UCL
Communication Clinic

Research Update

Issue 2, January 2018

Introduction

Two years ago we established the Research Volunteers Register. This allows people with communication difficulties who are interested in taking part in research to link up with researchers and projects. Some of the projects involve trials of new therapies. Others explore new ways of assessing speech and language. The researchers can be students undertaking their first projects, through to senior members of staff. All are important: the students are the future leaders of research. In this newsletter, students and staff describe some recent projects. You will see that some projects led to the award of national prizes. Others resulted in publications in important journals, allowing new advances to be shared with other researchers and clinicians from around the world.

People with communication difficulties and their families and friends are central to these achievements. Volunteers willingly give up their time and tackle the challenges of new activities. Without you, the research would not be possible. We are immensely grateful for your enthusiasm and collaboration in learning more about communication difficulties, finding the best ways to assess speech and language, and ultimately find better treatments.

This year, we also held the first Communication Clinic conference. We tried to explain our projects and findings in an aphasia-friendly manner. We discovered that this is not always easy. We will work harder on our communication skills at future conferences. Research volunteers raised important issues at the conference. In particular, many wanted more feedback on their performance. Some researchers (mainly me!) explained why this is sometimes difficult. But the suggestion is important. We will think hard on how we can do better.

Thank you for being part of our research. We look forward to working together in the future.

Professor Rosemary Varley

Head of Department, Language & Cognition

Listening to sentences

Claudia Bruns
Vanessa Meitanis

Why is it important?

Most people with aphasia find **sentences difficult**.

We looked at how people with aphasia **listen and react to** different types of sentences.

We worked together and asked **2 questions:**

Are some phrases easier than others?
For example: "fish and chips" **vs.**
                  "bread and chips"

Claudia

Do people with aphasia notice grammatical mistakes?
For example: "Mary hopped frogs" ✗
                  "Mary chased frogs" ✓

Vanessa

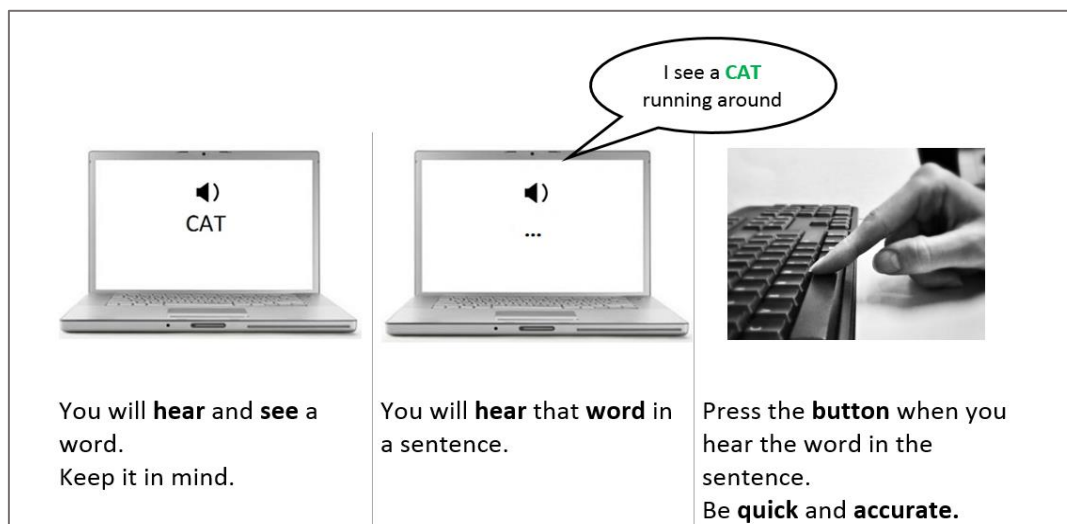## Our participants

People with aphasia   People without aphasia

What participants did

Participants **listened** to sentences and **pressed** a **button** when they heard a certain word. We measured how **quickly** participants pressed the button.

Here is an example of **our task**:

| You will **hear** and **see** a word. Keep it in mind. | You will **hear** that **word** in a sentence. | Press the **button** when you hear the word in the sentence. Be **quick** and **accurate**. |

Main findings

For most individuals with aphasia, **common phrases** like "fish and chips" are **easier** than **less common phrases** like "bread and chips".

Most individuals with aphasia do **notice** that something is wrong a sentence like "Mary hopped frogs". But some types of errors are easier to spot.

What we learned

- The computer task is a **new** way of **assessing language problems**
- The task is similar to **natural conversations**: you have to **process** words and sentences **quickly**
- We are learning about how aphasia affects **speed of listening** and understanding
- The results **help** in designing **new therapy** for aphasia

The impact of background noise on speech output in people with aphasia

Luisa Zenobi-Bird

Why is it important?

Communicating in **noisy** environments is **difficult.**

The research will help understand **how** people with aphasia **cope with noise.**

This may lead to **new therapies** to help people with aphasia.

What participants did

Participants described a picture 3 times:

1. In a **quiet c**ondition

2. In **cafeteria** noise

3. With **another person speaking** in the background

Findings

People with aphasia spoke more **loudly** in noisy conditions.

People with aphasia increased their **pitch** in noisy conditions.

People with aphasia found it particularly **difficult** to **think** with **another person speaking** in the background.

Luisa's project and Tom's (on page 7) jointly won the **Tavistock Trust for Aphasia** University Student Prize 2017

The linguistic complexity of speech produced in background noise

Hollie Wright

Why is this important?

Some people with **aphasia** find it **hard** to speak in noise

It is **unclear:**

- how **noise changes speech**
- if **different noises** have **different effects** on speech

Linguistic complexity includes: vocabulary, words per minute, utterance length

What participants did:

Participants heard **different noises** through **headphones**

Participants told the **Cinderella story**

Participants **rated** how **difficult** they found it to **speak**

Findings:

People with aphasia are **better** at **speaking in noise** than they think

Information, speed, vocabulary and **grammar** were the **same** in noise

People with aphasia and **controls** made the **same changes** to their **speech**

Speech was the **same** in **different noises**

It will be **helpful** to conduct speech and language **therapy** and **assessment** in **noise**

A survey of speech and language therapy provision for people with post-stroke dysarthria in the UK: patient perspectives

Sam Nerminathan

What is dysarthria?

Dysarthria is a medical term used to describe a communication disorder that affects **how a person's speech sounds**. A person with dysarthria may **find it hard to move their tongue, jaw or lips**, and/or find it **hard to control their breathing** when speaking.

Why do we need to research this?

Stroke-related dysarthria can have a **negative impact on a person's emotional wellbeing and quality of life.** Speech and language therapists (SLTs) support people with communication difficulties after stroke.

The aim of this study is to find out about what people with stroke related dysarthria **think about of speech and language therapy services in the UK.**

How we gathered the information

The project team developed a questionnaire for people with stroke-related dysarthria. This included questions about their **experiences of speech and language therapy**, as well as **what factors make up a perfect service**.

What we found out

The majority of people who filled out the questionnaire were positive about **speech and language therapy**. It helped people with stroke related dysarthria to **improve their speech** and **increase confidence.**

People with stroke related dysarthria think a perfect SLT service would **provide therapy when people need it** (even several years after their stroke), and **include family and friends.**

How important is pitch when deciding if a sentence is good or bad English?

Tom Shortland

People with aphasia may find some complex sentences **difficult to understand**.

But research has found they **can still tell good from bad** English. How do they do this?

One option is that instead of deciding based on **grammar**, they decide based on **pitch** – the rising and falling tones across a sentence.

Pitch in sentences has a **predictable pattern**, which would be different in good and bad sentences.

What participants did

People listened to recordings of sentences. Half the sentences had their **pitch removed** by a computer program.

Participants decided if each sentence was good or bad English by **clicking a button.**

Findings

People with aphasia **were still able to decide** if a sentence was good English or bad English **when there was no pitch.**

This means **pitch is not of special importance**. People with aphasia can **use grammar** to decide.

Knowing more about **how people process sentences** is important for **directing future therapy**.

Thank you to everyone who took part

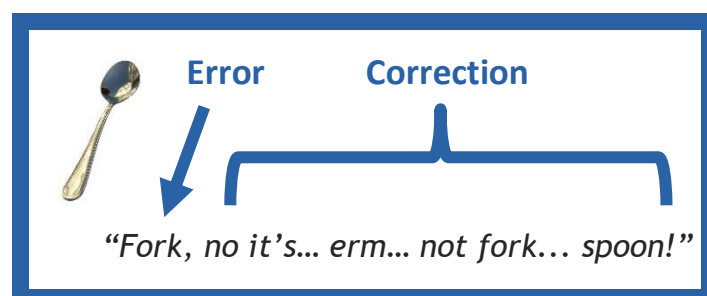# Self-correction of errors in different language tasks

Sinéad
Munday

Why is this important?

People with aphasia can sometimes **correct** mistakes they make when speaking.

If someone can correct themselves they can **still get their message across**.

> Error   Correction
>
> *"Fork, no it's… erm… not fork… spoon!"*

Trying to make a correction **shows other people there is a problem**, even if the correction is not successful.

It is an important communication skill. There has **not** been much research.

What people did

This study looked at self-correction in **three different speaking activities:**

| Picture naming | Story telling | Conversation |
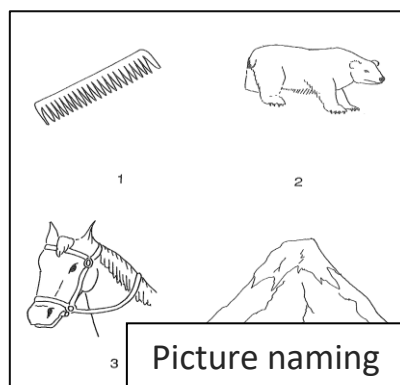
Comb, bear, horse   *At midnight she ran away from the ball…*   *"And then he…"*
*"Hang on, was he still at home?"*

Findings

There was **no relationship** between self-correction rates in the different activities.

Conclusions

Different self-correction skills are used in **different tasks**.

One kind of language activity (e.g. picture naming in therapy) does **not** tell us directly about another kind of activity (e.g. conversations with family and friends).

Investigating how **speaking rate** and **contextual information** affect the **non-native accent comprehension** in adults with **aphasia** after stroke
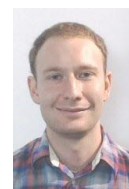
David Rank

Why is this important?

This study's results might help to improve the **advice** we give to **foreign accented speakers** when speaking to people with **aphasia**

What participants did:

Twenty people **with aphasia** and twenty people **without aphasia** listened to 120 sentences spoken by a foreign accented speaker.

Listeners had to **choose** a picture that matched **the last word** in each sentence.

Some sentences were **normal speed** and some sentences were **slower speed**.

Some sentences contained words that were related to the last word (e.g. "she drank a cup of tea") and some did not (e.g. "she talked about the tea"). This was called '**contextual information**'.

Main findings:

Overall, the **slower speaking rate** did **not** affect the **accuracy** or **response times** of either the group with or without aphasia.

However a few **individuals** with aphasia **did benefit** from the slowed speed.

People with aphasia particularly **benefited** from the presence of **contextual information**.

Foreign accented speakers need to **provide additional contextual information** to **support** the **comprehension** of people with **aphasia**. They can do this by **establishing the topic** when they speak.

Categorisation in aphasia
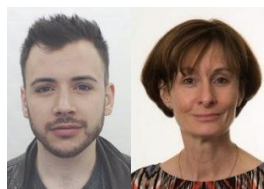
Jack Santos Silva
Rosemary Varley

Why important

Some scientists think words are important for some types of thinking e.g. making decisions about members of a category or 'family'.

It is important to learn more about how aphasia affects thinking: does this happen to all people with aphasia, or certain types of aphasia?

Our participants: people with

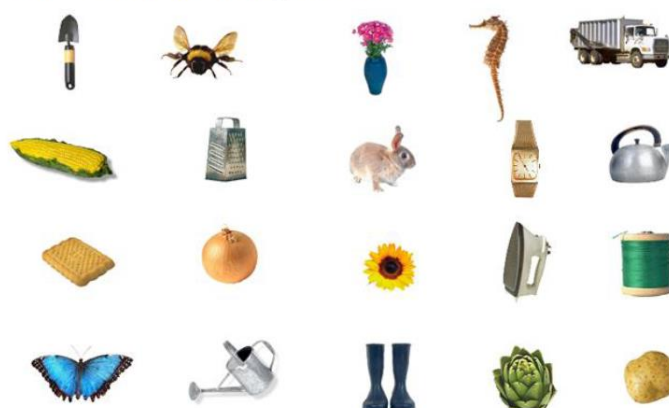Aphasia   Parkinson's Disease   No brain injury

What participants did

People looked at a computer screen

Found pictures belonging to a category or 'family' (e.g. vegetables)

Named pictures

Please search for: vegetables

Point here when done

Main findings

People with aphasia were as accurate as people without aphasia.

People with aphasia were slower in making decisions.

What we learned

People with aphasia do not have problems in this type of thinking.

There are a number of possible reasons for slower decisions: e.g. people with aphasia are more cautious; problems in using hand/arm.

Colour and emotion:
Measuring wellbeing creatively

Michael Dean

Wellbeing includes emotions, such as happiness, but also interest, engagement, meaning and **satisfaction**.

Measuring wellbeing can show whether social policies and health interventions work.
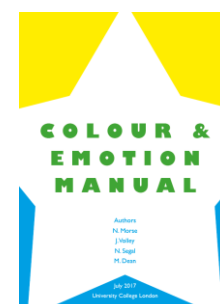
People with aphasia find **interviews** or **questionnaires** about wellbeing that use words **difficult**.

Seven people with aphasia took part in the project, working with an artist to design a **non-verbal measure**. There were 3 workshops and home activities.

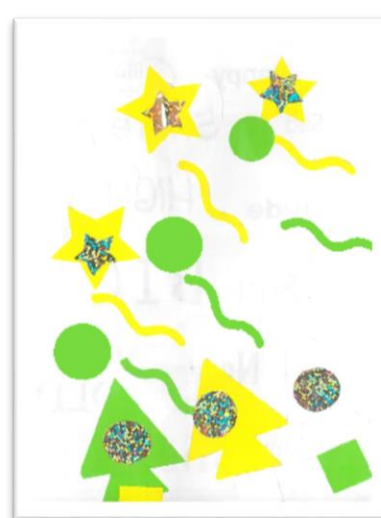We used coloured stickers as they are easy to handle.

The team designed a Colour Diary and handbook of activities.

There is an **exhibition** of images made during the project at UCLH Arts Street Gallery (14th January – 21st February 2018).

"Routine"

"Happy"

Research about self-correcting errors when speaking

Why is it important?

Some people make **mistakes** when speaking.
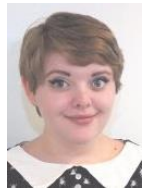
Gina Pemberton   Mary Moos

They **may know** they have made a mistake or they may be **unaware**.

They may **correct** the mistake or **pause**.

Knowing how people respond to errors can help us **improve** how we deliver **therapy**.

What will it involve?

You will visit **Chandler House** at UCL **1 or 2 times** to meet a researcher.

You will complete several tasks: **naming pictures**, **telling a story**, **completing a questionnaire**, and **having a conversation** with a conversation partner.

Interested in taking part?

Contact us **for more information**:   020 7679 4249   communicationclinic@ucl.ac.uk

Getting in touch…

If you would like to take part in any of our research projects, please get in touch

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