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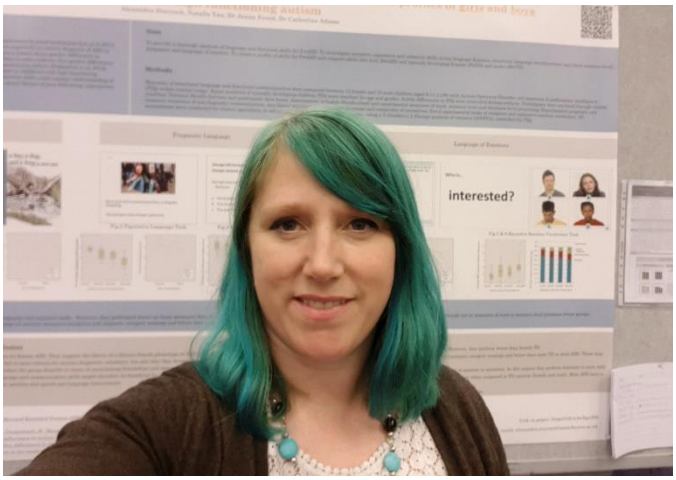
Summer Newsletter

Welcome to the summer 2019 edition of the Autism@Manchester newsletter. In this edition you will find:

- **The latest findings from our research community (pages 6 – 11)**
- **An interview with the newly promoted Professor Caroline Bond (pages 12 - 14)**
- **An opportunity to take part in a study of time perception in autism (page 15)**

NEWS

In April and May this year Alexandra Sturrock made an academic visit to the Autism Research Centre at the University of Alberta in Canada. She presented results from her first study on the differences between the language and pragmatic profiles of females and males with autism, to a group of around 80 researchers and clinicians at the Glenrose clinic. She was well hosted by the team headed by Lonnie Zwaigenbaum and future research collaborations with Olivia Conlon (also a researcher in gender differences in language) were discussed. Following this Alexandra went on to make a poster presentation at the International Society for Autism Research conference in Montreal.



You can download this poster here: https://communicationautism.wordpress.com/2019/05/30/international-society-for-autism-research-2019-poster-presentation/

Dr George Farmer also gave a presentation at the conference (his work is described on page 6)

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NEWS

Grant success

Emma Gowen and Daniel Poole have been awarded a Wellcome Trust Access to Expertise grant of £3,942 to work with Greater Manchester Mental Health NHS trust adult autism diagnosis service. Emma and Dan hope that this work will develop a partnership between Autism@Manchester and the service which will lead to the development of new research ideas together and support newly diagnosed adults in accessing information about autism through research.

Events

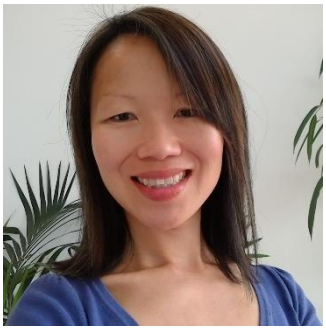
On 4th April, Dr Laura Crane from the Centre for Research in Autism and Education at University College London gave a presentation discussing the need for participatory research in autism and her experiences of working on co-produced projects with autistic people, with a particular focus on a project examining mental health in young people. A video of the presentation and slides are available on our website (http://www.autism.manchester.ac.uk/connect/events/)

Our next public event will be delivered by David Hartley on 16th October, details are yet to be confirmed. Please check our Facebook (@autismatmanchester) and Twitter (@AutismAtMCR) for details

Publications

- **Casasus et al (2019) Time Perception in Autism Spectrum Condition: A Systematic Review**

My Experience Presenting to the Autism@ Manchester Expert by Experience Group



By Dr Mai Wing Wan,
Lecturer in Developmental Psychology

Autism@Manchester coordinates a number of initiatives in an attempt to improve the involvement of the autistic community throughout the lifecycle of research. The expert by experience groups of autistic adults and parents of autistic children discuss and input into ideas put forward by researcher. There is a virtual group, which is conducted via an email list serve, and a face-to-face group, who meet in person four times a year. In each face-to-face group meeting two researchers present work they are planning or have conducted for discussed with the group. Here, Dr Ming Wai Wan describes her experience as a researcher working with the group at the most recent meeting:

Many researchers have benefitted from the Expert by Experience Advisory Group by gaining different perspectives and valuable input into their research, and in terms of learning how to best communicate research that considers the perspective of those living with autism. I thought I'd give a go at presenting some key findings from research I'd been involved in over the last 10 years or so (on parent-infant interactions in infants at increased likelihood of autism – *Ming was interviewed about her work in the summer 2018 edition of the newsletter*) **and ask where they felt was the most valuable direction to go next, especially to benefit families.**

My Experience Presenting to the Autism@ Manchester Expert by Experience Group (cont)

I prepared a 5-slide presentation, being mindful of the lay audience. However, because I'd not before presented to a lay audience before and crucially because 'parenting' is such a sensitive topic in itself, I must admit that the thought of presenting was quite daunting!

On 12th June, I gave a 20-minute research presentation, which was followed by a 20-minute discussion. Although I had taken care with how I framed my research, I still anticipated that some of the group might feel upset by taking some unintended message from the results. However, since an abstract was distributed to the Group beforehand, nothing was a surprise for them at the meeting. The Group was welcoming with ideas, not only with reflecting their own experiences, but also with thinking of how I might best move forward with my research. Most of the Group seemed quite knowledgeable about the research process, which I found refreshing, and I felt that my slides could have included a little more 'hard data' to satisfy that need to see more results. There were understandable perceptions around specific wording I had used, such as 'intervention' (which may sound very meddling rather than helpful), which I will alter in future.

Members of the Group offered to help with the communication of any future results. I found this helpful attitude to be a very positive experience and I realise I needn't have worried. The sensitivity of the topic was acknowledged at one point, and Emma (*Gowen – who chairs the Group*) did convey on my behalf the concerns I had with presenting my findings.

My Experience Presenting to the Autism@ Manchester Expert by Experience Group (cont)

Emma also did a great job of ensuring that everyone had their chance to be heard. After the discussion, I enjoyed chatting with the group over lunch in a more informal atmosphere. I also got the contact details of a student whose PhD was on a complementary topic.

These research meetings provide a unique interface between academics and the autistic community (either being autistic themselves or caring for a child with autism) to not only add value to the research we do, but also to change how research should be done. The expert by experience group relies on being costed into researchers grant applications, to cover travel expenses and lunch. I went away with a couple of ideas that I'm thinking of developing, one involving autistic parents and another on making baby and toddler groups more autism-friendly. It has also made me think about our research priorities and how I communicate my research. This should all be obvious already, but often as a researcher, we are much more informed by theoretical constructs and recent research developments by the field than we are by those we hope will ultimately benefit from the research. I will be sure to follow up on these ideas, provide feedback, and involve the group again either in a face-to-face or virtual meeting.

Find out more about the Expert by Experience Group on our website
http://www.autism.manchester.ac.uk/connect/expert-by-experience/

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LATEST FINDINGS

DECISION MAKING IN AUTISM

By Dr George Farmer,
Research Fellow, Division of Neuroscience and Experimental Psychology, University of Manchester

Decision-making is a key aspect of how we interact with the world. Where to live, what to eat, who to vote for – decisions big and small have consequences for how we live our lives. I recently ran an experiment with collaborators at Cambridge to see how people with autism process information when they are making decisions.

Research on the general population has shown that people have puzzling biases when it comes to decision-making. One famous example is framing, where people give different responses to the same question depending on whether it is framed as a loss or a gain. This means that the chances of a person choosing to have surgery will depend on whether the surgeon describes the operation as having a 95% success rate or a 5% failure rate. There are many more examples of this kind, and this research has had a big impact on the way we understand human decision-making.

Intriguingly, there are now several research studies (including my previous work) showing that people with autism are less likely to have these biases in their decision-making. It was this recent research that led us to investigate whether information is processed differently when people with autism make decisions.

What was the study?

We tested 35 autistic and 35 neurotypical participants on a decision-making task where they were asked to choose an apartment to rent. The apartments were laid out in a grid on a computer screen with rows for apartments and columns for different features (e.g., cost, distance, space). While participants were making their decisions we used an eye-tracker to record information about where they were looking.

Eye-trackers shine an invisible infra-red light on the eye and use the reflection to work out where a person is looking. These data allow us to investigate how people process information. We can record how long people take to reach a decision, what order they process information in, and what strategies they use to eliminate options.

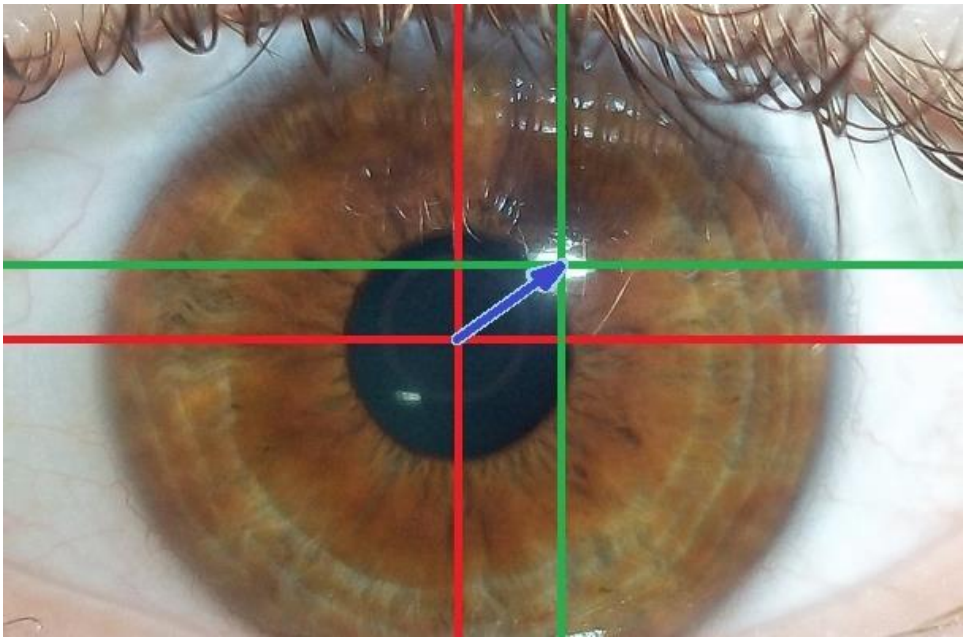

Fig 1. The position of the pupil centre (red lines) and the corneal reflection (green lines) allow the eye-tracker to determine where a participant is looking.

What did we find out?

We found that autistic participants appeared to use broadly similar strategies to neurotypical people, but that when we made the decision more complicated (by adding more information about the options) the autistic group were less affected and responded more quickly than the neurotypical group. We also found that autistic people spend more time looking at the option that eventually gets chosen, and more time than neurotypicals looking at the attributes they consider to be the most important. Finally, we found that autistic participants examined less of the available information than neurotypical participants.

What does this mean?

One interpretation of our results is that people with autism have stronger preferences, and are therefore able to narrow down their options more quickly. Stronger preferences could also explain previous findings that autistic decision-making is more rational – context and framing are less likely to have an impact the more sure you are of your preferences.

Understanding more about decision-making in autism is important for several reasons. One key benefit is that more rational decision-making is a valuable skill that many employers would value. Another issue is that previous research suggests people with autism are more likely to avoid making decisions than neurotypical people. Understanding more about information-processing in autism could help us design ways of presenting information that might make reaching decisions a less stressful process.

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LATEST FINDINGS

INVESTIGATING ACTION PREDICTION IN AUTISTIC ADULTS

By Hayley Shepard,
Research Assistant, Division of Neuroscience and Experimental Psychology, University of Manchester

Action prediction involves predicting what a person is going to do by watching their body movements. For example, you may predict what object a person is going to pick up by observing their actions. Our ability to predict other people's actions is important to help us understand other people's behaviour.

Movement ability is associated with ability to perform action prediction. For instance, a child's ability to predict the goal of an action is linked with their ability to perform the action themselves (e.g. the better a child is at an action the better they are at predicting the goal of an action). Many autistic people experience movement difficulties including clumsiness, poor hand-eye coordination and unstable balance. This link between movement ability and action prediction therefore suggests that autistic people may demonstrate reduced action prediction. This could potentially highlight why some aspects of social interactions are challenging for autistic people.

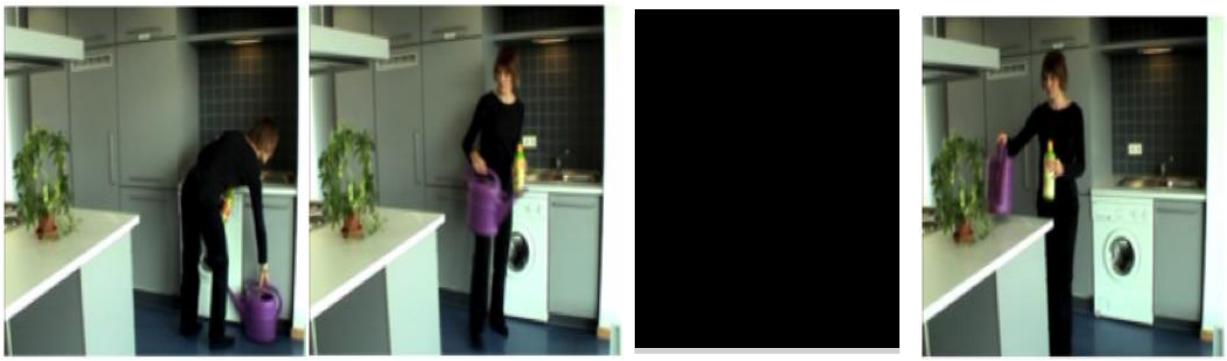
<u>What was the study?</u>

This study aimed to understand how well autistic, compared to non-autistic people are able to predict other people's actions based on body movements.

LATEST FINDINGS

INVESTIGATING ACTION PREDICTION IN AUTISTIC ADULTS

22 non-autistic and 20 autistic participants watched videos of everyday actions (e.g. making coffee, watering a plant) and were required to make a decision about whether some parts of the action were sped up or slowed down.



Watching video | Blank screen | Participant responds

Fig 2. ***Participants watched the videos in which the screen occasionally went blank. Following the blank screen, the video continued and the participants were required to indicate whether the video continued too early (the person in the video is too far behind in the action she is performing), too late (the person in the video is too far ahead in the action she is performing) or in time (the person in the video is at correct timing for the action she is performing) by pressing one of three buttons.***

We were interested in the number of correct responses. We also measured whether participants showed timing biases (e.g. answering that the video continued 'in time' when it was too early or too late.)

<u>What did we find out?</u>

We found that despite the autistic participants having poorer movement skills, they showed equivalent action prediction ability to the non-autistic group.

What does this mean?

These findings suggest that despite experiencing movement difficulties, people with autism do not show impairments in their ability to perform action prediction during every day actions. This study has provided a greater insight into the effects of movement difficulties in autism which is important given that movement difficulties occur in the majority of autistic people and persist into adulthood.

Future research is needed to investigate whether autistic people use body movements as a cue for action prediction or whether they use alternative cues to compensate for movement impairments. For example, autistic people may rely more on contextual information such as the objects in the videos as a cue. In addition, although the videos showed naturalistic, everyday actions, they lack the complexity of real-life situations where there are other cues and distractions (e.g. multiple people, noise, distractions) which may make action prediction more challenging.

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WHO ARE YOU?

My name is Professor Caroline Bond.

I am placement director for the Doctorate in Educational and Child Psychology, a researcher in Manchester Institute of Education and an educational psychologist. I work as part of a team providing training in educational psychology for our cohort of 13-16 doctoral students each year. Educational psychologists work with children aged 0-25, their families and schools to facilitate access to or overcome barriers to learning. This might include working with individual children or groups, or with systems such as schools or local authorities. Educational Psychologists also undertake research and one of my areas of research is applied educational psychology.

In my spare time I enjoy walking in the countryside of the North West.

WHAT MADE YOU BEGIN RESEARCHING AUTISM?

At the beginning of my career as an educational psychologist I met a number of children with a diagnosis of autism and their families. As an Educational Psychologist I was aware that some children and young people on the autism spectrum find school very difficult which can present challenges for them, their families and their teachers.

This led me to find out about interventions which might help autistic pupils in school and subsequently into my own research which has focused on school based interventions and approaches.

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WHO ARE YOU?

HOW WOULD YOU DEFINE THE AUTISM SPECTRUM?

As a wide spectrum of strengths and needs with particular differences in the areas of social interaction, sensory processing and managing change. A focus for me as a practitioner educational psychologist has been how we can utilise children and young people's strengths and interests to help them engage with education as well as identifying areas where they may need more support.

IS IT POSSIBLE TO CARRY OUT RESEARCH IN YOUR FIELD WHICH APPLIES TO ALL ASPECTS OF THE AUTISM SPECTRUM?

There is still a lot to do, so basically I'd say no. However, with our trainee educational psychologists we are researching areas which have received less attention in the past.

As educational research has focused mainly on boys we are currently undertaking research into the educational experiences of autistic girls and have a book about education and autistic girls coming out in August 2019. We have also researched how schools can support pupils with autism and learning difficulties in preparing for adulthood.

HOW VALUABLE DO YOU EXPECT YOUR RESEARCH TO BE WITH AUTISTIC PEOPLE, OR SOCIETY AT LARGE, AND WHY?

I'm very mindful of the research by Pellicano et al. which showed that often autism research has focused on researchers' priorities rather than those of the autistic community.

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WHO ARE YOU?

HOW VALUABLE DO YOU EXPECT YOUR RESEARCH TO BE WITH AUTISTIC PEOPLE, OR SOCIETY AT LARGE, AND WHY? (cont)

My aim is to develop research with trainee Educational Psychologists which is relevant to education and the needs of the autistic community. Recently, this has involved researching the experiences of marginalised groups such as girls and currently we are developing a project to find out about the educational experiences of gender diverse autistic young people. I was inspired by a recent Autism@Manchester talk about co-production of research (*see page 2)* and hope that more of our research will be co-produced with the autistic community in future.

WHAT RESEARCH IDEA WOULD YOU LIKE TO PURSUE IF FUNDING WAS NO BARRIER?

Having undertaken small scale studies in the area of autism and gender I hope that we will be able to expand this in future to gain the views of a wider range of young people. This will hopefully lead into interventions and approaches developed with the autistic community which will enable girls and gender diverse autistic young people to have positive and successful educational experiences.

THANK YOU CAROLINE

If you have any comments on this newsletter, please contact
Dr Daniel Poole
(daniel.poole@manchester.ac.uk)

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TAKE PART

TIME PERCEPTION IN AUTISM

Daniel Poole

Martin Casassus

Our sense of time and duration are essential to how we experience and interact with the world around us. There are many reports that autistic people experience and perceive time differently to non-autistic people. However, to date timing has not been well characterised in autism and the extent to which differences in timing cause problems is unknown.

We are seeking volunteers for a research project which will systematically investigate the experience and perception of time in autism spectrum conditions.

We are recruiting adults with a diagnosis of autism, and non-autistic controls who are closely matched in age, sex and IQ.

We are looking for volunteers who are:

- **Aged between 18-45**
- **Have normal or corrected vision (glasses are ok)**
- **Native English speakers who are able to read written English and communicate verbally in English**
- **Have no first degree relatives with a diagnosis of autism (applies to non-autistic control volunteers only)**

All parts of the study will be conducted in the Zochonis building at the University of Manchester. Participants will be compensated for their time and reasonable travel expenses.

We have prepared a short video to display what participants would be asked to do.

For more information, contact Dan and Martin:

autismtimeperceptionstudy@gmail.com

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