

## **Sensory differences: an interview with Peter Vermeulen**

1. Can you tell us how you first became interested in autism?

I did not get interested in autism, I think autism chose me because to be honest, I was looking for a job, and at the National Autistic Society in Belgium they had a vacancy, I applied for the job and I got it, and I did not know a single thing about autism those days, but I learned a lot in the past 30 years.

2. Can you tell us about your current work?

What I'm doing for the moment is mainly studying the predictive mind, how the brain works, but also I put a lot of energy and time in doing not really research, but study work on the happiness thing, because I think happiness is kind of an overlooked item for people with autism, we look a lot into the lack of wellbeing but I think it's time we make a u-turn and starting from wellbeing rather than the lack of.

3. What does recent research tell us about how the brain processes sensory information?

Well there's a new discovery about the brain that has nothing to do with autism but will effect our ideas about the sensory issues in autism, and the thing is that for a long time we taught that the brain processed sensory inputs, but the brain does not process sensory inputs, it predicts sensory inputs and then processes the difference between the prediction and the feedback which is named the prediction error. So, I think we should start rethinking the sensory issues in autism, not as sensory issues but as issues that have to do with prediction errors in the brain.

4. How can this research change support for autistic people around sensory issues?

The new ideas about the brain and how the autistic brain works in processing sensory information will lead to I think new ideas about coping with sensory issues and actually until now what we do mainly is reducing or avoiding too much information, reducing or avoiding certain sounds or light.

There's nothing wrong with that, but on the short term it's a good idea to do, but it prevents the brain from updating it's predictions, so in the long term the

brain starts to think that the world is silent and there's no light and in the long term it will lead to more prediction errors so more stress and discomfort.

So the new ideas now, okay, there's nothing wrong with taking away or reducing sensory stimuli, but at the same time we should teach the brain to cope with the sensory stimuli and also make the sensory environment more predictable because if it's predictable, then the brain does have less prediction errors, so there will be less stress, so this is opening a whole new area of interventions I think.

5. How can we apply this in a practical way to support autistic people?

We adapt the environment, of course we need to adapt the environment, but by doing so we also give the brain enough rest and once a person feels comfortable then we do the teaching, then we're gonna introduce sensory stimuli again, but helping the brain to update it's own predictions about the sensory environment so in the long term we can put back in all the sensory stimuli but giving the brain the power to control the sensory environment so it's all about giving the brain more control.

6. How do you think this research will be received by the autistic community?

I think for the autistic community it's gonna be, for some of them it will be shocking because what they have been doing for a long time now to make life easier for themselves is now saying you know what maybe that's not the only thing you should do, and I see mixed reactions.

Some people say oh yes I like the empowering thing about it, the idea that nobody else has to arrange my sensory environment but I can be more in control myself, other people say no I still want it to be silent, so there's mixed reactions, but I think this is not just the autistic community that has difficulties taking in this new idea about the brain I see a lot of professionals struggling with the same issues adapting to new ideas, it's not easy for everyone, not just the autistic community.

7. Can you explain what you mean by 'neuroharmony'?

Neuroharmony is connected to neurodiversity but it goes a step further. So, we now see autism as one of the many different neurological differences there is, so there's not such a thing as a normal brain, or a good brain or a disordered brain, there's just diversity.

It's very important, this neurodiversity movement, because it's all about accepting the differences, but with neuroharmony I want to go a step further, I see accepting neurological differences as only a first step, because I could say oh you have another brain, that's okay, and further do nothing about it.

Neuroharmony is like harmony in music, it's impossible to make nice music with one note, you need diversity in notes to make music, but it's not because you have diverse notes that you have a nice piece of music, you still have to do something with all these differences.

So neuroharmony is what can we do with the autistic note, to make the music and life nicer and better. So it's all about how autistic brains can contribute to society. Until now most people think okay what should society do to make life better for autistic people.

I want to move onto the next phase and say okay, what can autistic people do to make life in general better for all of us, and that's not just about inclusion, it's about active engagement and active contribution to society and I'm convinced, maybe I'm naive, but I'm convinced that every person with autism can contribute to society.

8. How far are we from 'neuroharmony' and what steps do we need to take to achieve it?

I think the neurodiversity movement is slowly getting on better so I think in terms of autism awareness and autism acceptance we've moved a long way, I think we've done a wonderful job and the NAS has done a wonderful job here too, the next step is actually something we still have to start.

And the first thing to do is if we want every autistic person to contribute to society, is to do assessment of what could they do to contribute to society.

So in schools rather than doing only assessments and diagnostic tests and on the deficits and the shortcomings and the difficulties, I think we should take a u-turn and start. Okay, we offer a lot of things to children with autism, we don't know whether they're gonna like it or not, we don't know whether they



are good at it or not, but we have to offer a lot of things to discover for every person the one or two or maybe three things that they can offer to society.

It's strengths based but also interests based, because often the strengths are within the interests. So what is often seen as stereotyped interest, and preoccupations, is actually a source of talent. The only thing is that when autistic people engage in their stereotyped activities often it limits their functioning, and what we should do is be creative and do something more functional with it and change it, I always say change stereotyped activities into a job, and then we will be successful in neuroharmony.