

The use of gesture by children – both deaf and hearing

Gary Morgan and **Abi Roper** examine why children use gesture when they communicate and how to analyse it

Before discussing gestures, we need to address the 'to sign or not sign' question first.

The long-debated topic in the language development of deaf children is whether manual communication should be encouraged or not. For many decades there have been arguments about signing versus speaking – does sign language help or hinder spoken language? The answer to this question is far from simple. But the recent growth in interest in baby sign classes for hearing infants shows us that while signs are not going to speed up linguistic development they do not stop children's language growing (e.g. Kirk, et al 2013).

For deaf infants, a main question is how much signing versus speaking is the child exposed to in the first 18 months of life? Although there is debate about this, there does not appear to be any detrimental effects of signing on spoken language until the point at which *the amount of signing the child is exposed to eclipses the spoken language*. The tricky question is how to promote good communication and interaction in order to enable spoken language by first using sign, gesture and word. Signs and gestures might be a way of enabling young deaf children to learn about concepts around them symbolically while they are waiting for their aided hearing to become functional. This fills the important first 12-18 months with interaction, communication and language.

This addresses the remaining difficult question of what happens if the cochlear implant does not work and the child is left with a significant spoken language delay? While CIs are continually improving, there still exists a range of outcomes in the young deaf child population. Many researchers would advise against waiting to see if spoken language develops before starting to sign. Learning to communicate with signs and gestures as well as speaking does, however, provide a very natural way for parents to interact effectively with their infants and for the infants

themselves to grasp the basic turn taking and joint attention strategies all spoken languages are based on. Early intervention should be aimed at effective joint attention, intentions to communicate and the first symbols.

This gets us back on to gestures. So why do children move their hands before and during their language development? This is a very interesting question which became a hot topic in the 1970s and has been taken up again more recently in research. Here we summarise a few papers written by our research team. We also briefly describe a gesture checklist that ToDs might find useful to monitor and evaluate how deaf children are using their hands and bodies during their communication and language development.

Deaf children use gestures with signed and spoken language in order to increase their communication

The majority of this section describes how deaf children with hearing parents (DCHP) use gestures while they are learning to speak and sign. However, there is evidence that even deaf children with deaf parents fall back on gesture when they need to describe something beyond their current level of sign language grammar. Morgan, Herman, Barriere & Woll (2008) described the signing of a native signer between 1;6 and 3;0 (years;months) and how at the start of his language development gestures were used to describe concepts before the classifier system took over. Classifiers are signs that show how something is positioned or moves through space. See figure 1.

The authors first identified gestures, lexical signs and classifiers before looking at how the classifiers developed. They described a pattern of whole body gestures then gestures and real objects combined with parts of the classifier and finally classifiers without gestures.

During the first three years, the native signer combined gestures with signs before mastering the grammar. See figure 2 overleaf.

If native signers use gesture it should be no surprise that DCHP will be gesturing while they are learning to sign and speak. It is important to be able to understand the reasons why this happens. In a couple of more recent papers, Lu et al (2016) and Thompson et al (2017) described groups of deaf and hearing pre-school children naming pictures with words, gestures and signs. Across the hearing children, we observed gestures with action meanings (e.g. brushing your hair when naming a picture of a comb) at the same time as, or instead of, spoken words. The hearing children were still developing their vocabulary and used these gestures side by side with words to reinforce their communication. The same multi-modality was observed in DCHP who had smaller spoken and signed vocabularies and so used gestures as another resource.

Lu et al (2016) looked in more detail at the gestures used



Figure 1 'The car went under the bridge'

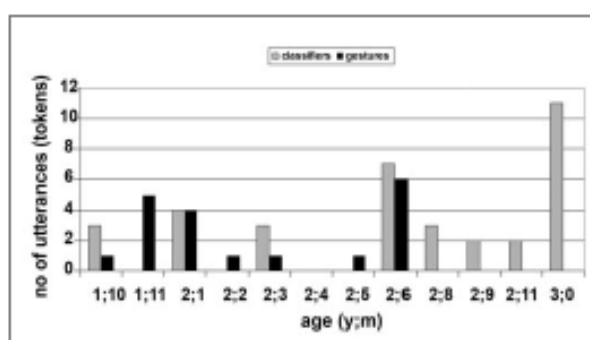


Figure 2

across the deaf groups on the same naming task. Native signers rarely gestured but instead used a semantic alternative if they did not know the sign for the picture (eg signing DOG instead of FOX) whilst DCHP used many gestures that looked like the action connected with that object. The important conclusion from these two studies was that DCHP (as hearing children do) will use gestures, signs and words mixed together in the first stages of language development. If all modalities are taken into account, these children demonstrate a better communicative repertoire than when only spoken or visual channels are taken in isolation.

Professionals working with deaf children's language development might therefore be interested in ways of capturing the types and functions of gestures used during learning

Roper and colleagues are developing a checklist with the aim of capturing and describing the different types of gesture used during communication (Roper et al, 2017). Here we describe the considerations you might wish to undertake when exploring and supporting the use of gesture in your practice. The development of the City Gesture Checklist (CGC) is based upon detailed gesture research regarding adults with aphasia. (It is often appropriate for this group to make use of gesture to support or extend their verbal communication after a stroke). Whilst the population being explored here is different from that of deaf children, many principles are equally relevant to the understanding and measurement of gesture for both groups.

The measurement and recording of the use of gesture typically requires an intricate and time-consuming process of coding video data using specialist computer software. We recognised that this is a somewhat impractical process for speech and language professionals working in the real world. We therefore aimed to create a one-page checklist that professionals can use in real time to count and classify the types of gestures they observe a person using during communication. Our checklist takes into account the

influential Gesture Continuum (Kendon, 1980) which categorises manual communication into the following forms: gesticulation, pantomime, emblems (conventional gestures such as the 'thumbs up') and sign language. We also consider further gesticulation categories such as pointing, and pretending or outlining (iconic) gestures (McNeill, 2006) as well as the use of numbers and idiosyncratic gestures.

These categories offer a starting point for readers to consider when exploring and recording gesture use in their own setting. If you are considering making a record of a student's gesture, further practical things to consider are:

- What types of gesture do they currently produce?
- How do they combine gesture with speech and other strategies?

Building on the above profile, any gesture analysis you undertake should also consider whether you wish to target either the gestures that a student finds more difficult or those that are most effective communicatively. You may wish to consider working on the ability to select salient features for use in gesture and the possible avenues for promoting flexibility of use. As previously mentioned, the CGC is currently in development at City, University of London. Interested readers can contact Abi.Roper.1@city.ac.uk for more information. Once completed, we look forward to sharing the tool with professionals interested in the use of gesture in communication. In the meantime, we hope the above guidelines will support readers to consider how they might begin to explore the use of gesture for the students they work with.

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