Research from Emily Farran and her group

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Thank you to the WS people who have come to London to take part in my virtual reality study - you can see a participant below navigating his way around a maze. I am still looking for more volunteers to come to London to take part in this study, so please do **contact me if you are interested**. In this task, participants learn a series of turns, in order to find their way from the start to the finish of the maze. We have manipulated whether the task relies on visual memory or on verbal memory. Any differences in performance across these two conditions will tell us a bit more about how people with WS learn their way around real-world environments, such as their school or town. We will then be able to determine how best to improve route learning ability in WS (e.g. by encouraging people to verbalise landmarks as they walk a new route). Poor route learning has severe consequences for independence and confidence. If we can find ways to improve the abilities involved in finding your way, this could really impact the daily lives of people with WS.

PhD students

Kerry Hudson

I have recently been working on two drawing studies and am amid collecting some control participant data. The tasks look at drawing diamond and square shapes and how providing cues and aids may improve accuracy of the drawings. One task manipulated planning demands by providing different levels of assistance when drawing square and diamond shapes. Participants drew the shapes on paper, with the following aids 1) a circular array of eight coloured dots, 2) a circular array of black dots (for 1 and 2, participants needed to join dots 1, 3, 5 and 7 to make a square or dots 2, 4, 6 and 8 to make a diamond), 3) a single starting-point dot only, and 4) with no cues at all. I predicted that the coloured dot array would lead to the greatest accuracy when replicating the shapes because the colour of the dots could be verbalised which helps select what dots to join to make the shape. I believed that the plain paper would lead to least accuracy as all the planning for the drawing was self-generated. The results from both the WS group and the typically developing children so far suggest that the opposite is true and

that when least assistance is provided that accuracy is greater. This is perhaps because the circular array of dots is too distracting and that it is difficult to overcome joining together all eight dots. This is interesting, as it tells us about the importance of the interaction between distraction and planning in visual perception in both WS and typical development.

Another task looked at the influence of placing a dark frame over the to-be-drawn area, to determine whether participants implicitly use the edges of frames as a reference when copying shapes. Participants were asked to copy squares and diamonds on to a piece of paper within the frame. The shape of the frame was either congruent (e.g. a square frame when participants drew a square) or incongruent (e.g. a diamond frame when participants drew a square) or neutral (a circle) to the shape being drawn. It was predicted that drawings would be most accurate when the shape and frame were congruent, and that the greatest difference in drawing would be for the same shape between the two types of frame. The results so far are not clear and work on the task is on-going. I shall write again about the final outcome of the studies and future tasks. I would like to thank everyone that took part in the tasks and look forward to seeing people again later in the year with more studies.

Susie Formby

I have recently finished the second study for my PhD, which investigated how people find items in a visual scene. This is relevant to real-life tasks, such as finding your keys, or locating a friend in a crowd. It also tells us about how individuals with WS are able to focus their attention on specific targets, how well they can monitor where they have already looked, and whether they are distracted by irrelevant information in a typical manner. Participants were asked to find 4 big circles (targets) on a computer display. The computer display also contained other circles (distracters) of different sizes (small, medium and large); and of different numbers (4, 8, or 12). See Figure 1 for an example. I recorded how long it took for people to find the targets and whether people made errors, such as selecting a distracter circle. People took longer to locate the targets and confused them with the distracters when they were of a similar size to the target. In the second, feedback, condition, when people selected a target it changed colour. This reduced the need to remember whether they have found a target before. Participants were now faster and more accurate to locate the targets, especially when there were lots of similar distracters in the display. I found that both participants with Williams syndrome and typically developing participants showed similar improvements in the feedback condition, compared to the no feedback condition, showing that the effort of remembering which target(s) you've already clicked, in the no feedback condition, was similar in both groups. I would like to thank everybody who has been involved in my studies to date.

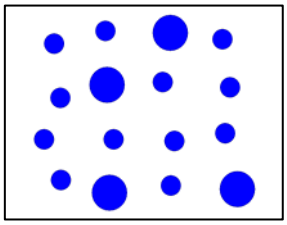

Figure 1