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ANAPHORICS, EXOPHORICS, AND AMBIGUITY OF REFERENCE IN CHILDREN'S DESCRIPTIVE SPEECH: SOME EVIDENCE FOR A DEVELOPMENTAL TREND

by

Kenneth R. Jackson

B.A., Simon Fraser University; 1980

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF

THE REQUIREMENTS FOR THE DEGREE OF

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ABSTRACT

The present study examined pronoun and article usage in the descriptive speech of Kindergarten, Grade Three, and Grade Five children. The task required children to describe the action taking place in various four-sequence cartoon strips. One hundred and ninety-two subjects, equally divided by grade, sex, and socioeconomic status (high or low) participated in the study. Samples of child-to-adult and child-to-child speech were collected in two different settings. In the picture present setting, referents were present in both the speaker's and the listener's fields of vision; in the picture absent setting, referents were present in the speaker's field of vision, but absent from the listener's field of vision. Results indicate that Kindergarten children in the present study were more ambiguous than Grade Three and Grade Five children in their use of reference in context-independent speech situations. Not until Grade Three did children begin to exhibit adult-like facility with respect to the rule system governing pronoun usage. Conversely, not until Grade Five (and even then not very clearly) did children begin to exhibit adult-like facility with respect to the rule system governing article usage. These findings suggest that children learn the rule system for pronouns prior to learning the rule system for articles, although both systems are fundamentally similar. In addition, grade (K, 3, or 5) and picture condition (picture present/picture absent), rather than socioeconomic status, proved to be the overriding factors in correct/incorrect pronoun and article usage. These findings suggest that Bernstein's Hypothesis and Hawkins' study supporting that hypothesis may have been based on inadvertently biased data.

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CHAPTER ONE

According to Basil Bernstein (1962, 1971, 1972a, 1972b), social class differences are manifested and, in many ways, maintained by a society's communicative speech codes. Bernstein suggests that the working, or lower, class is inclined to use a less elaborated speech code than that which is used by the middle, or upper, class -- irrespective of the fact that both of these sub-groups are capable of employing all of a society's speech codes with equal facility. Basing much of his hypothesis on Vygotsky's (1962) analysis of inner, external, and egocentric speech, Bernstein (1971) likens the speech code of the lower class (restricted code) to the often elliptical speech of intimates (e.g. husband and wife). He suggests that, in either case, "the intent of the other person can be taken for granted as the speech is played out against a back-drop of common assumptions, common history, common interests (p. 105)." Thus, in Bernstein's view, the relative sameness of experience obtaining between members of the working class determines that the speaker's audience is psychologically close to self and results in a somewhat idiomatic and laconic speech code. To borrow a term from Werner and Kaplan (1964), the social-psychological distance existing between working class individuals is relatively less "polarized" than that existing between middle/upper class individuals. As a consequence of the (supposed) sameness inhering in the lower class experience, the restricted code is characterized by particularistic, or context-tied, meanings. Unless the hearer shares a history with the speaker, s/he cannot understand the implicit context. Conversely, in middle class

elaborated speech, the "experience of the listener cannot be taken for granted" because the range of experiential alternatives is relatively infinite (p. 105). Thus, the elaborated code is characterized by universalistic, or context-free, meanings. In Bernstein's words, "the 'I' stands over the 'we'. Meanings which are discrete to the speaker must be offered so that they are intelligible to the listener (p. 105)."

Unfortunately, Bernstein provides little, if any, evidence to support his claims. In a 1962 study, he elicited spontaneous speech samples from five groups of lower and middle class males, aged 15-18 years (N=25). The first 1800 words elicited from each of the five free conversation groups supplied the data base. The only control over individual input was interviewer interruption when an informant began to "monopolize" the conversation. Because Bernstein does not provide any measure of what constitutes a monopoly, one cannot determine whether some informants contributed significantly more or less information to the study.

Statistical tests revealed that middle class speakers used significantly more "uncommon adjectives" and "egocentric" sequences (personal pronoun "I"); working class speakers, on the other hand, used significantly more "sociocentric" sequences (personal pronouns "you" and "they"). But as Norbert Dittmar (1976) points out, Bernstein's "variables correspond to normative value judgements that have no bearing on communicative efficiency (p. 53)." The classification of some adjectives as being "unusual" has no linguistic

basis and, thus, can hardly be used as a criterion to evaluate a speaker's expressive abilities. In addition, Bernstein's suggestion that the use of "I" is representative of egocentricity and the use of "you" or "they" is representative of sociocentricity is equally unfounded and arbitrary. The difference in choice of personal pronouns in such instances may represent sociolinguistic convention, but it does not necessarily indicate an ability or inability to be specific.[1] The only potentially revealing findings to come out of the study were the facts that middle class speakers used a significantly higher proportion of adjectives to total words and lower class speakers used significantly more personal pronouns. The former finding might support Bernstein's suggestion that middle class speakers (elaborated code users) employ greater specificity, if evidence could be found that other grammatical relationships (e.g. deictics and nouns to total words) evidenced a similar pattern. The latter finding, however, may hold the greater potential for supporting Bernstein's hypothesis. If one could show a predominance of personal pronoun usage coincident with a lack of referential specificity -- a vagueness as to the specific objects to which the respective pronouns refer -- in lower class speech, one might suggest that such speech relies more on context for understanding.

In an attempt to address this latter issue, Hawkins (1969, 1977) studied nominal groupings in the speech of middle class and working

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[1] See discussion of *speech roles* pronouns and *other roles* pronouns, p.p. 25-26, below.

class children from two geographically separate areas of London, England. After Halliday, Hawkins classified the various elements of the nominal grouping (or subject/complement) as: 1) Head (usually noun or pronoun); 2) Modifier (deictics, ordinatives, epithets, intensifiers, and nominals occurring before the head); and 3) Qualifiers (occurring after the head but referring to it). Thus, in the following sequence,

These two very long railway trains

M = modifier, D= deictic, O = ordinative, I = intensifier, E = epithet, n = nominal, H = Head, and N = noun.

As can be seen from the example, a considerable number of modifiers can precede a noun in the head position. Personal pronouns, however, cannot be modified. Similarly, the range of qualifiers that can follow a noun is quite extensive (although perhaps less extensive than modifiers), whereas the range of qualifiers that can follow a personal pronoun is relatively limited (e.g. we *all*, you *all*, they *all*). Thus, Hawkins hypothesized that if middle class speakers evidenced a proclivity to employ nouns and lower class speakers evidenced a proclivity to employ personal pronouns, he might be able to demonstrate that the middle class opportunity for linguistic

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[2]from Hawkins, 1969, p. 129.

"expansion" is more elaborated and the lower class opportunity more restricted. But as Hawkins points out, a higher incidence of pronouns to total number of words does not, in itself, necessarily imply a lack of specificity and/or a context-tied speech code. Insofar as personal pronouns are used to replace redundant nouns (and accompanying modifiers), a tendency to employ a high incidence of pronouns may only be evidence of a more concise and more economical speech code. Conversely, a tendency to use a higher incidence of nouns may indicate a more redundant speech code.

To account for these two possibilities, Hawkins (after Hassan, 1968) classified the personal pronouns as anaphoric (referring to something previously *mentioned*), cataphoric (referring to something about to be *mentioned*), or exophoric (referring to something *not mentioned* in the past or future). Thus, exophoric pronouns require that the listener share the same contextual knowledge as the speaker -- listener and speaker must possess the same mental image -- in order that the listener understand the referent to which the pronoun refers. In addition to personal pronouns, other grammatical elements (e.g. relative pronouns) that could be interpreted as exophoric or anaphoric were included in the analysis.

Hawkins used a sample of 124 middle class and 139 working class children, 5 years of age, whose social status was determined by the occupation and education of their parents. Although six tasks were employed, only 2 tasks elicited sufficient speech to be included in

Hawkins' (1969, 1977) analyses. In the first task, which was designed to elicit narrative speech, children were asked to look at a four sequence cartoon strip (without words) and tell the story. In the second task, designed to elicit descriptive speech, the children were asked to look at reproductions of paintings by Trotin and describe "what was going on in the picture, what the people were doing, and what the picture was all about (1969, p. 128)."

Although Hawkins provides no mean frequency counts for the noun and its linguistic variables, he does claim that middle class speakers used significantly more nouns, ordinatives, intensifiers before epithets, and epithets at head and at modifier in picture stories ($\underline{p}$ = 0.001 - 0.02). In the pronoun category, "all" children used at least one anaphoric pronoun and "most" children used at least one exophoric pronoun. In the picture stories, anaphoric usage differed very little between classes (Mean numbers of anaphorics used = 16.0 W.C. - 14.3 M.C.) and exophoric differed considerably (Mean number of exophorics used = 4.12 W.C. - 2.84 M.C.). In the Trotin reproductions, both anaphoric (Mean number of anaphorics used = 9.6 W.C. - 5.9 M.C.) and exophoric (Mean number of exophorics used = 4.59 W.C. - 2.44 M.C.) differed considerably. None of these differences, however, quite reached significance. The overall results lead Hawkins to conclude that the working class children in his study were not just using "more pronouns, but more pronouns of the exophoric kind," which rely heavily on the listener's familiarity with the context of situation (p. 134). Conversely, the middle class children's proportionally lesser use of

exophoric pronouns, coincident with greater use of nouns, epithets, and ordinatives suggests that the middle class child is being "more specific and more elaborate," which enables him/her to be "understood outside the immediate context without reference to the 'here and now' (p. 134)."

Although Hawkins interprets his findings as evidence supporting Bernstein's hypothesis of elaborated and restricted codes and generalizes his findings to the middle and working class populations, one must question his right to do so on two grounds. First, Hawkins makes it clear that the interviewer and informant either looked at the pictures together (narration) or took turns looking at the pictures (description). In either case, both the informant and interviewer would have possessed approximately the same mental picture. Consequently, one could hardly consider the use of exophoric pronouns in Hawkin's study to be indicative of a restricted code; one, perhaps, might more logically expect a higher incidence of exophoric usage, insofar as listener and speaker have equal knowledge of the context. For example, if one of two people watching a soccer game says, "They scored!", the other person will understand the referent of "They" because the context of the soccer game is shared by both speaker and hearer. One would less likely expect the speaker to say, "The team wearing the red jerseys, white shorts, and red socks scored a goal!" If, however, a person walks into an office and shouts, "They scored!", the office staff will not understand the referent of "They" because

the context of the game is not shared by both speaker and hearers.[3] The latter example illustrates the incorrect use of exophoric pronouns -- pronominal reference outward to a context with which the listener/hearer is unfamiliar. Thus, the first problem is one of definition and lack of specificity (as to task design). Had Hawkins designed an experiment to accommodate the two settings mentioned above, he would have provided a more accurate and more valid measure of exophoric pronoun usage -- context-dependent speech.

The second problem concerns Hawkins' selection of one age group (5-year-old children) as representative of a particular social class population. Dittmar claims that the reason for Hawkins' choice was that this particular group represented the "primary phase of socialization which is decisive for speech development," although Hawkins makes no such (explicit) claim (Dittmar, p. 54). However, Dittmar's suggestion seems to be reasonable in light of Bernstein's work. Throughout the reworkings of his hypothesis, Bernstein has suggested that working class members, because of their "restricted code," will have limited, or no, access to the avenues of power and wealth in society. Similarly, working class children may encounter communication problems as a result of entering the education system, a system that employs the speech code of the powerful -- the elaborated code. According to Bernstein, these factors may account for the high

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[3]The first example is taken from Hawkins.

dropout and failure rates among lower class children. This returns the argument to Hawkins, whose study proposes to, and, on the surface at least, seems to, substantiate Bernstein's concern that lower class children are destined for educational difficulties. The problem with Hawkins' approach, here, is two-fold. First, five-year-old children have only just entered the education system and there is little chance that its effect (resolving or propagating the reported communication problems) can be measured.[4] Second, and perhaps more important, sampling this age group does not take into consideration the possibility that the pronominal system is not yet fully understood at five years of age.

If one could show that middle class children use significantly fewer exophoric pronouns incorrectly at later stages of development and, at the same time, show that lower class children evidence no significant change in incorrect excphoric usage relative to development, one might have evidence for restricted and elaborated codes. However, if one could show that both groups use significantly fewer exophoric pronouns incorrectly at later stages of development, one would have evidence of

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[4]This also may represent a minor strength of Hawkins' approach, as noted by Dittmar, in that the pre-school or Kindergarten level child is potentially, at least, a "purer" representation of his/her class. That is, s/he has not been greatly influenced by any other system. This, however, does not take into consideration the effect that TV and radio exposure may have on a child's speech.

a developmental trend (development toward correct referential conceptualization).

CHAPTER TWO

Werner and Kaplan (1964) attribute the development of referential conceptualization to the increasing polarization between self, other, symbol, and referent.[5] Polarization between self and referent occurs as the individual moves from the non-polarized state of infancy, in which there is little, if any, differentiation between self and non-self, to increasingly polarized states, in which there is a "stable world of objects and a stable self (Werner and Kaplan, p. 44)." Coincident with this shift from an undifferentiated matrix to a differentiated matrix, object focus shifts from externally perceived objects of action to internally schematized objects of contemplation. In this latter stage, the referential object comes to be seen as "an ego-independent entity, more or less systematically related to other objects and represented, both in itself and in its relation to these other objects, via a symbolic medium (p. 44)."

Polarization between person and symbol, or person and symbolic vehicle, involves both the external and internal forms a vehicle takes. At the external level, reference moves from early bodily movement (e.g. pointing and gesturing) to vocalization which "lends itself to external, interpersonal shaping" into language that "can be 'handed over' from one person to another (p. 46)." At the internal level, the meanings expressed by the vehicle become less egocentric

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[5]The "referent" is the object to which the symbol refers.

and idiosyncratic -- less bound up in the individual's personal experience -- and more sociocentric -- more stable relative to the number of speakers in a particular speech community.

Similarly, polarization between symbol and referent proceeds from the fact that, with development, the individual begins to see the referent less as a concrete, specific entity and more as an abstract amalgam of "general concepts ... possessing an inner structure quite removed from the tangible, perceptible features (p. 48)." At the same time, the vehicle undergoes transformation from a form in which meaning, for the most part, is conveyed externally, as in onomatopoiea, to a form in which meaning is internally schematized and differentiated from the external, material form. Thus, at genetically later stages of development, the internal structures of both referent and symbol become increasingly abstracted from their external forms.

Polarization of self and other (persons) proceeds concomittantly with self-referent, person-symbol, and symbol-referent polarization. As the individual moves away from the "primordial sharing situation involving mother-child-object," interpersonal distance between self and other increases and necessitates a communication system of conventional, or communally shared, symbols (p. 48). Thus, the individual progresses from idiosyncratic gestures and utterances, which depend upon context for intelligibility, to autonomous utterances which, depending on the degree of intimacy or non-intimacy existing between addressor and addressee, supply the context necessary

for intelligibility. The further removed the addressee is socially-psychologically from the addressor, the more "impersonal, objective, and disentangled from the symbolizer's idiosyncratic experiences" the symbolic vehicles must become (p. 283).

Experiments conducted by E. Kaplan (1952) and H. Slepian (1959) lend support to Werner and Kaplan's claims. In E. Kaplan's study, twenty college students (10 M, 10 F) were asked to provide written descriptions of visual and olfactory stimuli for two different audiences -- the self and an unknown other. After a familiarization presentation of the stimuli, in which subjects were encouraged to write down "any reactions, feelings, and thoughts that come to mind," each subject again was presented with each of the stimuli and asked to write a one sentence description of what would enable him/her to "identify the particular stimulus-object at some future time (Werner and Kaplan, p. 286)." After completing this phase of the task, subjects were asked to provide a one sentence description of each stimulus-object that would enable "any other person" to identify that object from among four categorically similar objects (e.g. to identify one specific visual object from among four visual objects). Based on the mean number of words per sentence, other-directed speech was more explicit than self-directed speech under all conditions (ratios of 4:1 for visually articulated stimuli; 3:1 for visually diffuse stimuli; and 2:1 for olfactory stimuli) and visual stimuli evoked lengthier verbal responses than did olfactory stimuli (p. 288).

E. Kaplan also compared nominal group modifiers and qualifiers employed in self-directed descriptions.[6] Two very interesting findings emerged. First, other-directed descriptions contained significantly more modifiers and qualifiers than did self-directed speech (0.01), a finding that supports E. Kaplan's earlier claim that other-directed speech is more explicit than self-directed speech. As suggested by Werner and Kaplan, E. Kaplan's results are entirely consistent with the organismic-developmental viewpoint that other-directed speech contains a "higher degree of differentiation and articulation of a referent (p. 292)." Second, modifiers exceeded qualifiers in self-directed speech under all conditions while qualifiers exceeded modifiers in other-directed speech under visual stimuli conditions. According to Werner and Kaplan, these results also find support in organismic-developmental theory. In qualification, a "rather circumscribed thing" is accentuated before it is qualified; in modification, attributes of the referent are accentuated before they are "formulated," or brought together, into one concept. Thus, it would appear that qualification involves a more autonomous use of language, insofar as the referent is first specified by a vehicle by means of which others will conceptualize; only later are its attributes enumerated. E. Kaplan's findings, therefore, lend credence to Werner and Kaplan's claim that

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[6]Like Hasan and Hawkins, Kaplan uses the term "modifier" to refer to pre-noun units in the nominal group; unlike Hasan and Hawkins, she uses the term "specification" to refer to post-noun units in the nominal group. For the sake of clarity and continuity, the term "qualifier" is used throughout the present study.

> with *increasing distance* from other persons and from things, one uses those vehicles which will serve to specify referents in a more communal, conventional manner and tends to play down those vehicles which serve to specify referents in a more idiomatic, idiosyncratic, personal way.
>
> p. 300

In an attempt to extend E. Kaplan's findings, Slepian (1959) conducted a similar experiment involving thirty-six female subjects, equally divided into a normal group and a schizophrenic group. Schizophrenic subjects were used in the study because of schizophrenics' "extreme dedifferentiation between the self and others" which is "manifested in those special circumstances in which the patient is an addressor communicating to others (Werner and Kaplan, p. 254)." Slepian provided for five communication conditions, two of which evoked self-directed speech and three of which evoked other-directed speech. In the self-directed category, each subject was asked, first, to write down his/her immediate reaction to each stimulus and, second, to write a description to help him/her reidentify the referent at a later date. In the other-directed category, each subject was asked, first, to write a description of each stimulus that would enable a hypothetical or absent other person to identify the referent, second, to write a description for a visually present other, and, third, to write a final description for a hypothetical or absent other.[7] Based on the mean number of "structural units" per response, results

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[7]The repetition of stages one and three in the other-directed category allowed Slepian "to determine the effect of actual communication to a real other or communication to hypothetical others (p. 302)."

revealed that schizophrenic subjects' descriptions lacked the differentiatedness, or explicitness, of normal subjects' speech.[8] Whereas normal subjects employed more structural units per response as they moved from "immediate reaction" to "final description" for a hypothetical other, schizophrenic subjects used virtually the same number of structural units per response in all conditions.[9] In addition, schizophrenic subjects did not exhibit the higher degree of explicitness exhibited by normals when talking about the more phsychologically distant visual stimuli (as opposed to the more psychologically near olfactory stimuli).

Like E. Kaplan, Slepian also analysed the relationship of modifiers and qualifiers to nouns in the subjects' descriptive sentences.[10] Under all conditions and stimuli types, normal subjects used significantly more qualifiers per structural unit than did schizophrenics (0.83 versus 0.21). Although both groups used increasingly more qualifiers per structural unit as they moved from "immediate reaction" to other-directed speech, the degree of increase

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[8]The term "structural unit" refers to a nominal group (i.e. a nominal group containing only one primary noun). The use of this criterion allowed Slepian to avoid problems of echolalia and perseverance in the schizophrenic subjects' speech.

[9]However, both groups were relatively laconic in conditions of "immediate reaction."

[10]Like E. Kaplan, Slepian employs the term "specification" for "qualifier."

for normals was significantly greater. In addition, normals used significantly more qualifiers in *self-directed* speech than did schizophrenics in *other-directed* speech.[11] Comparing the number of qualifiers to modifiers in the subjects' sentences, Slepian found that under all (addressee) conditions and stimuli types, schizophrenic subjects employed more modifiers than qualifiers. Normal subjects, on the other hand, employed more modifiers under the "immediate reaction" condition and for olfactory stimuli, virtually the same number of qualifiers and modifiers under the self-directed condition, and more qualifiers than modifiers under other-directed conditions and for visual stimuli. Both groups of subjects in Slepian's study, then, performed in a manner consistent with Werner and Kaplan's theory. Normal subjects evidenced a greater degree of specificity of speech as the social-psychological distance between addressor-addressee and addressor-referent increased. Conversely, schizophrenic subjects did not exhibit a marked differentiation of speech under either condition. That is, the latter group did not appear to discriminate between self and other. Slepian's findings, therefore, suggest that less "advanced mental status" (in this case, schizophrenic as opposed to normal) contributes to a more idiomatic or more idiosyncratic

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[11] As in E. Kaplan's study, visual stimuli evoked a greater incidence of qualifiers than did olfactory stimuli; normal subjects, however, used considerably more qualifiers for all stimuli and exhibited greater differentiation between visual and olfactory stimuli than did schizophrenic subjects.

speech code under conditions of other-directed speech (Werner and Kaplan, p. 316). Thus, schizophrenia seems to involve a reversal of the organismic-developmental trend -- a devolution of the socialization process into a state akin to that of the undifferentiated matrix of early infancy. The more the schizophrenic individual withdraws from commerce with others, the less dependent s/he becomes upon communal, or context-free symbols, and the more disposed s/he becomes to idiomatic, or context-dependent symbols. As Gleitman (1981) points out, once the schizophrenic individual reaches the extreme state of autism, "it becomes extremely difficult to understand what a patient is trying to say ... there is a whole set of private fantasies, personal symbolisms, and special words invented by the patient himself (*neologisms*) (p. 668)."

For normal individuals, however, the reverse trend is true. And, the "potent factor in the change from relatively contextualized to relatively context-free vocal symbolization," according to Werner and Kaplan, is a "natural social habitat" which compels the individual "to develop and articulate his speech in order to achieve open commerce with others (p. 121)." Luria and Yudovich (1966) and Jespersen (1959) have demonstrated just how dramatically such a change in speech can be effected by a change in social habitat. Each of these studies involved one set of mentally normal, five-year-old, identical twins whose speech was abnormally idiosyncratic and context-dependent. In the Luria-Yudovich study, twin A and twin B were removed from an environment in which verbal contact was virtually limited to contact

with each other and placed in separate, normal environments, which encouraged conversation with other children.[12] Prior to their separation, the twins' speech was comprehensible outside the context of action only 17% (twin A) and 22% (twin B) of the time. Comprehensibility outside context of action improved, however, to 89% and 81%, respectively, after three months of separation and reached 100% for both children after ten months of separation. Similarly, in the Jespersen study, once the twins were removed from their necessarily narrow filial environment and placed in a group home, their speech underwent a transformation from monoremic-duoremic utterances, fusing things or persons with context of action (e.g. "lhal" referred to either "getting wet" or "water" depending on the context), to fully inflected forms which maintain their social meaning irrespective of context (e.g. genitive case) (Jespersen, p. 186).

Thus, it would appear that, in both the Jespersen and the Luria-Yudovich studies, an increase in "distance" between addressor-addressee (from twin-twin to twin-nonintimate) facilitated the development of conventional speech forms. As Werner and Kaplan point out, however, one must consider the addressor's awareness of distance between him/herself and the addressee, an awareness which is, "in itself, a function of ontogenetic development (p. 320)." As an example of how important the addressor's awareness of "distance" is,

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[12]Twin A also received speech tuition, although this contributed insignificantly to improvement in speech.

Werner and Kaplan cite a pilot study conducted at Clark University. Subjects in the study were children aged six to twelve years, "the age difference being taken to reflect differences in the awareness of distance between self and addressee (p. 320)." Each child was asked to tell the same story to (a person identified as being) a native speaker of English and (a person identified as being) a non-native speaker of English -- a "foreigner." According to Werner and Kaplan, younger children varied their speech only slightly to accommodate for the differing backgrounds of the addressees. Older children, on the other hand, were "more careful" when selecting words and articulating sentences when addressing themselves to "foreigners." This difference in awareness, however, does not imply that sociocentric awareness suddenly appears at a certain age. Rather, the organismic-developmental theory suggests that the child undergoes a gradual transformation from egocentrism to sociocentrism; it does not suggest that young children are completely egocentric.

Studies conducted by Borke (1975) and Shatz and Gelman (1973) provide evidence of the early onset of sociocentric thinking in young children. To allow for certain cognitive deficiencies in young children that she felt may have influenced the results in Piaget and Inhelder's (1956) study, Borke designed a study which incorporated Piaget and Inhelder's three mountain task with two slightly modified

versions of the same task.[13] In the modified versions, each three-year-old and four-year-old participating in Borke's study was asked to rotate a configuration and stop when s/he came to the scene representing the perspective of "Grover," who had been placed facing an angle of the configuration not faced by the child. Three-year-olds correctly represented "Grover's" perspective 79.5% of the time (mean for both tasks) and four-year-olds correctly represented Grover's perspective 86.5% of the time in the modified versions, compared to 42% and 67% accuracy (respectively) in the Piaget and Inhelder version (p. 242). These findings, according to Borke, suggest that "children as young as 3 and 4 years of age" are capable of understanding another person's perspective (p. 243).

Shatz and Gelman (1973) maintain that similar evidence can be found in the speech of pre-school-age children. In order to determine if young children adjust their speech to accommodate listeners of different ages, Shatz and Gelman administered several different tasks to sixteen four-year-olds (mean age 52 months). Phase One of Study A involved two different tasks. First, each child selected a particular airplane from among three alternatives and then attempted to communicate

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[13]In Piaget and Inhelder's study, a child on one side of a three mountain configuration was asked to depict (by means of another model or a set of pictures) the view seen by a teddy bear placed facing a different angle of the configuration. Because children up to nine years of age had trouble depicting the bear's perspective, Piaget and Inhelder concluded that the young child is "rooted" in egocentrism (Piaget and Inhelder, p. 242).

his/her selection in such a way that his/her mother, who could not see the child's choice, would be able to select a similar plane from among three alternatives before her. Second, in a modified version of Piaget and Inhelder's design, each child sat facing a model. The child was asked if his/her mother, seated at a different angle, had the same view. After this question, the experimenter removed the model and asked the child to replace it in such a way as to present his/her mother's view.[14] The second phase of Study A involved two consecutive periods. In period one, each child was asked to explain to an adult how a particular toy worked; in period two, each child performed the same task with a younger child (mean age 26 months). Of the sixteen subjects, only two passed both the airplane and perspective tasks and only ten passed at least one of the tasks.[15]

In the toy task, however, "all of the children were able to take their listeners into account to some extent (p. 21)." When talking to two-year-olds, four-year-olds used shorter utterances, more attention-getting words (e.g. see, look, watch, etc.), and fewer "coordinate conjunctions, subordinate conjunctions, and certain ...

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[14]The combination of a correct answer and a correct placement constituted one correct score.

[15]Like Borke, Shatz and Gelman attribute these low scores to design complexity and cognitive deficiency of very young children.

predicate complements (p. 30)."[16] In addition, the younger the listeners were, the more the speakers adjusted their speech.[17] Shatz and Gelman's findings, therefore, suggest that, prior to school-age, children are somewhat aware of the social-psychological distance existing between themselves and their addressees and, in some instances, even seem to adjust their speech accordingly.

Although Shatz and Gelman's findings, coupled with those of Borke, indicate that the young child is not necessarily "rooted" in egocentrism, they do not show to what extent, if at all, egocentrism still inheres in the young child's speech in context-independent situations. That is, each of the studies involved the manipulation of concrete objects in the "here and now" and, thus, evoked context-dependent forms of communication. For example, Shatz and Gelman's toy task relied heavily on explanation by physical example -- the four-year-olds manipulated the toys and accompanied the manipulations with gestures and dialogue (e.g. "Put the marbles in here. Put the marbles in here ... Now pour them in here." p. 9). Although such examples do show that the child-addressor is employing quite complex linguistic forms which, in themselves, are socially viable independent of context, they do not show that the

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[16]The predicate complements studied were "that" complementizers (e.g. "I think that this goes here.") and "wh" complementizers (e.g. "I'll show you how to do it.")

[17]Spontaneous speech samples collected in Studies B and C of Shatz and Gelman's experiment support the findings in Study A.

child-addressor can employ those forms and communicate his/her meaning effectively outside of context. That is, the presence of a particular linguistic form in the child's repertoire does not necessarily guarantee functional mastery of that form. As Bloom (1970) points out,

> The fact of the child's utterance is only one part of a larger, complex reality. The utterance occurs within situations that can be characterized in terms of behavior, other participants, and context - factors that need to be apprehended by the child learning to use the language.
>
> p. 14

Because early child speech is "very much tied to context," the young child may encounter some difficulty communicating when context is lacking (Bloom, p. 233). In such instances, the use of "abstract" forms, such as pronouns, is more likely to present problems than is the use of "concrete" forms, such as nouns.[18] However, in the example from Shatz and Gelman above, the child-addressor's use of a pronoun or noun for a particular referent or set of referents (e.g. "marbles" - "them") is relatively arbitrary because the context is shared by both addressor and addressee. That is, the addressor may as easily refer to the referents as "them," initially, as refer to the referents as "marbles," because either form, in this case, is

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[18]Thrust into unfamiliar situations that overtax his/her functional competence relative to recently acquired forms, the individual may employ the particular forms incorrectly, or, according to Werner and Kaplan's principle of "spirality," resort to even more "primitive modes" to effect his/her intention (p. 8).

contextually tied to the referent.[19] Because both addressor and addressee have physical recourse to the referent, there can be little or no doubt as to the identity of the specific referent -- irrespective of the symbolic vehicle (pronoun or noun) employed. Outside of context, however, the identity of specific referents requires considerable elaboration and the rules governing pronoun use are very clearly defined. One must question, therefore, whether young children possess the social-psychological wherewithal to handle pronominal forms meaningfully and with equal facility when relying on solely linguistic means.

Although Werner and Kaplan stop short of applying the organismic-developmental theory to the pronominal system of reference, such an application is not unwarranted. In effect, the pronominal system extends the vehicle-referent polarization phase of development and places additional demands on the addressor's conceptualization of the social-psychological distance existing between him/herself and his/her addressee. As Halliday and Hasan (1976) point out, the problem posed by pronouns lies in the fact that "instead of being interpreted semantically in their own right, they make reference to something else for their interpretation (p. 31)." Halliday and Hasan

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[19] Quite possibly, the two-year-old adressees in Shatz and Gelman's study understood neither symbolic vehicle ("marble" - "them"); instead, they may have completed the tasks successfully because the intonational clues and gestures provided by the addressors suggested that the addressees *do something* with whatever it was they had in their hands.

differentiate between the first and second person pronouns (I, you, we) of *speech roles* and the third person pronouns (he, she, it, they) of *other roles*. The former category refers to the persons and their roles in the speech act (I, we = addressor; you = addressee) and usually requires reference to the context of the speech act for interpretation. That is, because first and second person pronouns rarely refer to the text, their interpretation depends on exophoric reference. Thus, *speech roles* normally do not affect the cohesion of the text because they do not presuppose a referent in the text. The latter category (*other roles*), however, refers to all pronominal vehicles other than addressor and addressee that are relevant to the speech situation, but the referents of which are not (usually) supplied by the context of situation. The presence of a third person form in the text, then, normally implies "the presence of a referent somewhere in the text; and in the absence of such a referent the text appears incomplete (p. 49)." Thus, personal pronouns of the *other roles* category are usually anaphoric, although they "may be exophoric ... wherever the context of situation is (judged by the speaker to be) such as to permit identification of the referent in question (p. 51)." Text or speech cohesion relative to personal pronoun reference, therefore, depends upon the specificity, or definiteness, of linkage between third person pronominal forms and their nominal counterparts. That is, *other roles* pronominal forms, at the tacit level at least, "'contain the definite article (p. 32).'"

This distinction is crucial to a consideration of the pronominal system. Inasmuch as definite articles make reference to specific members of a particular class, their use (tacit or otherwise) presupposes listener and speaker familiarity with the referents. According to Maratsos (1976), a

> definite reference to *the X* on the part of the speaker requires not only that he intend a uniquely specified number of *X*, but also that the reference to *the X* be specific for his listener. *The X* should bring to the mind of both speaker and listener the same particular, unique member of *X* as referent for the expression. When this condition is not filled, the listener may be puzzled because he is unable to bring to mind a previously specified, unique member of *X* to correspond to the ... definite reference.
>
> pp. 2-3

Further, referents "introduced to the speaker only verbally ... have as distinctive properties only the propositional context in which they were introduced (p. 8)." In the event that propositional context is lacking, ambiguity of reference results. For example, one can make only very general and very limited conclusions as to the respective referents of the two pronouns in the following, decontextualized sentence:

He ate it.

One can safely conclude that the referent of "He" is singular and male. However, one cannot determine whether the referent of "He" is human or non-human, owing to the fact that, like humans, certain

members of the non-human classes are commonly assigned pronominal gender (e.g. household pets referred to as "he" or "she"). The second pronoun in the sample sentence presents a somewhat stickier problem. The only safe conclusion one can make is to say that the referent of "it" is singular and probably non-human.[20] Because of the fact that, like inanimate objects, many non-human creatures are commonly assigned neuter pronominal forms, one cannot determine whether the referent of "it," in this case, is animate or inanimate, male, female, or neuter.[21] Thus, the most informed statement one can make about the decontextualized sample sentence is the following:

> A single, male, animate something or other ate a single, male, female, or neuter, animate or inanimate, non-human something or other.

i.e.

He ate it.

single, non-specific, male, animate

single, male/female/neuter, animate/inanimate, non-specific, non-human.

Decontextualized pronouns, therefore, assume a non-specificity of character. Whereas decontextualized nouns still supply reference to

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[20] Although, if one were referring to a count or mass noun, one might successfully argue that "it" can also refer to plurals.

[21] However, much of the information regarding the animacy/inanimacy of a referent may be conveyed by the class of verb employed. For example, if the verb "killed" preceded the pronoun "it," one could probably assume that "it" referred to a previously animate referent.

the specific class to which they belong, decontextualized pronouns lack such semantic power. Out of context, *other roles* pronouns make no reference to specific classes. Consequently, they cannot be employed unless the referent is established for both speaker and hearer. In those cases in which the speaker's reference is not specific for the listener, "an introductory indefinite reference becomes appropriate (Maratsos, p. 4)." Thus, only the "a" versions of the two sentences below would be appropriate as introductory statements to referents with which the addressee is unfamiliar. That is, the "a" versions are acceptable because the use of the indefinite article acknowledges the addressee's lack of familiarity with the specific referents. The "b" and "c" versions, on the other hand, are unacceptable as introductory statements because the use of the definite article, at the surface level ("b" versions) or at the underlying level ("c" versions), presupposes addressee familiarity with the referents.

1.a. A man bought candy.

*1.b. The man bought the candy.

*1.c. He bought it.

2.a. A dog caught a rat.

*2.b. The dog caught the rat.

*2.c. He caught it.

However, as Maratsos points out, once a "referent in a discourse has become established as a unique member of its class for both speaker

and listener in the discourse, future references to it should be definite ones (p. 4)."[22] The greater the number of references, the more definite and semantically rich the referent becomes. Thus, one can see how much the previously decontextualized sentence, "He ate it.", gains in semantic content given the two different environments below.

1.a. A man bought candy.

indefinite, single, human, male, specific age range.[23]	indefinite, mass, inanimate, neuter, sweet.

He ate it.

definite,[24] single, male, human, of a specific age range (i.e., the man who bought the candy).	definite, mass, inanimate, neuter, sweet (i.e., the candy that was purchased by the man).

2.a. A dog caught a rat.

indefinite, single, canine, of indeterminate gender.	indefinite, single, rodent, of indeterminate gender.

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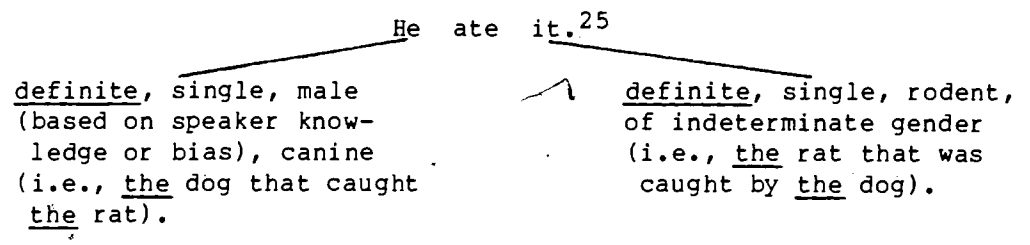
[22]"Definite," as used by Maratsos, refers to a very particular *member* of a class; "specific," as used by Maratsos, refers to a particular *class*.

[23]Age range may vary with political climate (e.g. In Canada, a male human becomes a man at 19; in the U.S., a male becomes a man at 21).

[24]With second mention, the referent assumes definiteness.



That is, the pronouns "He" and "it" which, when decontextualized, remained relatively abstract -- one could make only indefinite and non-specific statements concerning their referents -- gained significantly in concreteness with the introduction of context-supplying (class specifying, member defining) nouns. In other words, context provides the means by which the addressee selects the precise interpretation of pronouns intended by the addressor; without it, pronouns are open to a myriad of possible interpretations. Unless the addressee is familiar with the context referred to by the addressor, or, failing that, is made aware verbally of the context, s/he has no way of knowing whether a sentence such as "He ate it.", refers to a dog eating a rat, a king eating a pie, an elephant eating grass, a man eating candy, or any one of a host of other possible "He's" eating any one of a host of other possible "it's." And unless the addressor is aware of these constraints governing pronominal usage, his/her speech will be ambiguous and relatively egocentric. In summary, then, sociocentrism requires that the addressor not only be cognisant of the

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[25]Assigning neuter status to certain animals or groups of animals also may be due to a kind of social-psychological distancing. For example, one would most likely feel more emotionally distant from rats than from dogs. Perhaps the greater the emotional distance, the more likely one would be to assign neuter status.

addressee's knowledge of a particular context, but also that the addressor employ sociocentric forms that supply meaning in the absence of such knowledge. When such knowledge is lacking, initial reference must be indefinite ("a(n)" + noun) and subsequent references definite (either a pronoun or "the" + noun).

Maratsos (1974, 1976) claims that children as young as four years of age already "successfully formulate and use the abstract referential dimension of specificity and non-specificity (1976, p. 95)." But as Warden (1976) points out,

> Maratsos' experimental studies only cover a limited area of referential speech. Most of his evidence is based on question and answer sessions in which he told the children a story, and then asked a *wh* question, to which the children were supposed to give an answer of the form 'the + noun' or 'a + noun.'
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> p. 111[26]

Warden objects to this kind of experimental design on several grounds. First, by identifying the referents for the child, Maratsos provides no means of determining whether the child will introduce the referents correctly (with an indefinite reference). Second, because the referent is supplied by the researcher, there is no way of determining if the child is employing definite reference correctly (in accordance with the rules of "second mention") or merely is employing

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[26]Warden's article only came to the researcher's attention after the present study had been formulated and tested in a pilot study.

definite reference indiscriminately. Third, assessing children's referencing abilities by means of *Wh* questions and responses may be confusing referencing with naming.[27] Thus, Warden concludes that

> a speaker's ability to use the articles appropriately can be revealed most clearly when he is allowed to provide the verbal context for his referring expressions, rather than being constrained to respond to a verbal context imposed on him by an experimenter.
>
> p. 111

In an effort to assess children's use of the articles in a task "more generally representative of the referential use of language," Warden (1976) compared children's descriptions of three-dimensional farm scenes (Experiment 1), line drawings of animal chase scenes (Experiment 2), and cartoon strips of sequential events (Experiment 3) to adults' (aged 20 years) descriptions of the same referents. Whereas four-year-old children participated in the first two experiments, five-, seven-, and nine-year-olds participated in the third experiment in order to allow Warden to "examine developmental changes in the use of definite and indefinite referring expressions (p. 108)." In Experiment 1, addressors described events and named

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[27] An example of referencing would be a child volunteering the sentence "A dog in a pack caught a rat." An example of naming would be a child volunteering the nominal phrase "A dog.", in response to the question "What caught the rat?". Evidence from Brown (1973), Bloom (1970), and Warden (1976) shows that although children may "master the nominative use of a" even prior to the fourth year, they do not master its referencing use at the same time -- when that use involves adopting a "point of view ... different from their own (Warden, p. 110; Brown, p. 355)."

participants to either a blindfolded addressee (child version) or an imagined audience (adult version). In Experiment 2, half of the subjects described drawings present in both the addressors' and addressees' fields' of vision (Social condition) and half described drawings absent from the adressees' fields' of vision (Isolated condition). In Experiment 3, a subject at one end of a table on which a large screen was placed described the referents to an addressee of the same age seated at the opposite end of the table. Each member of each dyad in Experiment 3 participated as addressor and addressee. Thus, the purpose of the referent absent condition in the three experiments was to convey to sociocentrically aware addressors the need to make their references specific for their addressees. Only addressors aged nine years and above in Warden's experiment, however, were "reliably" possessed of such awareness. Younger children, according to Warden,

> fail to take account of the social context of their reference, or of their audience's knowledge of the referent ... They fail to recognize the need for an indefinite expression when introducing a referent for the first time in a discourse; consequently, they also fail to recognize the constraints on the use of the definite article, namely that its use indicates an already-identified referent.[28]
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> p. 110

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[28]Because "adults only used the articles consistently correctly in Experiment III," Warden suggests that the task design for that experiment (coincidentally similar to the task design of the present study) may offer one of the "best indication[s] of children's referential ability (p. 110.)"

Warden attributes this failure to the inability of young children to adopt their audience's point of view.

Given the tacit presence of the definite article in pronominal reference, then, a similar phenomenon may occur in children's use of pronouns. Although numerous researchers have studied children's facility with the pronominal system, few have focussed on children's awareness of when pronouns are properly employed. The vast majority of research has concentrated on syntactic and semantic accuracy. For example, Strayer (1978) studied the development of personal reference (*speech roles* pronouns "you" and "I") in two-year-old children; Cruttenden (1977), Charney (1978), Chiat (1981), and Oléron (1981) assessed noun-pronoun correspondence relative to gender, number, and case in preschool children's speech. The conclusions reached by these researchers, when taken as a whole, suggest that by the time they reach school age, children are wholly functional with respect to the complete range of pronominal alternatives. That is, given a particular nominal form (e.g. third person plural, nominal possessive - *John and Jim's* dog), a school-age child can correctly supply the pronominal equivalent (e.g. *Their* dog). However, evaluating the one-to-one correspondence between nouns and pronouns does not provide an accurate measure of children's understanding of the highly constrained conditions under which the rules of reference apply.

Wykes (1981) demonstrated this discrepancy in a study of five-year-old children's ability to understand adult-uttered sentences containing

more than one anaphoric pronoun. Seventeen of the twenty-four children in his sample misunderstood sentences as "a function of the number of pronouns in the sentence (p. 270)." The more pronouns there were in the sentence, the more errors the children made in reference. Although Wykes' study does not compare anaphoric pronoun usage to exophoric pronoun usage, or assess children's ability to employ (encode) anaphoric pronouns, it does point out that, at five years of age, children have not yet mastered the pronominal system, albeit at the decoding level. Thus, although the previously mentioned studies show that pre-school children seem to have all pronominal forms available in their repertoire, Wykes' study shows that syntactic and semantic knowledge, while necessary to the acquisition of pronominal forms, do not guarantee the successful application of those forms in relevant environments. When a pronominal form is employed without the knowledge that it must refer to something previously mentioned, something about to be mentioned, or something with which the listener is familiar, ambiguity results. Van Hekken, Vergeer, and Harris (1980) corroborate Wykes' findings, suggesting that "the syntactic role of the pronoun is not related to the probability that it will be used ambiguously" or unambiguously (p. 562). In order to determine whether the rather formal structure of an "experimental setting masks an otherwise available competence," Van Hekken et al. videotaped preschool child-child dyads (Mean age = 5:7) during play activities (p. 556). In cases in which the referent was not present in the environment, cases requiring verbal disambiguation, 64.2% of the pronouns were ambiguous, or non-specific. In addition, only two of

138 "responsive reactions to utterances with ambiguous pronouns" indicated that the listener detected the ambiguity (p. 560). Thus, it would seem that even in familiar, "naturalistic" settings, preschoolers tend to use pronouns ambiguously -- even though the speaker is aware that the referent is not present in the listener's visual field.

Maratsos (1973), however, has suggested that three to five-year-old children are quite capable of verbal explicitness when they are made aware that the referent is missing from the listener's field of vision. To test this hypothesis, he randomly selected eight subjects from each of age groups 3, 4 and 5 and randomly assigned them to either of two settings in which they "were to communicate their choice of a toy either to a person who could see or to one who could not (p. 697)." The criteria for explicitness were species (of toy), color (of toy), and position (of toy relative to other toys); pronoun usage was not analysed. Analyses of variance revealed that children in the blocked vision group gave significantly more verbally explicit responses ($F:1, 18 = 45.03$, $p. < .0001$). Children in the unobstructed vision group, the group in which both speaker and listener shared the visual field, relied more on gesture to specify referents. Thus, it would seem that the speakers were reacting to their listener's situation and encoding accordingly. However, as Maratsos points out, the "results obtained in this study ... can probably be attributed to the simplicity of the task (p. 700)." That is, the task of simply naming objects was probably not complex enough to offer many

opportunities for ambiguity and long stretches of speech. It more nearly determined whether children would resort to verbalization when gesture failed to effect listener response; it did not measure the degree to which children were "naturally" explicit in their speech. In addition, Maratsos' findings, rather than showing that five-year-old children exhibit adult-like facility with respect to articles, only show that five-year-olds differentiate *to some degree* between context-dependent and context-independent speech situations.

The present study represents an attempt to determine the explicitness of children's speech by examining the incidence of exophoric and anaphoric pronoun and article usage in a descriptive speech task. The design follows that of Hawkins (1969), although several changes have been made in order to provide a less ambiguous measure of exophoric usage and to determine whether that usage changes developmentally.

As mentioned above, incorrect exophoric pronoun usage can only be determined in a setting in which the context of situation is unfamiliar to the listener. To account for this qualification, two settings were used. In the first setting (Picture Present), both speaker and listener looked at the pictures the speaker was describing. Because both speaker and listener had (approximately) the same mental picture of the context of situation, the speaker was less obliged to make his/her speech specific by employing nouns in the "head" position. Because the referents were visible to the listener, the speaker could employ exophoric pronouns without fear of obscuring

the meaning. In the second setting (Picture Absent), only the speaker saw the pictures to be described. Because the listener had no mental picture of the context of situation, the speaker was more obliged to make his/her speech specific by employing either nouns or anaphoric pronouns in the "head" position. Exophoric usage in this case would obscure meaning because the speaker would be using context-dependent speech in a context-independent situation -- that which Bernstein calls restricted code.

Hawkins' dyad design was also altered in the present study so as to include child to child speech as well as child to adult speech. The purpose of this change was to determine whether there were any significant differences in the number of exophorics children used when talking to peers and to non-peers (adults). Thus, because the nature of the child's task remained the same in both dyads, any differences that might have resulted would have been due to dyad age differences rather than task factors. Significant differences in this area would also suggest that Hawkins' results may have been due to design factors rather than restricted code factors. That is, if one could show that, in the present study, child to child speech contained significantly more or significantly fewer exophorics than child to adult speech, one might suggest that Hawkins inadvertently biased his results by recording only child to adult speech.

The final major difference between the present study and that of Hawkins was the inclusion of two different grade levels (Grade 3 and

Grade 5) in addition to the Kindergarten group in the analysis. The reason for this change was twofold. First, if, as Hawkins claims, "most children in both classes use at least one" exophoric pronoun at five years of age, one might suggest that age, as well as socioeconomic background, plays an important role in exophoric pronoun usage (p. 132). For example, if the majority of children of a certain age, irrespective of class, use exophoric pronouns (correctly or incorrectly), *usage* can be said to be independent of class, but dependent on age; if children from one social class use exophoric pronouns significantly less often than children of the same age from another social class, *frequency of usage* can be said to be independent of age, but dependent on class. In the latter case, there might be evidence of a developmental trend -- of one group coming to understand the system of reference sooner than the other. Should the pronominally precocious group still employ exophoric pronouns incorrectly, however, there would be evidence that neither group, yet, fully understands the system of reference. Second, in order for Hawkins to suggest that lower/working class children use a restricted code, as evidenced by incorrect exophoric usage, despite schooling in the elaborated code of the education system, he would have to show that older lower/working class children, who have been in the system for some time, continue to employ exophoric pronouns incorrectly. That is, he would have to show that older lower/working class children use context-dependent speech in context-independent situations. If both upper/middle and lower/working class children employ exophoric pronouns incorrectly at earlier stages of development, one must show

that the former group does not use exophorics incorrectly and the latter group does use exophorics incorrectly at later stages of development. However, if both groups use significantly fewer exophoric pronouns incorrectly at later stages of development, one could suggest that the exophoric pronoun phenomenon discovered by Hawkins is merely symptomatic of a developmental stage in pronominal conceptualization, a stage which does not inhibit educational or social success. The inclusion of Grade 3 and Grade 5 children in the present study, then, serves the purpose of determining whether a developmental trend is observable in children's use of exophoric in context-dependent and context-independent speech situations.

Thus, the present study was designed to test the following null hypotheses.

1. Sex, grade, socioeconomic status, and dyad type will have no effect on the grammatical categories tested.

2. Picture condition and dyad age combinations will have no effect on the categories tested.

CHAPTER THREE

This chapter begins with a presentation of the research methods employed in the present study, including a slightly more detailed rationale for the linguistic scoring procedure used. The chapter concludes with an outline of the socioeconomic scoring procedure and a discussion of the socioeconomic score results.

METHOD

Subjects

Because this study, in part, was designed to compare the speech of high SES and low SES children, data were collected from two socioeconomically diverse schools (one reported to be high and one reported to be low) in the lower mainland of British Columbia, Canada. In the belief that solicitation of socioeconomic information (coincident with solicitation of parental consent) might inhibit consent, consent and socioeconomic information were solicited on two separate forms, at two different times. Only after parental consent had been received, the task performed, the speech samples transcribed, and the data categorized, was socioeconomic information sought from the parents of those children for whom consent had been received. As can be seen in the discussion entitled SES Forms and Rates of Return (below), the differences in rates of return between consent forms and socioeconomic information forms seem to justify this initial precaution.

Consent Forms and Rates of Return

In mid-October 1983, consent forms (see Appendix C) were sent home with the total English first language population (N = 113) of Kindergarten (N = 43), Grade Three (N = 33), and Grade Five (N = 37) children from one (reportedly) low SES elementary school. At the same time, consent forms were sent home with the total English first language population (N = 126) of Kindergarten (N = 36), Grade Three (N = 31), and Grade Five (N = 59) children from one (reportedly) high SES elementary school.

Initial returns for the low SES school totalled 66, yielding an overall return rate of 58.41%. Returns and rates of return for the individual grades were as follows:

Kindergarten - N = 29, 67.44% : 15 F, 14 M;
Grade Three - N = 17, 51.52% : 7 F, 10 M;
Grade Five - N = 20, 54.05% : 10 F, 10 M.

Initial returns for the high SES school totalled 76, yielding an overall return rate of 60.32%. Returns and rates of return for the individual grades were as follows:

Kindergarten - N = 30, 83.33% : 18 F, 12 M;
Grade Three - N = 22, 70.97% : 11 F, 11 M;
Grade Five - N = 24, 40.68% : 15 F, 9 M.

Follow-up consent forms, sent to non-respondents, produced the following results. Returns for the low SES school now totalled 94,

yielding an adjusted overall return rate of 83.19%. Adjusted returns and rates of return for the individual grades were as follows:

Kindergarten - N = 35, 81.40% : 18 F, 17 M;

Grade Three - N = 30, 90.91% : 13 F, 17 M;

Grade Five - N = 29, 78.38% : 13 F, 16 M.

Returns for the high SES school now totalled 100, yielding an adjusted overall return rate of 79.37%. Adjusted returns and rates of return for the individual grades were as follows:

Kindergarten - N = 34, 94.44% : 18 F, 16 M;

Grade Three - N = 30, 96.77% : 16 F, 14 M;

Grade Five - N = 36, 61.02% : 19 F, 17 M.

In each school, 32 children (16 F, 16 M) from each of grades Kindergarten, Three, and Five were randomly selected from the names submitted on consent forms. These children, in turn, were randomly assigned to each of the settings described below (see Procedure). In the three cases (Grade Three LSES females, Grade Five LSES females, and Grade Three HSES males) in which fewer than sixteen males or females returned consent forms, some children (3 F, 3 F, and 2 M,

respectively) were asked to perform the task twice. Because the task required that children who performed the task once see only any four given picture stories of the six picture stories used in the study, children who performed the task twice saw a repetition of only two pictures. For example, a child who performed the task twice might describe picture stories 1-2-3-4, in the first instance, and picture stories 1-3-5-6, in the second instance. Thus, only 16 out of a total of 768 descriptive speech samples involved twice-seen picture stories. One might suggest, therefore, that repetition had very little, if any, influence upon the data. Further, the fact that the study assessed not the *formula* of description, but, rather, the *grammatical items composing* the formula of description renders the repeated pictures' potential for influence virtually non-existent. In other words, a child who repeated the task might have been expected to introduce more referents into his/her description on the second attempt at the same picture, but that, in itself, should not have affected, overmuch, the means (e.g. nouns or pronouns, definite articles or indefinite articles) by which the child introduced those referents.

In addition to the child subjects, 46 (22 M; 24F) upper levels students from Simon Fraser University, Burnaby, B.C., performed the tasks included in the study (see Procedure). The reason for the inclusion of these subjects was twofold. First, in order to compare children's performance to the theoretical adult model of reference outlined above, one must ensure that adults, in fact, perform

according to that model in the experimental condition. Second, if, as Bernstein suggests, the education system employs an elaborated form of speech code, the speech of people long-schooled in that system should provide a fairly representative sample of the elaborated code. Thus, if high SES children's speech approximates that of university students, relative to correct exophoric usage, for example, and low SES children's speech differs relative to the same measure, one might suggest that the particular speech code one employs depends (to some extent) on one's socioeconomic background (at least in the elementary school years). However, if the speech of both high and low SES children differs to the same approximate degree from that of university students, one might suggest that age, rather than SES, contributes to the difference. In the latter event, the differences should disappear as the children mature -- theoretically, at least, Grade Five children's speech should more closely approximate that of university students (on the items tested) than should Kindergarten children's speech -- irrespective of SES.

Apparatus

Because Hawkins visually reproduced only two of the picture stories used in his study (Hawkins, 1977, pp. 56-57), it was necessary to design four other stories which were approximately consistent with Hawkins' stories in complexity and number of referents. Cathie Jackson, one of the two adult observers, designed and drew four of the

six picture stories used in the present study. In addition, she revised Hawkins' original "soccer" and "fishing" stories so that the artwork in all pictures was stylistically similar (see picture stories 1 through 6, Appendix A).

In the picture present condition (PP), the speaker and listener sat side-by-side, facing a table on which an A-frame apparatus held the picture stories upright for ease of viewing. In the picture absent condition (PA), the speaker sat facing the picture stories and the listener sat in a chair on the opposite side of the table, facing the back of the A-frame apparatus, so that his/her vision was obstructed.

All speech samples were recorded on Sony TC 110 cassette recorders and later transcribed. Testing took place during the weeks of November 1, 1983 (low SES) and November 7, 1983 (high SES).

Procedure

Child subjects. In each grade, children were taken out of class in pairs (either MM, MF, or FF). An equal distribution of each type of pair proceeded to child-child dyads prior to proceeding to child-adult dyads and vice-versa. Thus, dyad age combinations (either CA or CC) were completely counterbalanced.

Child-adult dyads - settings 1 & 2. Either prior to settings 3 and 4, or subsequent to settings 3 and 4, child pairs (either MM, MF, or FF) proceeded to settings 1 and 2. One child of each pair went to an adult male observer (Location A) and one child of each pair went to an adult female observer (Location B).[29] Sex factors were controlled for in these settings by alternating the sex pairings of the dyads. Thus, an equal representation of M to M, M to F, F to M, and F to F speech was elicited.

Setting 1 (CAPP). Looking at a different picture story from those s/he described in settings 2, 3, and 4, each child was asked to describe the picture story action to an adult observer (either M or F). The adult observer sat beside the child speaker and looked at the picture story during the course of the child's perusal and description of the picture story. Picture stories 1 through 6 were counterbalanced in all settings to control for the possibility that some pictures might elicit more speech and greater detail than other pictures. In addition, the picture present (PP) and picture absent (PA) conditions of settings 1, 2, 3, and 4 were counterbalanced to control for the possibility that a child proceeding to one condition first (e.g. PA) might become predisposed to using a higher incidence of certain grammatical items (e.g. nouns) when s/he proceeded to the

[29]Locations A and B, adjacent rooms, were used in order to prevent a child in one dyad from overhearing what was said in the other dyad.

other condition (e.g. PP). (For directions given to the children in each setting, see Appendix B.)

Setting 2 (CAPA). As stated above, the PP and PA conditions were counterbalanced in both CC and CA dyads, half of the subjects beginning the task in the PP condition and half beginning the task in the PA condition. In the CAPA condition, directions were given to the child by an adult observer other than the one who would be listening to the child's description. That is, at the time directions were to be given in the CAPA condition, each of the two observers went to the other observer's room, explained the procedure to be followed, selected the picture story to be described, and monitored the tape to ensure that it was working properly. Children were told that the observer who would be listening to the description had not seen the picture story before. Once the directions were given, each of the two observers returned to his/her room and seated him/herself in a chair on the opposite side of the table (from the speaker), the observer's vision obstructed by the back of the A-frame apparatus. (See Appendix B for the directions given to children in the PA condition.)

Looking at a different picture story from those s/he described in settings 1, 3, and 4, each child described the picture story action to the respective adult observer.

Child-child dyads - settings 3 & 4. Either prior to settings 1 and 2, or subsequent to settings 1 and 2, each pair of children

proceeded to settings 3 and 4 (Location C). As stated above, PP and PA conditions were counterbalanced in all settings. Sex factors were also controlled for in these settings by alternating the sex pairings of the dyads. Thus, an equal representation of M to M, M to F, F to M, and F to F speech was elicited.

In settings 3 and 4, the adult male observer instructed the children as to the task requirements and monitored the tape recorder and the children's performance (to ensure that the task was completed correctly). Again, picture stories 1 through 6 were counterbalanced in all settings.

Setting 3 (CCPP). Looking at a different picture story from those s/he described in settings 1, 2, and 4, each child was asked to describe the picture story action to another child. The child listener sat beside the child speaker and looked at the picture story during the course of the speaker's perusal and description of the picture story.

Setting 4 (CCPA). Looking at a different picture story from those s/he described in settings 1, 2, and 3, each child was asked to describe the picture story action to another child who had not seen the picture story. During the time in which the speaker perused and described the picture story, the child listener sat in a chair on the opposite side of the table (from the speaker), the listener's vision obstructed by an A-frame apparatus.

University Subjects

In the case of university subjects, only the PP and PA conditions applied, both of which were counterbalanced, as were the sex pairings of the dyads and the picture stories described (stories 1 through 6). Subjects were solicited by means of volunteer request forms circulated in upper division Linguistics and Education classes at Simon Fraser University and by advertisements placed in the student newspaper, *The Peak*. Volunteers were randomly assigned to dyad types (MM, MF, or FF) and PP/PA conditions.

Setting U1 (PP). Either prior to setting U2, or subsequent to setting U2, each student in each dyad type proceeded to setting U1. Looking at a different picture story from the one s/he described in setting U2, each student was asked to describe the picture story action to another student. The student listener sat beside the student speaker and looked at the picture story during the course of the speaker's perusal and description of the picture story. (For directions given to university students in both settings, see Appendix B.)

Setting U2 (PA). Either prior to setting U1, or subsequent to setting U1, each student in each dyad type proceeded to setting U2. Looking at a different picture story from the one s/he described in setting U1, each student was asked to describe the picture story action to another student who had not seen the picture story. During

the time in which the speaker perused and described the picture story, the student listener sat in a chair on the opposite side of the table (from the speaker), the listener's vision obstructed by an A-frame apparatus.

Recordings of university subjects' speech were made during the Fall 1983 semester and the Spring 1984 semester at Simon Fraser University.

Scoring Procedure

The first few attempts at scoring the data revealed one area in which the criteria for analyzing pronouns and articles (as outlined by Hawkins and Maratsos) could have been more precise. Specifically, the bipolar classification of pronouns, as either exophoric or anaphoric, and the bipolar classification of articles, as either definite or indefinite, tend to oversimplify the relationship between initial and subsequent reference.[30] For example, compare the two descriptions below, placed in the context of the PA condition. The first mention of each referent is signified by a number followed by an "a" (e.g. 1a, 2a, 3a); the second mention of each referent is signified by the same

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[30] Pronouns, in fact, are subject to a tripolar classification system (see Chapter 1, p. 5, above), but, because cataphoric pronouns do not affect backward reference, they are not included in the present discussion.

number followed by a "b" (e.g. 1b, 2b, 3b). Thus, 1a and 1b refer to the same referent.

1. A boy (1a) is at the seashore.[31] (2a) He's (1b) putting a boat (3a) in the water. (2b) The boat's (3b) floating.

2. He's* (1a*) there.*[32] (2a*) He's (1b) putting the boat* (3a*) in the water. (2b) It's (3b) floating.

In description 1, each referent is introduced in a grammatically acceptable way, given the PA condition. That is, initial reference is made by means of either an indefinite article plus noun (iA + N) or a definite article plus universally understood noun (iA + uN); subsequent reference is made by means of either an anaphoric pronoun (AnP) or a definite article plus noun (dA + N). Thus, there is every indication, given the discrimination in the use of each grammatical item in description one, that the speaker is cognisant of the rules governing correct pronoun and article use (See discussion Ch. 2, pp. 25-31, above.). To create a link between the referents and their respective symbolic vehicles -- in the mind of the listener -- the speaker places sufficiently complete semantic content in a correct

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[31] Referents which are universally understood can be introduced by means of dA + uN, irrespective of conditon.

[32] An asterisk denotes incorrect usage.

syntactic pattern. Thus, speaker number one adheres to the following formula for correct pronoun and article use:

a + b = c

, in which the order in which "a" and "b" appear represents a fixed syntactic pattern,

a = correct first mention,

b = correct second mention,

and

c = correct pronoun/article use.

In description 2, however, there seems to be a kind of semantic-syntactic blur, or free substitution, of grammatical items. The speaker does not seem to distinguish between first and second (or subsequent) mention. That is, instead of introducing each of the three referents correctly by means of a first mention form, speaker number two introduces each of the referents incorrectly by means of a second mention form. Referent 1a* is introduced by means of an exophoric pronoun (instead of iA + N); referent 2a* is introduced by means of an exophoric locative (instead of iA + N or dA + uN); referent 3a* is introduced by means of an exophoric definite article plus noun (instead of iA + N). Thus, instead of adhering to the required formula, a + b = c, speaker number two employs an unacceptable formula, a* + b = c*, thereby placing insufficiently complete semantic content in an incorrect syntactic pattern. It would seem inaccurate on two counts, therefore, to suggest that the "b" forms in description two represent anaphora in the same way that the

"b" forms in description one represent anaphora. First, the "b's" of the former lack the semantic load carried by the "b's" of the latter. Second, the mere presence of second (or subsequent) mention forms in second mention positions does not, in itself, indicate that speaker two has a thorough understanding of anaphoric reference, especially considering the fact that speaker two also employs second mention forms in first mention positions. It would seem incorrect, therefore, to credit a speaker with anaphoric accuracy when that speaker fails to distinguish between first and second mention forms. On the other hand, it would seem unfair to suggest that a speaker who fails to distinguish between first and second mention forms necessarily uses second mention forms incorrectly. Given this two-sided dilemma, the scoring categories below were established to indicate more precisely the semantic and syntactic relationship between initial and subsequent reference -- especially the considerable effect the former has on the latter.

Scoring Categories

AN - second mention pronoun based on correct first mention.

AN_1 - total number of anaphorics used irrespective of first mentions.

AN_2 - second mention pronoun based on exophoric pronoun first mention.

AN_3 - second mention pronoun based on exophoric definite article first mention.

AN_4 - second mention pronoun based on exophoric demonstrative first mention.

AN_5 - second mention pronoun based on noun unaccompanied by article in first mention.

AN_6 - second mention pronoun based on exophoric deictic (e.g. some, any) in first mention (e.g. "Some are playing.").

AUD - audience/listener (e.g. you).

CAT - cataphoric pronoun.

DA - second mention definite article based on correct first mention.

DA_1 - total number of definite articles used irrespective of first mentions.

DA_2 - second mention definite article based on exophoric pronoun first mention.

DA_3 - second mention definite article based on exophoric definite article first mention.

DA_4 - second mention definite article based on exophoric demonstrative first mention.

DA_5 - second mention definite article based on noun unaccompanied by article in first mention.

DEIC - deictic (e.g. words like "some, any, no").

DEM - demonstrative (e.g. this, that, these, those).

EDA - exophoric definite article first mention.

EDEIC - exophoric deictic.

EDEM - exophoric demonstrative first mention.

ELOC - exophoric locative first mention (e.g. "She's sitting there.").

EN - noun unaccompanied by article.

EP - epithet (e.g. any adjective).

EX - exophoric pronoun first mention.

IA - indefinite article, first mention correct.

INT - intensifier (e.g. words like "very" preceding adjectives -- "very mad").

LOC - locative, correct use.

N - noun

NAR PL - narrator plural (e.g. "We see a dog.").

NAR SG - narrator single (I).

NOM - nominal (e.g. *fishing* pole).

O - ordinative (e.g. two, first, next).

Q - qualifier (e.g. "they *all*").

REL - relative pronoun (e.g. "The boy *who* kicked the ball.").

Although each of the categories above was scored in both the PA and PP condition, incorrect first mention usage could only occur in the PA condition, owing to the fact that only the speaker had knowledge of the referents in the PA condition.

SES Forms and Rates of Return

In the belief that people's reluctance to volunteer personal socioeconomic information would result in a lower rate of parental consent to the linguistic study, socioeconomic information forms were sent to parents of eligible children only after consent had been received and the linguistic data scored.

Thus, in mid-February 1984, socioeconomic forms were sent home with the total population (N = 94) of Kindergarten (N = 35), Grade Three (N

= 30), and Grade Five (N = 29) LSES children for whom consent had been received in October 1983.

At the same time, socioeconomic forms were sent home with the total popluation of (N = 100) of Kindergarten (N = 34), Grade Three (N = 30), and Grade Five (N = 36) HSES children for whom consent had been received in October 1983 (For a copy of SES form, see Appendix C).

Returns for the LSES sample totalled 53, yielding an overall return rate of 56.38%. Returns and rates of return for the individual grades were as follows:

Kindergarten - N = 19, 54.29%; Grade Three - N = 20, 66.67%; Grade Five - N = 14, 48.28%.

Returns for the HSES sample totalled 55, yielding an overall return rate of 55.00%. Returns and rates of return for the individual grades were as follows:

Kindergarten - N = 19, 55.88%; Grade Three - N = 15, 50.00%; Grade Five - N = 21, 58.33%.

Comparing consent return rates to SES return rates, one can see a general reluctance on behalf of families to return the latter. Whereas 81.17% (N = 194) of the total families initially contacted (N = 239) consented to their children's participation in the linguistic

study, only 56.19% (N = 109) of the linguistic-consent families were willing to answer questions pertaining to their socioeconomic status.[33]

Scoring of SES Information

Several sources were used to arrive at family SES scores. First, Blishen and McRoberts' (1976) socioeconomic index for occupations in Canada was used to score the occupation of each male parent in each family.[34] This index listed only male SES scores in the belief, revised subsequent to Sampson and Rossi (1975) and Rossi, Sampson, Bose, Jasso, and Passel (1974), that "the social status of the family is based upon the occupational status of the male head of the household (Blishen and Carroll, 1978, p. 353)."[35] Second, Blishen and Carroll's (1978) socioeconomic index for women's occupations in Canada was used to score the occupation of each female parent in each

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[33]Due to time restrictions, follow-up SES forms were not sent.

[34]SES entries for single parent families in the present study represent the rating for one occupation only, whereas SES entries for double parent families represent a combination of the male parent's occupational rating and the female parent's occupational rating.

[35]Sampson and Rossi (1975) and Rossi *et al.* (1974) suggest that "the wife's race, occupation, and education do have an effect on family social status, although it is not of the same magnitude as the effect of these characteristics of the husband (Blishen and Carroll, p. 353)."

family. Third, Rossi *et al.*'s (1974) imputed prestige scores for housewives (26.9) and unemployed male (21.8) and female (25.4) parents were assigned to the respective adults in the present study because neither Blishen and McRoberts nor Blishen and Carroll included scores for such individuals. This seemed a preferable alternative to assigning either a zero or some other arbitrary rating to housewives and unemployed parents in the present study (For a list of occupations, education, and SES scores for consenting families, see Appendix D).[36]

One of the shortcomings of Blishen and Carroll's study is that the researchers do not suggest a formula for combining the female SES scores from *their* index with the male SES scores from *Blishen and McRoberts'* index to arrive at a family SES score, although the researchers agree with Sampson and Rossi and Rossi *et al.* that such a combination provides a more accurate measure of family SES than do male SES or female SES scores alone. Thus, given this lack of a formula, family SES scores in the present study were derived by giving equal weighting to male and female SES scores and combining the two in each of the double parent families (See footnote 34, p. 59, above). The combinations, thus determined, multiply by two the SES stages (or

[36]Although these three imputed scores are generalized from Baltimore, Maryland families to United States families, they are also included here because Rossi *et al.*'s and Sampson and Rossi's prestige ratings for other occupations (e.g. doctors and lawyers) are generally similar to Blishen and McRoberts' and Blishen and Carroll's ratings for other occupations (e.g. doctors and lawyers).

"class intervals") suggested by Blishen (1967), resulting in the following six SES stages:

High

140 & Above

120 - 139

100 - 119

80 - 99

60 - 79

59 & Below

Low.

SES Score Results

As can be seen in Figure 1, below, results of the SES scoring procedure indicate a very large discrepancy between the LSES and HSES families who participated in the present study. Whereas the former group has a mean family SES of 67.00, the latter group has a mean family SES of 108.00. A two-tailed t-test of differences between these two means produced a t-obtained of 9.504 ($p. < 0.001$). This finding, coupled with the distribution of scores relative to the scale of SES stages (above), seems to justify the use of the terms LSES and HSES to refer to the two groups in the present study.[37]

[37]For distribution of parents by education see Appendix D.

FIGURE 1

BACK-TO-BACK STEM-AND-LEAF OF FAMILY SES SCORES

LOW SES		HIGH SES
	15	0
4	14	608044
	13	69188
	12	1768
15	11	261076
9	10	00100100
22252	9	4226449644224442762
34647	8	882
11164	7	73
2821518858955	6	8
4796055697057	5	
67	4	
2299	3	
52	2	
N = 53.00		N = 55.00
$\bar{X}$ = 67.00		$\bar{X}$ = 108.00

STEM: TENS LEAF: UNITS (ROUNDED)

As stated above, grade (K, 3, 5), sex (MM, MF, FF, FM), socioeconomic status (high, low), and dyad type (CCPP, CCPA, CAPP, CAPA) served as the independent variables in the present study. Thirty-four grammatical categories and the number of words used per description served as the dependent variables. Due to the complexity of the research design, a computer-generated multivariate analysis of variance was used to analyse the data.[37] In addition to the multivariate anova, chi-squared tests were run to compare the number of children using a particular category to the number of children not using that category by measures of the independent variables. Categories (e.g. nouns and number of words used) that were used by all children could not be analysed by chi-square.

Subsequent to the completion of the above tests, the data were analysed to determine if dyad design (child-child versus child-adult) and/or picture condition (picture present versus picture absent) significantly affected the dependent variables. A two-way multivariate analysis of variance with repeated measures on both variables was used for this analysis.

Prior to the statistical treatment, p 0.01 was established as the probability level necessary to a rejection of the null hypothesis. Of the thirty-four dependent variables for which statistical tests were generated, only statistical tests for those dependent variables which are crucial to the present argument are reported here. In addition,

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[37]Degrees of freedom "within" for grade, sex, socioeconomic status, and dyad type were computed using the formula in Appendix E.

F-ratios and χ^2 for only those effects which were found to be significant are presented.

Thus, insofar as sex did not affect any of the dependent measures, the following discussion will focus on the effects of only three independent variables -- grade, socioeconomic status, and dyad type -- on only five dependent variables -- words, first order pronouns (An P), exophoric definite articles, exophoric pronouns, nouns, and number of words per discussion -- in the child speech sample. Further, insofar as dyad design (child-child versus child-adult) did not significantly affect the data, results of the multivariate analysis with repeated measures will be reported for the picture condition effect only.

In order not to complicate the research design further, the adult speech sample, which evidenced trends consistent with the theoretical model of pronoun and article usage outlined above, was not included in the multivariate analysis of variance. However, it is compared to the child speech sample on measures of exophoric pronoun and exophoric definite article usage (See Chapter Five, below).

RESULTS

Anaphoric Pronouns (AN_1)

CCPP condition.

In the CCPP condition (See Table 1), one can see an overall developmental trend in both the number of anaphorics being used and the number of children using them. In the HSES sample as well as the LSES, usage and users increase in number as grade level increases. One also can see an overall SES trend in Table 1. At each grade

TABLE 1

AN_1 PRONOUNS IN CCPP: MEANS AND STANDARD DEVIATIONS OF NUMBER USED; NUMBERS OF CHILDREN USING/NOT USING

Grade	N	$\bar{X}$	st. d.	users	non-users
K	64	0.828	1.464	22	42
LK	32	0.563	1.413	7	25
HK	32	1.094	1.489	15	17
3	64	2.016	2.074	47	17
L3	32	1.688	1.874	19	13
H3	32	2.344	2.238	28	4
5	64	2.688	2.725	50	14
L5	32	1.844	1.886	23	9
H5	32	3.531	3.172	27	5

level, HSES children used more anaphorics and more HSES children used anaphorics than did LSES children. Although the number from each SES

group almost reaches parity at the Grade Five level, the number of anaphorics being used still exhibits considerable disparity.

CCPA condition.

A trend similar to that observed in CCPP is noticeable in the CCPA condition, although Grade Three children in this setting used slightly more anaphorics than did Grade Five children (See Table 2). An overall SES effect also appears in the CCPA data, although LSES anaphoric usage reaches greatest parity at the Grade Five level and LSES anaphoric users reach greater parity at the Kindergarten and Grade Three levels (when compared to Table 1).

TABLE 2

AN_1 PRONOUNS IN CCPA: MEANS AND STANDARD DEVIATIONS OF NUMBER USED; NUMBERS OF CHILDREN USING/NOT USING

Grade	N	$\bar{X}$	st. d.	users	non-users
K	64	1.203	1.945	32	32
LK	32	0.750	1.295	14	18
HK	32	1.656	2.364	18	14
3	64	2.844	2.680	48	16
L3	32	2.531	2.874	21	11
H3	32	3.156	2.477	27	5
5	64	2.578	2.329	50	14
L5	32	2.375	2.406	23	9
H5	32	2.781	2.268	27	5

CAPP condition.

A developmental trend also appears in the CAPP data as anaphoric use and users increase coincident with grade level (See Table 3). A greaer discrepancy exists between Kindergarten and Grade Five users and between Kindergarten and Grade Three users than exists between Grade Three and Grade Five users. With the exception of Grade Five, at which level LSES means exceed those of HSES means, an overall SES effect manifests itself in higher means for HSES categories.

TABLE 3

AN_1 PRONOUNS IN CAPP: MEANS AND STANDARD DEVIATIONS OF NUMBER USED; NUMBERS OF CHILDREN USING/NOT USING

Grade	N	$\bar{X}$	st. d.	users	non-users
K	64	0.953	1.278	29	35
LK	32	0.781	1.157	13	19
HK	32	1.125	1.385	16	16
3	64	1.953	2.285	42	22
L3	32	1.438	1.605	19	13
H3	32	2.469	2.736	23	9
5	64	2.438	2.356	46	18
L5	32	2.813	2.306	25	7
H5	32	2.063	2.382	21	11

CAPA condition.

As can be seen in Table 4, the developmental trend continues in CAPA -- with grade level increase, usage and users increase in number. Again, SES also appears to influence the data. As in the CCPP, CCPA, and CAPP conditions, HSES children in the CAPA condition used more anaphorics and more HSES children than LSES children in the same condition used anaphorics, although the greatest parity between SES groups by number of users is revealed in CAPA.

A dyad effect by picture present/absent condition also seems to appear in the anaphoric data. If one compares Tables 1 and 3 to Tables 2 and 4, one can see that use and users increase in number in the picture absent conditons.

TABLE 4

AN_1 PRONOUNS IN CAPA: MEANS AND STANDARD DEVIATIONS OF NUMBER USED; NUMBERS OF CHILDREN USING/NOT USING

Grade	N	$\bar{X}$	st. d.	users	non-users
K	64	1.219	1.964	33	31
LK	32	1.063	1.435	17	15
HK	32	1.375	2.393	16	16
3	64	2.563	2.416	48	16
L3	32	2.063	1.883	23	9
H3	32	3.063	2.793	25	7
5	64	3.297	3.074	53	11
L5	32	2.938	2.747	26	6
H5	32	3.656	3.376	27	5

Hypothesis Testing

Consistent with the hypothesis, Dyad Type had no significant effect on anaphoric use. However, contrary to the hypothesis, both grade and socioeconomic status significantly affected anaphoric use, although there was no interaction effect (See Table 5).

TABLE 5

ANALYSIS OF VARIANCE OF AN_1 PRONOUN USAGE BY GRADE AND SES EFFECT

Source	SS	df	MS	F	p
Grade	403.128	2	201.564	28.704	0.000
SES	74.376	1	74.376	10.592	0.001
Within	1263.973	180	7.022		

In order to determine which means differed significantly by grade effect, a two-tailed t-test for post hoc comparisons compared K, 3, and 5 (See Table 6). Results revealed that both Grade Three and Grade Five children used significantly more anaphorics than did Kindergarten children. Chi-square analysis of the number of children using/not using anaphorics relative to grade level also revealed results contrary to the hypothesis. Grade proved to be significantly related to use/non use, χ^2 (64) = 16.973, $p < 0.01$, df = 2.

TABLE 6

POST HOC t-TEST (TWO-TAILED): AN_1 PRONOUN USAGE RELATIVE TO GRADE EFFECT

Effect	df^W	Differences in means	D obtained	D critical at 0.01
Grade	180	3 - K =	1.293*	1.206
		5 - K =	1.699*	
		5 - 3 =	0.406	

* $p < 0.01$

A post hoc comparison was not necessary for the socioeconomic effect, insofar as only two means were considered (H & L). Thus, the anova result (Table 5) was sufficient to show that HSES children used significantly more anaphorics than did LSES children.

Consistent with the hypothesis, picture condition did not significantly affect anaphoric pronoun usage in the individual grades. However, contrary to the hypothesis, picture condition effects for the overall child sample did prove significant, F (1, 191) = 8.73, $p < 0.004$. Thus, overall, children used significantly more anaphoric pronouns in picture absent conditions ($\bar{X}$ = 2.284) than they did in picture present condition ($\bar{X}$ = 1.812).

Exophoric Definite Articles

CCPP condition.

As can be seen in Table 7 (below), exophoric definite article usage and exophoric definite article users decrease in number as grade level increases, irrespective of socioeconomic status. With the exception of HSES Grade Five scores, however, differences between grades and SES groups are relatively small. Thus, the HSES Grade Five data would seem to suggest that, when asked to "describe" something, this group is relatively less inclined to use exophoric definite articles when talking to peers in context-independent speech situations. That is, HSES Grade Five children seem to infer the need for specificity even when referents are present in both the addressor's and addressee's field of vision.

TABLE 7

EXOPHORIC DEFINITE ARTICLES IN CCPP: MEANS AND STANDARD DEVIATIONS OF NUMBER USED; NUMBER OF CHILDREN USING/NOT USING

Grade	N	$\bar{X}$	st. d.	users	non-users
K	64	1.5781	1.467	48	16
LK	32	1.688	1.693	23	9
HK	32	1.469	1.218	25	7
3	64	1.297	1.191	45	19
L3	32	1.375	1.362	22	10
H3	32	1.219	1.008	23	9
5	64	1.063	1.879	35	29
L5	32	1.438	1.645	21	11
H5	32	0.688	0.931	14	18

CCPA condition.

In Table 8 (below), one can see a trend similar to that in Table 7. With the exception of HSES Grade Five children, for whom usage increased slightly, relative to HSES Grade Three children, exophoric definite article usage declined as grade level increased, irrespective of socioeconomic status. With respect to the user data, however, approximately equal numbers of Grade Three and Grade Five children used exophoric definite articles.

A comparison of Tables 7 and 8 reveals that a considerably larger difference exists between Grade Three children and Kindergarten children in the CCPA condition. In addition, whereas the CCPP data show relatively negligible differences between LSES and HSES children at the Kindergarten and Grade Three level, and relatively large differences between the two socioeconomic groups at the Grade Five level, the CCPA data evidence the opposite trend. That is, in the CCPA data, differences between the two SES groups decrease coincident with grade level increase to such a point that LSES Grade Five children actually use slightly fewer exophoric definite articles than do HSES Grade Five children.

These results would seem to suggest that as grade level increases, children are less inclined to use exophoric definite articles in context-independent situations. Further, with the exception of the LSES Kindergarten and HSES Grade Five children, who used slightly more exophoric definite articles in CCPA than they did in CCPP, exophoric

TABLE 8

EXOPHORIC DEFINITE ARTICLES IN CCPA: MEANS AND STANDARD DEVIATIONS OF NUMBER USED; NUMBER OF CHILDREN USING/NOT USING

Grade	N	$\bar{X}$	st. d.	users	non-users
K	64	1.625	1.386	48	16
LK	32	1.906	1.553	25	7
HK	32	1.344	1.153	23	9
3	64	0.797	0.979	33	31
L3	32	1.031	1.150	18	14
H3	32	0.563	0.716	15	17
5	64	0.781	0.934	33	31
L5	32	0.688	0.821	17	15
H5	32	0.875	1.040	16	16

definite article usage and users declined in number coincident with a shift from picture present to picture absent conditions. This would seem to suggest that children at each grade level discriminate to some degree between context-dependent and context-independent speech situations.

CAPP condition.

As one can see in Table 9 (below), the inverse developmental trend observable in the CCPP and CCPA data can be observed in the CAPP data, although, in the later data, differences between grade levels and SES groups are considerably less pronounced. The HSES Grade Five data, however, differ most noticeably from the general trend, owing to the facts that HSES Kindergarten children used more exophoric definite

articles than did LSES Kindergarten children and more HSES Kindergarten children used exophoric definite articles than did LSES Kindergarten children in CAPP. Differences between CCPP and CAPP data were virtually negligible across grade levels and SES groups, although considerably more HSES Grade Five children used exophoric definite articles in CAPP than they did in CCPP.

TABLE 9

EXOPHORIC DEFINITE ARTICLES IN CAPP: MEANS AND STANDARD DEVIATIONS OF NUMBER USED; NUMBER OF CHILDREN USING/NOT USING

Grade	N	$\bar{X}$	st. d.	users	non-users
K	64	1.609	1.432	50	14
LK	32	1.500	1.524	22	10
HK	32	1.719	1.350	28	4
3	64	1.297	1.318	43	21
L3	32	1.344	1.285	22	10
H3	32	1.250	1.368	21	11
5	64	1.188	1.082	45	19
L5	32	1.250	1.078	23	9
H5	32	1.125	1.100	22	10

CAPA condition.

As can be seen in Table 10 (below), the general trend of decreased exophoric definite article usage and users coincident with increases in grade level continues in the CAPA condition. The differences between grade levels, however, seem somewhat more pronounced in the CAPA data than they are in the CAPP data. As one might recall, a

similar trend appeared in the child-child data. That there is a larger discrepancy in exophoric definite article usage between grade

TABLE 10

EXOPHORIC DEFINITE ARTICLES IN CAPA: MEANS AND STANDARD DEVIATIONS OF NUMBER USED; NUMBER OF CHILDREN USING/NOT USING

Grade	N	$\bar{X}$	st. d.	users	non-users
K	64	1.781	1.506	52	12
LK	32	1.563	1.413	26	6
HK	32	2.000	1.586	26	6
3	64	0.984	1.120	35	29
L3	32	1.063	1.243	16	16
H3	32	0.906	0.996	19	13
5	64	0.656	0.947	26	38
L5	32	0.750	1.016	14	18
H5	32	0.563	0.878	12	20

levels in picture absent conditions than there is in picture present conditions suggests that older children are less inclined to use exophoric definite articles in context-independent speech situations. That the number of exophoric definite articles used and the number of chidren using them at the Grade Five level in picture absent conditions were relatively high seems to suggest that, even as late as Grade Five, children are still not fully aware of the conditions governing correct definite article usage in context-independent speech situations.

Hypothesis Testing

Consistent with the hypothesis, dyad type and socioeconomic status did not significantly affect exophoric definte article use. However, contrary to the hypothesis, a significant grade effect did result, F (2,180) = 16.595, p 0.01. A post hoc t-test (two-tailed) revealed that only Kindergarten and Grade Five differed significantly in their means (See Table 11).

TABLE 11

POST HOC t-TEST (TWO-TAILED): EXOPHORIC DEFINITE ARTICLE USAGE RELATIVE TO GRADE EFFECT

Condition	df[W]	Differences in means	D obtained	D critical at 0.01
CCPP, CCPA, CAPP, & CAPA	180	K - 3 =	0.554	0.680
		K - 5 =	0.726*	
		3 - 5 =	0.172	

* p 0.01

Consistent with the hypothesis, chi-square analysis revealed that the number of children using and not using exophoric definite articles was not significantly related to grade level, ^{2} (64) = 7.836, p 0.01, df = 2.

Contrary to the hypothesis, picture condition significantly affected overall exophoric definite article usage, F (1, 191) = 9.16, p 0.0028). With respect to individual grades, however, only Grade Five children significantly discriminated between picture conditions, F (1,

63) = 9.79, p 0.0027. Thus, there was a significant overall trend for children to use fewer exophoric definite articles in picture absent conditions (X = 1.104) than they did in picture present conditions (X = 1.339), although in individual grades only Grade Five children used significantly fewer exophoric definite articles in picture absent conditions (X = 0.7187) than they did in picture present conditions (X = 1.125).

Exophoric Pronouns

CCPP condition.

A very distinct inverse developmental trend -- number of exophorics used and number of children using them decreases as grade level increases -- is observable in Table 12, The difference between

TABLE 12

EXOPHORIC PRONOUNS IN CCPP: MEANS AND STANDARD DEVIATIONS OF NUMBER USED; NUMBERS OF CHILDREN USING/NOT USING

Grade	N	$\bar{X}$	st. d.	users	non-users
K	64	0.969	0.890	44	20
LK	32	1.188	0.896	26	6
HK	32	0.750	0.842	18	14
3	64	0.250	0.471	15	49
L3	32	0.219	0.420	7	25
H3	32	0.281	0.523	8	24
5	64	0.203	0.510	11	53
L5	32	0.188	0.397	6	26
H5	32	0.219	0.608	5	27

Kindergarten and Grade Three and Kindergarten and Grade Five, however, is considerably more pronounced than is the difference between Grades Three and Five with respect to the number of exophorics used and the number of exophoric users/non users. With the exception of the Kindergarten children, very negligible differences exist between socioeconomic groups.

CCPA condition.

The differences observed between Kindergarten children and Grades Three and Five children in Table 12 are also detectable in Table 13, although the dyad design in the latter table seems to have effected a decline in the number of exophorics used and the number of children using them at each grade level.

TABLE 13

EXOPHORIC PRONOUNS IN CCPA: MEANS AND STANDARD DEVIATIONS OF NUMBER USED; NUMBERS OF CHILDREN USING/NOT USING

Grade	N	$\bar{X}$	st. d.	users	non-users
K	64	0.734	0.980	31	33
LK	32	0.781	0.870	17	15
HK	32	0.688	1.091	14	18
3	64	0.109	0.315	7	57
L3	32	0.094	0.296	3	29
H3	32	0.125	0.336	4	28
5	64	0.063	0.244	4	60
L5	32	0.0625	0.246	2	30
H5	32	0.0625	0.246	2	30

Coincidentally, the discrepancy between LK and HK has diminished considerably in both use and user categories.

CAPP condition.

Again in the CAPP design, the number of exophorics used and the number of children using them declined coincident with grade level increase, the greatest difference existing between Kindergarten and Grades Three and Five (See Table 14). However, use and users increased in number

TABLE 14

EXOPHORIC PRONOUNS IN CAPP: MEANS AND STANDARD DEVIATIONS OF NUMBER USED; NUMBERS OF CHILDREN USING/NOT USING

Grade	N	$\bar{X}$	st. d.	users	non-users
K	64	0.859	0.990	37	27
LK	32	0.938	0.840	21	11
HK	32	0.781	1.128	16	16
3	64	0.281	0.519	16	48
L3	32	0.344	0.602	9	23
H3	32	0.219	0.420	7	25
5	64	0.141	0.467	7	57
L5	32	0.063	0.246	2	30
H5	32	0.219	0.608	5	27

from the respective means in Table 13, thus suggesting a dyad effect. Differences by SES effect seem relatively negligible.

CAPA condition.

With one exception, the exophoric data in Table 15 follow the same pattern as that established in Tables 12, 13, and 14. The inverse developmental trend continues with use and user means decreasing as grade level increases. Once again, there is an overall decrease in

TABLE 15

EXOPHORIC PRONOUNS IN CAPA: MEANS AND STANDARD DEVIATIONS OF NUMBER USED; NUMBERS OF CHILDREN USING/NOT USING

Grade	N	$\bar{X}$	st. d.	users	non-users
K	64	0.672	0.993	28	36
LK	32	1.031	1.178	20	12
HK	32	0.313	0.592	8	24
3	64	0.141	0.350	9	55
L3	32	0.188	0.397	6	26
H3	32	0.094	0.296	3	29
5	64	0.016	0.125	1	63
L5	32	0.031	0.177	1	31
H5	32	0.000	0.000	0	32

means across grades from the previous picture present condition. The one exception to the general trend is a considerable difference in means between LK and HK in the CAPA condition.

If one compares the average number of exophoric pronouns used by the LSES and HSES Kindergarten groups in Tables 12 through 15, one can see that LSES Kindergarten children invariably used more exophoric pronouns than did their HSES counterparts. However, in the CAPP condition, the condition that most nearly approximates Hawkins' experimental design, differences are virtually neglible--contrary to Hawkins' findings. Overall differences between the two socioeconomic groups are relatively small (mean difference = 0.3515), although differences in exophoric pronoun usage in the CAPA data are considerably large.

Hypothesis Testing

Consistent with the hypothesis, analysis of variance revealed no significant relationships between SES and exophoric use, although it did reveal an interaction effect between SES and grade level (See Table 16). The latter finding is probably due to a combination of the

TABLE 16

ANALYSIS OF VARIANCE OF EXOPHORIC PRONOUN USAGE BY GRADE AND SES EFFECTS

Source	SS	df	MS	F	p
Grade	74.971	2	37.486	62.570	0.000
SES	2.521	1	2.521	4.208	n.s.
Interaction	5.559	2	2.780	4.640	0.011
Within	107.838	180	0.599		

discrepancies existing between LK and HK means and the differences existing between Kindergarten and Grades Three and Five means.

Contrary to the hypothesis, analysis of variance indicated significant grade, F (2,180) = 62.570, $p < 0.01$, and dyad design effects, F (3,540) = 5.270, $p < 0.01$, on exophoric use.

Tukey's post hoc test revealed that the mean number of exophorics used by Kindergarten children significantly exceeded the mean number of exophorics used by both Grade Three and Grade Five children (See Table 17). A post hoc t-test (two-tailed) indicated that children used

TABLE 17

TUKEY'S POST HOC TEST OF HONESTLY SIGNIFICANT DIFFERENCES: EXOPHORIC PRONOUN USAGE RELATIVE TO GRADE EFFECT

Condition	df^W	Differences in means	D obtained	HSD critical at 0.01
CCPP, CCPA, CAPP, & CAPA	180	K - 3 =	0.614*	0.399
		K - 5 =	0.703*	
		3 - 5 =	0.089	

* $p < 0.01$

significantly fewer exophorics in CAPA and CCPA than they did in CCPP (See Table 18). In addition, chi-square analysis revealed a

TABLE 18

POST HOC t-TEST (TWO-TAILED): EXOPHORIC PRONOUN USAGE RELATIVE TO DYAD TYPE

Condition	df^W	Differences in means	D obtained	D critical at 0.01
K, 3, & 5	540	CCPA - CAPA =	0.026	0.152
		CAPP - CAPA =	0.151	
		CCPP - CAPA =	0.198*	
		CAPP - CCPA =	0.125	
		CCPP - CCPA =	0.172*	
		CCPP - CAPP =	0.047	

• $p < 0.01$

significant relationship between grade level and exophoric use/non-use, contrary to the hypothesis, χ^2 (64) = 36.634, $p < 0.01$, df = 2.

Contrary to the hypothesis, there was a significant overall picture effect relative to exophoric pronoun usage, F (1, 191) = 13.76, $p <$ 0.0003. With respect to individual grades, however, only at the Grade Five level did the picture effect approach very closely to significance, F (1, 63) = 6.12, p 0.0161. Thus, children, overall, used significantly fewer exophoric pronouns in picture absent conditions ($\bar{X}$ = 0.2891) than they did in picture present conditions ($\bar{X}$ = 0.4505), although mean differences by individual grades did not quite reach significance.

Nouns

CCPP condition.

As can be seen in Table 19 (below), Grades Three and Five children used considerably more nouns per description than did Kindergarten children in CCPP, irrespective of SES. Differences between the two upper grades, however, appear to be minor in both socioeconomic groups, although HSES Grade Three children used slightly more nouns than did the two groups of Grade Five children. In addition, differences between the two socioeconomic groups are quite small across the grade levels.

TABLE 19

NOUNS IN CCPP: MEANS AND STANDARD DEVIATIONS OF NUMBER USED; NUMBERS OF CHILDREN USING/NOT USING

Grade	N	$\bar{X}$	st. d.	users	non-users
K	64	5.578	3.850	64	0
LK	32	5.594	4.188	32	0
HK	32	5.563	3.546	32	0
3	64	8.891	4.903	64	0
L3	32	8.656	5.209	32	0
H3	32	9.125	4.647	32	0
5	64	8.609	3.654	64	0
L5	32	8.844	4.378	32	0
H5	32	8.375	2.803	32	0

CCPA condition.

The trend observed in Table 19 (above) continues in the CCPA data (see Table 20, below). Grades Three and Five children used considerably more nouns in CCPA than did Kindergarten children. Again, with the exception of the HSES Grade Three children's scores, the two upper grades were relatively close in the number of nouns used. Consistent with the results in Table 19, differences in noun usage relative to SES in Table 20 were virtually negligible.

If one compares Table 20 to Table 19, one can see that an increase in noun usage, although small, occurs coincident with the shift from picture present to picture absent conditions. These differences would seem to suggest that, on the average, all children, irrespective of

TABLE 20

NOUNS IN CCPA: MEANS AND STANDARD DEVIATIONS OF NUMBER USED; NUMBERS OF CHILDREN USING/NOT USING

Grade	N	$\bar{X}$	st. d.	users	non-users
K	64	6.328	3.222	63	1
LK	32	6.250	3.360	31	1
HK	32	6.406	3.130	32	0
3	64	10.125	6.004	64	0
L3	32	9.281	4.503	32	0
H3	32	10.969	7.177	32	0
5	64	9.219	4.180	64	0
L5	32	9.688	4.902	32	0
H5	32	8.750	3.322	32	0

SES and grade level, attempted to increase specifity in context-independent speech situations by employing more nouns. However, the degree to which children from each grade level and socioeconomic group were successful in increasing specificity was more directly related to their ability to employ pronouns and articles correctly.

CAPP condition.

As with the CCPP and CCPA data, a considerable difference in noun usage exists between Kindergarten and Grades Three and Five children in the CAPP data, irrespective of SES (see Table 21, below). As in Tables 19 and 20, HSES Grade Three children used slightly more nouns in CAPP than did HSES Grade Five children. Differences between

socioeconomic groups relative to noun usage in CAPP appear to be fairly negligible at the Kindergarten and Grade Five level, but somewhat larger at the Grade Three level.

TABLE 21

NOUNS IN CAPP: MEANS AND STANDARD DEVIATIONS OF NUMBER USED; NUMBERS OF CHILDREN USING/NOT USING

Grade	N	$\bar{X}$	st. d.	users	non-users
K	**64**	**5.656**	**2.977**	**64**	**0**
LK	32	5.563	3.574	32	0
HK	32	5.750	2.286	32	0
3	**64**	**7.547**	**3.060**	**63**	**1**
L3	32	7.000	2.410	32	0
H3	32	8.094	3.550	31	1
5	**64**	**7.750**	**3.404**	**64**	**0**
L5	32	8.031	3.650	32	0
H5	32	7.469	3.172	32	0

If one compares the CCPP data in Table 19 to the CAPP data in Table 21, one can see that virtually no difference in noun usage occurs at the Kindergarten level. At the Grade Three and Five levels, however, noun usage decreases somewhat in the shift from CCPP to CAPA.

CAPA condition.

Again in Table 22 (below), a relatively large discrepancy in noun usage exists between Kindergarten children and Grades Three and Five children, irrespective of socioeconomic status. In addition, Grade

Five children, on the average, used consistently more nouns than did Grade Three children, with the largest discrepancy between the two grades occuring in the LSES data. Comparing the noun usage data by socioeconomic status, one can see considerable differences between the LSES Kindergarten and LSES Grade Three groups and their HSES counterparts. In the Grade Five data, however, one can see no differences at all between the two socioeconomic groups.

TABLE 22

NOUNS IN CAPA: MEANS AND STANDARD DEVIATIONS OF NUMBER USED; NUMBERS OF CHILDREN USING/NOT USING

Grade	N	$\bar{X}$	st. d.	users	non-users
K	64	6.563	3.394	63	1
LK	32	6.063	3.601	31	1
HK	32	7.063	3.151	32	0
3	64	9.188	4.327	64	0
L3	32	8.438	3.172	32	0
H3	32	9.938	5.180	32	0
5	64	10.344	5.006	64	0
L5	32	10.344	5.918	32	0
H5	32	10.344	3.989	32	0

If one compares Table 21 to Table 22, one can see that children at all grade levels used more nouns in CAPA situations than they did in CAPP situations. This would seem to support the observation above that children at each grade level seem to be attempting to make their speech more explicit in context-independent situations by employing more nouns. A comparison of the data in Tables 20 and 22 reveals

little difference between LSES Kindergarten children and HSES Kindergarten children in their use of nouns relative to CCPA and CAPA dyads. Curiously, both SES groups at the Grade Three level used fewer nouns in CAPA than they did in CCPA, whereas both Grade Five groups used more nouns in CAPA than they did in CCPA.

Hypothesis Testing

Consistent with the hypothesis, SES did not significantly affect the number of nouns used. However, contrary to the hypothesis, analysis of variance indicated significant effects by grade level, F (2,180) = 25.769, $p < 0.01$, and dyad design, F (3,540) = 9.349, $p < 0.01$. No interaction effects were found. Tukey's post hoc test indicated that both Grade Three and Grade Five children in the present study produced significantly more nouns per speech sample than did Kindergarten children (See Table 23). Further, a post hoc t-test (two-tailed)

TABLE 23

TUKEY'S POST HOC TEST OF HONESTLY SIGNIFICANT DIFFERENCES: NOUN USAGE RELATIVE TO GRADE LEVEL

Condition	df^W	Differences in means	D obtained	HSD critical at 0.01
CCPP, CCPA, CAPP, & CAPA	180	3 - K =	2.907*	2.744
		5 - K =	2.950*	
		5 - 3 =	0.043	

* $p < 0.01$

revealed that, with one exception, children produced more nouns in picture absent conditions than they did in picture present conditions (Table 24).

Contrary to the hypothesis, picture condition had a significant effect on overall noun usage, F (1, 191) = 24.97, p 0.00. Picture condition also had a significant effect on noun usage at the Grade Five level, F (1, 63) = 12.09, p 0.0009. Thus, although only Grade Five children used significantly more nouns in picture absent conditions ($\bar{X}$ = 9.781) than they did in picture present conditions ($\bar{X}$ = 8.180), children, overall, followed the same pattern (PA, $\bar{X}$ = 8.628; PP, $\bar{X}$ = 7.339).

TABLE 24

POST HOC t-TEST (TWO-TAILED): NOUN USAGE RELATIVE TO DYAD TYPE

Condition	df^W	Differences in means	D obtained	D critical at 0.01
K, 3, & 5	540	CCPP - CAPP =	0.709	0.953
		CCPA - CAPP =	1.573*	
		CAPA - CAPP =	1.715*	
		CCPA - CCPP =	0.864	
		CAPA - CCPP =	1.006*	
		CAPA - CCPA =	0.142	

* $p < 0.01$

Words

CCPP condition.

As Table 25 shows, Grades Three and Five children used considerably more words per description in CCPP than did Kindergarten children. Differences between the two upper grades, however, were virtually negligible. Further, although LSES children used more words per description than did HSES children at the Kindergarten and Grade Five levels, overall differences relative to socioeconomic status were slight.

TABLE 25

NUMBER OF WORDS IN CCPP: MEANS AND STANDARD DEVIATIONS OF NUMBER USED

Grade	N	$\bar{X}$	st. d.
K	64	30.766	18.235
LK	32	32.531	18.682
HK	32	29.000	17.898
3	64	44.500	21.346
L3	32	43.000	22.428
H3	32	46.000	20.453
5	64	44.125	14.589
L5	32	45.313	16.919
H5	32	42.938	11.890

CCPA condition.

The differences noted between Kindergarten children and Grades Three and Five children in Table 25 are also visible in Table 26 (below). However, the shift from picture present to picture absent condition seems to have effected a slight increase in the mean number of words used at each grade level, irrespective of socioeconomic status.

TABLE 26

NUMBER OF WORDS IN CCPA: MEANS AND STANDARD DEVIATIONS OF NUMBER USED

Grade	N	$\bar{X}$	st. d.
K	64	32.453	15.864
LK	32	33.969	17.271
HK	32	30.938	14.438
3	64	49.172	23.766
L3	32	47.063	22.616
H3	32	51.281	25.045
5	64	45.719	17.024
L5	32	47.000	20.771
H5	32	44.438	12.417

As with the CCPP data, LSES children in the CCPA condition used more words per description than did HSES children at both the Kindergarten and Grade Five level, although overall differences relative to SES appear to be negligible.

CAPP condition.

As in Tables 25 and 26, Kindergarten children used considerably fewer words per description in the CAPP condition than did Grades Three and Five children (see Table 27, below). Once again, the latter two grades were relatively similar in the number of words used. Consistent with the previous word usage results, LSES Kindergarten and Grade Five children used more words per description than did their HSES counterparts in CAPP, but, again, overall differences by SES remain relatively small.

TABLE 27

NUMBER OF WORDS IN CAPP: MEANS AND STANDARD DEVIATIONS OF NUMBER USED

Grade	N	$\bar{X}$	st. d.
K	64	30.766	14.168
LK	32	31.438	16.995
HK	32	30.094	10.870
3	64	40.781	17.737
L3	32	38.469	15.035
H3	32	43.094	20.055
5	64	39.625	15.456
L5	32	41.125	15.581
H5	32	38.125	15.429

Comparing Table 25 to Table 27, one can see that, in all but one case (HSES Kindergarten), children at all grade levels, irrespective of SES, used fewer words when talking to adults in the CAPP condition.

These differences, however, appear to be relatively small. Conversely, if one compares Table 27 to Table 26, one can see that children at each grade level, in both SES groups, used more words in the CCPA condition than they did in the CAPP condition. Differences at the Kindergarten level, however, were less pronounced than differences at the Grades Three and Five levels.

CAPA condition.

Again in the CAPA results (see Table 28, below), Kindergarten children used considerably fewer words per description than did Grades Three and Five children, the latter two grades differing less noticeably in their means. Although differences between SES groups at the Kindergarten and Grade Five levels were relatively small in the CAPA condition, differences at the Grade Three level by SES were relatively large. Consistent with the previous word usage findings, the number of words used per description in the CAPA condition was, in all but one case, higher at each grade level, in both SES groups, than the number of words used at each grade level in either CAPP or CCPP. Differences at the Kindergarten level, however, were less pronounced than those at the Grades Three (exception noted) and Five levels.

A comparison of the CAPA (Table 28) and CCPA data (Table 26) reveals no clear pattern as to word usage differences by dyad type (CC versus CA), although Grade Five children used considerably fewer words when talking to other children in picture present conditions.

TABLE 28

NUMBER OF WORDS IN CAPA: MEANS AND STANDARD DEVIATIONS OF NUMBER USED

Grade	N	$\bar{X}$	st. d.
K	64	33.453	15.062
LK	32	32.656	15.941
HK	32	34.250	14.339
3	64	45.766	20.237
L3	32	41.656	15.649
H3	32	49.875	23.505
5	64	51.203	20.674
L5	32	51.250	21.552
H5	32	51.156	20.102

Overall results for word usage seem to suggest that Kindergarten children were considerably less inclined to adjust their speech relative to picture condition and dyad type than were Grades Three and Five children. Further, socioeconomic status seemed to have little effect on number of words used.

Hypothesis Testing

Consistent with the hypothesis, SES was not a factor in the number of words used per description. However, contrary to the hypothesis, analysis of variance revealed a grade effect, F (2,180) = 21.086, $p <$ 0.01, and a dyad effect, F (3,540) = 7.822, $p <$ 0.01. Tukey's post hoc test indicated that both Grade Three and Grade Five children used

significantly more words than did Kindergarten children (See Table 29). A second Tukey's test revealed that the mean number of words

TABLE 29

TUKEY'S POST HOC TEST OF HONESTLY SIGNIFICANT DIFFERENCES: WORD USAGE RELATIVE TO GRADE LEVEL

Condition	df^W	Differences in means	D obtained	HSD critical at 0.01
CCPP, CCPA, CAPP, & CAPA	180	3 - K =	13.195*	7.341
		5 - K =	13.308*	
		5 - 3 =	0.113	

* p 0.01

employed by the children in the CCPA and CAPA dyads significantly exceeded the mean number of words employed in the CAPP dyad (See Table 30).

TABLE 30

TUKEY'S POST HOC TEST OF HONESTLY SIGNIFICANT DIFFERENCES: WORD USAGE RELATIVE TO DYAD TYPE

Condition	df^W	Differences in means	D obtained	HSD critical at 0.01
K, 3, & 5	540	CCPP - CAPP =	2.74	4.657
		CCPA - CAPP =	5.391*	
		CAPA - CAPP =	6.417*	
		CAPA - CCPP =	3.677	
		CCPA - CCPP =	2.651	
		CAPA - CCPA =	1.026	

* p 0.01

Contrary to the hypothesis, overall word usage was affected by picture condition, F (1, 191) = 19.12, p 0.000, as was Grade Five word usage, F (1, 63) = 13.43, p 0.0005. Thus, children, overall, used significantly more words in picture absent conditions ($\bar{X}$ = 42.96) than they did in picture present conditions ($\bar{X}$ = 38.43). At the individual grade level, however, only Grade Five children used significantly more words in picture absent conditions ($\bar{X}$ = 48.460) than they did in picture present conditions ($\bar{X}$ = 41.870).

There was also an interaction effect between picture condition and dyad design at the Grade Five level, contrary to the hypothesis, F (1, 63) = 10.49, p 0.0019. This latter effect is due to the facts that picture absent conditions, on the average, generated more words per description ($\bar{X}$ = 48.46) than did picture present conditions ($\bar{X}$ = 41.87) and child-adult speech, on the average, generated more words per description ($\bar{X}$ = 45.41) than did child-child speech ($\bar{X}$ = 44.92).

CHAPTER FIVE

The following discussion expands upon the results presented in the previous chapter, treating each of the dependent variables separately and in conjunction with each other and the independent variables mentioned above. Subsequent to this initial discussion, children are compared to adults in their use of pronouns and articles and possible explanations are offered for the fact that children seem to acquire the pronoun rule system prior to acquiring the article rule system. The chapter concludes with a discussion of the possible implications the present study might have for education, linguistics, and psychology.

Number of Words Used

Socioeconomic status.

Although LSES children in the present study used more words than did HSES children seven out of the twelve possible settings (dyad type by grade level = 4 x 3), these differences did not reach significance. Consequently, dependent measures differences (N, AN, EX, EDA) due to an SES effect were not affected by the number of words either SES group was using.

Grade.

Because Grades Three and Five children used significantly more words than Kindergarten children used in the present study, developmental

trends, in which the dependent variable increased coincident with grade level increase (e.g. nouns and anaphorics), may have been affected by number of words. Inverse developmental trends, however, in which usage declined coincident with grade level increase (e.g. exophoric pronouns and exophoric definite articles), would not have been affected by number of words, owing to the fact that Kindergarten children used significantly fewer words than Grades Three and Five children. Any differences between Grades Three and Five children on the dependent measures were not affected by number of words insofar as these two groups did not differ significantly on number of words used.

Dyad type.

Although children in the present study used more words in each of the picture absent conditions than they did in the picture present conditions, only differences between CCPA - CAPP and CAPA - CAPP reached significance. Thus, any dependent variable differences resulting from either of the equations above may have been due to the smaller number of words being used in CAPP.

Nouns

That Grades Three and Five children used significantly more nouns per description than did Kindergarten children in the present study may have been due to the fact that the two former groups used

significantly more words per description (See preceding discussion on number of words and grade). When mean nouns used were expressed as a percentage of the mean number of words used, however, differences between Kindergarten children and Grades Three and Five children shrank to less than one percentage point. A similar situation may have occurred in the noun-dyad effect in which noun use increased in both the CCPA and CAPA conditions relative to the CAPP condition. These findings in conjunction with the lack of significant differences in noun usage relative to SES suggest that upper SES children in the present study did not rely on nouns to increase specificity. This would seem to contradict Hawkins' suggestion that middle/upper class children increase specificity by employing a higher incidence of nouns in their speech. Inasmuch as HSES noun usage did not increase relative to LSES noun usage, the extent to which modifiers and qualifiers could have been employed by the former group was no greater than that of the latter group. That is, the opportunity for elaboration, of which, according to Bernstein and Hawkins, the high SES speakers in the present study should have availed themselves, was relatively restricted.

Anaphoric Pronouns (AN_1)

That Grades Three and Five children in the present study used significantly more anaphorics than did Kindergarten children also may have been due to the "number of words" effect. However, when mean anaphorics used were expressed as percentages of mean number of words

used, the differences between the respective grades increased from 1.293 to 1.882 in the Grade Three - Kindergarten comparison and from 1.699 to 2.767 in the Grade Five - Kindergarten comparison. In addition, the number of children using anaphorics was significantly related to grade level -- number of users increasing with grade. These developmental findings coupled with the lack of significant differences in anaphoric pronoun use relative to picture conditions (PP/PA) suggest that it is not necessarily the *number* of nouns or pronouns and/or pronouns in a conversation, but, rather, the *clarity of the relationship* between the nouns and their respective pronouns in a conversation that determines specificity.

Contrary to the trend suggested by Bernstein and Hawkins, upper SES children in the present study used significantly more pronouns than did lower SES children. As stated in Chapter 2, above, the use of pronouns, whether anaphoric or exophoric, limits the speaker's opportunities for modification and qualification. Thus, the finding that HSES children used more anaphoric pronouns than did LSES children, coupled with the fact that HSES children did not use more nouns than LSES children, seems to refute Hawkins' claim that middle/upper class children "do not simply use more nouns, they also exploit the possibilities of elaborating the nominal group more widely (p. 135)."

Exophoric Pronouns

An inverse trend from that observed in the anaphoric data appeared in the exophoric data. In all dyad combinations, greater numbers of Kindergarten children (compared to Grade Three and Grade Five children) used exophoric pronouns -- in both context-dependent and context independent speech situations. In addition, the former group used more exophorics than did the latter group -- in both context-dependent and context-independent situations. That these differences occurred in picture present conditions suggests that Kindergarteners do not necessarily infer specificity when asked to "describe" and that they are more inclined to draw on context, or the "here and now," to convey their meaning. That approximately the same significant discrepancy exists in the picture absent conditions suggests that Kindergarteners do not discriminate to the same extent as older people between the "here and now" and the "there and now/there and then." Thus, in the present study, younger children were more ambiguous and older children were more specific in situations requiring context-independent speech. That is, incorrect exophoric pronoun usage declined and correct exophoric pronoun usage rose coincident with an increase in age. These findings would seem to support the suggestion mentioned above that a developmental trend might be observable relative to elementary school children's command of the pronominal system. The findings also suggest that Hawkins' study may have produced different results if it had been designed to compare speech samples from children of different age or grade levels in different picture conditions. Had he tested children in this

manner, he may have found that social class was less of a factor in incorrect, as well as correct, exophoric pronoun usage than were age and referent condition.

Exophoric Definite Articles

The inverse developmental trend in the exophoric definite article data was quite similar to the trend in the exophoric pronoun data. In all dyad combinations, Kindergarten children (when compared to Grades Three and Five) used more exophoric definite articles -- in both context-dependent and context-independent speech situations, although mean scores for each dyad type were considerably higher for the exophoric definite article data than they were for exophoric pronouns. The fact that the number of users of exophoric definite articles relative to grade did not reach significance, however, suggests that an understanding of the rules governing article usage is longer in developing than is an understanding of the rules governing pronoun usage. That is, although Kindergarten children, on the average, use significantly more definite articles incorrectly per description, the average number of children using definite articles incorrectly did not differ significantly across grades. This finding is rather surprising, given the discussion concerning abstractness and decontextualized pronominals in Chapter Two, above.

Comparison of Exophoric Pronouns and Exophoric Articles

The data presented so far show that Grades Three and Five children use exophoric pronouns and articles significantly more correctly than do Kindergarten children. However, the data do not show whether or not Grades Three and Five children exhibit adult-like facility relative to the respective variables. For this purpose, Tables 31, 32, 33, and 34, below, compare exophoric data gathered from the SFU adult sample to the elementary school sample in the present study.

As can be seen in Table 31, the difference between adults and Grades Three and Five children is relatively slight in the percentage of exophoric pronouns used in picture present conditions. Differences between these three groups and the Kindergarten children on the same measures, however, are relatively large. Similarly, although a larger discrepancy exists between adults and Grades Three and Five children in the percentage of users column, each of these three groups, again, differs considerably from Kindergarten children. These findings, therefore, seem to suggest that the majority of Kindergarten children do not necessarily infer the need to increase specificity when asked to "describe" a set of referents in context-dependent speech situations. However, by the time they reach Grade Three, the majority of children seem to infer the need for specificity and approach adult-like performance levels with respect to exophoric pronoun usage in context-dependent speech situations.

TABLE 31

EXOPHORIC PRONOUN USAGE IN PP CONDITIONS

Group	Mean	st. d.	% of words	users	non-users	% users
Adult	0.109	0.375	0.11	4	42	8.70
K (CAPP)	0.859	0.990	2.79	37	27	57.81
(CCPP)	0.969	0.890	3.15	44	20	68.75
3 (CAPP)	0.281	0.519	0.69	16	48	25.00
(CCPP)	0.250	0.471	0.56	15	49	23.44
5 (CAPP)	0.141	0.467	0.36	7	57	10.94
(CCPP)	0.203	0.510	0.46	11	53	17.19

Looking at Table 32, one can see that the difference between adults and Grades Three and Five children is virtually negligible in the percentage of exophoric pronouns used. As in the picture present conditions, the difference between each of these three subject groups and the Kindergarten group is considerably large. A roughly similar trend is observable in the percentage of exophoric pronoun users column. These findings would seem to suggest that not until the time they reach Grade Three, do children exhibit adult-like facility with respect to the rule system governing pronoun usage in context-independent speech situations.

TABLE 32

EXOPHORIC PRONOUNS IN PA CONDITIONS

Group	Mean	st. d.	% of words	users	non-users	% users
Adult	0.087	0.282	0.10	4	42	8.70
K (CAPA)	0.672	0.993	2.0	28	36	43.75
(CCPA)	0.734	0.980	2.26	31	33	48.44
3 (CAPA)	0.141	0.350	0.31	9	55	14.06
(CCPA)	0.109	0.315	0.22	7	57	10.94
5 (CAPA)	0.016	0.125	0.12	1	63	1.59
(CCPA)	0.063	0.244	0.14	4	60	6.67

However, by comparing Tables 31 and 32, one can observe an interesting phenomenon in the different ways in which adults and children seem to approach descriptive speech tasks in context-dependent and context-independent speech situations. Whereas adults, on the average, used virtually the same number of exophoric pronouns in picture present and picture absent conditions, elementary school children, overall, used significantly fewer exophoric pronouns in picture absent conditions than they did in picture present conditions. Similar trends are observable in the percentage of users data. Although the percentage of adults using exophoric pronouns was the same in picture present and picture absent conditions, the percentage of children at each grade level using exophoric pronouns was consistently lower in picture absent conditions. Thus, it would appear that for adults, the task of describing played a more important role in influencing referencing than did picture condition. That is, when asked to "describe" a set of referents, adults were inclined to

disambiguate their descriptions by "dropping" exophoric pronouns from their speech, irrespective of the context-dependency or context-independency of the speech situation. Children, on the other hand, seemed to pay more attention to the setting of the speech situation than to the nature of the task. Thus, when asked to "describe" a set of referents, children were more inclined to disambiguate their speech in context-independent situations and, to varying degrees, attempt to "drop" exophoric pronouns from their speech. However, that Kindergarten children, were largely unsuccessful in the attempt is owing to their lack of facility with the rules governing pronoun usage, as is evidenced by their relatively high exophoric pronoun usage and user scores in context-independent speech situations. That Kindergarten children did not fully appreciate the difference between context-dependent and context-independent speech situations is evidenced by the fact that, unlike children's overall scores, Kindergarten children's scores did not decrease significantly coincident with the shift from picture present to picture absent conditions. Further, that Kindergarten children did not adjust their speech according to the descriptive nature of the task is evidenced by the fact that Kindergarten children used significantly more exophoric pronouns across the picture conditions than did Grades Three and Five children.

A careful examination of Tables 33 and 34 (below) reveals that the trends observed in the exophoric pronoun data (Tables 31 and 32) continue in the exophoric definite article data. However, in all

TABLE 33

EXOPHORIC DEFINITE ARTICLE USAGE IN PP CONDITIONS

Group	Mean	st. d.	% of words	users	non-users	% users
Adult	1.043	2.734	1.04	19	27	41.30
K (CAPP)	1.609	1.432	5.23	50	14	78.13
(CCPP)	1.578	1.467	5.13	48	16	75.00
3 (CAPP)	1.297	1.318	3.18	43	21	67.19
(CCPP)	1.297	1.191	2.91	45	19	70.31
5 (CAPP)	1.188	1.082	3.00	45	19	70.31
(CCPP)	1.063	1.379	2.41	35	29	54.69

categories and at each group (grade/age) level, exophoric definite article scores increased relative to exophoric pronoun scores; adult scores evidenced the smallest increase, followed by Grade Five, Grade Three, and Kindergarten children, respectively. Coincidentally, rather than remaining the same across picture conditions, adult exophoric definite article scores declined from picture present to picture absent conditions, although the majority of adults did not use exophoric definite articles in either condition. Grades Three and Five children's scores also declined from picture present to picture absent conditions, although, with the exception of Grade Five children in CAPA, the majority of children from both groups did use exophoric definite articles in both conditions. Conversely, Kindergarten children's usage and user scores remained virtually identical across picture conditions, the vast majority of Kindergarten children using exophoric definite articles in both conditions.

TABLE 34

EXOPHORIC DEFINITE ARTICLES IN PA CONDITIONS

Group	Mean	st. d.	% of words	users	non-users	% users
Adult	0.175	0.433	0.21	7	39	15.22
K (CAPA)	1.781	1.506	5.32	52	12	81.25
(CCPA)	1.625	1.386	5.01	48	16	75.00
3 (CAPA)	0.984	1.120	2.15	35	29	54.69
(CCPA)	0.797	0.979	1.62	33	31	51.56
5 (CAPA)	0.656	0.947	1.28	26	38	40.63
(CCPA)	0.781	0.934	1.71	33	31	51.56

Given the above findings, the following observations would seem justified.

1. At the Kindergarten level, children are not fully conversant with the rules of first and second mention that govern pronoun and article usage and contribute to effective sociocentric speech. Evidence for this claim is provided by the relatively high incorrect usage scores combined with the relatively high percentages of Kindergarten children using exophoric pronouns and exophoric definite articles incorrectly--in context-independent situations.

2. Kindergarten-age children have a better understanding of the pronominal rule system than they have of the article rule system as is evidenced by their lower scores in incorrect pronoun usage and user data relative to incorrect article usage and user data.

3. At the Grade Three level, children are not yet able to apply the concepts of first and second mention to the article rule system, although they are able to apply those concepts to the pronominal rule system. Evidence for the former claim is provided by the fact that Grade Three children are almost equidistant from adults, on one hand, and Kindergarten children, on the other, in exophoric definite article usage. Evidence for the latter claim is provided by the fact that Grade Three children's scores are relatively close to adult's scores in usage and user data in both context-dependent and context-independent speech situations.

4. At the Grade Five level, children, although not fully able to apply the concepts of first and second mention to the rule system governing article usage, begin to exhibit adult-like facility with respect to the article system. Evidence for this claim is provided by the following two facts. First, Grade Five children's usage and user scores are considerably lower than Grade Three children's scores and considerably higher than adult's scores in context-independent speech situations. Second, although the percentage of exophoric definite articles to words in Grade Five children's context-independent speech is relatively low, the percentage of Grade Five children using exophoric definite articles in context-independent speech is only slightly less than the majority.

5. Native speakers of English acquire an understanding of the rule system governing pronoun usage prior to acquiring the rule system governing article usage, although both systems, with respect to the concepts of first and second mention, are fundamentally the same. Evidence for this claim is outlined in statements one through four, above.

Possible Explanations for Article Lag Effect

Several possible explanations may account for the trend presented here -- that an understanding of the article rule system seems to lag behind an understanding of the pronoun rule system in children's language acquisition. First, one cannot "see" an article in the way that one can "see" a pronoun. That is, one can visualize the number and sex inherent in "he," "she," "him," and "her," but one cannot visualize either number or sex in "the." Thus, pronouns may appear to be more tangible to learners. Second, one can grasp the gist of many sentences when appropriate articles are absent (e.g. Man went away.), whereas one may fail to grasp the gist of many sentences when pronouns are missing (e.g. Went away.). Consequently, learning pronouns may take precedence over learning articles by order of syntactic-semantic necessity. A third possible explanation is that during the process of language acquisition, children may be exposed to pronouns more frequently than they are exposed to articles due to the fact that speech (own and other's), especially during childhood, is most commonly tied to the "here and now." That is, child speech and speech directed to children is probably less "abstract" than adult speech

and, thus, quite probably and quite correctly includes more pronouns. This may be the reason why children in the present study generally used more exophoric pronouns and articles when talking to other children.

Summary Statement

According to Bernstein's definitions, Kindergarten children in the present study employed a more "restricted" speech code relative to the more "elaborated" speech code of adults and Grades Three and Five children -- irrespective of SES. Thus, it would appear that children around the age of five years are not yet fully functional with respect to the pronominal system. By the time these children reach Grade Five, however, they seem very close to adults in their ability to employ pronouns correctly in relevant environments. Conversely, although children at the Grade Five level are more proficient than Kindergarten and Grade Three children in the correct use of definite articles, they have not yet achieved adult-like competency levels with respect to article usage.

Thus, the findings presented here suggest that Hawkins may have been somewhat hasty in declaring,

> I shall not be concerned in any detail with the problems of language acquisition as such, and the development of...grammatical competence; I shall assume that by the age of five, which is when our speech sample was collected, most of the basic...grammatical structure has already been acquired.
>
> 1977, page 2.

Implications for Education

The present study suggests that some children may come as linguistic unequals to the educational system, not owing to socioeconomic inequities, but, rather, owing to natural, and thus understandable, developmental differences. Despite the fact that these differences disappear over the course of several years and children, with few exceptions, reach equality of facility with adults, one might suggest that a more active approach to teaching grammar in the primary grades could accelerate the acquisition of certain, difficult linguistic rule systems. Such an approach might also reduce the possibility that children who acquire certain grammatical items later than do other children may become consciously or subconsciously intimidated or disenchanted in the classroom due to negative feedback in tasks requiring the correct use of those items. In addition, that young children do not seem to infer specificity to the degree that adults do in descriptive speech tasks suggests that a more functional-based instruction program would be beneficial in elementary school. That is, in order to guarantee that all children--irrespective of initial developmental differences--receive equal treatment in assessment situations, all children should be instructed in the specific strategies necessary to the successful completion of specific tasks. For example, all children should be apprised of the fact that descriptive tasks require specificity and elaboration. As Bernstein says, the

> introduction of the child to the universalistic meanings of public forms of thought is not compensatory education—it is education.
>
> 1972(a), page 149.

Implications for Linguistics and Psychology

That the present study demonstrates the need for research designs in which language learners supply their own linguistic contexts suggests that a reassessment of previous first and second language acquisition studies and language acquisition measures may be in order. Insofar as many of these studies and measures were designed in such a way as to supply the linguistic context for the category being tested, they may have been testing learners' naming abilities and passive competence rather than learners' functional mastery and performance.

That the results of the present study suggest that native speakers of English acquire the rule system for pronouns prior to acquiring the rule system for articles, despite the fact that both systems are basically the same with respect to the rules of first and second mention, points to a relatively rich field for future research. For example, given the apparent acquisition order mentioned above, one might inquire into the possibility that native speakers of English generalize from the pronominal rule system to the article rule system in their acquisition of the latter. Further, the present research design could be expanded to include other first language learners, such as French, Spanish, and Italian first language learners, to determine whether these groups differ in the order of pronoun and

article acquisition, given the fact that, in these languages, articles, as well as pronouns, carry number and gender.

Limitations of the Study

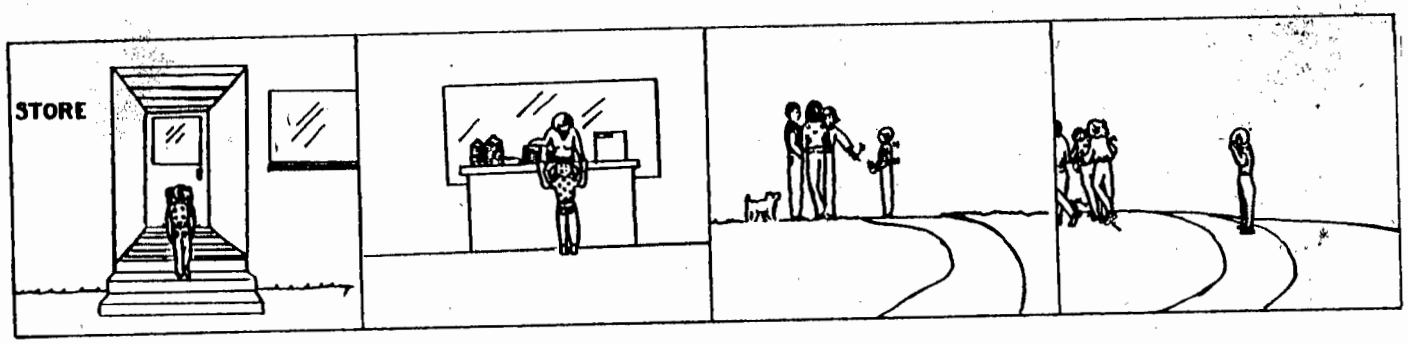
Although the present study points to several design problems with Hawkins' and Bernstein's research, no attempt is made to generalize the present results to children's linguistic behavior in England, a country in which social classes are more clearly differentiated. One might expect, however, a not dissimilar developmental trend in English children's understanding of the rule system governing pronoun and article usage. Warden's findings with respect to English children's use of articles would seem to support this latter view.

Insofar as the present study involved a descriptive speech task--a task which the children may have perceived as high in risk, although every attempt was made to deformalize the situation--one might caution against cursorily generalizing the findings to children's speech in general. However, that all children easily understood the requirements of the task and most seemed to enjoy interrupting their school day to look at cartoons would seem to suggest that the speech generated in the present study approximates that which children would use in everyday referencing situations.

APPENDIX A

Picture Stories

1



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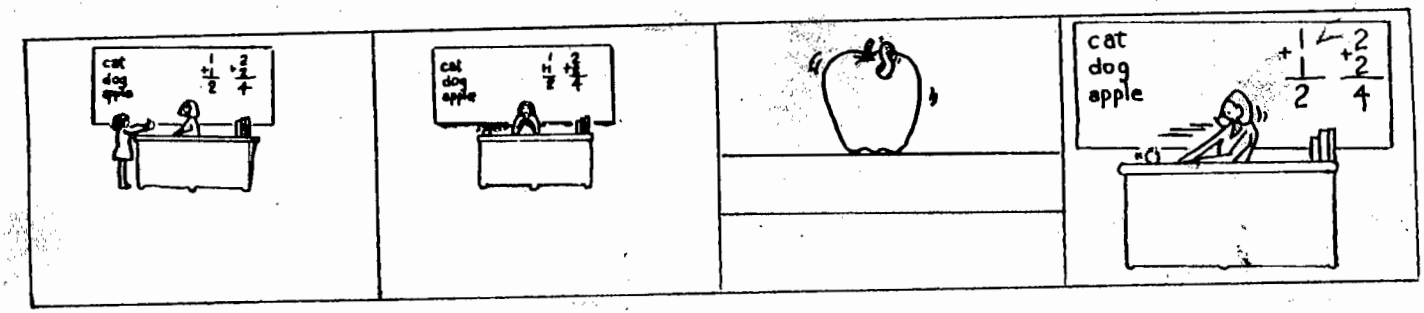
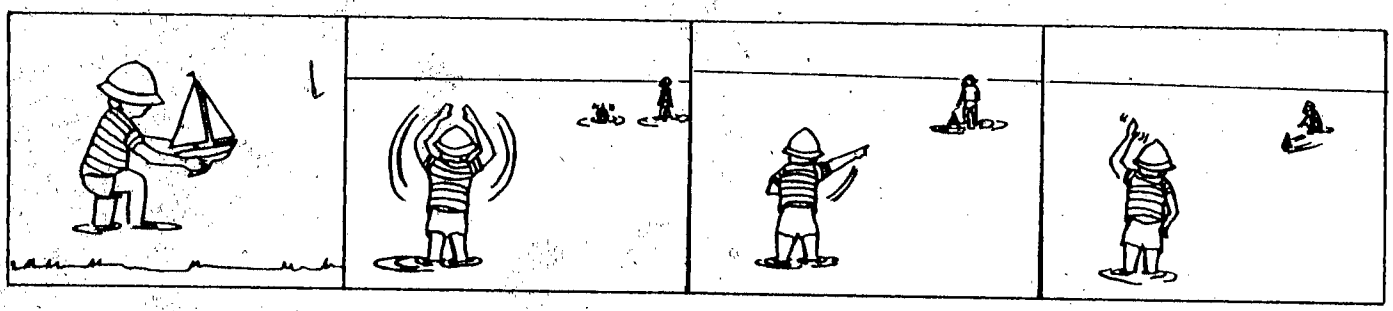


3

Scale = 1/4 actual size.



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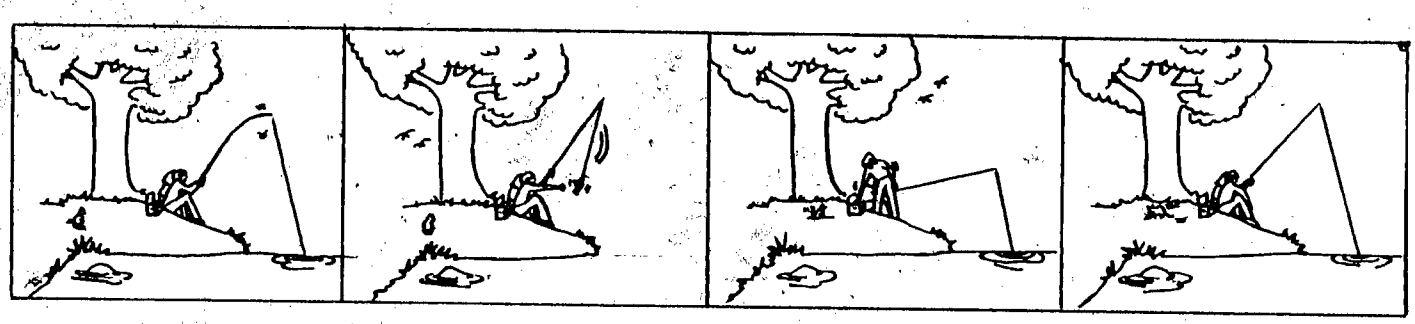

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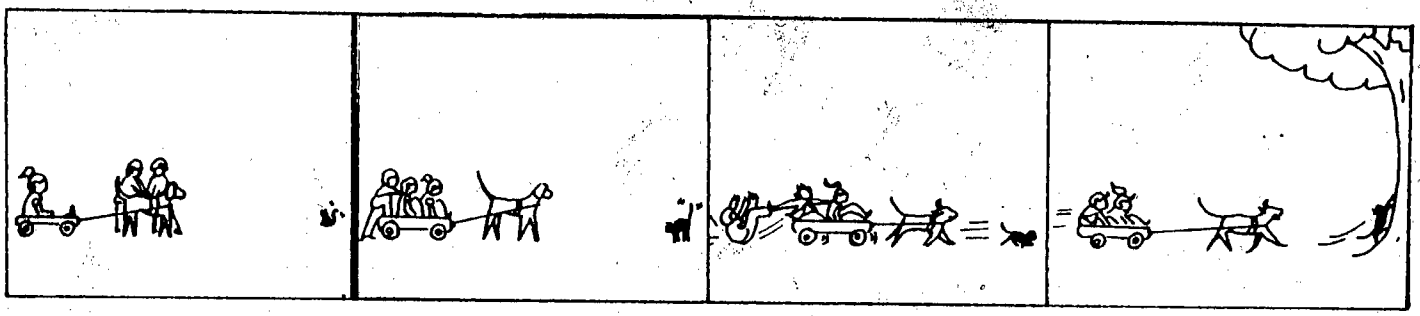


6

Scale = 1/4 actual size.

Appendix B

Directions Given to Subjects in Each Setting

Directions Given to Child Subjects

Directions

Children were taken out of class in pairs by the adult male observer and shown to the area of the school in which the task was to be performed. En route, the observer told the children that they were going to play a kind of game, using cartoon strips, and that they were going to take turns describing the cartoon strips to each other and to the male observer or his sister, Cathie[38]. In addition, the children were told that the game was not a test, that it had nothing to do with their schoolwork, and that there were no right or wrong answers in the game. Once the children were introduced to the adult female observer, the following directions were given to the children --depending on which dyad (CA or CC) and which condition (PP or PA) applied first.

Setting 1 CAPP. After the child was seated, the adult observer sat beside the child speaker and gave the child the following directions.

"O.K. CHILD'S NAME , I'd like you to look at this picture story. It's a story without any words. Like a cartoon, the story starts here (Observer points to first picture in sequence.) and ends here (Observer draws finger from first to fourth and final picture in sequence.). Now, do you think you could tell me what's happening in

[38]Adults were introduced by first name in an attempt to deformalize the task setting.

the story?"[39] The description was considered to be complete when the child paused for at least three seconds after a description of the final picture in the sequence.

Setting 2 CAPA. Prior to the selection of pictures for this setting, the observer who was to listen to the description gave the child the following directions.

"O.K. CHILD'S NAME , I'm going to leave the room for a moment and OTHER ADULT OBSERVER'S NAME is going to come in and show you a picture I haven't seen. When I come back, I'm going to sit over there (pointing to chair on opposite side of table from speaker) where I won't be able to see the picture. After I sit down, I'd like you to tell me what's going on in the picture because I've never seen it before. O.K.?"

At this point each observer went to the other observer's room and gave the respective child the following directions.

"O.K. CHILD'S NAME , I'm going to show you a picture that OTHER OBSERVER'S NAME hasn't seen before. When OTHER OBSERVER'S NAME comes back in, s/he's going to sit over there (pointing to chair on opposite

---

[39]All cues were placed in the context of the present progressive tense. Children were allowed as much time as they felt necessary to study the picture story prior to proceeding with the description.

side of table from speaker) and s/he won't be able to see the picture. What I want you to do is to tell him/her what's happening in the picture because s/he won't be able to see the picture. O.K.?" Directions were always repeated if the child did not understand them.

After giving these directions, the observer returned to his/her room. Once seated in the chair on the opposite side of the table from the child speaker, the observer gave the child the following directions.

"O.K. CHILD'S NAME , could you tell me what's happening in that picture story that OTHER OBSERVER'S NAME showed you because I haven't seen the picture story before and I can't see it now?"

Setting 3 CCPP. When both children were seated side-by-side facing the A-frame picture holder, the adult male observer gave them the following directions.

"O.K. CHILDREN'S NAMES , I'd like you to look at this picture story. It's a picture story without any words. Like a cartoon, the story starts here (pointing to first picture in sequence) and ends here (drawing finger from first to fourth and final picture in sequence). Now, CHILD DESCRIBER'S NAME, I'd like you to tell CHILD LISTENER'S NAME what's happening in the picture story."

Setting 4 CCPA. When the child describer was seated facing the front of the A-frame picture holder, and the child listener was seated facing the back of the A-frame apparatus, the male observer placed a picture story on the A-frame in such a way that only the child describer could see the picture story. Once the picture story was in place, the male observer gave the child describer the following directions.

"O.K. CHILD DESCRIBER'S NAME, I'm going to show you a picture story that CHILD LISTENER'S NAME can't see. It's a picture story without any words. Like a cartoon, the story starts here (pointing to first picture in sequence) and ends here (drawing finger from first to fourth and final picture in sequence). What I'd like you to do is tell CHILD LISTENER'S NAME what's happening in the story because s/he can't see the story. O.K.?"

Directions Given to University Subjects

Directions

The adult male observer met each dyad of university subjects in a specific room at Simon Fraser University. Once introductions were made, the observer informed the subjects that they would be providing an adult speech sample to which the researcher would compare a child speech sample he had collected. In addition, subjects were told that there was no "trick" to the task, that the task was not a test, that there were no right or wrong answers, and that the researcher's presence in the room had no bearing on the task.

Setting UI AAPP. Once both speaker and listener were seated at a table facing the A-frame picture holder, the researcher placed a picture story on the picture holder and gave the following directions to the subjects.

"O.K. SUBJECTS' NAMES , I'd like both of you to study this picture story. Like a cartoon, the picture story starts here (pointing to the first picture in the sequence) and ends here (drawing finger from first picture to fourth and final picture in the sequence). Once you've familiarized yourselves with the content of the story, I'd like you, DESCRIBER'S NAME, to tell LISTENER'S NAME

what's happening in the picture story. You can start whenever you like.[40]

Setting UI AAPA. When the student describer was seated facing the front of the A-frame picture holder, and the student listener was seated facing the back of the A-frame, the male observer placed a picture story on the A-frame in such a way that only the student describer could see the picture story. Once the picture story was in place, the researcher gave the student describer the following directions.

"O.K. STUDENT DESCRIBER'S NAME , I'm going to show you a picture story that STUDENT LISTENER'S NAME can't see. It's a picture story without any words. Like a cartoon, the picture story starts here (pointing to the first picture in the sequence) and ends here (drawing finger from first picture to fourth and final picture in the sequence). Once you've familiarized yourself with the content of the story STUDENT DESCRIBER'S NAME, I'd like you to tell STUDENT LISTENER'S NAME what's happening in the picture story because s/he can't see it. You can start whenever you like."

[40]Again, a three second pause after a description of the final picture in the sequence was understood to signify an end to the description.

Appendix C

Consent & SES Information Forms

Principal: Phone:

Elementary School
School District No.:

, 1983.

Dear Parents:

Ken Jackson, Graduate Student in Education at Simon Fraser University, will be carrying out a language study in our school. A purpose and description of the study is on the second page of this notice. Pupils in Kindergarten, Grade Three, and Grade Five will be involved, with your permission. Pupils will be participating for only 5-10 minutes each, so little instructional time will be missed.

We would like the study to begin on _____ and would appreciate the permission slips being returned no later than _____.

As parent/guardian of _____ (pupil's name), I consent to his/her participation in the language study, "Reference in Children's Descriptive Speech," to be carried out at _____ Elementary during the week of _____, under the supervision of Ken Jackson, Graduate Student in Education, Simon Fraser University.

I have read the attached description of the language study and I understand the procedures to be used. I realize that I may obtain a copy of the results of the study by contacting the principal, _____. I also understand that all the data gathered in the study will be confidential.

Name: _____

Signature: _____

Please phone Ken Jackson, at _____, or the Principal, _____ at _____, if you have any questions concerning the study.

Purpose of the Study

The study is designed for two purposes:

1) to determine if the kind of speech children use when talking to other children differs from the kind of speech children use when talking to adults;

2) to determine if the kind of speech children use when talking about abstract objects (invisible objects) differs from the kind of speech children use when talking about concrete objects (visible objects).

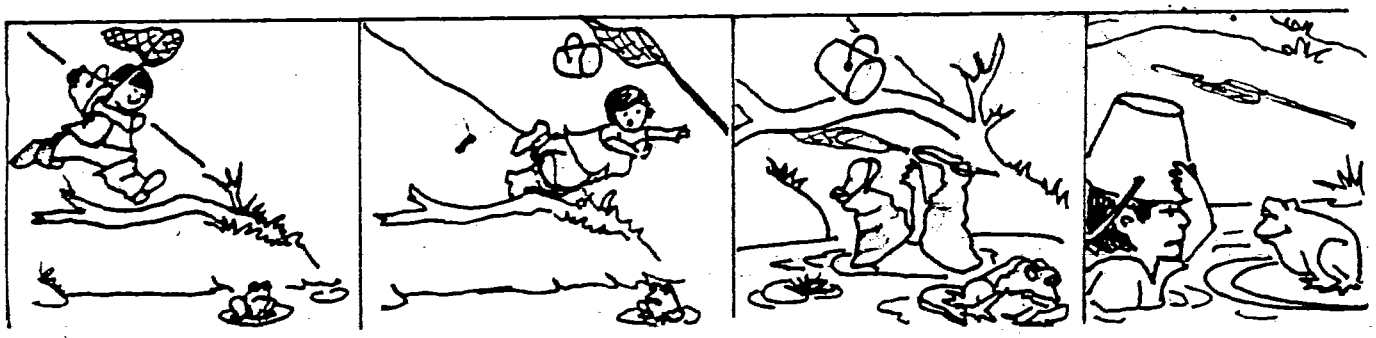
Description of the Study

Setting 1: Looking at picture story 1 (see below), child describes picture action to adult observer (also looking at picture). Speech samples will be recorded.

Setting 2: Looking at picture story 2, child describes picture action to another adult observer (who has not seen picture).

Setting 3: Looking at picture story 3, child describes picture action to another child (also looking at picture).

Setting 4: Looking at picture story 4, child describes picture action to another child (who has not seen picture).



Principal: Phone:

Elementary School
School District No.:

Dear Parent/Guardian:

I would like to thank you for having allowed your child to participate in the language study I began at _____ Elementary School during the month of November 1983.

The purpose of my study (the first of its kind) is to assess elementary school children's understanding of the personal pronoun system (I-me, you-you, he-him, she-her, it-it, we-us, they-them). The data gathered in the study are now undergoing statistical analysis, the results of which should go a long way in determining the adequacy/inadequacy of the present day educational system in teaching and assessing beginning language skills. The results of the study may also suggest ways in which children's language skills may be improved and taught.

However, before making a final analysis of the data, I would like to ensure that the children who participated in the study have approximately the same social and linguistic backgrounds (so that I may account for any minor discrepancies in the data). In this regard, I would ask if you would be kind enough to complete the brief questionnaire on the reverse and have your child return it (unsigned and sealed in the envelope provided) to _____ Elementary.

Thank-you very much for your assistance and support.

Sincerely,

Ken Jackson
Graduate Student, Education
Simon Fraser University
Phone: _____

1. Do you feel your child's school is doing enough to develop language skills.?

1. Yes 2.. No

2. Do you feel preschools develop language skills?

1. Yes 2.. No

3. Did your child begin speaking by age three?

1. Yes 2.. No

4. Did your child show any signs of language problems prior to school age?

1. Yes 2.. No

5. Occupation of male parent/guardian _____

6. Occupation of female parent/guardian _____

7. Last level of schooling attended by male parent/guardian:
Please circle one number only

1. Elementary 2. Junior High 3. Senior High
4. College 5. University 6. Graduate School

7. Last level of schooling attended by female parent/guardian:
Please circle one number only

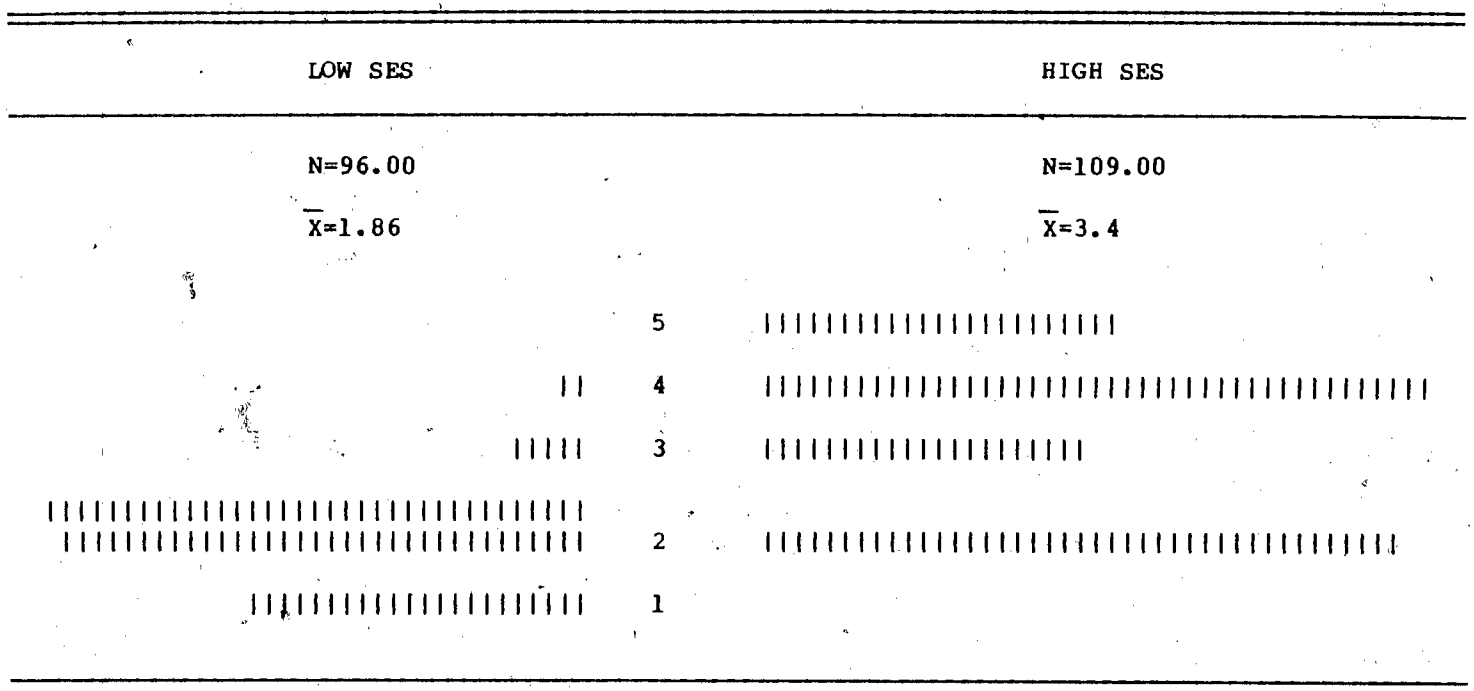
1. Elementary 2. Junior High 3. Senior High
4. College 5. University 6. Graduate School

APPENDIX D

Family SES by Education, Occupation, and SES of Parents

FIGURE 2

BACK-TO-BACK STEM-AND-LEAF OF LAST LEVEL OF SCHOOLING ATTENDED BY INDIVIDUAL PARENTS



STEM: LAST LEVEL OF SCHOOLING ATTENDED
: 5 = GRADUATE SCHOOL
: 4 = UNIVERSITY
: 3 = COLLEGE
: 2 = SENIOR HIGH
: 1 = JUNIOR HIGH

LEAF: INDIVIDUAL PARENTS

LSES Families by Education, Occupation, and SES of Parents

Family	Education		Occupation		SES		Family SES
	M	F	M	F	M	F	
1.	University	University	Teacher	Teacher	68.8128	75.6336	144.4464
2.	-	Sr. High	-	Flag Person	-	38.5427	38.5427
3.	Jr. High	Jr. High	Warehouseman	Hswf.	38.5252	26.9	65.4252
4.	Sr. High	Sr. High	Truck Driver	Hswf.	29.7365	26.9	56.6365
5.	Sr. High	Jr. High	Sales Mgr.	Hswf.	65.1050	26.9	92.0050
6	Sr. High	Sr. High	Salesman	Pr.Scl.Teach.	43.7909	71.0869	114.8779
7.	Sr. High	Sr. High	Police Officer	Hswf.	60.1046	26.9	87.0046
8.	Sr. High	Sr. High	Tax Auditor	Tax Preprer.	67.4100	43.6202	111.0302
9.	Sr. High	Jr. High	Machine Op.	Hswf.	27.6005	26.9	54.5005
10.	Sr. High	Sr. High	Tree Faller	Hswf.	22.8047	26.9	49.7047
11.	Sr. High	Sr. High	Sht.Mtl.Mech.	Hswf.	37.6528	26.9	64.5528
12.	Sr. High	Jr. High	Truck Driver	Hswf.	29.7365	26.9	56.6365
13.	Sr. High	Sr. High	Millwright	Lab. Aide	41.4781	42.2051	83.6832
14.	-	Sr. High	-	Flag Person	-	38.5427	38.5427
15.	-	Sr. High	-	Factory Wkr.	-	31.7514	31.7514
16.	Sr. High	Sr. High	Restrnt. Mgr.	Waitress	37.2441	31.7650	69.0091
17.	Sr. High	Sr. High	Pipefitter	Cstms. Clerk	37.6162	48.1480	85.7642
18.	Sr. High	-	Credit Mgr.	-	68.2250	-	68.2250
19.	-	Sr. High	-	Factory Wrkr.	-	31.7514	31.7514
20.	Sr. High	Sr. High	Unemployed	Unemployed	21.8	25.4	47.2000
21.	Sr. High	Sr. High	Auto Shop Mgr.	Cashier	45.002	38.7227	83.7229
22.	College	Sr. High	Drvr. Slsmn.	Secretary	32.8339	49.8224	82.6563
23.	Sr. High	Sr. High	Prdction Wkr.	Hswf.	32.1822	26.9	59.0822
24.	Sr. High	Sr. High	Correct.Offcr.	Hswf.	28.7070	26.9	55.6070
25.	Jr. High	Sr. High	Sawfitter	Hswf.	37.6640	26.9	64.5640
26.	Sr. High	Jr. High	Hvy. Duty Mech.	Hswf.	41.4781	26.9	68.3781
27.	Sr. High	College	Auto Chkr.	Technologist	34.7114	60.6514	95.3628
28.	College	College	Supervisor	Hswf.	47.4196	26.9	74.3196
29.	Sr. High	Jr. High	Fttr. Wldr.	Recep./Typist	35.1540	41.2541	76.4081
30.	Sr. High	Jr. High	Welder	Hswf.	35.1540	26.9	62.0540

LSES Families continued.

Family	Education		Occupation		SES		Family SES
	M	F	M	F	M	F	
31.	Jr. High	-	Unemployed	-	21.8	-	21.8000
32.	Sr. High	-	Purchasg. Agent	-	54.6308	-	54.6308
33.	Sr. High	Sr. High	Inventory Planr.	Bookkeeper	64.7042	44.5726	109.2768
34.	Sr. High	Jr. High	Manager	Hswf.	65.1050	26.9	92.0050
35.	Sr. High	Sr. High	Pressman	Hswf.	41.5833	26.9	68.4833
36.	Jr. High	Sr. High	Driller	Janitor	35.5183	25.5670	61.0853
37.	Jr. High	Jr. High	Waiter	Hswf.	28.0074	26.9	54.9074
38.	Sr. High	Jr. High	Sales Mgr.	Hswf.	65.1050	26.9	92.0050
39.	Sr. High	Sr. High	Tree Faller	Hswf.	22.8047	26.9	49.7047
40.	Sr. High	-	Flying Instr.	-	56.3952	-	56.3952
41.	Sr. High	Sr. High	Fisherman	Hswf.	18.6296	26.9	45.5296
42.	Sr. High	Sr. High	Retail Clerk	Hswf.	38.3541	26.9	65.2541
43.	Jr. High	Jr. High	District Mgr.	Hswf.	65.1050	26.9	92.0050
44.	Sr. High	Sr. High	Salesman	Hswf.	43.7909	26.9	70.6909
45.	College	Sr. High	Shipper	Hswf.	34.4410	26.9	61.3410
46.	-	Sr. High	-	Dressmaker	-	25.3045	25.3045
47.	Sr. High	Jr. High	Labourer	Office Clerk	27.6005	43.6202	71.2207
48.	Sr. High	Jr. High	Partsman	Hswf.	43.7909	26.9	70.6909
49.	Sr. High	Sr. High	Millworker	Hairdresser	29.5722	32.0662	61.6384
50.	Jr. High	Sr. High	Millworker	Bank Clerk	29.5722	38.7227	68.2949
51.	Sr. High	Sr. High	Prdctn. Wkr.	Hswf.	32.1822	26.9	59.0822
52.	Jr. High	Jr. High	Truck Driver	Hswf.	29.7365	26.9	56.6365
53.	-	Sr. High	-	Daycare Prsn.	-	53.8504	53.8504
$\bar{X}$	1.94 Sr. High = 2.0	1.80 Sr. High = 2.0	N.A.	N.A.	40.7740	33.8551	66.3895

HSES Families by Education, Occupation, and SES of Parents

Family	Education		Occupation		SES		Family SES
	M	F	M	F	M	F	
1.	Grad.School	Grad.School	Lawyer	Lawyer	72.7302	77.3790	150.1092
2.	Grad.School	University	Lawyer	Hswf.	72.7302	26.9	99.6302
3.	University	University	Contractor	Hswf.	66.6958	26.9	93.5958
4.	University	Sr. High	Lmbr. Trader	Hswf.	61.5618	26.9	88.4618
5.	University	University	Appraiser	Hswf.	50.0692	26.9	76.9692
6.	Grad.School	Sr. High	Lithographer	Hswf.	41.5833	26.9	68.4833
7.	Grad.School	College	Lawyer	Hswf.	72.7302	26.9	99.6302
8.	Grad.School	Sr. High	Co. Manager	Hswf.	65.1050	26.9	92.0050
9.	University	College	Transport Mgr.	Hswf.	60.9983	26.9	87.8983
10.	Grad.School	University	Systems Anal.	Lawyer	68.7215	77.3790	146.1005
11.	Sr. High	Grad.School	Co. Exec.	Hswf.	64.7042	26.9	91.6042
12.	Grad.School	College	Engineer	Hswf.	69.5540	26.9	96.4540
13.	Grad.School	College	Gov't.Direc.	Comput. Op.	68.6724	43.4933	112.1657
14.	University	College	Physician	Hswf.	74.2246	26.9	101.1246
15.	Grad.School	College	Lawyer	Hswf.	72.7302	26.9	99.6302
16.	University	College	Professional	Hswf.	66.6958	26.9	93.5958
17.	University	College	Concert Prod.	Hswf.	67.0394	26.9	93.9394
18.	University	University	Bsnss.Man	Fit. Instr.	66.6958	49.5230	116.2188
19.	Sr. High	University	" Slf.Empld.	Bsnss Wm.S.E.	66.6958	68.8385	135.5343
20.	Sr. High	Sr. High	" " "	Buyer	66.6958	54.6308	121.3266
21.	Grad.Schpol	Grad.School	Bsnss. Mn.	Multicltrl.Wkr.	66.6958	72.3517	139.0475
22.	Grad.School	University	Professor	Hswf.	72.2955	26.9	99.1955
23.	Grad.School	-	Lawyer	-	72.7302	-	72.7302
24.	University	University	Realtor	Art Lctrer.	50.0692	80.5704	130.6396
25.	Grad.School	Sr. High	Engineer	Hswf.	69.5540	26.9	96.4540
26.	College	Sr. High	Bsnss. Mn.S.E.	Hswf.	66.6958	26.9	93.5958
27.	College	College	Director	Hswf.	66.6958	26.9	93.5958
28.	University	College	Co. Mgr.	Hswf.	65.1050	26.9	92.0050
29.	University	Sr. High	Executive	Hswf.	64.7042	26.9	91.6042
30.	College	College	Elec.Contrtr.	Hswf.	66.6958	26.9	93.5958

HSES Families continued.

Family	Education		Occupation		SES		Family SES
	M	F	M	F	M	F	
31.	Grad.School	Grad.School	Mgmnt.Consult.	Teacher	64.7042	75.6336	140.3378
32.	University	University	Writer	Teacher	62.8184	75.6336	138.4520
33.	University	University	Lawyer	Hswf.	72.7302	26.9	99.6302
34.	University	College	Lawyer	Teacher	72.7302	75.6336	148.3638
35.	Sr. High	College	Ins. Broker	Secretary	61.5618	49.8224	111.3842
36.	Sr. High	Sr. High	Fireman	Stockbroker	50.9583	58.6165	109.5748
37.	University	College	Sales Engineer	Hswf.	66.6958	26.9	93.5958
38.	Grad.School	University	Bsnss Mn.	Hswf.	66.6958	26.9	93.5958
39.	Sr. High	Sr. High	" " S.E.	Secretary	66.6958	49.8224	116.5182
40.	University	University	Physician	Hswf.	74.2246	26.9	101.1246
41.	Grad.School	University	Exec. Mgr.	Teacher	64.7042	75.6336	140.3378
42.	University	University	Bus. Exec.	Hswf.	64.7042	26.9	91.6042
43.	University	University	Restrntr.	Fit. Instr.	66.6958	49.5230	116.2188
44.	University	Sr. High	Lawyer	Hswf.	72.7302	26.9	99.6302
45.	University	University	Teacher	Teacher	68.8128	75.6336	144.4464
46.	University	College	Consultant	Nurse	64.7042	61.9938	126.6980
47.	University	Grad.School	Writer	Teacher	62.8184	75.6336	138.4520
48.	University	Sr. High	Lawyer	Hswf.	72.7302	26.9	99.6302
49.	University	College	Engineer	Hswf.	69.5540	26.9	96.4540
50.	University	Sr. High	Invest. Mg.	Accountant	68.2250	58.1653	126.3903
51.	University	University	Administ.	Hswf.	68.6724	26.9	95.5724
52.	College	Sr. High	Const. Mg.	Hswf.	55.4962	26.9	82.3962
53.	Sr. High	Sr. High	Writer	Admin.Assist.	62.8184	65.2740	128.0924
54.	Grad.School	University	Invest. Mg.	Teacher	68.2250	75.6336	143.8586
55.	College	Sr. High	Bus. Exec.	Hswf.	64.7042	26.9	91.6042
$\bar{X}$	3.96 University = 4.0 College = 3.0	3.24	N.A.	N.A.	66.0597	42.7337	108.0164

APPENDIX E

Degrees of Freedom Formula for Grade, Sex, Socioeconomic Status, and Dyad Type Effects

Formula for Grade, Sex and SES Effects

"Within" degrees of freedom were computed using the following formula:

$$S/ABC = (A)(B)(C)(n-1)$$
$$= (3)(2)(2)(16-1)$$
$$= 180$$

in which

S = 16, number of subjects, in each cell, or n
A = 3, number of grade levels
B = 2, number of SES levels
C = 2, number of sex levels.

Formula for Dyad Effect

"Within" degrees of freedom were computed using the following formula:

$$ST/ABC = (A)(B)(C)(n-1)(T-1)$$
$$= (3)(2)(2)(16-1)(4-1)$$
$$= 540$$

in which

S = 16, number of subjects in each cell, or n
T = 4, number of dyad types
A = 3, number of grade levels
B = 2, number of SES levels
C = 2, number of sex levels.

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