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NORTHERNILLINOISUNIVERSITY

Illocutionary Force of Infant's Representational Gestures: A Review of the
Research

A Thesis Submitted to the

University Honors Program

In Partial Fulfillment of the

Requirements of the Baccalaureate Degree

With Upper Division Honors

Department Of

Communicative Disorders

By

Cydney Bunner

DeKalb, Illinois

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Capstone Approval Page

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**Illocutionary Force of Infant's Representational Gestures:
A Review of the Research**

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ABSTRACT (100-200 WORDS):

Teaching infants to use representational gestures has become popular because their use has been linked with vocabulary acquisition. It is also known that infants use gestures for different purposes, or communicative intents. However, it is not known how infants' communicative intents relate to the types of representational gestures they use. Therefore this capstone includes a review of previous research and a study design for examining the relationship between communicative intent and representational gesture use. The proposed study utilizes fourteen infant-mother dyads who were taught five representational gestures and asked to record the use of the signs at home. They were asked to note how often the signs were used and for what purpose: commenting, requesting, or other. The study design is proposed to provide information that might inform intervention programs that teach representational gestures to infants.

The use of Baby Signs© (Acredolo & Goodwyn, 1988), or representational gestures, is a popularized practice believed to enhance language acquisition for children with typical and atypical language development (Capone & McGregor, 2004). Representational gestures have been defined as visible movement gestures made by a person that can be either imagistic or non-imagistic depending on whether they depict an image (McNeil, 1992). In this popular program, parents and infants typically attend classes that teach signs through books, songs, games and other activities. Then the parents are encouraged to use these signs at home. The Baby Signs© program offers many avenues for parents to find information and suggestions for teaching children representational gestures. The program also has a website to learn about the program, find classes, and resources such as books, videos, games, and other materials to aid in teaching Baby Signs©.

Acredolo and Goodwyn's research has shown that Baby Signs© can positively affect the process of learning to talk, specifically vocabulary acquisition (Acredolo & Goodwyn, 1996). Their study included 103 infants at the age of 11 months who were placed into two groups: Sign Training and a Non-Intervention Control Group. The parents of infants in the Sign Training group were instructed to use representational gestures with their child by modeling the gesture and pairing it with a verbal cue. The Non-Intervention Control Group was not instructed or trained to use representational gestures while communicating with their child. Acredolo and Goodwyn used interviews to obtain information about how often mothers and infants used each representational gesture. They also measured the number of words in each infant's expressive vocabulary and receptive vocabulary. They then created a "combined" vocabulary score (i.e., total of receptive plus expressive) that was used for analyses. They found that children in the Sign Training group had combined vocabulary scores that were significantly larger at 15 months,

19 months, and at 24 months than children in the control group (Goodwyn & Acredolo, 2000). They concluded that Baby Signs© not only help a child to express what they want, but also give insight to what the child knows about communication and language (Acredolo & Goodwyn, 1996).

As infants acquire language, they start out communicating in primitive ways such as gesturing that have distinct illocutionary forces. These illocutionary forces or communicative intents include labeling, repeating, answering, requesting, calling, greeting, protesting, and practicing (Bates, Benigni, Bretherton, Camaioni, & Volterra, 1979). First gestures are used to gain and sustain attention with adults. Infants begin to gain attention by showing-off, then progress to using objects, then deictic gestures, followed by ritualized request, and then using "play schemes" to depict the object in terms of function (Capone & McGregor, 2004; Crais, Douglas, & Campbell, 2004). The use of representational gestures in communication is important because, studies by Acredolo and Goodwyn (1985, 1988) suggest that 85% of infants use both representational gestures to label, to request, and to obtain or look for an object.. Yet researchers have not focused on the communicative intent of infants' representational gestures. We know that babies use gestures to comment and request, but researchers have not examined the illocutionary force of infants' representational gestures (Bates et al., 1979; Crais et al., 2004). Therefore, it is important to design studies that investigate not only the kind of representational gestures infants use but also their communicative intent.. Therefore, the purpose of the current project was to design a study to connect infants' representational gestures to their illocutionary forces.

Method

Participants

This current project utilizes data collected as part of a larger ongoing project at Northern Illinois University (Olson & Masur, 2011). The participants for the current study were fourteen infant-mother dyads. The infants were thirteen months of age and had expressive vocabulary sizes of less than sixty-five words and no signs of developmental delay according to the *McArthur-Bates Communicative Development Inventory: Words and Gesture* scores (MCDI: Fenson, Marchman, Thal, Reznick, & Bates, 2007). All infant-mother dyads identified themselves as white Caucasian. All participants lived in the northern Illinois area and reported living with the infants' fathers. The average age of the mothers was thirty years. Educational levels of the mothers were as follows: one with a high school degree, three with some college (i.e., never finished college, junior college degree, technical school degree), five with college degrees (B.S or B.A), and five with graduate degrees.

Procedures

At the 13 month visit mothers were instructed to teach 5 signs to their child and then to record the frequency and purpose of their use. The signs included, two of four verbs (throw, go, dance, open) that focused on the function of an object and two of four nouns (ball, duck, car, bear) that focused on the form of the object. The signs were chosen based on the following criteria: they could easily be pictured, were easy to make motorically, and all words were in the upper fifty percent of words 24 month olds have according to the MCDI. The dyads were separated into two groups. The first group was given the signs ball, duck, go, and dance. The

second group was given the signs bear, car, throw, and open. Both groups were given the sign for "more". All mothers demonstrated the ability to produce each sign.

When mothers left the experimental session, they were asked to use the 5 signs at home as they interacted with their children, to make observations of sign use, and to return when the infants were 17 months to discuss their sign use. The mothers were asked to record the frequency and purpose of both theirs and their infant's representational gesture use. Mothers were given a "sign-use checklist" to document that use. The sign-use checklist (Appendix A) was divided into infant's gesture use and mother's gesture use. First mothers were asked to notice when a sign was used and then what purpose the sign was used for. Mothers were asked to indicate the purpose or reason for using each sign as one of three categories, requesting, commenting, and other. They were then asked to rate its frequency of use on a four point scale, ranging from never, rarely, sometimes, and other. If the mothers did not fill out the form before arriving for the 17 months visit it was done with the researcher at the end of the session in an interview format.

Hypotheses

The current study will have 2 research questions 1.) Do infants use representational gestures more often to request or to comment?

It is hypothesized that infants will use representational gestures to request more often than to comment.. This hypothesis takes into account the research of Crais and colleagues (2004), who looked at the age of emergence for different gestures. They concluded that declarative gestures or "commenting" emerged on average at 9.33 months with a range from 8-11 months, and imperative gestures or "requesting" emerged on average at 11.91 months with a range from

11-14 months (Crais et al., 2004). So considering the participants' ages, it is reasonable to predict that they will be using the later emerging gestures.

2.) Are there differences in how infants use representational gestures that depict nouns and verbs?

It is hypothesized that verbs will be used more often than nouns for requesting and verbs will also be used more often than nouns for commenting. This hypothesis is based on the research of Namy, Vallas, and Knight-Schwarz (2008), that indicates that children used more gestures when parents enacted action on objects rather than gestural forms of the objects.

Planned Analyses

Analyses of the data collected will include tallying each gesture that was used to comment and each gesture that was used to request for each dyad. The numbers will then be compared to determine if there is evidence of a correlation between gestures and purpose, and also if there is a connection between the mother's gestures and the infant's gestures.

Discussion

It is hoped that the study will reveal information pertaining to the relationship between different types of representational gestures and their communicative intent. This information should inform programs designed to teach infants signs and it should better describe why there might be connections to vocabulary acquisition. Acredolo and Goodwyn (1988) believe that gestures are an important transitional vehicle to move infants toward understanding symbolic function and then to continue the "distancing" process towards complete language acquisition. If this study shows that representational gestures are used more by infants to request or comment,

then it may be possible to change how we teach and model representational gestures to enhance language acquisition.

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Appendix A

Infant Communication and Language Development
 Janet Olson & Elise Frank Masur

Northern Illinois University,

Please circle the answer that best describes your or your child's sign use

N=Never S=Sometimes
 R=Rarely O=Other

Code#: _____
 Date: # _____
 Visit#: _____

Signs	How often does your child use this sign to	How often do you use this sign to
Throw p, ph, c sl, nj	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.
Open p, ph, c sl, nl	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.
Bear p, ph, c sl, nl	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.
Car p, ph, c sl, nl	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.

Signs	How often does your child use this sign to	How often do you use this sign to
More	comment on a picture of object? (N R S O) request an item or action? (N R S O)	comment on a picture of object? (N R S O) request an item or action? (N R S O)
p, ph, c sl, ni	Other? (N R S O) Describe.	Other? (N R S O) Describe.
	comment on a picture of object? (N R S O) request an item or action? (N R S O)	comment on a picture of object? (N R S O) request an item or action? (N R S O)
p, ph, c sl, ni	Other? (N R S O) Describe.	Other? (N R S O) Describe.
	comment on a picture of object? (N R S O) request an item or action? (N R S O)	comment on a picture of object? (N R S O) request an item or action? (N R S O)
p, ph, c sl, ni	Other? (N R S O) Describe.	Other? (N R S O) Describe.
	comment on a picture of object? (N R S O) request an item or action? (N R S O)	comment on a picture of object? (N R S O) request an item or action? (N R S O)
p, ph, c sl, ni	Other? (N R S O) Describe.	Other? (N R S O) Describe.
	comment on a picture of object? (N R S O) request an item or action? (N R S O)	comment on a picture of object? (N R S O) request an item or action? (N R S O)
p, ph, c sl, ni	Other? (N R S O) Describe.	Other? (N R S O) Describe.

Please circle the answer that best describes your or your child's sign use

N=Never S=Sometimes
 R=Rarely O=Other

Code#: _____

Date: # _____

Visit#: _____

Signs	How often does your child use this sign to	How often do you use this sign to
Ball p, ph, c sl, nl	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.
Duck p, ph, c sl, nl	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.
Dance p, ph, c sl, nl	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.
Go p, ph, c sl, nl	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.

Signs	How often does your child use this sign to	How often do you use this sign to
More p, ph, c sl, ni	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.
p, ph, c sl, ni	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.
p, ph, c sl, ni	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.
p, ph, c sl, nj	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.
p, ph, c sl, ni	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.	comment on a picture of object? (N R S O) request an item or action? (N R S O) Other? (N R S O) Describe.
	How oftAn does your child use this sign to	How often do you use this sign to