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ReAttach: Promising Treatment Of Clinical Symptoms In Schizophrenia? The Disappearance Of The Parrot - A Single Case Study

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Abstract

Introduction: Hearing voices, the result of specific psychological problems, such as mood complaints like depression and anxiety or personality disorders like schizophrenia, can hinder patients from doing daily things. For example, the voices say nasty things that someone has started listening to, or concentration is more difficult because of the voices. Hearing voices can cause fear, sadness, anger, or shame. Multiple case studies have shown that ReAttach, a noninvasive and gentle training intervention, can potentially transform the treatment of hearing voices, eliminating clinical symptoms.
Method: The authors describe a single case study of a 65-year-old male with SZ to stress the importance of further research into this promising and transformative phenomenon.
Results: After ReAttach, we witnessed a significant positive change in daily functioning. ReAttach can enhance stimulus processing, strengthen cognitive skills, and train secure attachment. The voices are gone, and the patient can monitor himself, a testament to the transformative potential of ReAttach.

Keywords: ReAttach, New Mind Creation, W.A.R.A., Schizophrenia

Introduction

Schizophrenia (SZ) stands as one of the most challenging conditions within the realm of psychiatric diseases. It affects young adults (Abel et al., 2010; Eranti et al., 2013), presenting various symptoms that give rise to a heterogeneous range of clinical syndromes (American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, 2013). The condition, not linked to brain deficits or precise etiopathogenetic mechanisms, remains a puzzle (Andreasen, 1997; Goldstein et al., 1999; Lawrie & Abukmeil, 1998; McCarley et al., 1999; Seidman et al., 2003; Shenton et al., 2010; Wright et al., 2000). With a global impact of about 20 million individuals (Charlson et al., 2018; Jablensky et al., 1992; James et al., 2018) and a lifetime prevalence of about 0.3–0.7 % (American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, 2013), the condition presents a paradox as SZ patients usually reveal decreased fertility and have a reduced tendency to marry and have children (i.e., the SZ paradox [Huxley, Mayr, & Osmond, 1964]). The diverse phenomena gathered under the diagnostic umbrella of "psychosis" are often perceived as uniquely biological. In the public imagination, depression and anxiety are intuitive responses to adversity; indeed, it is commonplace to describe a situation as "depressing" or "anxiety-provoking." Schizophrenia, on the other hand, connotes a kind of alien intrusion wherein a person's humanity is first colonized and then inevitably eroded (Wang, 2019). In this sense, understanding experiences like hearing voices as part of a spectrum of human reactions to our environment remains a frontier within the mental health field (Higgs, 2020).
Auditory hallucinations are one of the most mysterious and intriguing phenomena in psychiatric disorders in general and schizophrenia in particular. According to the Diagnostic and Statistical Manual for Mental Disorders, hallucinations are the second characteristic symptom in Criteria A for the diagnosis of schizophrenia. While two or more characteristic symptoms are generally required for the diagnosis of schizophrenia if hallucinations "consist of a voice keeping up a running commentary on the person's behavior or thoughts, or two or more voices conversing with each other," that is sufficient for diagnosis. Verbal hallucinations cause a broad palette of reactions from genuine horror to extraordinary interest and are one of the morbid phenomena studied in schizophrenia. Despite a significant increase in the research on auditory verbal hallucinations in the past few decades, the underlying mechanisms and factors involved in the emergence of these hallucinations remain poorly understood (Kreinin, 2013). Auditory hallucinations represent a particularly rich and varied phenomenology. They involve the perception of an extensive array of sounds, which, when involving voices, are referred to as auditory verbal hallucinations. He proposes that auditory hallucinations are, in fact, on a continuum beginning with separate sounds: noise, ringing, shouts, shots, music, raps, and phonemes (the smallest contrastive unit in the sound system of a language) and ending with words, sentences, which are the audible expressions of thought disorders (such as overvalued ideas), e.g., the ability to control one's thought processes. It is not the inner speech of Vygotsky, who defined *inner speech* as a stage in the development of thought. In Vygotsky's psychology, thought and speech are considered a unit that contributes to developing the emerging personality and is the key to the nature of human consciousness (Vygotsky, 1994).

Schizophrenia and Theory of Mind

Theory of Mind (ToM) and mentalization, which is the ability to understand and interpret one's and others' mental states, including beliefs, intentions, and emotions, are key concepts in this discussion. Individuals with SZ often show deficits in ToM and mentalization, contributing to their social cognition and interaction difficulties. Studies indicate that impaired ToM and mentalization in SZ are associated with the severity of positive symptoms, such as hallucinations and delusions (Frith, 2004; Bora et al., 2009).

A large number of studies have shown that theory of mind (ToM) impairment is a robust feature of schizophrenia (Bora et al., 2009; Chung et al., 2014; Savla et al., 2013; Sprong et al., 2007). ToM impairment is clinically relevant as it contributes to deficits in social functioning and poor insight in schizophrenia (Bora, 2017). ToM impairment seems to be a vulnerability marker of schizophrenia. Research suggesting that ToM impairment is evident in first-episode schizophrenia and individuals at ultra-high risk for psychosis arguably supports the notion that ToM impairment is a trait marker of this disorder. However, ToM impairment in individuals presenting with symptoms of emerging illness (first-episode and prodromal period) might also be a marker of the onset of illness rather than being an indicator of an individual's proneness to psychosis/schizophrenia. The studies investigating ToM abilities in nonclinical individuals presenting with latent liability to psychosis are critical to exploring the potential of ToM deficits as vulnerability markers of psychosis (Bora, 2020).

On the other hand, a growing body of evidence suggests that deficits in social skills play a significant role in the pathogenesis of many psychiatric disorders. In psychotic disorders, several core symptoms (reality distortion, negative symptoms, and disorganization) seem to exist, secondary to the loss of social cognitive functions (van Neerven, Bos & van Haren, 2021). This understanding of the broader implications of social skills in psychiatric disorders is crucial for a comprehensive approach to treatment and management.

Extensive and converging evidence suggests that alterations in the ways persons diagnosed with psychosis understand and think about themselves and others significantly influence the course of the disorder. This evidence has fueled research on the processes that might undermine or enhance self-experience. Interest has grown in describing and measuring aspects related to self-experience, which, if compromised, may contribute to the loss of agency and self-coherence and, if recaptured, may enable recovery from psychosis. The integrated model of metacognition has suggested that reduction in the capacity for metacognitive activity could derail a person's ability to effectively make sense of and manage the challenges related to psychosis. This work has similarly suggested that improvement of metacognitive function amid psychosis could enable persons to make personally meaningful sense of their challenges, instilling hope for recovery and the pursuit of a personally meaningful life (Lysaker et al., 2021).

Maladaptive schemas in schizophrenia

Social and environmental factors, such as childhood negative experiences, are thought to be risk factors for schizophrenia (Bortolon et al., 2013). Young (2003) has specified stable structures named early maladaptive schemas (EMSs). One model that may be useful regarding psychopathology is schema theory (Young, 2003). According to this model, EMSs involve memories, emotions, cognitions, and bodily sensations that are believed to be triggered during childhood because of exposure to unpleasant experiences (e.g., childhood trauma (CT) and insecure attachment). EMSs are maladaptive patterns concerning oneself and one's communications with others (Khosravani et al., 2019).

Regarding EMSs in SZ, Bortolon et al. (2013) have found that SZ patients exceed healthy controls on emotional deprivation, social isolation, defectiveness, enmeshment, failure, and subjugation. They have also shown that mistrust/abuse predicts positive symptoms beyond depression, while none of the EMSs relate to negative symptoms. Also, Sundag et al. (2016) have revealed that all EMSs, except for emotional inhibition and unrelenting standards, are higher in psychotic patients than normal controls and mistrust/abuse associated with positive symptoms, while this schema is not linked to positive symptoms after adjusting for depression.

Further, the dependence and enmeshment schemas have been shown to relate to social functioning as well as eight EMSs of abandonment, mistrust/abuse, social isolation, failure, dependence, vulnerability to harm, enmeshment, and subjugation associated with distress in individuals with psychosis (Taylor & Harper, 2017).

In addition, EMSs have been shown to correlate with coping strategies in SZ patients. Since EMSs stem from traumatic experiences including Childhood Trauma. SZ patients show significantly high CT (Larsson, 2013). Also, CT has been found to affect development, treatment (Mørkved, 2018), and cognitive functions (Li XB, 2017) in SZ. Further, it has been found that CT and dissociation relate to severe symptoms of SZ (Vogel, 2009), and also dissociation mediates the link of CT to psychosis symptoms (Sun, 2018). Furthermore, particular EMSs and dissociation may affect the link of CT to auditory hallucination (Bortolon, 2017). In addition, the schemas of defectiveness, dependence, emotional inhibition, and enmeshment are associated with psychotic experiences, and these schemas, except for emotional inhibition, mediate the link of CT to psychotic experiences (Boyda,2018).

In summary, Schizophrenia (SZ) is a complex mental disorder characterized by a range of symptoms, including hallucinations, delusions, and cognitive impairments. One particularly challenging symptom is auditory hallucinations, often referred to as 'hearing voices.' While traditional treatment approaches for SZ have primarily focused on medication

and cognitive-behavioral therapies, the emergence of therapies such as ReAttach offers novel promising approaches.

ReAttach is a therapeutic approach that integrates elements of cognitive-behavioral therapy, attachment theory, and neurodevelopmental principles. It aims to enhance emotional regulation, cognitive flexibility, and social cognition through structured sensory and cognitive exercises. By improving ToM and mentalization, ReAttach helps individuals with SZ better understand and manage their hallucinations.
This article explores the potential of ReAttach to enhance the Theory of Mind (ToM) and mentalization, address maladaptive schemas, and foster secure therapeutic relationships.
Multiple case studies have shown the life-changing potential of ReAttach, a noninvasive and gentle intervention, in treating hearing voices and eliminating clinical symptoms (Weerkamp-Bartholomeus, 2018). The authors present a single case study to underscore the
need for further research into this promising phenomenon. ReAttach aims to activate cognitive skills for the first time or assist patients in regaining lost skills. Previous research has demonstrated that individuals who have schizophrenia (SZ) experience significant impairments in Theory of Mind (ToM) and mentalization. These impairments indicate a disrupted connection with higher brain functions, which is critical for understanding others' perspectives and engaging in complex social interactions. ReAttach addresses these deficits by systematically training patients in cognitive skills, following a developmental sequence akin to that observed in typical childhood development. This approach involves identifying and repairing disruptions, mirroring the natural progression of cognitive and social maturation.

A crucial aspect of ReAttach is its focus on transforming an external locus of control into an internal one. Patients with an external locus of control perceive their lives as controlled by external factors. In contrast, an internal locus of control signifies a belief in one's ability to influence outcomes through personal actions. During ReAttach sessions, patients are guided to develop an internal locus of control, empowering them to take an active role in their treatment and daily lives rather than remaining passive recipients.

For instance, one case study (Weerkamp-Bartholomeus, 2018) demonstrated the efficacy of ReAttach. Following the treatment, the patient exhibited increased autonomy and assertiveness, showing a marked improvement in self-regulation and decision-making. This transition from passivity to activity underscores the transformative potential of ReAttach in enhancing the cognitive and social functioning of individuals with schizophrenia.
Moreover, ReAttach incorporates multisensory stimulation and structured interaction exercises to foster neural plasticity. ReAttach aims to reinforce neural pathways and improve cognitive flexibility by engaging multiple sensory modalities. This multisensory approach not only aids in rehabilitating existing cognitive functions but also promotes the development of new neural connections, further supporting the recovery process.

Overall, ReAttach represents a promising intervention for addressing the complex cognitive deficits associated with schizophrenia. By facilitating the reacquisition and development of critical cognitive skills and by promoting an internal locus of control, ReAttach can significantly enhance the quality of life for individuals with schizophrenia, enabling them to achieve greater social integration and personal autonomy.
Designed to target and modify EMSs, ReAttach offers a non-verbal, multi-sensory approach. This approach can be particularly beneficial for SZ patients who may find it challenging to articulate their traumatic experiences, as it can effectively address their EMSs.
Multi-sensory Integration: ReAttach uses tactile and auditory stimuli to engage the patient's sensory systems, helping to reorganize and integrate fragmented memories and emotions associated with EMSs. This process can reduce the intensity of negative schemas without requiring verbal processing of the trauma.
Regulating Arousal and Emotions: By stabilizing the emotional and physiological responses, ReAttach helps patients manage the overwhelming emotions linked to their EMSs and traumatic experiences. This emotional regulation is crucial for individuals with SZ, who often struggle with heightened emotional reactivity.
*Cognitive restructuring***:** ReAttach aims to reshape maladaptive cognitive patterns by fostering a sense of safety and security. This cognitive restructuring can modify the negative beliefs embedded in EMSs and improve cognitive functions such as attention, memory, and executive functioning for SZ patients, making it a crucial aspect of ReAttach.
ReAttach also aims to improve attachment. Attachment styles developed during childhood play a significant role in forming EMSs. ReAttach emphasizes creating a secure therapeutic environment miming a positive attachment experience. This positive experience can *enhance interpersonal relationships* by improving the patient's sense of attachment security. ReAttach can foster better social interactions and relationships, which are often impaired in SZ patients due to negative EMSs like social isolation and mistrust, offering a ray of hope for a more fulfilling social life.
Childhood trauma has been shown to impact cognitive development and functions in SZ. ReAttach's focus on sensory integration and emotional regulation can lead to cognitive improvements by r*educing dissociation* and integrating traumatic memories more cohesively; the therapy can lower dissociative symptoms that exacerbate cognitive deficits.

Enhancing neuroplasticity and the sensory and cognitive stimulation provided by ReAttach can promote neural plasticity, aiding in the recovery of cognitive functions affected by trauma and negative schemas.
ReAttach provides a holistic approach to treating SZ patients by addressing the underlying EMSs and childhood traumas without necessitating verbal trauma disclosure. By improving attachment security and regulating emotions and arousal, ReAttach may lead to better cognitive functions and overall symptom reduction, offering a comprehensive and promising avenue for enhancing the quality of life for patients with schizophrenia.
With New Mind Creation, ReAttach can train adaptive schemas, which are so important for patients with schizophrenia.

Single Case-Study : the disappearance of the parrot

Clinical characteristics and course of disease
M. is a 65-year-old male diagnosed with schizophrenia. He was compulsorily admitted in 2015 and had a court order for one year. Before the onset of the first psychosis, M. experienced severe and life-altering stressful events, such as divorce and bankruptcy, which significantly impacted his mental health. M. had been suffering from hearing voices since 2015, and they made him so anxious that he did not dare to stay home alone. The voices often said nasty things, causing M. to feel fear, sadness, and shame. In 2017, he faced another two weeks of hospitalization due to psychosis and then received guidance and daytime activities every week.

Medication
Since 2017, M. has been on Haloperidol medication, which is used to treat nervous, emotional, and mental conditions (e.g., schizophrenia) (Muench & Hamer, 2010). Besides, he is on Artane medication (trihexyphenidyl), an antispasmodic drug used to treat the stiffness, tremors, spasms, and poor muscle control of Parkinson's disease, and also used to treat and prevent the same muscular conditions when they are caused by certain drugs such as Haloperidol (Kobayashi et al., 1997).

ReAttach interview
After M. heard about ReAttach, he turned to the therapist and asked if she could help him get rid of the voices that still tormented him every day despite the antipsychotics. Before starting ReAttach, the therapist explained that a problem in processing sensory information could cause the voices he heard. By improving sensory stimulus processing and training social cognitive skills with ReAttach, M. might become the master of his voices.
The therapist said that it seemed to M. that the voices came from outside, but this was not the case. According to her, this would instead indicate a disruption in the stimulus processing, causing memory fragments or thoughts to be experienced externally instead of internally.
After explaining ReAttach and the importance of training perspective-taking and identifying with the voices, the therapist agreed that ReAttach should be started..

First tailored ReAttach Session
Thus, in Oktober 2022, M. underwent his first ReAttach session in the presence of one of his best friends.The therapist provided a tailored ReAttach session since M. showed far too high arousal, weak sensory integration, poorly functioning mirror neuron system, and flat facial expressions. Fortunately, ReAttach can be fun, and the presence of the excellent friend, who provided a supportive and reassuring presence, contributed to a relaxed atmosphere. This environment allowed M. to keep his eyes open during all ReAttach exercises and seek confirmation from his friend, which was crucial for his progress. It was important for M. to hear that he was doing well and that his cooperation was appreciated. The therapist trained optimal arousal through co-regulation, and after activation of the mirror neuron system, the social cognitive training of ReAttach was initiated to optimize M.'s learning conditions.
During the social cognitive training, much attention was paid to training perspective-taking so that we could use the same exercise to work towards identifying with the voices. In patients with chronic psychotic complaints, it is extra important to ensure that the entire ReAttach session runs smoothly and that the patient continues to feel safe. Feeling safe is not self-evident because anxious psychiatric patients feel fundamentally unsafe, which means that the ReAttach therapist must continue to co-regulate the arousal very well to prevent sensory over responses. Sensory over responses do not occur during optimal arousal, which is the arousal that we also see during curiosity or play. The therapist emphasized the playful nature of ReAttach by discussing with M. that the voices were like a parrot, a metaphor for the intrusive and annoying nature of the voices, screaming annoyingly in his ear. During identification, the therapist decided to give the instruction in the we-form and to use we are instead of *you are*. After all, if we are the parrot together, it is even safer to carry out the assignment. After sufficient time to associate with the parrot identification, the therapist has down-regulated to the low arousal and activated the parasympathetic nervous system. M. immediately reacted with a deep sigh and relief: the parrot was back in the cage, and the voices were gone! M said as if they were cursed, and M. laughed heartily and relieved at this. After completing the first ReAttach session, a second appointment was scheduled a few days later. The intention was to offer

the ReAttach New Mind Creation in the second session: a phase of the therapy that focuses on training secure attachment and further strengthening the patient's control over their thoughts and emotions.
M. was given a small self-regulation exercise that he could use if the voices that were gone unexpectedly returned for the second appointment. The self-regulation exercise involved identification training with the parrot under optimal, high arousal. That same evening, the therapist received a text message: It was hectic tonight. Lots of things were happening, and the voices were coming back. I put the parrot back in its cage myself!

ReAttach New Mind Creation
A few days later, when M. came for his second ReAttach session, he beamed that the voices were still gone. He was proud that he had already managed to control the voices on the first day. The therapist saw a cheerful man with more lively facial expressions, well-functioning mirror neurons, improved intonation, and coherent speech. Although M. felt better and the disappearance of the voices boosted his self-confidence, it was clear that this would be short-lived without the therapist training secure attachment. The ReAttach therapist followed the New Mind Creation procedure (aimed at training adaptive schemas) and the New Mind Creation Protocol to train the over-alarmed amygdala to encode information as safe (Bartholomeus, 2022). After the second ReAttach session, M. indicated that he felt good and confident. He would let us know how he was doing so that the therapist could monitor him and make a new appointment if necessary. He would also make an appointment with the psychiatrist and psychologist at the psychiatric clinic where he was in daycare.

Monitoring the results
After only two sessions of an average of 20 minutes, M. reported a remarkable absence of voices. He slept better and was less anxious. He also expressed feeling more in control of his thoughts and emotions, which was a significant relief for him and his loved ones. M. described ReAttach as a transformative experience, helping him to understand and manage his mental health issues.
M. made an appointment with the psychiatrist and psychologist at the hospital where he was in daycare and indicated that he would instead do volunteer work. They continued to monitor M. but encouraged his steps towards more autonomy and self-direction. Despite the fact that he became more active and took on more responsibilities (he started volunteering as a chef), M. made significant progress and remained well-balanced. This instilled a profound sense of hope and optimism in their journey, highlighting the positive impact of ReAttach on the patient's well-being.

Follow up
The voices stayed away for *a year and three weeks;* M. said when he called the therapist to ask if he could undergo ReAttach again. M. had no problem waiting two weeks for the appointment because he was less afraid of the votes. After all, he had learned from the previous sessions that they did not come from outside and that ReAttach could be used to solve it.

November 2023
M. underwent a tailor-made session, and the New Mind Creation could also be offered directly. After all, the complaints had not existed for long, meaning that sensory integration had not yet been completely extinguished. M. was still familiar with the exercises, so M. quickly picked up the session and solved his problems after 20 minutes. At M.'s request, he continued his life independently and would contact us for a second session if necessary. Another session was optional; this time, too, but the voices were absent for a long time.
May 2024 : Wiring Affect with ReAttach
M. underwent a brief follow-up with W.A.R.A. (Weerkamp-Bartholomeus, 2020) to help him deal with feelings of acute stress after weeks of inflammation of the vestibular organ (Benign Positional Dizziness B.O.P.D.). Just in case the voices would come to bother him again. That was not only wise of M.; it was also **proactive coping.** The therapist was impressed by the resilience and independence this man showed. Understanding what disrupted stimulus processing does and being able to sense it and ask for help in time gives dignity to this man who decided to pick up the thread of his life again!

Discussion

If we look at M. 's course of illness, you could say that in the period from 2015 (the first psychosis) until the start of the first ReAttach session in October 2022, there was little improvement in complaints despite the psychopharmaceutical medication and psychiatric guidance.
On the contrary, since the introduction of ReAttach sessions in October 2022, we have witnessed a significant improvement in M.'s mental well-being and autonomy. ReAttach is a *salutogenic* intervention focused on improving learning conditions and restoring growth. By using ReAttach to enhance stimulus processing, strengthen cognitive skills, and train secure attachment with the
New Mind Creation, we have witnessed a significant change in M.'s functioning. He has been able to identify with the voices, which no longer disturb him.

M. has left psychiatric daycare behind him, is more socially active, has taken on more responsibilities, and signals to himself when he comes under too much pressure. If he notices that his vulnerability is increasing, he only needs a little help to prevent him from relapsing. We see this as a huge profit: since M. can monitor himself better and respond proactively, he is less vulnerable.

It's crucial to consider the necessary conditions for effective ReAttach therapy, such as the trustworthiness of the therapist and the establishment of a secure attachment relationship. This prompts us to question what these conditions require from us as therapists. And it raises the question whether it is a contraindication if there is distrust in patients with SZ. Increased distrust is a symptom that often occurs in patients with psychiatric complaints, so it is important to pay attention to a calm and peaceful therapist/patient relationship before the onset of the ReAttach sessions.

Understanding ReAttach as a form of social cognitive training that enhances mentalization is crucial. Schoneman's (1981) study on self-awareness and the three sources of self-knowledge- self-observation, social feedback, and social comparison processes is highly relevant. ReAttach, which focuses on self-observation, significantly enhances self-control and an internal locus of control, influencing self-presentation.

In M's case, ReAttach played a pivotal role. With the disappearance of the voices, he began to believe in the possibility of self-control, an essential aspect of secure attachment, Theory of Mind, and self-observation. This case underscores the potential of ReAttach and evokes empathy and understanding for those undergoing similar experiences.

Conclusion

Authors expressly draw attention to the possibilities ReAttach can offer vulnerable patients with schizophrenia. They believe that this accessible, salutogenic intervention can be life-changing. Further investigation of the evidential value of the noninvasive ReAttach intervention through independent randomized clinical trials is necessary. The authors and the patient are hopeful that this single case study will not only invite but also inspire further initiatives in this area, encouraging the audience to contribute to the advancement of schizophrenia treatment.

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