

## IASA's 10-Year Celebration

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### **Attachment and vagal regulation of the heart in children and child therapists: an empirical study using respiratory sinus arrhythmia, the DMM-AAI and DMM analysis of narrative story stems.**

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Topic: Research.

This study assessed DMM attachment strategy and respiratory sinus arrhythmia (RSA) of 6 school age children and 2 trainee child therapists. Porges' polyvagal theory proposes that RSA or vagal tone is an indicator of how individuals regulate fight, flight and freeze responses during social engagement with other people. RSA provides a specific window into the functioning of the parasympathetic nervous system via the influence of the myelinated component of the vagus nerve (also referred to as the vagal brake) on cardiac reactivity. Six school age children with histories of abuse and/or neglect were interviewed using the narrative story stem procedure with concurrent measure of RSA. Two trainee play therapists gave the DMM-AAI (one deployed A+ the other C3). Therapist and child were then concurrently assessed for RSA during an average of 18 video recorded individual play therapy sessions (each therapist worked with 3 children). Both therapists had children using strategies similar to their own.

The study hypothesized that DMM Type A+ and C+ strategies would show different profiles and intrapersonal changes in RSA. Given the primacy given to the therapist-client relationship as the medium for change the study also hypothesized that periods of observed synchrony between therapist and child would show a connection at the level of heart rate and RSA. As predicted children using a Type A+ strategy showed high levels of inhibition (vagal braking) during the story stems. Children using a Type C+ strategy showed a more complex vagal pattern that may be consistent with the expression and exaggeration of anger. Periods of synchrony between therapist and child did show the predicted physiological connections but these were rare in these sessions conducted by two trainees. The therapists' own attachment strategy appeared likely to have a crucial outcome on the success of therapy.

#### **How it used the DMM**

No previous studies (DMM or ABCD) have assessed attachment behaviour and concurrent RSA.

Together with RSA this study used the DMM-AAI, DMM analysis of narrative story stems (The Child Attachment & Play Assessment) together with the CARE-Index mother (carer)/child constructs as a means of describing synchrony between therapist and child client. The therapist AAI-RSA data has yet to be analysed.

#### **What it can contribute to the DMM**

The polyvagal theory conceptualises information processing in terms of 'neuroception', that is how the nervous system uses sensory information to evaluate safety and danger. Attachment behaviour is dependent on the myelinated vagus which fosters calm behavioural states by inhibiting the influence of the SNS on the heart (a face heart connection). In this light the polyvagal theory provides the biology of the DMM. Although a small exploratory study the results strongly suggest bigger studies will strengthen the validity of both models. This is of particular concern given the current questioning of the attachment paradigm which largely overlooks the predictive power of the DMM.