The way you speak to your baby can tell a very specific story.

Through the subconscious mechanism of babylalk, a parent's voice can offer encouragement, discipline or comfort, and according to new research findings, it can even facilitate early language development in infants.

A research paper published by the MARCS Institute (opens in new window) at Western Sydney University shows that mothers unconsciously shorten their vocal tract when speaking to their babies, creating a higher pitch that is thought to have evolved from pre-speech, primate ancestors to provide comfort and appear less threatening to offspring.

Research leader Dr Marina Kalashnikova suggests that it was only once human language emerged, that babylalk, formally referred to as infant directed speech (IDS), acquired a second purpose – to facilitate language learning in infants.

"Infant directed speech is actually a powerful tool that parents instinctively use to aid language development in their infant's first months and years of life," says Dr Kalashnikova.

"Shortening of the vocal tract is not unique to humans – it is an adjustment that several species make to appear smaller and less threatening.

"But specifically for humans, by shortening their vocal tract, mothers produce clearer speech sounds (especially vowel sounds like ee, oo, and ah).

"Mothers' speech also sounds more similar to an infants' own vocalization and this has been proposed to drive their preference for IDS; further, infants prefer to listen to speech that is similar to the sounds that they produce."

In comparison to adult-directed speech, Dr Kalashnikova said IDS had simpler grammar; more varied pitch, longer pauses, greater emotion and inflection, as well as distinguishable speech sounds and exaggerated facial expressions.

This research, conducted by Dr Marina Kalashnikova, Dr Chris Carignan and Professor Denis Burnham from the MARCS BabyLab, is the first study of its kind to not only measure the sound qualities of the speech that mothers produce when speaking to their infants, but also measured the movements that they make when producing speech (the movements of their lips and tongue).