



Taking a Closer Look at Gestures: Implications for Intervention with Late Talking Children

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We all know gestures are an important part of communication development. In fact, if you think about it, children's earliest communication is through use of their hands rather than their mouths (Goldin-Meadow, 2015).

There are many things we, as speech language professionals, know about early gesture use. But when it comes to assessing gesture use and targeting gestures in intervention with late talking children, we may still have some unanswered questions, such as:

- What are the most significant milestones in gesture development?
- Do certain gestures predict language development?
- What is the best way to assess gestures?
- Which gestures should be targeted first in intervention?
- How can I help parents support their child's use of gestures?

Two recent articles in *Perspectives on Language Learning and Education* shed some light on this topic:

- Susan Goldin-Meadow (2015) explains how gestures predict the onset of specific linguistic milestones in an article titled, "Gesture as a Window onto Communicative Abilities: Implications for Diagnosis and Intervention"
- Nina Capone Singleton & Jessica Saks (2015) discuss how co-speech gestures, and in particular co-speech iconic gestures, can promote language development in an article titled, "Co-Speech Gesture Input as a Support for Language Learning in Children with and Without Early Language Delay"

Below I summarize some of the highlights from these two articles, as well as some content from an article by Capone & McGregor (2004) regarding typical gesture development. I will also describe how gestures are addressed with children who are late talkers in the recently updated Target Word™ Program.

How Gestures Develop

In typical development, children begin to use gestures as early as 8 or 9 months of age. The period between 8 – 18 months marks several important milestones when it comes to gesture development:

- **deictic gestures emerge at approximately 10 months** (before the onset of spoken language) – these gestures involve pointing to or drawing attention to an object or event in the child’s immediate environment. First *showing* emerges (holding up an object), then *giving* (giving an object to someone), and finally *pointing* (toward a specific object, location, or event) (Mastrogiuseppe, Capirci, Cuva & Venuti, 2015).
- **ritualized requests emerge between 9-13 months** – these requesting gestures include reaching with an open-and-closed grasping motion, putting an adult’s hand on an object, and pulling an adult’s hand towards a desired item or action
- **play schemes develop at 12 months** – these are actions carried out on an object that demonstrate the object’s function (e.g. drinking out of a toy cup). Play schema are thought to show the child’s capacity for symbolic representation and the way a child uses the objects can give insight into a child’s semantic knowledge.
- **some iconic gestures usually develop before a child has acquired 25 words** – also known as “representational” or “symbolic”, iconic gestures illustrate an aspect of the item or action they represent. Blowing to indicate bubbles or flapping one’s arms to represent a bird are examples of iconic gestures. Some iconic gestures are culturally defined, such as waving to greet.
- **gesture and spoken words are almost always mutually exclusive between 12 and 18 months** – i.e. they use either a gesture or a word, not a combination of the two
- **children begin to produce gesture + speech combinations at around 18 months** – children first produce **complementary gestures**, which contain information that complements the information conveyed via speech (e.g. point to a dog and say “dog”). Soon after, children produce **supplementary gestures**, which provide additional information to that conveyed via speech (e.g. pointing to a dog and saying “big”).

(Capone et al, 2004; Goldin-Meadow, 2015)

Having a good sense of these important milestones helps us effectively assess a child’s gestural communication and provides an index of his cognitive abilities (Capone et al, 2004). But closely examining a child’s gestures can also help us predict when certain linguistic constructs will emerge.

Gestures predict the emergence of specific language milestones

Gestures precede the onset of spoken language, but research has also shown that they predict the emergence of specific linguistic constructions (Goldin-Meadow, 2015).

Did you know...

- children who produce more gestures early on have larger expressive vocabularies later in development
- parents who are encouraged to model gesture-word pairs in daily interactions with their infants have children who ~~begin to~~ use symbols earlier
- a child who produces a deictic gesture about an object (points to it) will likely learn the word for that object within 3 months
- children produce gesture + word combinations before word + word combinations
- children who frequently use supplementary gestures early on are likely to use relatively complex sentences a few years later
- children who convey a wide variety of different meanings via gestures early on are likely to have a larger expressive vocabulary a few years later
- the age at which children first produce a complimentary gesture about a noun (e.g. point to a cup and say “cup”) precedes and predicts the onset of determiner + noun combinations in speech (such as “the cup”)
- children’s gesture use also predicts their narrative abilities later on. At age 5, children who can demonstrate a character’s point of view via gestures tend to produce well-structured stories in the later years. Goldin-Meadow (2015) cites an example of perspective-taking via gestures: if a child moves her upper body and head back and forth to describe a woodpecker’s actions versus moving her hand in the shape of a beak, she is taking the perspective of the bird (if she used her hand as a beak, it would be from the perspective of someone looking at the bird).
- early gesture use predicts receptive and expressive vocabulary in children with brain injury (Goldin-Meadow, 2015; Capone Singleton et al, 2015)

Assessing children’s gestures

Due to the relationship between gestures and language, Goldin-Meadow explains that “charting early gestures allows us to predict when a child is likely to acquire particular linguistic constructions in speech” (2015, p. 57). This early tracking of children’s gesture development can also help determine whether a child is at risk for a language delay. For example, if a child expresses few different meanings via gestures, this may indicate that he is at risk for later vocabulary deficits, or if a child produces few gesture + speech combinations, this might signal later delays in sentence construction (Goldin-Meadow, 2015). Looking at children’s early gesture use promotes early identification since a delay in gestures can be detected even before the onset of speech.

Assessing children's gestures can be tricky. Goldin-Meadow calls for the development of norm-referenced elicitation tasks that encourage gestures for diagnostic purposes since examining long samples of children's interactions for gesture use is not usually feasible. Until such tests are developed, there are some tools that can help us gather information about gestures, including the Rossetti Infant-Toddler Language Scale (Rossetti, 1990), the Communication and Symbolic Behaviour Scales (Wetherby & Prizant, 2002), and the MacArthur Communicative Development Inventories* (Fenson, Dale, Reznick, Thal, Bates & Hartung, 1993) (Capone et al, 2004).

A new tool for gathering information about parents' responses to their child's gestures has been developed for the Target Word™ Program. Completed at the pre-program consultation, the purpose of the "Gesture Survey" is to raise parents' awareness of their child's gestures and get them to start thinking about ways to respond to these messages in order to promote their child's communication.

Addressing gestures in intervention

Which gestures to target

Capone Singleton & Saks (2015) make the case that pairing gestures with speech ("co-speech" gestures) promotes language development in children with and without early language delay, especially *iconic* co-speech gestures.

Iconic co-speech gestures are helpful because they:

- **build semantic knowledge** - they create links between words and their referents because they help to illustrate the meaning of the word they represent. This is helpful for children with Language Impairment, who have weak semantic knowledge.
- **are useful for teaching object names** - typically developing children with early vocabularies dominated by object words demonstrate larger vocabularies overall. In addition, they reach other semantic and morpho-syntactic milestones sooner than other children. Therefore, establishing a rich object vocabulary for late talking children is a primary goal.
- **can promote shape-based word learning** - typically developing children learn new instances of a word based on the object's shape or perceptual-sameness (e.g. they assume all things shaped like a cup are called "cup"). Children who are precocious at shape-based word learning have larger noun vocabularies. However, children with early language delay do not demonstrate this shape bias for word learning. Capone Singleton et al (2015) suggest that iconic gestures that highlight the shape of objects may be particularly helpful for teaching object names.

Capone, Singleton et al (2015) review some interesting research that demonstrates the power of iconic "shape gestures" over other types of co-speech gestures. In Capone and McGregor (2005) and Capone

Singleton (2012), toddlers learned new words for object labels faster with shape gestures (e.g. making one's hands round like the shape of a ball to model "ball") than gestures that demonstrate the function of the object (a throwing gesture to demonstrate "ball"), pointing to the object or no gesture at all. The children who were exposed to shape gestures were also able to extend the taught object labels to new examples of the object (e.g. new examples of balls) more easily. Function gestures also facilitated learning, but not as much as shape gestures. A pilot study is currently under way to demonstrate the same phenomenon in children with early language delay. Preliminary results indicate that iconic shape gestures may be helpful in this population as well.

Therefore, Capone, Singleton et al (2015) suggest that clinicians working with late-talking children should:

- teach object names
- use iconic gestures to highlight words, especially shape and function gestures
- ensure speech is paired with gestures to make the link between the word and the referent explicit
- "use a gesture as a retrieval cue to aid in producing words that may be on the cusp of activation" (p. 69)

Helping parents encourage gestures

Sometimes parents are reluctant to focus on gestures, thinking that the emphasis on nonverbal communication may discourage speech. Some discussion with parents may be necessary before targeting gestures in order to ensure parents understand the value of promoting and modeling gestures. Some points to share with parents include:

- **research has shown that increasing parents' co-speech gesturing results in receptive and expressive language gains for their children** – and this has been shown with both typical children and children with expressive language delay
- **gestures provide a child with a means to produce particular meanings with their hands** at a time when it would be difficult to express those meanings by mouth
- **child gestures elicit speech from listeners** - in this way, the listener can provide the spoken word(s) that match the child's meaning, thereby modeling within the child's zone of proximal development

(Capone Singleton & Saks, 2015; Goldin-Meadow, 2015)

While parents are encouraged to model gestures and interpret their child's gestures in all of the Hanen programs for parents, there is a special focus on gestures in the Target Word™ Program. Some of the ways gestures are incorporated into the Target Word™ Program include:

- **parents complete the Target Word "Gesture Survey: A look at how I talk with my child"**, to raise their awareness of messages their child sends that include gestures and how they respond to them

- **choosing target words for which their child already uses gestures and adding a gesture to target words that don't have a corresponding gesture**
- **learning to use co-speech gestures** - parents learn to copy their child's gesture and add a word, or add a gesture and the matching word, if their child doesn't yet have a gesture to represent the word.
- **learning to highlight new vocabulary with the "TARGET What You Say" strategy** - the "G" in TARGET stands for "Gesture or show". Parents are encouraged to highlight words by gesturing or holding up objects whenever possible.

These principles follow Goldin-Meadow's suggestion:

"It may be beneficial for parents, teachers, and clinicians to encourage children to gesture, and then use those gestures to guide the linguistic input they offer children" (2015, p. 58)

Summary

As Capone et al (2004) summarize, "Gesture and language development are intrinsically linked, and gesture serves many functions as children navigate spoken language acquisition" (p. 184). Gestures can also serve many functions for those of us charged with assessing and encouraging children's language development, because gestures:

- provide information about a child's symbolic and concept development
- aid in determining the risk of a persistent language impairment
- help us predict the emergence of specific language constructions
- guide goal-setting
- scaffold language learning

(Capone et al, 2004)

With a good understanding of gesture development and the many ways gesture can support young language learners, we should feel well-armed to support children's language development via gestures. And by working with parents and encouraging them to increase their use of gestures when they interact with their child, we are supporting the child's receptive and expressive language development.

* <http://www.hanen.org/MyHanen/Shop/Products/CDI--Complete-set.aspx>

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