse childhood events, particularly traumatic primary attachment ruptures have long-standing individual, interpersonal, social and phylogenetic impact on the individual's future relationships (Riordan et al., 2019; Van der Kolk, 2014). Van der Kolk's (2014) prediction of a dramatic increase in developmental disorders has emerged in a pandemic of child and adolescent community mental health presentations, a crisis of dyadic and relational trauma that has transposed into widespread loneliness and loss of social cohesion (Riordan, 2023).

Preverbal infants cannot independently neurocept and need their primary attachment figure to soothe them with somatic-attachment-soothing (SAS) (Riordan et al., 2017) when their nervous systems are overwhelmed in response to threat. Riordan and his colleagues (2017) hypothesised that preverbal infants when in a traumatised state of dorsal vagal shutdown (Porges, 2011), a state of emotional and somatic overwhelm, needed to *complete* their survival imperative by reconnecting with their primary caregiver for SAS. Observation of this process for LB during his experience of *running-to* his attachment figure for soothing resulted in the term *dyadic completion* (a state of attuned somatic and emotional engagement in secure attachment after trauma) being coined by the researchers. The resulting state was later identified as SPA (Riordan et al., 2019) to specifically identify the phylogenetic nature of trauma in secure attachment of human relationships. It was later demonstrated that SPA reinstalled in the therapeutic processes of AF-SE resolved dyadic trauma in monozygotic twin boys, 13 years old (Riordan, 2022). Further, that unresolved dyadic trauma or SPA remains in relationships throughout the life cycle and is phylogenetically transposed in all proceeding relationships.

Riordan and his colleagues revealed that dyadic completion, SPA, trauma and dyadic trauma (2019) are transposed interpersonally and neuro synchronistically in dyads (Riordan, 2022) throughout the life cycle from newborn infants to geriatrics via the face-heart connection (Porges, 2011; Riordan, 2022). From this conclusion, the construct that trauma is contagious in dyads (Riordan, 2022; Riordan et al., 2019) and has maladaptive phylogenetic impact interpersonally and intergenerationally was confirmed (Riordan, 2023). Considering theories of attachment traumatology (Riordan, 2023) identified adaptive and maladaptive INP as the mechanisms whereby secure or traumatic attachment is transposed in dyads, families and communities. Maladaptive INP contributes to loneliness, loss of social cohesion in communities and the expanding mental health pandemic.

Research into interpersonal neuro synchronicity is sparce. However, Riordan (2023) offers insight into the issues with his elucidation of the mechanisms involved when considering INP.

> Adaptive INP originates in the face-heart connection postpartum that initiates interpersonal neurosynergy and attuned reciprocity in the attachment bond between mother and child (Schore, 2019a). Unresolved traumatic ruptures of the attachment bond emerge as perturbations in the dyad that then compromise somatic attunement and reciprocity, creating loss of concordance and reduced interpersonal synergy which generates fear-vigilance sequences in the subcortical brain. Functional connectivity changes in the individual's brain during social exclusion (Schmalzle et al., 2017) shifting from social engagement to avoidance in the brains of both participants in the dyad. The

> resulting maladaptive-INP further confounds SPA and erodes neuroception creating dyadic trauma. (p. 6)

Purpose of the study

The importance of a longitudinal analysis of the outcomes of dyadic completion for this traumatised preverbal infant cannot be overestimated. Longitudinal evidence of measurable change throughout the life cycle after dyadic completion may validate the long-term efficacy of AF-SE and the importance of the accompanying constructs of SPA and INP in theoretical attachment traumatology. A greater understanding of the mechanisms that lead to trauma as a contagion, and the inevitable loss of social cohesion and loneliness now complicit in today's mental health pandemic, offers theorists a more nuanced hypothesis to explain dyadic completion in traumatised dyads and gives clinicians a demonstrated treatment option.

Research approach and design

A longitudinal single-case design was followed using psychometric assessments and clinical interviews with three family members (LB, his mother and maternal grandmother) to determine the longitudinal efficacy of the *dyadic completion with rescue role-play* intervention provided in 2014–2015.

Research strategy

A decade post-treatment, LB, his mother and maternal grandmother were assessed psychometrically and inferentially in semi-structured clinical interviews to determine their phylogenetic attachment dynamics and whether there were any residual mental health problems associated with LB's childhood post-traumatic stress disorder (PTSD) initiated by his preverbal dyadic trauma with his caregivers. Semi-structured clinical interviews focussed on LB's phylogenetic attachment dynamics with his caregivers, his social cohesion in his peer group, his mental health and any trauma triggers associated with avoidance and/or intolerance of medical treatments. Inferential analysis of self-report to supplement psychometric outcomes was conducted.

Semi-structured clinical interviews also attended to LB's presentation of anxiety, depression and social connections through a social network diagram. In particular, the nature, quality and interpersonal dynamics of LB's somatic and/or affective attunement with his caregivers were considered.

Psychometric assessment instruments were administered to LB, his mother and grandmother to measure their current states of anxiety, depression, trauma and attachment dynamics. The purpose of psychometrics provides a psychological measure of LB's residual mental health parameters ten years after his early childhood postsurgical trauma to elucidate the decade-long impact of trauma and dyadic completion in 2014 on his life cycle functioning. Now 12 years old, LB's psychometric mental health profile provided insights into his preadolescent social functioning and the phylogenetic dynamics of his attachment profile a decade after treatment. Inferences can be made regarding his future relationship and mental health journey.

Research method

Research setting

In December 2014, LB (Riordan et al., 2017) experienced a postoperative surgical trauma that compromised his attachment bond with his mother and maternal grandmother. Symptoms of Reactive Attachment Disorder, DSM-5 313.89 (APA, 2013, p. 265), tantrums, aggression and self-harming (biting self and others) with hysterical avoidance of all medical treatments accompanied LB's resistance to being soothed by his primary attachment figures. In February 2015, LB was diagnosed with childhood PTSD, DSM-5: 308.81 (APA, 2013). A unique Somatic Experiencing© (Levine, 2010) attachment-focussed intervention identified as *dyadic completion with rescue role-play* (Riordan et al., 2017) for preverbal infants was devised to reengage LB in a SPA with his mother in March 2015.

It was hypothesised that in the limbic brain's sympathetic state of flight and/or fight arousal, preverbal infants do not *run from* danger but rather *run to* their primary attachment figure for safety and SAS – a critical survival imperative for toddlers embodied in the interpersonal neurosynchronistic neuroceptive process of maternal soothing during fear-arousal states. Dyadic completion was a technique devised to reengage LB in his previously secure attachment bond with his mother by *completing* his survival orientation to her that was thwarted at the time of his traumatic postsurgical restraint episode. Restricting access to his secure primary caregiver during hyperarousal and LB's unanswered cries for soothing resulted in emotional overwhelm and his collapse into the dorsal vagal state of somatic and/or affective shutdown (Porges, 2011), a state of collapse where the overwhelmed nervous system conserves energy for survival. This state is characterised by hopelessness and experiences of futility regarding the organism's existing survival mechanisms.

Utilising LB's intrinsic survival imperative to seek SAS from his primary caregivers, endemic to mother-child dyads, during the rescue role play at the point of his fear-activation became the entry point into LB's reconnection with his mother. By accessing LB's traumatic memory, he was able to *run to* his mother to receive maternal SAS and re-engage with her in a state of attachment neuroception, a mutual somatic, social engagement to resolve his overwhelm and traumatic attachment rupture thereby reinitiating attuned reciprocity in the face-heart connection between mother and infant (Porges, 2011). The face-heart connection is a fundamental neurosynchronistic survival imperative in mother-infant soothing and remains the basis of neuroception and intimate communication in all forms of human attachment relationships throughout the life cycle. Little Bill recovered fully and re-engaged completely with his mother and maternal grandmother. All symptoms of trauma, avoidance of medical treatments and LB's symptoms of overwhelm

disappeared entirely during the course of his treatment of five sessions.

Entrée and establishing contact

The researcher invited the family to participate in the process of semi-structured clinical interviews and psychometric assessment to determine LB's long-term efficacy after treatment a decade earlier. All family members were enthusiastic to engage in the process and attended two sessions to complete the assessment process.

Research participants

Little Bill, his mother and maternal grandmother were included in the research follow-up and assessment because they were all included in the original treatment in 2014–2015. There were no other participants in the original treatment or follow-up.

It was important to include LB and his parents because the dynamics of attachment before and after treatment was significant to the study. Little Bill's continuing positive mental health is significantly influenced by his ongoing style of attachment with his caregivers.

There are no other studies available for this specific intervention.

Data collection

Quantifiable data were gathered psychometrically from LB, his mother and maternal grandmother within the context of a semi-structured clinical interview where psychometrics was supported by self-report on family attachment dynamics, LB's social network and trauma history associated with his exposure to medical procedures since 2014.

The following psychometric assessments were conducted with LB:

The Revised Childhood Manifest Anxiety Scale-2 (Reynolds & Richmond, 2008)

Child Depression Inventory-Short Version (Kovacs, 2015)

Attachment Questionnaire for Children the National Child Traumatic Stress Network (Muris et al., 2001)

The Revised Children's Manifest Anxiety Scale-Second Edition (RCMAS-2)

The RCMAS-2 is a 49-item self-report instrument designed to assess the level and nature of anxiety in children aged 6 to 19 years old. The RCMAS-2 has six subscales: Inconsistent Responding, Defensiveness, Total Anxiety, Physiological Anxiety, Worry and Social Anxiety. Raw scores are converted into T-scores which are interpreted under the following T-score chart.

- 71 and higher = extremely problematic
- 61 to 70 = moderately problematic
- 40 to 60 = no more problematic than average
- 39 and lower = less problematic than average

Subscales are summed to provide a total anxiety score which is the most robust of the scores obtained on the RCMAS-2.

Child Depression Inventory: Short Version (CDI:S)

The CDI-S (Kovacs, 2015) is a 10-item quick screening tool that does not provide factor scores.

Combining self-report and psychometric outcomes provided a comprehensive inferential and quantifiable analysis regarding LB's residual trauma triggers since 2014, his phylogenetic attachment dynamics and his current mental health profile of anxiety, depression and childhood PTSD.

The Attachment Questionnaire for Children (AQC)

The AQC (Muris et al., 2001) is a 1-item self-report measure of children's attachment style. Children are given three descriptions of feelings and perceptions about relationships with other children and are asked to choose the description that best fits them. The measure classifies children according to one of three attachment styles identified by The National Child Traumatic Network (2024) as: secure, avoidant or ambivalent.

The questionnaire items are as follows.

Secure attachment

I find it easy to become close friends with other children. I trust them and I am comfortable depending on them. I do not worry about being abandoned or about another child getting too close friends with me (Muris et al., 2001).

Avoidant attachment

I am uncomfortable to be close friends with other children. I find it difficult to trust them completely, difficult to depend on them. I get nervous when another child wants to become close friends with me. Friends often come closer to me than I want them to (Muris et al., 2001).

Ambivalent attachment

I often find that other children do not want to get as close as I would like them to be. I am often worried that my best friend doesn't really like me and wants to end our friendship. I prefer to do everything together with my best friend. However, this desire sometimes scares other children away (Muris et al., 2001).

Caregiver's psychometric assessments

The following psychometric assessments were conducted with LB's mother and maternal grandmother.

Child Depression Inventory-Parent Version (Kovacs, 2003)

The Child-Parent Relationship Scale (Pianta, 1992)

The Reactive Attachment Disorder Rating Scale (Hall, 2009)

Child Depression Inventory-Parent Version (CDI:P)

The CDI-P is a 17-item version of the CDI corresponding to items on the self-report version, suitably rephrased to focus on observable manifestations of depression. Responses are based on a four-point scale indicating the degree to which each statement describes the youth for the past 2 weeks. A total score and two factor subscale scores (emotional problems and functional problems) are calculated. The CDI-P assesses the presence and severity of depressive symptoms in children aged 7–17 years as observed by parents. When used in combination with other information, results from the CDI-P can help to better understand a child and guide intervention decisions. The CDI-P provides information about the parent's assessment of the child, how they compare with other children of a similar age, and which (if any) scale scores are elevated (Kovacs & MHS Staff, 2011).

Emotional problems subscale

This subscale parallels the negative mood and anhedonia subscales of the self-report, reflecting symptoms such as the child looking sad, crying or looking tearful, appearing lonely, and looking tired or fatigued. In parent evaluations, it also reflects the child not liking themselves, blaming self for things, being cranky or irritable, thinking they are ugly and having trouble sleeping at night.

Functional problems subscale

This subscale parallels the interpersonal problems and ineffectiveness subscales of the self-report, including the child not enjoying being with people, being uncooperative, having to push themselves to do schoolwork, not enjoying school, showing a decrease in school performance, not spending time with friends, being cranky or irritable and having interpersonal conflicts.

The Child-Parent Relationship Scale (CPRS)

The CPRS (Pianta, 1992) is a self-report instrument completed by parents to assess their perceptions of their relationships with their children. It is a very widely used self-report instrument and accesses both positive and negative aspects of the parent-child relationship. The CPRS is made up of 30 statements about the child and the parent's interactions with them. The 15 items are rated on five-point Likert scales and the ratings can be summed into groups of items corresponding to conflict and closeness subscales. The eight-item conflict subscale measures the degree to which a parent feels that their relationship with a child is characterised by negativity. The seven-item closeness scale assesses the extent to which a parent feels that their relationship with their child is characterised by warmth, affection and open communication. The conflict and closeness scales of the CPRS represent two distinct domains of parent-child relationships, as evidenced by a relatively low correlation between the scales ($r = 0.16$).

When sourcing, results are calculated under the subscales of closeness and conflict. Results are compared to the average scores, which are for:

* Conflict: 15–16
* Closeness: 37.

Reactive Attachment Disorder (RAD) Rating Scale

The RAD rating scale was developed as a screening tool from DSM-IV criteria (APA, 1994; Hall, 2009). The 17-item questionnaire with ratings scales from 'almost completely false' to 'almost completely true' is designed to measure RAD in combination with a thorough history, interview and observations. A score above 50 indicates a high probability of RAD based on DSM-IV criteria.

Data recording

Psychometric assessments were completed with pencil and paper before the clinical interviews. Administration of the assessments was conducted by the author. No facilitators were used in the project.

Data were recorded in clinical case note format within the Australian Psychological Society (APS) guidelines for clinical psychologists. Psychometric results were recorded on the actual pencil and paper questionnaires and also recorded in case notes to be summarised in the follow-up academic case study report.

Data analysis and presentation

Psychometrics were scored for LB and his parents according to the scoring instructions of each instrument. Conclusions and inferences were made regarding the family's presentation, residual elements of LB's trauma triggers, dyadic trauma, dyadic completion, attachment dynamics and mental health. Self-report results and inferences were considered the totality of the analysis to form conclusions and hypotheses for further study.

Ethical considerations

Ethical considerations specified by the researcher and/or practitioner's professional body, the International Association of Applied Neurosciences (IAAN) were adhered to. Ethical approval was provided by the IAAN Board.

The quality and integrity of the data were preserved by adherence to instructions for administration and recording of the psychometric assessments utilised. All data were secured in a confidential file and no other person other than the participants and the primary researcher and/or author had access to the records. Written approval to conduct the research and to publish the results within the boundaries of confidentiality and duty of care was obtained before the research was conducted. Participants were fully informed of their rights to withdraw from the research at any time.

Findings

Psychometric assessments results: Little Bill

Results of the Revised Children's Manifest Anxiety Scale-Second Edition

Little Bill's raw score of 21 indicated that his anxiety levels were significantly lower than the lowest category indicated on the RCMAS-2 and significantly less problematic than the general population of boys his age. **This result indicates that LB is not anxious.**

Results of Child Depression Inventory: Short version for Little Bill

Because LB's scores were so low on the CDI-S, it was deemed unnecessary to proceed with the full version of CDI. Little Bill recorded a raw score of (1) that translates into a total T-score of 43. T-scores of 65 or greater are considered clinically significant. T-scores describe how an individual compares to children in the same age range and gender from the normative sample. Little Bill scored within the slightly below average range of 40 to 44. Indicating that his measure of depression was below the average population of boys his age. The only item that LB identified as slightly elevated was item 6, 'things bother me many times'. This item was scored in the mid-range from 'once in a while' to 'all the time' and of little overall importance to LB's psychometric results when considering LB's self-report on his mood, his parent's interpretation of his mood and his general presentation. Self-report and caregiver observations confirm that LB is a happy, well-adjusted pre-teen with no observable mood disorder concerns. **These results confirm that LB is not depressed.**

Results: the attachment questionnaire for children

Little Bill emphatically chose the category of 'secure attachment' rejecting the other two categories outright. His social network description (Figure 1) supports SPA with his peer group and a keen understanding of the dynamics of his interpersonal relationships.

Psychometric results: Mother and grandmother

Child-Parent Relationship Scale: Mother's results

Mother scored LB above average on both scales, scoring 24 for conflict and 48 for closeness.

Child-Parent Relationship Scale: Grandmother's results

Grandmother scored LB above average for both scales, scoring 18 for conflict and 45 for closeness.

Reactive Attachment Disorder Rating Scale

On the RAD rating scale, mother scored LB at 21 indicating no evidence of reactive attachment disorder.

On the RAD rating scale, grandmother scored LB at 24 indicating no evidence of reactive attachment disorder.

Combined results: Caregiver assessment of reactive attachment disorder

There is no evidence that LB has RAD. Further, LB's post-treatment presentation as reported in Riordan et al. (2017) also evident in this current round of psychometric assessments, indicate a healthy SPA dynamic in the family. Similarly, from intermittent self-report over time by both LB and his carers there is no historical or current evidence of reactive attachment disorder.

Child Depression Inventory-Parent Version (CDI:P)

Psychometric results: Mother

Mother's scores indicated a raw score of 2 for the emotional subscale and 9 for the functional subscale. Overall raw score was 11 indicating a T-score of 48. T-scores of 65 or greater are considered clinically significant. Mother's assessment T-score fell within the average age compared to children of similar age and gender in the normative sample. **According to mother's assessment, LB is not depressed.**

Psychometric results: Grandmother

Grandmother's raw scores for LB were: 0 for the functional subscale, and 1 for the emotional subscale for a total score of 1, indicating a combined T-score of 34. T-scores of 65 or greater are considered clinically significant. Grandmother's T-score fell within the average age compared to children of similar age and gender in the normative sample. **Grandmother's psychometric results confirm LB is not depressed.**

The battery of psychometric tests were selected and based upon the premise of identifying LB's current attachment style and overall mental health profile including anxiety, depression and trauma responses ten years after he was treated with dyadic completion for postsurgical, separation and restraint toddler trauma.

Psychometric results indicate a well-adjusted child with healthy SPA to his mother and maternal grandmother indicating that this triad enjoys a healthy psychological state of adaptive INP (Riordan, 2023). Positive mental health, a secure attachment style and LB's confident self-assured interpersonal presentation validate the constructs of dyadic completion, dyadic trauma, AF-SE, SPA and the construct of INP to explain how his

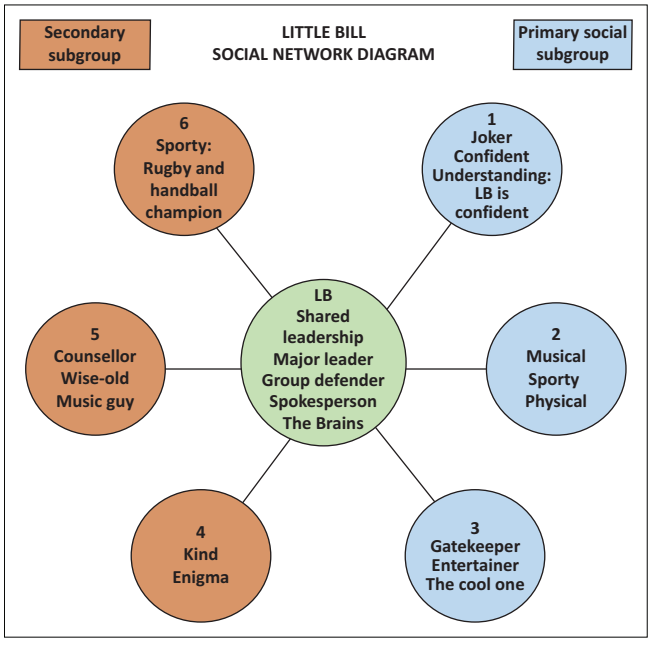

FIGURE 1: Social network diagram: Little Bill.

interpersonal style is transposed neurosynchronistically between the individuals in his family unit.

These results indicate that the initial trauma, previously identified as a trauma contagion in the parental triad has been resolved with dyadic completion and the re-instalment of SPA thereby re-establishing LB's adaptive-INP. Dyadic completion and the aforementioned associated constructs offer attachment traumatologists with an efficacious treatment option and a theoretical platform to explain trauma as a contagion that can be resolved with AF-SE.

Little Bill's social network attachment dynamics

To understand LB's phylogenetic social attachment style, a social network diagram (Figure 1) was developed between LB and the assessing researcher. Together on a white board, LB described his social network and the nature of the individual relationships that he had within his friendship peer group.

It is evident from Figure 1 that LB has a keen understanding of his relationships with his peers, the key elements of their attachment and/or friendship bonds, and a healthy confident assessment of his place with his peers. This simple demonstration of peer group social engagement clearly demonstrates that LB's adaptive-INP after treatment resulted in a lasting capacity to engage in secure healthy relationships. Significantly, LB's evolving social dynamics occurred during the most difficult period of a global mental health crisis and social well-being for children and adolescents, the coronavirus disease 2019 (COVID-19) pandemic. The COVID-19 pandemic was a time of enforced, intermittent social isolation when face-to-face contact with peers was denied to children over a protracted period of 2 years in Australia.

Little Bill's medical history since 2014

Little Bill has shown no resistance, avoidance or overwhelm regarding medical treatments after his treatment in 2014. Shortly after his treatment, LB had several minor medical interventions and an admission to hospital for a respiratory complaint. Similarly, LB was admitted to hospital in 2020 with respiratory difficulties because of COVID-19. Little Bill recounted this time in a light-hearted clearly untroubled manner recalling the food and the nurses who treated him with particular affection and deference because of his charming interpersonal style. This self-report was supported by parental information that LB has no residual resistance to medical interventions and can experience oral dental surgery without trauma triggers to his earlier post-surgical separation and restraint trauma. Specifically, this outcome is a significant functional validation for the constructs of dyadic completion and SPA after preverbal medical restraint trauma.

Psychoeducation regarding mother and/or infant separation in medical treatment situations resulted in LB and his mother contracting an understanding that they would not be separated in any medical situation until LB was independent and robust enough to experience hospitalisation without traumatic impact. This occurred in 2020 when LB's parents were necessarily separated from him during the hospital treatment for COVID-19. Consequently, there have been no residual trauma triggers impact from LB's hospitalisation in 2020.

Discussion

The purpose of the study was to elucidate neurosynchronistic constructs in attachment traumatology by assessing LB's phylogenetic attachment dynamics and mental health ten years post-treatment with dyadic completion in a rescue role play.

From LB's three psychometric assessments and results for depression, it is clear that LB is not anxious or depressed and there is no identifiable, residual mood disorder associated with his early childhood PTSD. Further, there is no anecdotal, social, medical or self-report indications of anxiety and depression at any point in LB's history after his treatment with dyadic completion in AF-SE in 2014. These results indicate that LB is securely attached to his caregivers and has no residual symptoms of dyadic trauma.

Because both caregivers scored LB higher than average on both closeness and conflict subscales, this indicates a heathy rapport between LB and his caregivers. Little Bill is simultaneously close to both caregivers but can comfortably confront and be in safe conflict with them without any attachment rupture or compromise to his SPA with them. These results indicate a healthy close child-parent bond free of dyadic trauma where LB can comfortably challenge his parents in conflict without the flight and/or fight imperatives of fear or anger typical of a traumatised child-parent dyad. Consequently, LB has a SPA bond with his caregivers with no residual impact of his preverbal postsurgical trauma.

Dyadic completion, introduced by Riordan et al. (2017), was the first construct in a series of quantitative and qualitative journal articles by Riordan and his colleagues (2019, 2022, 2023) that proposed a theory of attachment traumatology to explain trauma in dyads, interpersonally and intergenerationally.

The importance of a longitudinal analysis of the outcomes of dyadic completion and the other constructs identified in later studies provides evidence of measurable change over time and throughout the life cycle to validate the constructs under observation for their longitudinal efficacy. This assessment offers direct validation of the constructs of dyadic trauma, SPA, AF-SE and INP in Riordan's theory of attachment traumatology (Riordan, 2023). Understanding the mechanisms that in part lead to loss of social cohesion and loneliness complicit in today's mental health pandemic offers theorists and clinicians greater treatment options and more nuanced hypotheses to explain the phenomena.

Quantifiable and inferential evidence of constructs in the theory of Attachment Traumatology offers clinicians and theorists a platform on which to expand the research on neuro synchronicity, secure phylogenetics and trauma to counteract widespread loneliness and loss of social cohesion.

Implications for practice

Long-term results of interventions with dyadic completion, a fundamental element of AF-SE have not been represented in the literature until now. Inferentially, psychometrically and from participant's self-report, it is hypothesised that dyadic completion and the other accompanying constructs to the theory of INP are valid constructs for treating trauma as a contagion in attachment dyads. Focussing treatment interpersonally and neurosynchronistically within a dyadic completion process offers a completely new dynamic and set of procedures to treat trauma in relationships and a mechanism to arrest the widespread growth in escalating mental health difficulties, loss of social cohesion and loneliness in our communities.

Limitations and recommendations

The constructs, theories and therapeutic interventions identified precedingly are poorly represented in academic literature. Interpersonal neurosynchronistic and neurogenesis initiated by interpersonal neurosynchronistic dynamics are difficult to measure and operationally complex. The tools and processes available to clinicians and researchers are constantly developing in the rapidly advancing field of neuroscience. Psychometrics and self-report are less reliable than autonomic measures of dyadic completion and somatic attunement in relationships (Riordan, 2022).

Little Bill and his primary carers are a very small sample research group with very different individual characteristics, connected in attuned attachment bonds. A larger sample size over time and a continuation of this longitudinal study into LB's adult life may offer further validation of the constructs identified here. Similarly, a 5 or 10-year follow-up of Riordan's monozygotic twin pair (2022) treated with AF-SE may further elucidate the constructs of dyadic completion, dyadic trauma, SPA, INP and AF-SE as a treatment modality in attachment traumatology.

Conclusion

Dyadic completion is a viable treatment protocol for trauma and dyadic trauma. It has been demonstrated here that LB's initial positive results are sustainable throughout childhood and family life cycles over a 10-year period. Little Bill's trauma response abated completely immediately after treatment and he fully reconnected with his primary caregivers in an attuned somatic attachment that regulated his nervous system. This process was later identified as adaptive-INP. Post-treatment, there was no intervention or follow-up to reinforce, encourage or promote treatment outcomes. Therefore, this stand-alone one-off treatment in 2014 demonstrated long-term efficacy during very difficult social circumstances with the COVID-19 pandemic, independent of any therapeutic support mechanisms or extended follow-up.

Psychometric results and self-report indicate that LB is a well-adjusted, socially adaptable, pre-adolescent boy with no mental health difficulties or attachment ruptures in his social and family networks.

Psychometrically and by inference and implication elucidated here, the constructs that evolved after dyadic completion that was first described in Riordan et al. (2017) those being, *dyadic trauma, SPA, somatic attachment soothing, AF-SE* and *INP* hold true. These outcomes also support *Adaptive-INP* as a theoretical construct to explain interpersonal neurosynchronistic changes in dyads after application of AF-SE that resolves trauma in attachment dyads.

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Author's contribution

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Data availability

The author confirms that the data supporting the findings of this study are available within the article.

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