
Autism: The Pre-Conceptual State of Mind

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Short communication

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Abstract

Introduction: Autism Spectrum Disorders can be defined as a complex and heterogeneous area of clinical characteristics. Adults diagnosed with ASD show a lot of comorbidity and overlapping symptomatology with other neuropsychiatric conditions that require specific approaches. The development of ReAttach supports a *dynamic* special educational model for autism. Indicating the clinical characteristics of ASD as a reflection of the pre-conceptual stage, the ReAttach for autism protocol is characterized by activating the skills that are required for integration, conceptualisation, imagination and coping. ReAttach starts with external arousal regulation by the therapist to obtain optimal environmental conditions for learning. The term *dynamic* refers to the personal growth that individuals with ASD and patients with other neuropsychiatric conditions have shown. If core ASD symptomatology, such as lack of coherency, monotropic information processing and social communication problems, can be reduced by intervention it is time to embrace a dynamic model for autism.

Objective: The objective is to propose a dynamic special education model for autism and to communicate how indicating the clinical characteristics of ASD as a reflection of the pre-conceptual stage sheds a different light on comparative research of ASD versus neurotypical groups.

Method: The procedure of a comparative study of an autism and a neurotypical control group is reviewed from a dynamic special education model. The questions and remarks about the instructions and findings are displayed.

Results: Reviewing the research procedure and findings from a dynamic special educational model sheds a different light on this comparative research of ASD versus neurotypical groups.

Key words: *autism, pre-conceptual state of mind, special education.*

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Introduction

When a mother of a one-year old child asks her child to rest, it will be very difficult, if not impossible for the child to obey. Imagine an experiment with 30 mothers and children of the same age and it will not be difficult to picture that completing this task would be too difficult for those children. It is self-evident that humans with a certain developmental stage can't follow the instruction to rest. If we are ignorant about human development, we may draw preliminary conclusions and design research hypotheses to investigate what could be wrong with these children. What distinguishes this category of normal children? Do they speak another language? Are they deaf? Do they have different brains? We might consider it will have something to do with their age, but this factor will not *completely* explain the problem.

We are dealing with the fact that there is no timetable for development, no direct route or highway: developmental outcome seems rather unpredictable and dynamic with big leaps forward and periods of relapse or decline.

The concept 'autism spectrum disorder (ASD)' as described in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2013) refers to a complex and heterogeneous area of clinical characteristics based on behaviour and obtaining developmental milestones. Spectrum refers to a range of developmental disorders varying from mild to severe, compared with normal controls. The spectrum also refers to considerable individual varieties in health problems and difficulties in social interaction, motor coordination and daily life functioning. Although we can hardly describe one phenotype, the difference between individuals with ASD and normal controls is used in many scientific studies.

Is it autism we investigated or are there plausible alternate phenomena responsible for our findings?

The assumption that a group of individuals, once diagnosed with ASD by the DSM-5, can be clearly distinguished from normal controls might be a potentially flawed decision. Results reflecting differences between these groups confirm the bias that individuals diagnosed with ASD actually have different brains or brain functioning, which might be based on established research finding but might be wrong essentially.

Consider the complexity of brain functioning and this complex system is fallible: it can easily be deceived. This happens when we pay too much attention to potential threats, by our tendency to predictability, or by a state of hypo-arousal (fatigue, attention deficits, medicine). If we can accept the unpredictability of our state of mind it will be very hard to assume that the state of mind of individuals with ASD will be predictable.

The concept "Autism Spectrum Disorders" refers to a *static* model: a pervasive developmental disorder refers to malfunction of development that will continue to impact individuals lives. Questioning this model opens the door for ulterior possibilities such as an individual symptomatology network to create *tailored interventions* (Nuijten, 2016) or a *dynamic developmental* model such as ReAttach (Weerkamp Bartholomeus, 2018) in combination with other necessary interventions: for instance, supporting the immunity system (Poletaev, 2018) (Trajkovski V. , 2016), family support (Sarria, 2015) (Preece, 2017) or medical care. Effective early interventions (Dawson, 2008) (Smith, 2015) (Trajkovski, 2016) and reversing early core ASD characteristics into normal development by change of food or medical care (Poletaev, 2018) support a dynamic ortho-pedagogical model rather than a static autism spectrum disorder diagnose which might have a negative impact on parental and personal expectations and developmental outcome (Duijkers, 2014).

A dynamic special education model: ReAttach

ReAttach is a multimodal intervention based on ortho-pedagogical influencing obstructing factors and facilitating optimal conditions for growth (Weerkamp Bartholomeus, 2018). From an ortho-pedagogical point of view arousal regulation, joint attention, activation of the social reward system and multiple sensory processing are prior to conceptualisation. The monotropic information processing and lack of coherency individuals with ASD experience in daily life, can be interpreted as a normal state of mind as we see in the pre-conceptual stage. This is the stage prior to the conceptual stage, when individuals will develop a coherent concept of the self and learn to differentiate between the self and (significant) others (Feldman, 2007). Instead of completing this multisensory (Baum, 2015) (Kwakye, 2011) (Wallace, 2014) integrative task toward coherency in terms of self-awareness, individuals with ASD will continue to process information in a monotropic way (Bogdashina, 2004). The monotropic information processing offers some strengths (hyper-focus on details) but also a lot of difficulties in daily life functioning which are guiding for treatment goals and evaluation of interventions as reflected in the Autism Treatment Evaluation Checklist (Rimland, 1991).

People tend to regress in development when they are blown away by overdemands, sensory overload, medical problems or when they are exposed to more stressful experiences than they can deal with (Seifer, 1992) (Wentz, 2005). Such a decline in development can be temporary and fortunately many individuals have the resilience to continue their developmental on their own. Unfortunately, other individuals develop more severe problems and loose previously achieved milestones or develop a vulnerability for future pathology (Poletaev, 2018) (Di Pierro, 2017) (Mito, 2014) (Wentz, 2005). A lot of overlapping symptomatology between ASD

and other clinical neuropsychiatric disorders has been found, for instance between ASD and Generalized Social Anxiety Disorder (Cath, 2008), ADHD (Alley, 2016) (Anholt, 2010) Obsessive Compulsive Disorder (Arildskov, 2015) (Paula-Perez, 2013) (Jacob, 2009), Schizophrenia (Fitzgerald M. , 2012), Eating Disorders (Dell'Osso, 2016), Personality Disorders (Baskin-Sommers, 2014) and Psychopathy (Fitzgerald M. , 2015) (Rogers, 2006).

Preliminary results in treatment of aspects of autism and overlapping symptomatology by ReAttach, support the hypothesis of a dynamic ortho-pedagogical model (Weerkamp Bartholomeus, 2018). Through offering optimal information processing conditions and activating personal development, core symptomatology networks declined and a broad range of patients with neuropsychiatric conditions including ASD was able to grow and/or reclaim previously lost developmental milestones (Weerkamp Bartholomeus, 2018).

Evaluation of research conditions from a dynamic special education model

Social communication problems are one of the core characteristics of ASD: individuals with autism will commonly be delayed in language and communication skills can be very different from neuro-typical children (Fitzgerald M. , 2017). Due to the epidemic growth of autism (Poletaev, 2018) many parents who have a child with social communication problems seek help and visit a clinician for a diagnose. How likely is it that these parents are worried and pay too much attention to the potential threat that there might be something wrong with their child?

It is likely that this causes parental stress which is known to affect the child whose stress levels will rise too (Weerkamp Bartholomeus, 2015). Hyperarousal of parents will trigger the anxiety system which will change the way the brain of the child is functioning and monotropic information processing, lack of coherency, poor

communication skills and poor performance on tasks requiring multiple sensory processing will at least temporarily interfere (Cath, 2008) (Seifer, 1992). Presenting a child under these conditions to a clinician is likely to confirm that something *is* wrong with this child. Every child at risk for diagnosis deserves a clinician with excellent external arousal regulation skills who can facilitate the child to function well during neuropsychological and social communication tasks. Optimal information processing starts with external arousal regulation by parents, by teachers, clinicians, therapists and researchers. Reviewing research conditions by changing the perspective from a static diagnostic model towards a dynamic ortho-pedagogical might offer new insights or plausible alternate accounts for the results.

Review Study: Overt social interaction and resting state in autism (Jasmin, 2018)

Recently a study was published about overt social interaction and resting state in autism (Jasmin, 2018) in which a group of 19 males with ASD and 20 control participants were compared. There were no significant differences found in full-scale IQ, verbal IQ and age. The researchers investigated the neural basis of face-to-face interactions under two conditions and resting states. The conditions of the face-to-face interactions were:

1. Conversation (spontaneous speech)
2. Repetition (repeating the speech of their partner)

Prior to scanning, participants were told that they would engage in unstructured and informal conversations with the experimenter.

Unstructured and informal conversations are unpredictable demanding tasks for individuals with social communication problems. This instruction will alter the state of mind of those individuals with ASD who have difficulty with unpredictability in general and/or who have traits of perfectionism.

Special interests: A modified version of the Interest Scale questionnaire (Anthony, 2013) (Bodfish, 2003) was used to rate participants level of interest in various topics and to indicate the top three interest, from which the experimenter selected two (Jasmin, 2018).

The choice to communicate about two interests from the top three of favourite subjects is interesting to review. If we love to talk about something this will bring excitement and reward in terms of joy (Marazziti, 2006). It will alter the state of mind of those individuals who find spontaneous social communication stressful or demanding when they hear they can talk about their favourite subjects. When there are individuals with preoccupations in the group diagnosed with ASD brain-activity during this conversation will reflect the obsessive compulsiveness of talking about this beloved subject and counteracting the anxiety of the social conversation into excitement and joy (Marazziti, 2006).

Final conversation: cognitive compensation?

The final conversation was about work or school life (according age of the participant).

Although the spontaneous part of this final conversation might be demanding, the subject work or school life is a common subject. Many individuals with ASD who are verbal and bright learn how to deal with questions about their work or school. From the pre-conceptual developmental stage of ASD, which goes with mono-information processing and fragmented speech, it will take more effort to solve challenging task that require social concepts and oversight. Cognitive compensation (Mizuno, 2006) (Jasmin, 2018) might indeed play a major role in the final conversation task, besides previous training.

Repetitive Speech

In the pre-conceptual stage, children and adults train their working memory since they rely on sequences. Repetitive speech is a predictable task and a strength for many individuals with an autism spectrum condition. Those

individuals who are very good at it, or love to perform such a task will show excitement and alter their state of mind. For other individuals the predictability of this task and the lack of need for cognitive compensation will be a distraction caused by the mono-information processing (Bogdashina, 2004). As long as they are busy completing this task there is literally no room for something else (like distress).

Resting States

Each run began with 16 seconds of rests during which the participant saw the word “REST”.

After each interaction, a “STOP” slide was displayed to the participant, followed by 30 seconds of rest (Jasmin, 2018).

Both instructions can't be generalized as clear instructions for a heterogenous group of individuals diagnosed with ASD. Rest is an abstract concept and from my clinical experience with autism it is most difficult to explain the concept “rest” as well as the concept “stop”. In this context they both mean that the conversation is over and that the participant should relax. From a pre-conceptual stage it will be rather unpredictable how an individual will respond on these instructions. Individuals who have preoccupations will probably show a lot of activity engaging in thinking about their favourite subjects: this will alter their state of mind. The individuals with ASD who tend to be under-aroused in general (Anholt, 2010), might stimulate themselves by seeking sensory input (Bogdashina, 2004). Others might feel tense because the concept ‘rest’ is an insecure state of mind for those who can't follow this command. This might activate anxiety and restlessness (Cath, 2008).

Discussion

The purpose of the study of Jasmin et al was to characterize neural activity during spontaneous conversation in autism and resting states (Jasmin, 2018). Reviewing this study from the perspective of a dynamic ortho-pedagogical

model might contribute to the discussion of the findings in a positive critical way.

Researchers state that many results were state-dependent: neural regions that were hyper correlated during tasks appeared to function at typical levels or were hypo-correlated during rest (Jasmin, 2018). They discuss the possibility of increased functional connectivity at task in the ASD group as a compensatory neural strategy (Shen, 2012) which corresponds to with our findings. Researchers question the static model themselves: “Why did our autistic participants receive diagnoses if they are able to compensate and function at nearly normal levels?” (Jasmin, 2018). The dynamic ortho-pedagogical model might answer this question by emphasizing the unpredictability of developmental outcome and the consequences of a static ASD diagnose. Considering both the ASD group and the neurotypical group to contain individuals that function in a rather unpredictable way, with varying states of minds due to many possible reasons it is very difficult to support any conclusion at all.

Recommendations

As a recommendation for further research it would be interesting to embrace the complexity of symptomatology networks from a dynamic developmental model of our fascinating brain.

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Conflicts of interests

The author declares no conflict of interests.

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