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ReAttach – The Exciting Development of a Promising Intervention for Autism Spectrum Disorders

Paula Weerkamp-Bartholomeus

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1. Introduction

In our society, we usually *talk* about events that are happening around us. We do not usually reflect on the manner in which we *handle* and *process* these events. If there is an obstacle in our information processing, we notice that events that have happened in the past continue to influence our current functioning. For example, we cannot manage to forget past events. We become burdened if we are figuratively ‘full’ with the unprocessed information. ReAttach is an intervention in which people do not have to discuss their problems. This process is easier for people if they have difficulties communicating or expressing themselves, such as with many cases of autism. ReAttach assists with the collection of facts, impressions and events, which are later processed quickly to ensure that the process will not overwhelm the participants. During ReAttach, the therapist focuses on the *process* and not on the content of the information. The participants are asked to listen to the thinking assignments given to them during cognitive training. The subsequent insights that follow are the participants’ own insights because they process information better.

2. February 2010: An experiment

Five years ago, I conducted an experiment that led to a drastic change in my work. Introducing a new intervention in the field of autism requires courage and determination. Accepting innovation requires an open mind and readiness to review pre-existing concepts. The name ReAttach was chosen because of the importance of the attachment theory [1] in my work as an educational psychologist. This name does not indicate that I think that autism is an attachment disorder, nor do I blame the parents of autistic chil-

dren. ReAttach emerged from the idea that we can learn from healthy child development and the manner in which healthy children process information, emotions and events. We therefore required a multimodal approach. On 26 February 2010 I was reading a manual for schema therapy [2], a book describing a treatment for adults with trauma and personality disorders. I tried to understand the authors' viewpoint and to integrate this viewpoint into the concepts that I have built from my own working experience. In my opinion, the behaviour patterns described in this book strongly matched the behaviour patterns of children with early maladaptive schemas. Children are able to cope with their stressful events during play if they have fundamental environmental support that provides them with the confidence and safety to work out their negative emotions through play. As an educational psychologist, for me, playing is processing [3]. Playing made me create an experimental treatment session in which I simulated the optimal conditions needed to process defensive excluded information through play. The results of this experimental treatment were positive, and I started to conduct practical research with traumatized adults. In July 2010, I realized that it should be possible to develop a special intervention for people with autism and to focus on cognitive training to improve information processing and daily life functioning. We made special adjustments for people with autism because we had to overcome their individual problems with arousal regulation and multiple sensory integration processing to be able to teach new social cognitive skills and to improve executive functioning. For the autistic children and adults who voluntarily joined the cognitive training the first results were amazing. We observed improvements in facial expressions and social cognitive skills, and high-functioning adults with autism reported that it felt as if the computer in their brain was updated and now contained multiple processors.

This process, which was the beginning of ReAttach for Autism, needed to be described in a protocol, and we needed to investigate how we could share this multimodal intervention with other professionals. Finally, we had to wait to determine whether the results would last after we ended the cognitive training. We started practical research and made improvements in the process of transferring the intervention to colleagues and during collaboration with parents and partners. In November 2012 I felt that there would be more options for strengthening the treatment process (i.e., information, emotions and events) if we could gather fragmented pieces of information stored in the long-term memory and reprocess this information in a coherent manner to reflect the following concepts: self, significant others and social. To reprocess information, the arousal level of a patient must be regulated slightly above the level of 'falling asleep' at the Alpha-Theta border (7-8 Hz). This arousal level is important for transitioning from deep relaxation, visualization, creativity, and learning to information acquisition from long-term memory [4, 5].

We currently work with two different arousal levels using the multimodal approach of ReAttach. We need a high arousal level for optimal information processing, good joint attention, active stimulation of multiple sensory integration and training social cognitive skills. To help participants with autism process information in a coherent manner, a near-sleep condition is required to access fragmented information that needs reprocessing. Both arousal

levels might be reached by changing the tapping frequency at the back of the participants' hands.

3. The multimodal ReAttach approach

The ReAttach intervention involves individual cognitive training using multiple components with increasing difficulty, which allows the intervention to be adapted for children and adults. A brief overview of the therapy components is presented below to provide an impression of the complexity of the therapeutic skills.

4. Oxytocin

Physical contact stimulates the brain to produce the hormone oxytocin, which plays an important role in the bonding process and is a direct reward of social contact [6]. During ReAttach, gently and frequently tapping on the back of the participant's hand is used to manage arousal. The tapping helps the participant to release stress and negative thoughts, and it stimulates the participant to become involved in social interaction and joint attention. Joint attention is important to maximize the results of an intervention or cognitive training. Joint attention is considered to be a precursor of the theory of mind [7] and language development [8]. In ReAttach, we simultaneously combine a) external arousal regulation to gain, and maintain joint attention and b) oxytocin, administered through physical contact, to improve the social reward system. We hypothesize that this process optimizes the conditions conducive to further information processing and growth in individuals with autism.

There is another reason why tapping is involved. One goal of ReAttach is to stimulate multiple sensory integration processing to teach the multitasking skill. Gently tapping on the back of the participant's hand ensures the input of the essential tactile stimuli needed to stimulate the tactile sensory channel simultaneously with auditory and visual inputs.

The tapping is based on a natural method of making physical contact without overstimulating oxytocin production. If a parent comforts an upset child, we see the same kind of tapping on the back of the child. The result of that natural parental tapping behaviour is that the child's stress levels can be easily and naturally regulated by the parent [9]. To use the same technique during the ReAttach intervention, we chose a more professional attitude and transformed this arousal regulation technique by gently tapping on the hands of adults and children with autism spectrum disorders. If a participant with autism cannot bear the touch of the therapist even after an explanation has been provided, we provide additional instructions that enable the participant to perform the tapping himself (for example on the knees). We have learned that even children with tactile defensiveness responded well once we gave them the time that they needed to understand and to adjust.

A condition of safe attachment is required for the intervention. Therefore, we intend to work in the presence of a parent or partner unless the participant prefers to work alone.

5. Manage your own arousal

If we work with families, we start by teaching the parents how to manage their own arousal. We provide parents with a technique to lower their own arousal and the tools to help their children with stress and emotion regulation. To provide a good therapy session, the ReAttach therapist must manage his/her own arousal before addressing the participant.

6. Multiple sensory integration processing

People with autism experience difficulties processing information through more than one channel; they process sensory information atypically. Because of monotropism, people with autism store information in a fragmented manner. According to Bogdashina and Siebelink [10], children with autism have disrupted concept formation because of these sensory integration problems. I believe that we can teach them how to improve in this area. To build coherent concepts we must use multiple sensory integration processing. During optimal arousal under multisensory stimulation (tactile, auditory, visual), we can stimulate multisensory integration processing by requesting conceptual thinking.

7. Conceptual thinking

At approximately the first year of age, children become capable of placing coherent information into concepts. People with autism lack this ability. They continue to process incoming information in pieces; consequently, they do not create a coherent image of 'the self', 'the other', or 'the world'. Baron-Cohen believes that the social interaction problems of people with autism arise because of a basic inability to think about mental phenomena in terms of 'self' and 'other' [11]. It has been my experience that with ReAttach we can train people with autism to form concepts. During our cognitive training, we follow the same order of development that occurs in a young child [12]. We start with the concept of 'the self' – the name. Then, we train concepts of significant others, theory of mind and social concepts. Autistic individuals with average or high intelligence can start this training at the age of six and follow it through to completion. With low-functioning people with autism and with younger children, our purpose is to teach them to differentiate between 'the self' and 'the (significant) other'. At a later stage, we can try to train theory of mind and inter-relational concepts. We must adjust the intervention to the developmental stage of the participant.

8. Low arousal as a condition for reprocessing

Based on the theory proposed by Bogdashina, I assume that people with autism have an entire database of loose fragmented pieces stored in their long-term memories [10]. It is important

to retrieve this information and piece it together. This training is possible during low-level arousal – a near-sleep condition [4, 5].

While the first process is still running, the therapist externally regulates the arousal in a soft and low tapping frequency, with a dimmed voice and attitude. Most children and adults like this condition; it makes them feel relaxed. Simple instructions are given to collect positive information from the long-term memory to reprocess it in a coherent manner. If a person with autism has a negative attitude toward himself and the world there will be many social interaction problems. After reprocessing the same person might have a more realistic coherent point of view and fewer social interaction problems. In many patients we have observed a reduction in aggression regulation problems, as well as less explosive behaviour, and we think that these findings might be the result of a more realistic and coherent understanding of themselves and the world. These findings strengthen the Baron-Cohen theory that many social interaction problems of people within the autism spectrum arise because of the inability to think in terms of self and others [11]. By teaching these concepts we can observe a significantly reduced number of social interaction problems.

9. An illustrative case study: The story of Jason

Jason, a 22-year old male, demonstrated development after undergoing ReAttach therapy four years ago. Jason was diagnosed with Asperger syndrome when he was eight years old. Despite his high intelligence level, it was obvious that something was wrong. Asperger's manifested itself in a typical manner. Jason himself describes some of the more prominent features of his condition before and after the ReAttach therapy.

'Before receiving the ReAttach therapy, I, for instance, had always had trouble signalling my own pain sensations. According to my mother, this was already apparent when I was young. As a baby, when I accidentally held my arm in a hot bath, I did not flinch. When I was a teenager, I broke my arm twice but did not hesitate to shake the general practitioner's hand with my injured arm, simply because I was unable to sense the pain this must have caused. The same goes for sensing hunger: it has always been difficult for me not to forget to eat.

Another example was trouble in both perceiving and showing emotions. I remember how my grandfather died when I was ten, and of course it was obvious to me that everyone was sad, as that is what most people are at funerals. However, it was very difficult for me to become aware of the way I felt myself. I remember thinking I had to feel sad too, but was not able to show empathy. Looking back, I notice how seeing someone crying was connected to the cognition of feeling sad, but the actual feeling never came.

When reflecting with my mother, it became clear that I was often absent-minded, and could completely focus on one activity, for instance playing a video game. In these situations, I completely lost track of time and the people around me. Simple tasks like walking the dog or doing the dishes were not executed, not because I was unwilling but because of the lack of overview.

The first time I was going to receive the ReAttach therapy, I was slightly sceptical of the improvements it could offer me. Afterwards, I realize that because I was not able to reflect on my own situation, I could also not see the skills that I lacked. Of course I was aware of my diagnosis, but that did not mean that I felt limited in my daily functioning. So far, I had lived a happy life. My results at school had been excellent; why bother improving?

It is impossible for me to fully describe my gain from ReAttach, not only because it comprises so many aspects but also because I lack a proper self-image from the first 18 years of my life. According to my relatives my social interaction skills have improved dramatically. Not only are my facial expressions more appropriate but people in conversation with me also feel better understood, and...I actually take part in a conversation.

Another big improvement is the ability to multitask in everyday life. Since ReAttach, I have been able to live on my own, get my driver's license, play in a band, maintain my social life with my roommates and friends, and undertake university study with an internship abroad, but above all I have been able to do these things with ease. I do not think I would have been able to, for instance, live on my own if I had not received the ReAttach therapy. I do think that it would have come with a lot more trial-and-error. This is the exact reason I would recommend the therapy to everyone: after a couple of almost effortless sessions my life has become so much easier, it would be almost foolish to not see what ReAttach could offer you'.

10. Transferability and cultural differences

Working in countries other than the Netherlands (e.g., India and Romania) has taught us that there are many different methods of expressing the meaning of ReAttach. I was pleased that my original intent to make children experience play was easily accepted and recognisable so many miles from home. I was also pleased with the commitment to participate in the cognitive training as we provided ReAttach to high-functioning adults with autism spectrum disorders and to parents. In a few weeks we will begin teaching a course for professionals in Saudi Arabia, and we are confident that we are able to make the adjustments that are needed to overcome communication problems and cultural differences. Autism does not discriminate in terms of intelligence, social economic status or culture; therefore, we want to include all families affected by autism.

11. Conclusion

The development of a new intervention is an exciting process that might take several years. Continuous practical research in the form of pre- post measurements has shown positive results and a publication about this practical research is in progress.

This illustrative case study of one of the first follow-up interviews, four years after the intervention, is promising. This young adult with Asperger syndrome has shown no signs of

regression at all after ending the cognitive training. On the contrary he describes how he has been able to use his newly-acquired skills for his personal development and self-determination.

Future research is necessary and most welcome to explore the mechanisms that may underlie the improved daily function that has been observed in the children and adults with autism who have participated in our practical research. I can only speculate that for most individuals with autism, one or more components used in this multimodal ReAttach approach may lead to reliable improvements.

Acknowledgements

My intention to contribute to the solution of problems in daily life functioning for people with autism has grown with the unconditional support of parents, children and adults with autism that were willing to participate in the innovation and practical research of ReAttach. Without their support it would not have been possible to make efforts or progress in the field of autism.

I would like to thank all parents, special educational needs teachers, play therapists, occupational therapists and other autism specialists that have embraced the ReAttach intervention and integrate ReAttach in their daily work. We can learn a lot from each other and I am very grateful to have the opportunity to work with you all.

Author details

Paula Weerkamp-Bartholomeus*

Address all correspondence to: info@reattach-therapy-institute.com

ReAttach Therapy Institute Waalre, The Netherlands

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