Research from Emily Farran and her group

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This has been a busy 6 months for our team. I'd like to welcome Harry Purser, Jo Camp and Hannah Broadbent. Harry, as you can see below, has recently started working on a three-year project to look at route learning abilities in WS and in Down Syndrome using virtual reality. Jo and Hannah are about to start PhDs. Jo will be researching problem solving abilities in developmental disorders, including WS. Problem solving abilities include tasks such as knowing which order to put your clothes on or working out how to reach something by using another object to stand on. Hannah will be exploring route learning in a similar manner to Harry, but will be using real-world familiar environments such as a child's school, to work out what strategies people with WS use to remember their way from, e.g. their classroom to the toilet, and whether these strategies can be improved. Hannah's PhD is part sponsored by the WSF, for which we are very grateful.

Matthew Cranwell has now left the team, to return to his studies at Surrey University. His colour perception study is still ongoing and I hope to update you on the results of this in the next WSNews.

Susie and Kerry are now nearing the end of their PhDs, and I am very proud of the work that they have carried out. We have all recently presented our research at a British Psychology Society Conference; people were very interested to learn more about WS. Kerry and Susie report the results of some of their recent studies below.

Route learning abilities
Harry Purser

I have recently joined Emily Farran at The Institute of Education, as a post-doctoral researcher. My previous post was at Birkbeck College, where I researched language development in WS.

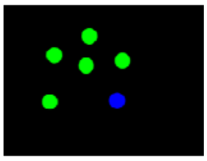
We are in the early stages of a project investigating the development of route learning abilities in people with WS: in other words, why do some people get lost? The project follows on from Emily's last route learning study and we will again use virtual reality mazes. In the first study of this project, we are trying to find out what kind of landmarks are particularly useful for navigating through our maze. For example, are distant landmarks useful, like tall buildings, or are street-level ones better, such as postboxes?

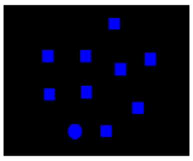
Our hope is eventually to put together a training programme that will help individuals who struggle with finding their way around. By the time that this article goes to print, many of you will already have taken part, so thank you in advance! However, we are also still looking for more volunteers to take part in this study (either at your home or here, at the Institute of Education), so please do **get in touch if you are interested**

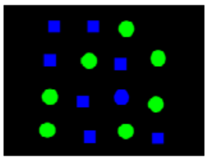
Searching for moving and static objects in a cluttered environment
Susie Formby

I would like to thank everybody who has taken part in my PhD research. In my current studies, participants were asked to search for static or moving items to investigate whether children and young adults with WS are able to process both static and moving stimuli in a similar way to typically developing participants. This kind of search behaviour is used in the real world when you are trying to find your friend amongst the people that are getting off a train (moving target) or when you are looking for your keys (static target).

Participants were asked to search for a target amongst few or many distracters. In the static condition, the target was a blue circle hidden amongst green circles (colour condition), blue squares (shape condition) or green circles and blue squares (colour and shape conjunction condition). Here are some examples of the colour, shape and conjunction games for the static condition: Can you find the blue circle?







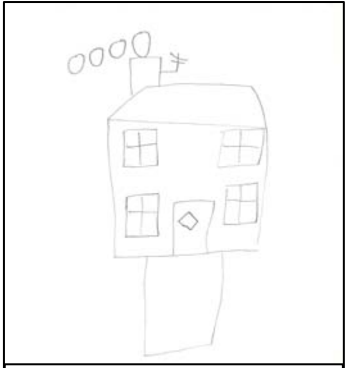
In the moving condition, participants were asked to search for a fast, rightward moving target amongst slow rightward moving distracters (speed condition), fast, leftward moving distracters (direction condition) or amongst slow rightward and fast leftward moving distracters (speed and direction conjunction condition).

My preliminary analyses showed that people with WS are able to process both static and moving images in a similar way to typically developing children. The response times (RT) of people with WS were most similar to 4-9 year old children. I am now investigating RT, accuracy and the search strategies of people with WS, when they are asked to search for 4 targets defined by static or moving features. Thank you again to everybody who has taken part!

Drawing styles
Kerry Hudson

I have now finished testing all of the participants with Williams syndrome (WS) that I needed for my PhD experiments and would like to thank everyone that has taken part over the years. It's been an absolute pleasure working with you.
The recent studies have produced some very interesting results. One of the most interesting tasks examined drawing strategies in WS. Specifically, I wanted to find out how often people with WS look at the picture that they are copying, and the

sequence in which the parts of the picture are drawn. Participants were asked to copy a house from a computer screen. The house was only on screen for a short time and to see the house again the participant had to press a button. The number of times that the button was pressed gave a measure of how many times people looked at the house while they were copying it. It was predicted that people with WS would look less frequently at the house when copying and that when drawing the house lots of details would be drawn without drawing a cohesive image, relative to typically developing children.



A house drawn by a participant with WS

People with WS looked an average of once every 33 seconds whereas typically developing children looked once every nine seconds. This might be a reason for poorer drawing in WS; if participants looked less frequently then it is more difficult to remember the relationship between parts of the house and to make a recognisable copy.

The WS group drew more external features of the house than details. This argues against the local processing bias hypothesis in WS (the local processing bias hypothesis predicts that more details of the house are drawn than external parts). The WS group drew the core features that made a house recognisable, such as the roof, house frame, chimney, door and basic windows, but omitted some of the details such as the door knob. The drawing sequence was similar to typically developing children; both groups started with external features before completing the details. The results suggest that when drawing is poor in WS it may be due to poor attention to what is being copied, rather than a local processing bias.