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The Sign Segmentation Project at City University

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When people use language, they usually know where a sign or a word starts and finishes.

When children learn language, they learn how to put signs or words together. Researchers understand how spoken words are put together in a sentence. People listen to sounds and when a word ends, people hear a gap between words and understand that there is more than one word. They know that there are different words in a sentence and not just one long string of different sounds.

Do researchers understand how Deaf people put signs together in a sentence? What part of the sign do Deaf people watch?

Our research question is: we want to know how Deaf people when they sign or watch signing are able to understand meanings through picking out signs from a sign stream. This will help us to understand how people learn sign language.

Learning to sign, as learning to speak a language, is a complex process and is the end result of many factors working together. In this project we concentrate on some of these factors that we think are important. Specifically, we aim to understand which parts of the sign (e.g. the handshape or the movement or the location of the sign, for example) are important when people learn sign language.

We also aim to find out when is the best age for people to learn sign language. This is important because the majority of deaf adults are not native users of a sign language. Less than one in ten deaf children are born to deaf parents. This means that many deaf children, are exposed to sign language, their first language, in late childhood, and this is different from hearing children who learn language earlier.

This project will look at how the way the sign is formed and the age at which sign language is learnt could influence performance on specific tasks.

At first, we used the sign spotting activity. This task has been used in research with spoken language; listeners try to spot real words that are combined with nonsense words. People usually pick up words faster when they are combined with possible words (but not real words), than with impossible words. For BSL, we filmed 32 real signs in pairs with 16 possible (but not real) BSL signs and 16 impossible signs. We asked people to spot real signs.

We tested 60 Deaf people from all over Britain (London, Liverpool, Birmingham, Bristol and Edinburgh). There were native signers, people who learnt BSL after the age of 6 and another group who learnt after the age of 11.

We found that people spotted real signs faster when they were with possible signs. People were slower when they saw a real sign with an impossible sign. We also found that more mistakes were made when a BSL sign was with an impossible sign and less mistakes when a BSL sign was with a possible sign. This is the same as with spoken languages. So we found that people watch BSL in the same way as hearing people listen to spoken words.

We also looked at the mistakes people made. People made more mistakes with movement and handshape than with location. This means that the location of a sign is easier for a signer to observe than the movement or the handshape.

This is interesting because another research study in the USA (Mathur and Best, 2006) found that people spotted sign pairs that were related by handshape and movement faster, than pairs of signs that were related by location.

Our next step is to make a test which will help us understand the role of the movements between signs as a cue to sign boundaries. We will film signs again and ask people to watch and respond when they see a sign. We hope to report to you on our findings when we have collected all the data.

Our research will help us to understand BSL more. This means that we can find which parts of a sign are important. This may be useful for people who are planning BSL courses for children or for adults.

This project is funded for three years by the Economic and Social Research Council, and is led by Dr Gary Morgan, from the Deafness Cognition and Language Research Centre, and Dr James McQueen from the Max Planck Institute on Psycholinguistics in Holland. Dr Eleni Orfanidou is postdoctoral researcher and Robert Adam (Deaf) is postgraduate researcher.

Watch our website for updates:
http://www.staff.city.ac.uk/g.morgan/sign_segmentation/index.html

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This project is an affiliated project to the Deafness Cognition and Language Research Centre.

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