

BABYLAB



UNIVERSITY OF
PLYMOUTH
School of Psychology

SUMMER NEWSLETTER 2018-2019



Hello to all parents/carers of Babylab Scientists!

Thank you to everyone that has visited and taken part in our studies here at the Babylab since September 2018. We really appreciate all your help and support to complete our research here, we really can't do any of it without you! We hope you enjoy reading about all the research we have done over the year and the interesting results we have found so far!

We have had a great year with around 650 visitors to the Babylab since September for participation in 18 different studies, this included setting up and collecting data for 5 new studies.

We have had many students in the Babylab over the year conducting research. Working alongside the three placement students - Abby, Flora and Laura, were 10 final year undergraduate students, conducting research for their dissertation, and our PhD student Paul. We have also had a student from Bournemouth University - Sophie, acting as an intern since June, who has been helping run the studies here and for the first time we will have three summer interns starting 20th August, so keep an eye out for invites to studies at the end of August! We will then have our new placement students starting in September — Alvise, Paige and Yasmin.

We would also like to send best wishes to Alshaimaa Gaber Abdel Wahab who completed her PhD this year!



Like us on Facebook for regular updates on the labs activities and current studies (click on text for a link):

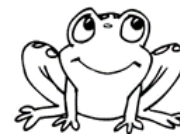
[Plymouth Babylab at University of Plymouth](#)

[Plymouth Babylab](#)



BBC Documentary

The BBC documentary that was filmed here in the Babylab last year was broadcasted in December 2018 on BBC2. We were featured in the third episode of *Babies: Their Wonderful World*. Professor Caroline Floccia, Paul Ratnage and Ella Cosgrove were featured in the episode, with Caroline Floccia being interviewed to explain how babies up to the age of 10 months old can hear speech sound differences that adults can no longer hear. This is very useful in language learning until the age of 12 months where perceptual narrowing focuses their learning to their native language.



Contents:

Page 3: Mummy (5 & 12 months old), CVC (11 months old) & Talking Heads. (5 & 12 months old)

Page 4: LineOr/DotGrid (6 & 7 months old) & SemCat Control. (15 months old)

Page 5: SESB (18 months old) & Catlink (21 months old).

Page 6: Word Network (21 months old) & WinG/BinG (30 to 38 months old).

Page 7: Emoji (3, 4 & 5 year olds) & AVA (3, 4 & 5 year olds).

Page 8: PAS (4 year olds) & Recruitment.

Mummy (5 and 12 months) and CVC (11 months)

*Prof Caroline Floccia & Paul Ratnage
Collaboration with Dr Thierry Nazzi, CNRS-University Paris Descartes*

As adults, we rely more on consonants than vowels in both recognising and learning words. For example, reading a sentence with all of its consonants removed would be challenging. In contrast, a sentence where the vowels have been removed would be easier to understand. How and when children learn that consonants are more informative than vowels in word recognition is unclear. Studies in French infants show that, at 5-months, infants rely on vowels, before switching to consonants for word recognition at 11-months.

Using the head turn preference task, our Mummy and CVC studies have looked to see if infants aged between 5- and 12-months can recognise vowel and consonant changes either to a single word ('Mummy') or in lists of familiar words ('CVC'). Our results show that British English learning infants show no preference for either consonant or vowel changes in the familiar words presented to them. These findings show that British English children appear to differ from their French-learning counterparts in when they learn consonants help with word recognition.

Paby
Buttle
Punny



Baby
Bottle
Bunny

Talking Heads (5 and 12 months)

Prof Caroline Floccia, Paul Ratnage & Laura Hitchin

Research shows that 5-month-old infants pay more attention to a speaker's mouth than their eyes when listening to them talk but will only do so at 12-months if the speaker is talking in a foreign language. It has also been found that infants prefer to look at someone who has spoken to them in their native language rather than a foreign language.

This study looks to see whether infants will use the same strategies when listening to a local accented or a regional accented speaker. Infants are presented with videos of females speaking in either a local (Plymouth) or regional (e.g. Scottish) accent. Using our eyetracker, we examine how long each infant looks at each speaker to gain an idea of their preference. We also measure how long they look at each speaker's eyes and mouth to see if this will differ based on the accent they are hearing. Data collection is currently ongoing, but we hope to have some exciting results soon.



Line Orientation and Dot Grid (6-7 months)

Dr Allegra Cattani

Our eyes move around and tell us what we see and how we focus our attention to then send signals to our brain. We know that each side of our brain become specialised for many things but we do not know whether these abilities stem from the ancestral brain 'division of roles'.

A group of infants watched images of parallel lines (placed like a 'clock' face) in which one odd line was oriented differently. Children also looked at images of a black dot in the screen or placed inside a black grid. After having seen the results of 16 infants to add to the previous 65 infants from the past year, I was surprised to see how many of them spot the different line (or the dot) doing one straight movement of their eyes from the starting attention to the centre of the screen. We still have to learn which half side of the screen the infants spot the odd line (or the dot) faster but to do so many more children are needed! Thank you to all parents that contributed to attend and to come to visit us here!

SemCat Control (15 months)

Prof Caroline Floccia

Following on from testing of SemCat15 Asso800 last year, our study looking at how 15 month olds recognise words and how they may have a link. We are now running the control task of this study, where infants listen to word pairings that are either related (bird and tree) or unrelated (duck and nappy). To do this we use the Head Turn procedure, where we use flashing lights to shift the child's attention to the left or right before the word pairings are played.

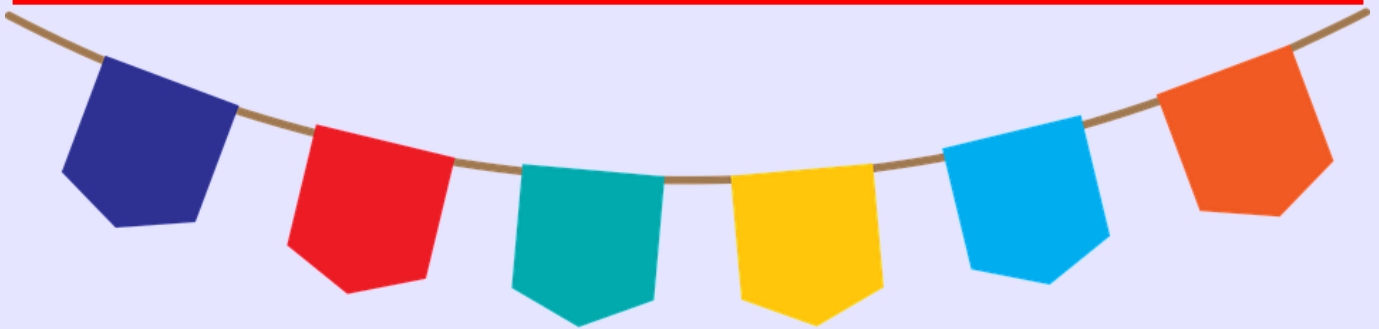
So far, we have tested around 15 children and are still needing around 15 more children to complete the study. Once this is completed, we will be able to publish the full study of SemCat15 Asso800 (the experimental task) and SemCat Control (the control task) together.

Scale Error & Shape Bias (18 months)

*Prof Caroline Floccia, Dr Allegra Cattani & Ella Cosgrove
In collaboration with Dr Beata Grzyb, UCL*

Toddlers sometimes seriously attempt to perform actions with toys which are impossible because of their size, for example trying to step into a miniature car. These scale errors have been studied in our lab over the past years, and we were examining whether there is a link between the emergence of these scale errors, and the emergence of the "shape bias" in early childhood. The shape bias refers to the fact that children prefer to categorise objects based on shape rather than colour or texture.

During this study, children were placed in a play situation where the toys were the appropriate size, and then with miniature replicas of the same toys and we measured the number of times the child tried to interact with them the same way as the large objects. Then they played an object sorting game with play dough and sponge shapes where we looked at the extent of their shape bias. We also looked at the number of words each child could understand and say in order to investigate the relationship between vocabulary and performance on the other tasks. Findings suggested that children who had larger comprehensive vocabularies at 18 months were more likely to perform scale errors than those who had smaller ones.

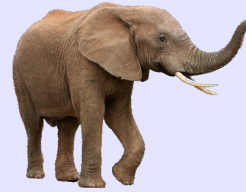


CatLink (21 months)

Prof Caroline Floccia & Mollie Williams

Previous research has demonstrated that 18-24 month infants are sensitive to categorical membership, e.g. displaying two object from the same categories such as an apple and banana causes a delay in the infants recognition of the object. This is due to the similarity between the objects causing confusion due to the properties they have in common linking the words in the child's vocabulary.

In this experiment we investigated whether word networks based on animate and inanimate membership have formed by 21 months old and if the structuring of these categories are similar. Infants were presented with two images and instructed to identify one of the images e.g. look bear. The image pairings shown were from the same category (two animate or two inanimate images) and compared with trials whereby images pairings were from different categories (one animate, one inanimate). We found no significant difference in looking time at the target image between the same category and different category word pairings, indicating there is no difference in the organisation of animate and inanimate word categories at 21 months. Although research suggests that the development of these categories may be activated later at 24 months.



Word Network & Word Link (21 months)

Prof Caroline Floccia, Natalie Day & Harriet Oliver

An adult's vocabulary consists of around 50,000 words which are efficiently arranged and can be detected within milliseconds. In young children, there is a huge vocabulary increase between 1-2 years where word networks are created and organised in their brain. How does such an enormous network begin to build in infancy? One theory suggests that young children learn words best through the associative links between objects in their environment, and older children/adults learn best through the basic-level categories to which words belong.

In our study, we use an eye-tracker to test the links between words in 21-month-olds. Children's eye movements towards images are tracked on a computer as they hear pairs of taxonomically related (dog/bird) or associatively related words (dog/bone). When infants are presented with either 2 images belonging to the same category (e.g. dog/bird), or 2 images that serve a complementary function (dog/bone), will infants attend longer to the image in the second condition when prompted with an audio (e.g. look, dog)? So far for this study, we have tested 42 participants and are still collecting data. Results will then be analysed to see whether associative links do aid infants in learning and detecting words from different or similar categories.

WinG/BinG (19 to 38 months)

Dr Allegra Cattani & Prof Caroline Floccia

We believed these bilingual children would use the gestures more often than monolingual children to compensate to enhance effective communication. To do this we used the WinG (Word in Game) card task, this involved presenting children with 3 cards at a time. First, they were asked to point out one image to show their comprehension of words, after two cards were removed and they were asked what the final card was, to understand their production of words.

Thanks to your support, we saw around 70 children aged 30 to 38 months, and we do really need to see many more bilingual children over the next months! Along the years we saw in the Babylab 31 children aged 37-41 months and so far we found that some children produced more gestures than others and that monolingual and bilingual children did produce a similar amount of gestures! Mums and dads of bilingual children, please do help us in bringing your child to the Babylab to see how many words your child knows and say!



Emoji (3, 4 and 5 year olds)

Dr Beverly Plester, Kitty Rankin & Hannah Commane

During the 2018-2019 year, Dr. Beverly Plester studied the use of emoji as representations of emotional expressions, with two dissertation students. They studied the development of emotional understanding from 3 to 9 years of age, using the stories from the Test of Emotion Comprehension (Pons and Harris 2004), but with emoji faces replacing the original cartoon faces, on the basis that today's children are very likely to be familiar with emoji use, with many of them having regular access to digital screen devices.

They found that emotional understanding improved with age, as predicted, and compatible with the earlier work by Pons and Harris, but at every age in the present study, males performed more accurately than females, an unexpected outcome. Several variables may have contributed to this outcome, which could inform further research. Attendance at pre-school improved performance, but socio-economic factors such as parental working status and the presence of older siblings in the family did not show any effects on the children's scores.



Accent Vs Accuracy (3, 4 and 5 year olds)

Prof Caroline Floccia, Paul Ratnage and Sophie Olver

Past research in children has shown that children adopt a number of potentially opposing strategies when deciding who to accept information from. One strategy is that children pay attention to the social identity of an informant (e.g. whether they speak with a native or foreign accent). Another is that children will pay attention to how accurate or inaccurate a potential informant has been in the past.

This study looks at how children apply these strategies in a word learning task, with a local accented (Plymouth) speaker or a regional (Welsh or Scottish) speaker teaching them new words. Children are first asked what a series of novel objects are called after being provided with a different name for them by each speaker.

Then, one of the speakers will always provide accurate names for a series of familiar items, whereas the other will always provide inaccurate names. Finally, children are again asked to name novel objects labelled by each speaker. We are currently in the process of looking at the data we have collected so far but we predict that younger children will always agree with a local accented speaker, irrespective of their accuracy. However, older children will initially agree with a local accented speaker, but then switch their strategy to the more accurate speaker.

PAS (4 year olds)

Dr Allegra Cattani

This study aimed to investigate the influence of the oral language on the phonological awareness of English pre-reading skills children. Previous research has shown that oral language influences the development of phonological awareness in infants. However, when last year we were seeing the children in a pre-school environment and in the Plymouth Babylab, we noted that children from the two environments tended to perform differently on this task. So, we decided to investigate this further. Twelve children aged 48-50 months visited the Babylab and 28 children aged 48-50 were tested in three local pre-schools.

We asked the children to take part in two games, a tapping syllable and a blending syllable task. Children listened to words and non-words in English and in an unknown language (Italian) which would sound as a non-word to English children. Children listened to these words from an iPad. Children took part also in a semantic fluency game, where your child was asked to say in two minutes all words associated with animals and food (one minute each) he/she can think of. Most children were playing happily whilst others still had to learn the syllable pattern. We are still in the phase of data collection and we are welcoming more little volunteers!



Recruitment

We have visited lots of baby groups over the year. We have enjoyed meeting new families and seeing all the different activities out there. We want to thank NCT for allowing us to go to both the nearly new sales in October and April. We also want to thank Baby Sensory, Chatterbox, Christian Centre, Bumps and Babies, Plymouth libraries and the Multicultural Group for their help!

We are currently looking for 4 year olds to help us with a new study we are starting. This involves taking pictures of them in both a yellow and orange waistcoat. This will be used in a study to see whether other children of the same age, will choose to play with a child in the same colour waistcoat they were wearing and whether they would choose to play with a peer or a robot.

Please drop us an email if you have had any more children you would like to sign up! Email - babylab@psy.plymouth.ac.uk.