INITIAL PARENT AND SCHOOL REPORT FOLLOWING GROUP 1 (2-3 YEAR OLDS) ASSESSMENTS.

This group form part of a larger study which is examining Theory of Mind in children with Down syndrome. I hope to track the development of Theory of Mind skills from age 2 to 10. In total I have seen 14 children in this age group, from ages 2 years and 2 months, to 3 years and 11 months, with a really good spread across the age group.

Here are a few things that you are able to do as you develop a Theory of Mind, **some of them are very complex and don't fully develop until adulthood:**

- Know that things and people still exist even when you can't see, hear or touch them.
- Pretend and imagine in play.
- Understand different perspectives – know that other people see and think about things differently than you, and that they have different experiences than you.
- Put yourself 'in someone else's shoes' – and so work out why someone thinks or behaves the way they do.
- Be able to imagine a few perspectives all at once, and work out how those different perspectives might interact.
- Understand simple concepts of time – past, present and future.

Developing a Theory of Mind is important; it means children can be more flexible in their thinking and begin to use a wider set of skills, such as:

- Working out problems
- Imagining
- Using skills learnt in lots of different situations.

But these skills also put a huge strain on memory and brain power; you need to be able to think about lots of different solutions, perspectives and outcomes all at the same time.

ASSESSMENT TASKS

The tasks in this age group measure developmental areas which are considered to be important in going on to later develop Theory of Mind skills. The assessments followed the same pattern for each participant;

<u>Task 1 – Object permanence 1</u> Children were asked to find a toy hidden under a box.

<u>Task 2 – Object permanence 2</u> Children were asked to find a toy hidden under one of two boxes.

<u>Task 3 – Object permanence 3</u> Children were asked to find a toy which had been hidden under one box and then moved to the other in the sight of the child.

The object permanence tasks examine whether children are aware that objects still exist when they are hidden. The more complex the task the longer children have to hold on to the image of the object (and where it is) in their mind. As children develop they begin to be able to hold images in their mind of more complex ideas and for longer periods.

<u>Task 4 - Joint attention - Novel (new) object</u>

Children were introduced to a new object (a noisy bird puppet) to observe their reaction.

This task examines how children react to an object which is controlled by the experimenter. They show that they know the bird is controlled by me by looking to me, or talking or signing to me to start or stop the bird making a noise. Children also look to their carers to show them the toy.

Task 5 – Joint attention – imitation and others' intentions

I showed the child that I was trying to open a Russian Doll toy by pulling it apart, then it was set down in front of the child. The purpose of this task is to see whether the child can understand what my intention was and copy my behaviour; they show their understanding by picking up the toy and trying to pull it apart.

Task 6 – Joint attention – imitation and others' intentions

I showed the child a round tin and attempted (and failed) to put some discs in it. I then put the discs down in front of the child. The purpose of this task was to see whether the child can understand what my intention was and copy my behvaiour; they show their understanding by putting the discs in the tin.

Task 7 – Joint attention – others' intentions

I had 5 different boxes and bags (a teddy was hidden inside one), and a picture card of a teddy. I pointed to the picture card and then began to look in the bags and boxes, showing that they were empty. After three boxes/bags I stopped and put the picture card in front of the child. The purpose of this task is to see whether the child can read my intention of trying to find a hidden object and their response to a novel task.

Task 8 – Joint attention – others' perspectives

Carers were asked to look at a picture book with their child, held up so that I couldn't see the pictures. I asked 'Can I see the duck please?' and 'Can you show me the duck?' The purpose of this task is to find out whether children know to turn the book around so that I can see the picture.

RESULTS

The results I will report here are from my initial look at the data; please remember I am reporting about the whole group of children and not about individuals. I will firstly describe what I have seen so far, and then explain how I plan to look further into the data I have collected.

THE OBJECT PERMANENCE TASKS

Most children in the group were able to find all three objects in at least 1 of the 2 testing sessions. Of those who did not find an object there is no pattern as to which task was not completed; some children were unsuccessful in task 2 and some in task 3. Some children passed the harder task 3 but not task 2. This inconsistent pattern might show that not completing a task was not because the task was two difficult, but due to other factors, such as inconsistent focus or boredom.

JOINT ATTENTION TASKS – NOVEL OBJECT (THE BIRD)

Most children reacted to the bird by either looking to me or their carer and back to the bird. They were checking others' reactions to the bird, looking to see whether we telling them (by our gestures and body language) whether the bird was ok or something to be afraid of. This could be an indication that the children in the study were aware of others' attention to an object; this is an important developmental milestone towards understanding that other people have their own knowledge about the world. A few children did not react at all to the bird, there could be a number of reasons for this, it may be that they had seen a bird like that before so were not concerned by it, or that they had not yet reached an understanding that other people's attention must also be drawn to an object in order to share it.

IMITATION TASKS

The doll and tin tasks were copied easily by most children. There were some very good imitations of my over acting (!) and most children took the doll apart and put the discs in the tin, all children completed at least one of the tasks. This shows that the children were able to pay joint attention to an object with me and use their understanding of my intention to copy my action and successfully complete it. This ability may eventually develop into more complex pretend play and social understanding skills.

The searching for teddy task proved much harder for the majority of children to complete. Out of 26 times the task was shown it was only attempted 6 times. The rest of the time children were mostly off task, playing with the boxes, looking away or not responding at all. There could be a number of reasons why this happened; it may not have been clear what I wanted them to do, the task may have been too long for them to remember what I was doing, there may have been too many interesting things to play with or it was towards the end of the session so they may have been tired. Although this needs further analysis my initial suggestion is that the task needed the children to imagine the teddy, which they had not seen, in a box (which is a different skill than the object permanence tasks, where they had seen me hide a toy) and this skill of 'representation' may not yet have emerged in this group of children. In addition, whilst holding the image of the teddy in a box in their mind, they had to read my intention that I was looking for it. This means a large load on their working memory, which at this age, may not be capable of keeping all this information in mind.

OTHERS' PERSPECTIVE

On asking the question 'Can I see the duck please?' 11 times children pointed to the picture in the book, showing that they understood I wanted to see the ducks, but not yet realising that I wasn't in a position to see the pictures. One child turned the book around for me to see, and the rest of the time the children either did not respond to my question or disengaged with the task. In this task there appears to be a slight age pattern; the younger children in the group tended to show no response, the middle ages were able to point at the ducks, and the oldest children showed a very mixed pattern between pointing, not responding and being completely off task. This may mean that the oldest children understood my request, but couldn't work out how to do it; they could be in the middle of developing this skill.

FURTHER ANALYSIS

The ideas I have outlined here are from my initial analysis of the data and I have much more work to do to look further into the data. I will be looking in more detail at the behaviours displayed by the children when working on the tasks. I will be examining their body language, use of gesture and vocalisations to establish how they are engaging with the tasks and whether this has any effect on their performance. I will attempt to establish why the search for the teddy task and the book task were less successful than the other tasks, and why they were more difficult for the children to engage with.

The work I do with this group with then be linked in with the other age groups to try and establish patterns of behaviour and links between the age groups.

Please remember not to share or copy this document. I will be creating further reports for parents and schools as my analysis of the assessments continues. By the end of the year I hope to be able to draw together all the strands in my work and produce a document for you which outlines my final findings.