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Running Head: Deictic Reference

Fatima Esseili

Spatial Deixis and Gesture in English: Adults vs. Children

Purdue University

Abstract

This study explored first language acquisition of spatial deictic referencing, *this/that,* in English. Specifically, this study attempted to understand people's ability to internalize and to refer to props in a certain communicative situation. Deictic referencing is re-conceptualized into real world terms according to hard science linguistics (HSL) that was established by Yngve (1996). In this study, children were compared to adults in order to test age as a significant variable in the articulation of [ðIs] and [ðæt]. This was investigated through an experiment that involved 148 subjects (62 adult and 86 child, ages 5 to 58) where verbal and nonverbal behavior was recorded. Subjects were prompted to use *this* and *that* in referring to three sets of objects. Findings revealed that native speakers of English do not use *this* and *that* according to the definitions provided by dictionaries and grammar rules. In addition, touching seemed to be the most preferred non verbal gesture for children whereas pointing was the preferred one for adults. The results also showed that age plays a significant role in the articulation of [ðIs] and [ðæt].

Deixis is derived from a Greek word that means pointing or indicating (Lyons, 1977). It is defined in theoretical linguistics as part of pragmatics where the reference and the comprehension of "many words rely entirely on the situational context of the utterance" (Fromkin 2003, p. 218). Most linguists believe that deixis is divided into three major categories: personal (first and second person pronouns), spatial (this/that, here/there), and temporal or time deixis (now, then, tomorrow). These words are deictic because a person can not infer the arbitrary meaning traditionally assigned to the sounds that make each of these utterances unless the linkage or the context, in which they occur, is well identified. Spatial deixis, which is the focus of this paper, is defined as "that aspect of deixis which involves referring to the locations in space of the communication act participants" (Fillmore 1982, as cited by Jarvella and Klein 1982, 37).

Reference to locations includes the demonstratives *this* and *that*. English dictionaries and language grammar books concur that *this* is usually used when the object or the thing being referred to is proximal to the speaker. *That* is used to refer to distal objects that are relatively far from the speaker. Moreover, in a contrastive situation, *this* is claimed to be used to indicate a favorable or primary preference whereas *that* is used to indicate that something is of a secondary preference or importance to the speaker. In addition, it is assumed by prescriptivists that the demonstrative *this* is used when people talk about something present here and now; whereas *that* is used to talk about things that are not present (Tanz 1980, 75). Table 1 shows two examples about the different usages of *this/that* and their meaning as described by prescriptive linguists.

Table 1, adapted from Lyons (1977)

	Example	Meaning
This	(1)This book (2)I like this ring.	(1)The book which is *here* or *near* the speaker. (2) I *like* this ring that I am seeing or holding *now*.
That	(1)That book (2)I did not like that ring.	(1)The book which is *there* or not near the speaker (2)I *did not like* the ring that I have seen *earlier*.

Theories of first language acquisition suggest that the time spent by children in learning English deixis "stretch to at least eight years, matching what is generally considered the period of general language acquisition as a whole" (Tanz 1980, p. 144). To begin with, H. Clark (1973), constructed a theory of deictic acquisition based on Chomsky's innateness hypothesis, which states that children acquire their first language from the surrounding speech that they are exposed to. This speech, Chomsky explains, includes performance errors and ungrammatical structures; however, due to the assumption that first language learners possess what he calls the "language acquisition device" (LAD) they end up producing grammatical structures based on their a priori or innate knowledge of the language (Chomsky, 1965). Clark takes Chomsky's LAD hypothesis for granted and maintains that children acquire specific deictic expressions by applying "these expressions to the a priori knowledge" they have about such expressions (p. 28). In addition, Clark upholds that the *unmarked terms* (there, that) are more likely to be acquired before *marked terms* (here, this) because the latter are by far more complex. This marked/unmarked argument by Clark is based on the assumption that adults require more time to process difficult terms, and hence, these terms will be acquired later by children.

Lyons (1977), on the other hand, states that research is still "uncertain" about the "fixed sequence in the acquisition [of deixis] by children" (p. 650). However, he assumes that *this* will be acquired before contrastive and non-contrastive *that*. Tanz (1980) agrees with Lyons' assumptions and he builds his theory of acquisition on an experiment which involved 37 middle-class children, ages 2 to 6 years, where Tanz concludes that children acquire terms related to proximity before those related to distance (p. 87). Tanz claims that children tend to "learn the contrastive meaning of *this* before *that.*" This is due to the fact that proximal terms are more "easily discoverable," and are "more basic concepts" than the distal ones (p. 107). Further, Tanz declares that personal pronouns are the first to be acquired by children. These are followed by the acquisition of the deictic prepositions *in back of* and *in front of*; then, comes the acquisition of the demonstratives and the locatives *this/that, here/there*. Finally, children acquire the deictic verbs of motion such as *come* and *go*. Tanz acknowledges the fact that this order might not be the same for all children, and that it is "invariable."

Now, how would the demonstratives *this/that* function in a communicative situation? Especially if we consider that the arbitrary meaning traditionally assigned to these utterances is always changing with the change of the speaker and the addressee's location with respect to each other and with respect to the object being referred to. Jakobson (as cited by Tanz 1980, p. 2) calls deictic terms "shifters." These shifters are "a complex category [that belong] to the late acquisition of child language and to the early losses of aphasia… the child who has learned to identify himself with his proper name will not easily become accustomed to such alienable terms" like personal pronouns and spatial deixis. This is discussed further by Piaget (1985) who relates this inability to

realize the difference among deictic referencing, and consequently the inability to distinguish between the hearer and the addressee, to the "egocentricity" of children under the age of six and seven. Egocentricity refers to the children's inability to view themselves as separate entities from the entities of other people. Moreover, Piaget assumes that the early utterances of children do not reveal "communicative function, that is why it is called egocentric speech." The natural question then is, how does a child come to realize that *this* object is *that* object in another person's perspective? Piaget explains that children reach the stage where they realize that they have to make this distinction (between hearer and addressee) in order to survive socially, and thus the egocentric speech fades away and is replaced by deictic speech usually when the child is six or seven years old. Tanz agrees with Piaget about the concept of egocentricity. He also claims that "the acquisition of many aspects of deixis, by children, is delayed to the age of three." The function of deictic terms, Tanz elaborates, will be "realized differently by different children." Spatial deictic terms, *this* and *that,* reflect "the focus of the child's attention and serves to direct another person's attention." Their contextual meaning would be, according to Lyons (1977, p. 648) "Look!" or "there!" These terms are most probably "accompanied by a gesture from the eyes, head, or hands, towards the entity or event in question. …this description of terms…is described by empirical researchers as being among the first to appear in children's speech" (Tanz, 1980).

Research into gesture is also as diverse and controversial as that concerning deictic referencing. Researchers do not agree on a common interpretation of what gestures refer to. Some related them to linguistic choices; others consider gestures as a mean to help speakers communicate their intended message (Crais, Douglas, and

Campbell, 2004). Adam Kendon (1994) argues that a common definition of what "gesture" means is hard to be agreed upon because people have different interpretations of what gesture refers to based on whether the action is performed to "say something" or not. He suggests that future research into this area will reveal a sort of "hierarchical organization in gesture" that could be linked to a similar organization in speech. Kendon claims that gesture "is a separate and distinct mode of expression with its own properties," and that gestures and speech can be "used in a complementary way." Further, Kendon asserts that it is important to understand the setting or context in which a gesture is employed for a full appreciation of its reference.

Pragmaticists (Zinober and Martlew, 1985) divide children's gestures into four types according to the function that each gesture performs: instrumental gestures (used for requesting such as reaching), expressive gestures (used to indicate positive and negative emotions such as arm flapping), enactive gestures (used to represent objects and requests such as imitation), and deictic gestures (used to focus attention or to bring something into salience such as pointing). On the same level, Tanz (1980, p. 80) claims that the co-occurrence of deictic terms and gestures is very "crucial to how children learn demonstratives, which are always amongst the first fifty words learnt…and the acquisition of the pointing gesture precedes the use of the words."

In a more recent study about spatial deixis, Shingo Imai (2003), challenges the assumption that relative distance is the primary parameter affecting people's choice of *this* and *that*. Imai claims that a person "demarcates space by judging whether or not a referent/region is within his/her territory or not," and he concludes that the

contact/control parameter is the main cause behind people's choice of *this* and *that* (p. 4). "A referent touched by the speaker," Imai explains, "is a prototypical case of [direct] contact." Imai contrasts direct contact with indirect contact which happens when "the speaker is touching a distal referent with a long object like a stick" (p. 18). Imai assumes that the individual's "direct or indirect [contact], is one of the main reasons to use proximal forms in all languages" (p. 19). Control, on the other hand, happens when a person manipulates an object, with a string attached to the object for example, and moves it "without directly touching it." This is a typical case where people will supposedly use the distal form *that*. In other words, if the referent is within the territory of a person and can be contacted or controlled by this person, then, according to Imai, it is certain that *this* and *that* will be used respectively. According to contact/control theory, the question of how this territory can be measured is something that is not determined by relative distance, but rather, by whether the person conceptualizes, subjectively, that the referent can be contacted or controlled and *is* within his/her "imaginary territory" (p. 5).

In fact, this view, that the world is interpreted by the communicating individual's subjective perception of the external events is not something new. It is a view supported by hard science linguistics (HSL) which states that the observer, of any phenomenon, should be careful not to project his/her internal subjective properties to the external events taking place in the real world (Yngve, 1996). However, to state that in demarcating referents the speaker's perception would be "conscious and voluntary" (Imai 2003, p. 17) is not really precise especially in natural speech. Speakers or communicating individuals are not always conscious of the communicative tasks that they employ in

referring to objects; otherwise, they would have ended up using these tasks according to grammatical rules or definitions found in dictionaries.

Although the contact/control parameter is an interesting concept that might be responsible for people's choice of *this* and *that*, Imai's experiment design is flawed in many respects. To begin with, the cups used as referents in his study were labeled. "Each cup had a number and a character on it, such as'1A', '2C', or '9B' to facilitate the communication" (p. 76). This means that the subject, in a natural setting, would be more likely to name the object if it has an identifiable name. The second thing is the fact that Imai asked the subjects to use the distal form when he wanted them to use it.

> It was made sure that the most distal cup on the table was not referred to with a proximal form. In other words, the speaker *was led* to establish ground and conceptualize the farthest end of the table as [distal]...Informants *were asked* to refer to each cup with a demonstrative adjective and a demonstrative pronoun…based on his/her intuition without thinking about 'prescriptively grammatical' forms. (p. 77-78, emphasis mine)

Imai coached the subjects, "led them," to use the form that he wanted them to use. This, in my opinion, is the greatest flaw in the experiment. Imai made the subjects perform conscious thinking about the form to be used, *this* or *that*, even though he mentioned that the subjects should do this "without thinking about 'prescriptively grammatical' forms." The mere fact that he *asked* them to use *this* or *that* would make them think in terms of the *grammatical rules* that they had learned and would therefore affect the results. Imai's study does not attempt to examine the reality of deictic referencing as used by people in daily communication. It is trying to validate the definitions found in grammar books and dictionaries. Imai presents a huge number of parameters collected from reference grammar books, and he attempts to find a parameter, used in different languages, that affects people's employment of spatial deictic reference.

It is obvious from the above discussion that prescriptive linguists do not agree on the order of acquisition of deictic referencing. They base their statements on personal assumptions. They state definitions that illustrate the difference between *this* and *that*, and they provide examples that seem to be the result of mere introspection to support their claims. The examples they provide do not rely on direct observation of people communicating in real world situations. Tanz (p. 80), for example, provides the following analysis on the appropriate usages of *this* and *that*. He states:

> Let us compare sentences (28) and (29):
> (28) What's that?
> (29) What's this?
> Question (28) is the more general question, but it does not have absolute generality. If the speaker is holding the relevant object in his hand and examining it, only the question 'what's this?' is appropriate.

Tanz did not resort to observation to come up with this conclusion. Does this definition apply to every day's communication? What about the definitions of *this* and *that* stated earlier? Do people use these communicative tasks according to traditional definitions? Further, is language (being an abstract system) autonomous and separate from people communicating in the real world?

Consider the following utterance: "look at that!" If a person hears this utterance alone, s/he will not be able to make any sense of it. What is the thing that is being referred to? Where? Who is the speaker? Who is the addressee? There is no way one can know this information from that utterance alone. However, consider the following situation. Amanda and Tony are shopping. Amanda stands in front of a display façade, points at a sweater, and says: "Look at that!" Tony will directly look at the thing she is pointing to, and he will realize that she is talking about a sweater that she liked. Here, we are able to identify the speaker, the addressee, and the thing being talked about because

we are in a certain communicative situation that includes all the necessary elements for successful and meaningful communication. These elements are explained by HSL that was established by Yngve (1996). According to HSL, language is an abstract system that has no existence in the physical world. In other words, language exists in the subjective experience of people. It is not physically real in the sense that it cannot be measured and observed directly like you would observe and measure water evaporating, for example; what is there and what can be observed directly is an individual communicating with another in an assemblage. An assemblage is a real world event that incorporates a "group of people together with their linguistically relevant surroundings involved in particular communicative behavior" (p. 86). Elements of a linkage include participants or communicating individuals, a particular channel (sound and light waves that are emitted from the communicating individuals), props or objects, and finally, all other elements found in the setting.

Thus, deictic referencing should not be considered and identified within the theoretical constructs that linguists set forth without real observation; rather, it should be considered within the framework set by HSL. In fact, HSL states clearly that linguistics should be the study of people communicating in real world situations (Yngve, 1996). Hence, the statement that *this* is used to refer to near objects and *that* is used to refer to far objects must be based on an observation of people actually using these tasks in this purported way. To investigate the reality of *this* and *that* in every-day communication, I decided to test whether adults and children adhere to these a priori set definitions or not.

Reasoning

I started this experiment with the assumption that native speakers of English do not use *this* and *that* according to rules of grammar when they communicate daily. To provide evidence for this, I wanted my experimental setting to be as natural as possible and I wanted my subjects to use *this* and *that* spontaneously without making them to think consciously about correct grammatical usage. I wanted to avoid what Imai did in his contact/control experiment where he asked his subjects to use *this/that* according to grammatical rules and by doing so he was not actually investigating the real usage of these terms. The second issue that I wanted to check was to see whether children and adults differ in the way they use these terms like Tanz, Clark, and Lyons claim. Is the difference only related to the assumption that children have no clear distinction between *this* and *that*? My third assumption was that people will refer to an object by a distinctive feature that is a characteristic to that object. In other words, if they can refer to the object by its name, they will use its name. If they can not refer to the object by its name, then they will use another distinctive feature that characterizes the object, like the object's color or shape. But, if they can not refer to the object by these distinctive features they will use deictic referencing and gestures, mainly pointing. This is why I chose to show the subjects three sets of objects: four different objects (subjects can name the object), four objects that differ only in color (subjects can refer to the object by telling its color), and four identical objects (subjects have to use deictic referencing).

Methodology

One hundred and forty eight subjects participated in this experiment, 62 adult and 86 child, ages 5 to 58. The first part of the experiment, that involved adults, was conducted at The University of Toledo (UT), Ohio. The second part of the experiment, that involved the children, was conducted at St. Hedwig School in Toledo, Ohio. The experiment took place during the academic year 2005-2006. Adults were randomly selected from students and workers at UT as well as the general public. Information was not formally recorded about the occupation of the subject. The subjects were all volunteers and they did not receive any compensation for their participation in the experiment. The experiment took place in several places around UT campus (different classrooms, the library's lobby, and the library's basement) at different times of the day. The children's data, on the other hand, was all collected in the same place (the school's activity room) and in the same day in the morning. Three researchers recorded information from the subjects, two females and one male. If the researchers did not agree on the information recorded, i.e. if they recorded different answers given by the subject, the information was discarded. However, if two of the researchers agreed and one disagreed, the information would still be taken into consideration.

The subjects were presented with three sets of objects. The first set (see figure 1) consisted of four different objects: plastic figures of animals (lion, tiger, alligator, and monkey). The second set (see figure 2) consisted of four objects that were the same, with color being the only difference: For Lego blocks. The third set (see figure 3) consisted of the same objects with the same color (four yellow Lego blocks). For each set of objects, the subjects were all asked the following question: Which one of these do you like the

best? Each set of objects was placed in front of each researcher on a white A4 paper, on a brown table. Each researcher would ask the same question for a set of objects, after sliding the paper to reachable distance from the subject. Figures 4 and 5 (see Appendix 4) show the setting in which the experiment took place for adults and children respectively. For the children (figure 5, Appendix 4), each set of objects was placed on a different table where the subject (child) stood in front of the table, gave an response, and moved from one table to another; objects were placed in a reachable distance.

The three researchers recorded the subjects' age, gender, verbal and nonverbal behavior. Adults were given a consent form (see Appendix 1) prior to the beginning of the study that briefly informed them about the background of the researchers and the purpose of the study. The subjects were also verbally informed about the study. Few subjects read the form before doing the experiment. As for children, consent forms (see Appendix 2 and 3) were sent to their parents three weeks before the experiment day. Only subjects with signed forms participated in the experiment.

The data from the three researchers' sheets was compared and entered into SPSS file. Concerning the non-verbal behavior, researchers used the following codes in recording the items in the SPSS file: 1 (touching), 2 (pointing), 3(gazing), and 4 (no gesture). However, gaze was discarded because the researchers were not sure to which object the subjects were gazing and whether their gaze was toward a particular object or just non-directional. Some of the subjects referred to the object according to its position with respect to the subject/speaker. These responses were all condensed and entered as "position," and they were given a numeric value. For example, responses like "left," "right," "middle," "first," "second," and "third one to the left," were all entered as

position. Moreover, when the subject hesitated to give a specific response, concerning the identical objects with identical colors, the researchers would prompt the subject to make a choice. For example, the subjects would say something like “They are all the same!” or “it doesn’t matter” or “which ever.” The researcher would kindly request from them to make a selection anyway.

Results

1. Different Objects:

The crosstabulation for the different objects, verbal and non verbal behavior by status (adults vs. children) indicated that 57 adult referred to the object by its name (out of 62) whereas 34 child (out of 86) named the objects. This goes with the initial assumption that people will refer to the object by its name if they can identify its name, but it does not apply to children who were referring to the object with different nonverbal gestures. The frequency of *this/that* was very low for this set of objects. Also, results showed that 50% of adults preferred to point to the object when they refer to it, in contrast to children who used different non verbal strategies such as pointing and touching. Figure 6 (See Appendix 4) clearly shows that naming was the preferred way of referring to an object and that pointing was the preferred gesture. It also shows that adults never failed to give a verbal response whereas 40 children failed to give a verbal response.

2. Different colors:

The crosstabulation for the second set of objects (same objects, different colors) revealed that the frequency of *this* and *that* was very low: 0 adult said *this* vs. eight children, and two adults said *that* vs. three children. Referring to an object by a distinctive feature, color in this case, was again the preferred way of pointing out an object for adults (56 out of 62), and it was somehow also the preferred for children (36 out of 86).

Children preferred to make selection by touching the object with 42 children referring to an object by touching it in contrast to adults who seemed to prefer to point

(25 pointed and only one touched). In addition, the percentage of children not giving a verbal response was high (39 out of 86) compared to adults where only four failed to give a verbal response. Figure 7 (See Appendix 4) shows that the subjects were clustering in the middle, i.e., they are referring to an object by color and they are pointing at the same time. It also shows how the two groups differ in terms of the non verbal response. Figure 8 (See Appendix 4), on the other hand, shows that touching is the preferred non verbal gesture for children when they don't want to give a verbal response, with only one adult touching.

3. Identical Objects:

The crosstabulation for identical objects (same color, same object) showed that *this* and *that* were being used interchangeably with the two groups. Objects were the same distance away from the subjects, yet both adults and children seemed to be using the two terms interchangeably. One is tempted to think that this kind of usage might not be deictic, but rather neutral. However, I think it is deictic because the two groups were either pointing or touching the object when they say *this* and/or *that*, which indicate that they are not neutral about their preference and they are purposefully choosing. The frequency of *this/that* articulation was higher for the third and final set of objects especially with children. Adults seemed to prefer to refer to the object by pointing out its position either according to the researchers or to themselves (32 out of 62). Again, children were employing different non verbal strategies to refer to an object, touching being the most frequent (50 touched and 34 pointed); whereas adults were using more precise verbal response and their preferred nonverbal gesture is pointing (47 pointed and

3 touched). Finally, figure 8 (See Appendix 4) shows how the verbal responses were clustered along with pointing and touching respectively.

Discussion

My first assumption in this experiment was that subjects will use *this* and *that* interchangeably and not according to prescriptive grammatical rules. It was obvious in the third set of objects that the subjects were using *this* and *that* interchangeably and not according to a specific rule. However, I cannot make valid inferences and generalize about the reality of usage for two reasons. First, one might argue that the design of the experiment is not natural and might look "weird" to the subjects especially with the identical set of objects. To an extent, this criticism is very legitimate only if we do not consider the fact that people sometimes have to indicate their preferences from objects that are very alike, for example, if they are choosing apples that are all red and all look the same. It would have been better if I used more natural, real objects like apples. The second reason is that the format of the experimental design was not the same for the two groups. For practical reasons, the researchers had to change the design with children without paying attention to the fact that the setting must be consistent for the two groups. This might be a big confound in the study.

The second issue that I wanted to look at was the assumption that children do not use deictic referencing correctly because they have no clear distinction between what is near and what is far. Although I am tempted to state that adults also have no clear distinction in their usage of *this* and *that* since they were using the two terms interchangeably, I cannot make such a generalization for the above two mentioned reasons and for another reason which my experiment did not take into consideration. My experimental design did not place objects in relatively far and near distances from the subjects; objects were all placed at the same distance. Thus, the experiment was not

really testing the concepts of near and far. What is interesting to me though is the fact that subjects used the two terms interchangeably even when the objects were all placed at the same distance from them. Future research into this area should definitely take into consideration those two aspects of experimental design. It would be interesting to test whether subjects would still use *this/that* interchangeably when objects are placed in near and far spots. This would have an implication on the traditional teaching of grammar in foreign/second language contexts because it would mean that this particular grammatical aspect is not used by so-called native speakers.

My third and final assumption was that people will refer to an object by a distinctive feature that is a characteristic to that object. This was definitely significant in the current experiment especially with adults who never failed to give a verbal response for the first two sets of objects. As for the third set, the identical object, adults and children were using *this* and *that* along with non verbal gestures. The results show that children have a tendency to refer to an object by touching it regardless of their verbal response, whereas adults refer to an object by giving a precise verbal response and by pointing.

Conclusion

This study was designed with the assumption that native speakers of English do not adhere to prescriptive grammatical rules when they communicate daily with respect to the use of *this* and *that*. The experimental design was thought of in a way that seemed to be similar to real life situations that people usually have to deal with like when they indicate preference. However, the design did not take into consideration a couple of issues that are crucial for making valid inferences and that might have introduced error in the results from a quantitative research perspective. These two issues are 1) not providing similar setting for the two groups, and 2) not testing the concepts of nearness and farness. Consequently, the current results cannot be used to make valid claims about how native speakers of English communicate in daily life, and definitely it cannot make claims about whether they use prescriptive grammatical rules when they communicate or not. However, the experiment can make claims about how children and adults indicate their preferences when choosing among different and identical objects. When objects can be referred to via distinctive features that are characteristic to these objects (like shape, color, and name), children and adults will articulate these features in their verbal responses. In other words, if they can refer to the object by its name, they will use its name. But, if they can not refer to the object by these distinctive features they will use deictic referencing and gestures. Touching is the preferred non verbal gesture for children, and pointing is the preferred one for adults. Future experiments need to take the above mentioned flaws into considerations if they are to make valid inferences about adherence to prescriptive grammatical rules.

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Appendix 1 – Adults' Consent Form:

We would like to introduce ourselves:

We are graduate students from the Department of English, with the emphasis on English as a Second Language at the University of Toledo and we would like to include you in a research project on deictic referencing. The information obtained will give us a better understanding of how people communicate and the relationship between verbal and nonverbal communication. If you take part in this project it will involve about 20 minutes time.

In this study you will be shown three groups of objects and be asked to select one object from each group. The first group will contain three identical objects, for example three red boxes. The second group will be three objects that vary in only one aspect, for example a red box, a blue box, and a yellow box. The third group will consist of totally varied objects, perhaps a red box, a blue pyramid, and a yellow ball. The researchers will record the presence of both verbal and nonverbal communication in the responses, your age and gender. Nothing to identify specific subjects will be recorded.

Your participation in this project is completely voluntary. If you want to participate in this project, you may change your mind and may stop taking part at any time. You are free to withdraw your permission at any time and for any reason without penalty.

The information that is obtained during this research project will be kept strictly confidential and will not become a part of any record that can be identified with you. Any sharing or publication of the research results will not identify any of the participants by name.

In the space at the bottom of this letter, please indicate whether you **do or do not** want to participate in this project.

We look forward to working with you. We think that our research will be enjoyable for those who participate and will help them to learn about non-verbal communication. If you have any questions about this project, please contact us using the information below. If you have any questions about your rights as a participant in research involving human subjects, please feel free to contact the University of Toledo, Human Subjects Review Board Office at 419.530.1918, Dr. Gerald Sherman or gsherma@utnet.utoledo.edu

Sincerely,

Torey Hickman
419-841-7814
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Appendix 2- Children's consent form:

This is the slip that children signed when they participated in the experiment. We had them write their name even though their parents already signed a form:

I am willing to participate in the research on communication. I understand that I do not have to participate. I understand that I can stop at any time without anything bad happening.

Appendix 3 – Parents' consent form:

Fall Semester 2004 - 2005

Dear Parent:

We are graduate students from the Department of English. We would like to include your child, along with his or her classmates, in a research project studying non-verbal communication. The information obtained will give us a better understanding of how people communicate and the relationship between verbal and nonverbal communication. If your child takes part in this project it will involve about 10 minutes from his or her class time. They will do this experiment in one of the classrooms in the school. Any children who do not do this project will do other school work during this time.

In this project your child will be asked to make a selection of preference between a number of objects. The researchers will record the presence of both verbal and nonverbal communication in the responses, the age of your child, and gender of your child. There will be three researchers in the room with your child at all times. Your child will be asked whether or not they want to participate in the research.

Your child's participation in this project is completely voluntary. Sister Valerie, the Principal, and each of the classroom teachers have already approved the project. Only those children who have parental permission and who want to participate will do so, and any child may stop at any time. This study is without prejudice to The University of Toledo or to St. Hedwig School.

The information that is obtained during this research project will be kept strictly confidential and will not become a part of your child's school record. Any sharing or publication of the research results will not identify any of the participants by name.

In the space at the bottom of this letter, **please** sign the form and have your child return it to school right away if they can participate.

We look forward to working with your child. When the study is completed we plan to send a summary of our findings to Sister Valerie for the newsletter. If you have any questions about this project, please contact us using the information below. If you have any questions about your rights as a participant in research involving human subjects, please feel free to contact the University of Toledo, Human Subjects Review Board Office at 419.530.1918, or Dr. Gerald Sherman at gsherma@utnet.utoledo.edu

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Appendix 4 – Figures

Figure 1 – Different objects

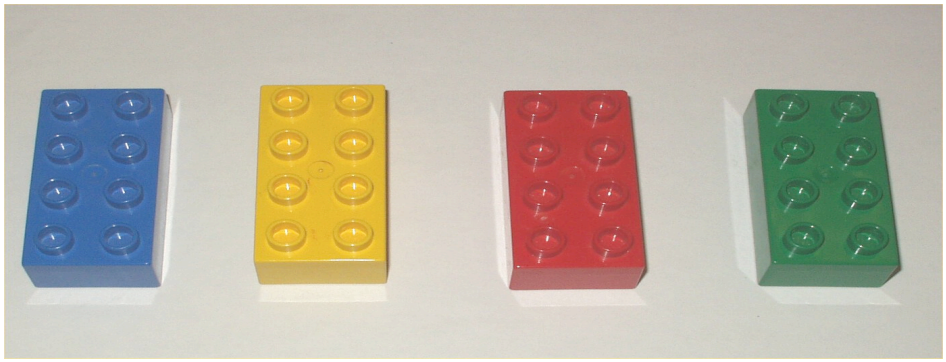


Figure 2 – Same object, different color.

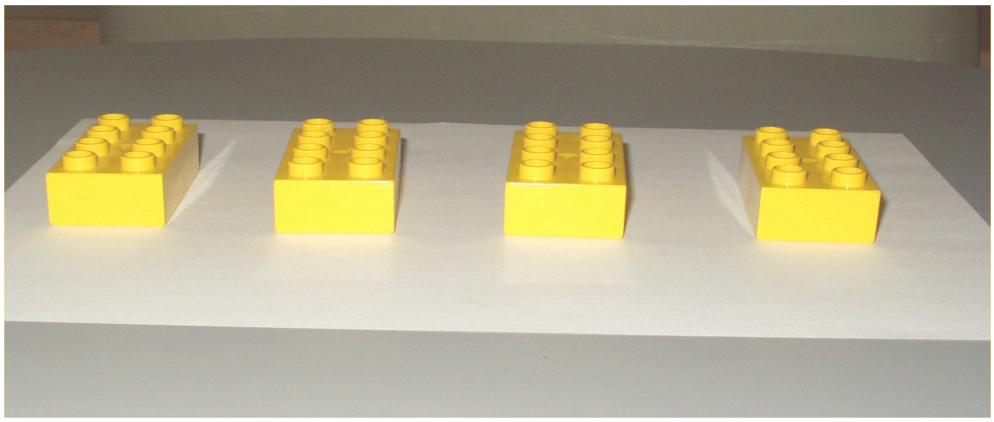


Figure 3 – Same object, same color

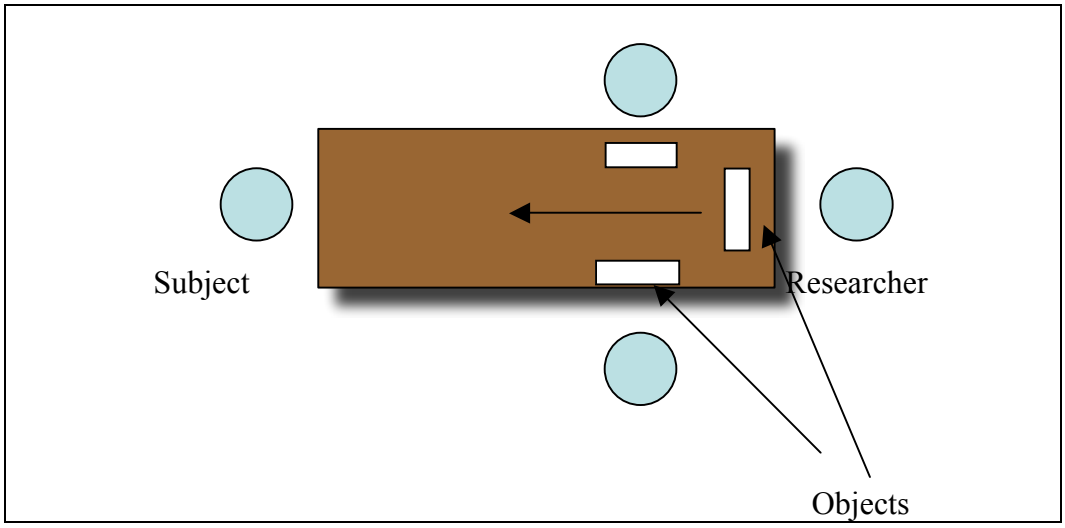


Figure 4 – Adults' experimental setting

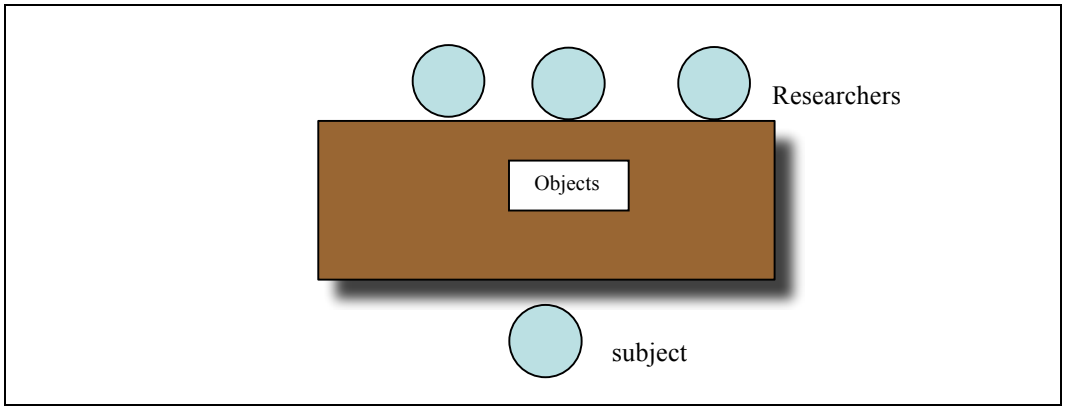


Figure 5 – Children's experimental setting

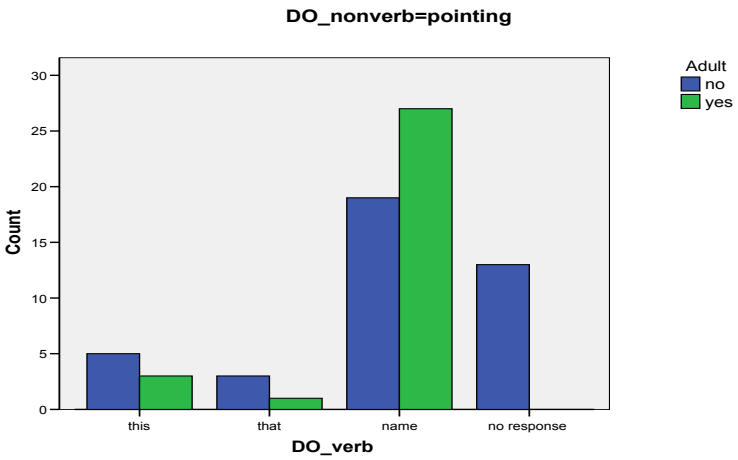


Figure 6 – Different Objects: Naming and pointing

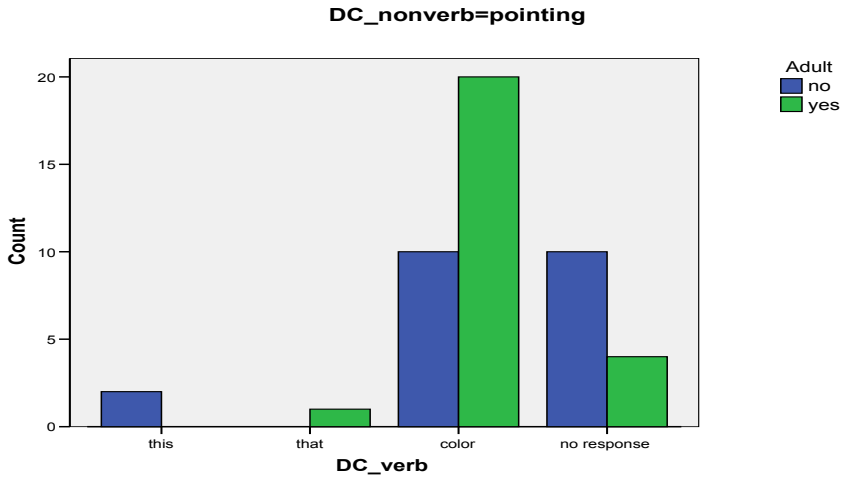


Figure 7 – Different colors: naming and pointing

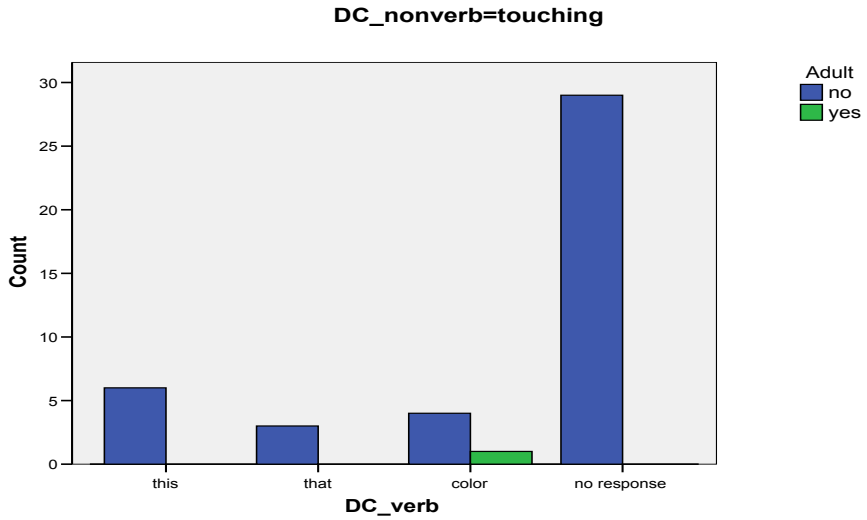
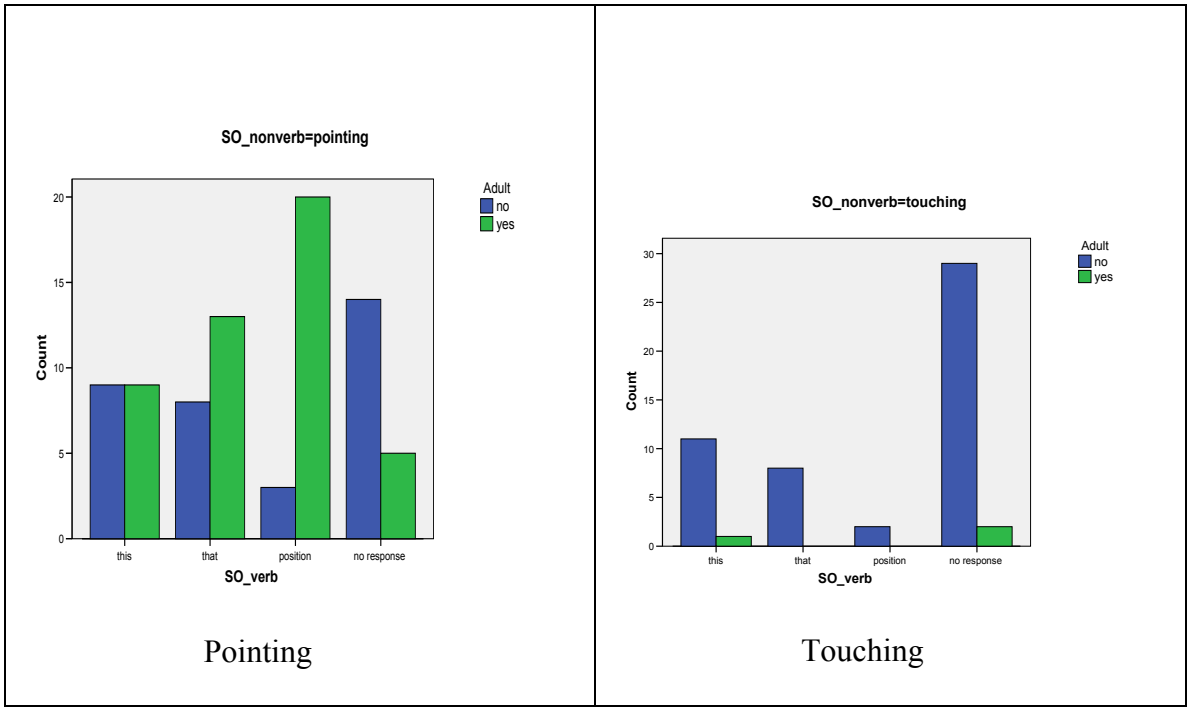


Figure 7 – Different colors: touching



Pointing

Touching

Figure 8 – Identical Objects: Pointing and Touching