



**Infant and Toddler Language Studies**  
**Dept of Language & Linguistic Science**  
**University of York**  
**York YO10 5DD**  
**Tel 01904 433619**  
**E-mail: [linguistics-babylab@york.ac.uk](mailto:linguistics-babylab@york.ac.uk)**  
**<http://www.york.ac.uk/res/babylab>**



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Dear Parents,



The months have once again raced by so it's high time you heard from us again. We hope that this finds you well and that you are enjoying spring after the long, snowy winter. We'd like to take this opportunity to tell you about two new studies we're about to start in and also to give you a recap of the work we've been doing over the past year.

Firstly, though, some changes to our team. Both Nicola Armstrong and Philippa Claxton, who worked mainly on our Late-to-Talk Toddlers project, have left us for pastures new. Nicola has a job as a research assistant on the Child Smile project, which aims to improve children's dental hygiene in Scotland. She is also getting married in May this year. Philippa is spending a few months teaching English in China before starting a teacher training course in York in September. We wish them both every happiness in these new ventures.

### **1. A New Research Grant**



In our last newsletter, we told you about a study we'd run with 7.5 month olds in York. We played two-syllable words like *princes* and *castle* over and over again to the babies and then played sentences containing these words and sentences containing other words. We wanted to see if these young babies had a preference for the sentences containing the words that they had heard at the start of the experiment. In fact we found that the 7.5-month-old babies had no preference at all, which was in stark contrast to 7.5-month-old babies in America, who did prefer the sentences containing the words they had heard at the start. We wondered why there was this difference between these two cultures learning the same language. We have now received a year's funding from the ESRC to investigate this further. Together with our colleagues at James Madison University in Harrisonburg,

Virginia, we will be running a series of experiments with 7.5-, 9- and 10.5-month olds, trying to work out at what age British and American babies start to be able to recognise words within sentences and comparing any differences we observe. We will look at both one-syllable (e.g. *cup*, *bike*) and two-syllable (e.g. *farmer*, *tractor*) words.

To compare how British and American parents interact with their babies, we will also ask some families with 7.5-month-old babies to borrow a special digital recording device called LENA from us. LENA (Language Environment Analysis, [www.lenababy.com](http://www.lenababy.com)) records the speech that babies hear during their waking hours. As well as capturing spontaneous interactions between parents and babies during the recording period (usually over a weekend), we will also ask families to perform certain tasks with their babies, such as telling them a story from a picture book. We will be looking at things like intonation, the length of sentences, the number of different words and the total amount of speech that the babies hear. It will be fascinating to see how parents on both sides of the Atlantic interact with their young children and whether this can help us to understand why American babies seem to start recognising words within sentences earlier than British babies.

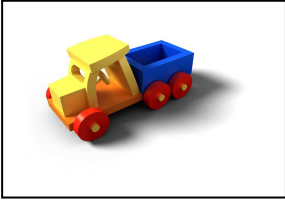
### **2. Another New Study: the Link between Speech Production and Perception**



A few years ago, we ran a study in Wales looking at babies' first consonants in babble and how they influenced what babies listen to when they hear speech. We found that when babies use just one consonant in their babble (e.g. b or d), they prefer listening to words containing that consonant. However, when babies use more than one consonant (e.g. b AND d), they prefer listening to words that contain a different consonant, one that they haven't yet learned to say (e.g. g). This means that beginning to use a second consonant may be a significant milestone in babies' language development and in their attention towards speech. As this is such an important finding, we are now planning to repeat this study here in York. We hope to recruit around 24 babies to take part in the study. It will involve one of our team visiting families in their homes on a weekly basis from the time when the baby turns 8 or 9 months of age. We will film parents at play with their babies for 30 minutes in each session. When babies reach a stage where they are producing a

consonant regularly in the recorded sessions, we will invite their family to come into the university to participate in our lab experiment. The babies will hear words that contain their favourite consonant and words that contain other consonants and we will see which type they pay most attention to.

### 3. Late to Talk Toddlers Study Update

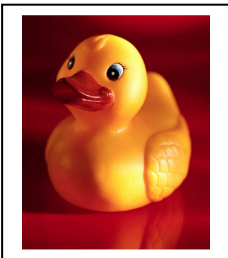


Over the past two years we have been observing a group of toddlers whose understanding of speech was good but whose vocabularies were smaller than those of other children their age. Our aim was to try and work out why some children are delayed at learning to talk, to see if we might then be able to help other toddlers with problems in the future.

One bit of good news is that a lot of the children we went to see, despite not having a very large vocabulary when they were two years old, had caught up with their peers by the time they turned two and a half.

We have been analysing the data of all the children and are comparing it with data gathered from children whose speech development was not delayed in any way. We are particularly interested in *systematicity* - in other words, in how children develop regular word and sound patterns in their speech. Some children use lots of words which sound very similar but mean different things. For example, we had one child who said "ba" to mean both *ball* and *bye*, and whose attempts at the words *arch*, *bath*, *rocks* and *lots* came out as "hatsh", "bash", "raktsh" and "latsh". Another child liked using "v" in the middle of her words, so *flower* was "va-va" and *rabbit* was "wa-vi". Another used "w" in the middle of every word, so we had "ah-weh" for *flowers*, "hawow" for *soil* and "a-weh" for *wheelbarrow*. Other children have only a few words but they all sound very different from each other and much more like the words they are meant to be (so, for example, the words *more* and *baby* will sound just the way they should). We are trying to develop a means of comparing systematicity across children. We are looking at how similar each child's words are to one another and how much they differ from the adult word that the child is trying to say. Our idea is that each child develops word patterns (we call these *templates*) based on the sounds they are physically capable of producing. The ability to learn to produce new words using these templates is essential for learning new words quickly. If a child has to learn each word individually, rather than fitting them into a small number of repeated patterns, they find it much harder to learn more and more new words. We are still gathering data in this project to test the idea.

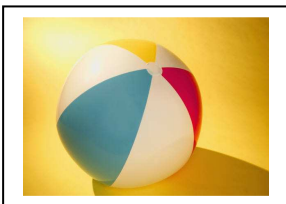
### 4. Longitudinal Head Turn Study Results



Many of you have been involved in our longitudinal head turn study over the past year. In this study we played babies two lists of words. The first list contained words that babies hear around them a lot, such as *hiya* and *bye-bye*. The second list contained unusual words that they wouldn't have heard before, such as *manna* and *bebop*. We were interested in whether the babies would have a preference for one type of word (familiar or unfamiliar). But we also wanted to know whether there is a memory effect when babies come into the lab twice to do the same experiment. A previous study we ran in Bangor led us to suspect that infants remember not just the experience of being in our lab but also the actual words played to them during the experiment. When they came to the lab more than once to do the same experiment, they behaved differently to babies who were visiting for the first time at the same age. So we had two groups of babies in the longitudinal study in York - one group who came to the lab only once, aged 11 months, and one group who came twice, at both 9 and 11 months. All groups heard the same words spoken by a female. We still need to finalise our results, but so far it seems that the 11 month olds who came only once and the 9 month olds preferred listening to the familiar words, but that the 9 month olds when they returned as 11 month olds had a reduced interest in the familiar words relative to the unfamiliar words. So it appears that the two groups of 11 month olds are behaving differently.

So that we can test babies twice on the same study in future to chart their language development, we now need to work out how we can counter this memory effect. We need to see what changes we can make to the word lists to make the second session less similar to the first one from the babies' point of view. So, for example, would using a male speaker for the first visit and a female speaker for the second make the 11 month olds who come twice behave more like the 11 month olds who hear the words for the first time? We will continue testing babies and keep you posted about the results.

### 5. Babbling Babies Study Update



Our big *Babbling Babies* ("Dynamic Interactions Between Perception and Production") project is in its final stages. Over the past year and a half we have visited 59 babies in the York area, following their language development between the ages of 9 and 18 months. The last few babies have now "graduated" from the study so all our visits are done. It has been such a rewarding project and we must extend our most sincere thanks once again to everyone who took part. We still have much work to do analysing all the data we have gathered, which will keep us very busy in the months to come. We will let you know what we find out in future newsletters.

So that's all from us for now. As always, please mention us to any friends or relatives with young babies who you think might be interested in taking part in our studies.

With very best wishes from the Infant and Toddler Language Studies team,

**Marilyn Vihman, Tamar Keren-Portnoy, Rory DePaolis, Rebecca Dodgson, Amy Bidgood, Helena Sears and Michelle McGillion**