

**An Observational Study of the Request Behavior  
of Preschool Children: Developmental Changes in the  
Nature of Requests as a Function of the Sex and  
Status Characteristics of Peer Targets**

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**ABSTRACT****An Observational Study of the Request  
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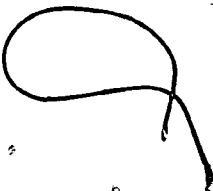
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The goal of the present study was to determine whether preschoolers' request behavior varied as a function of the sex and status characteristics of the speaker and of the target classmate. Five aspects of request behavior were examined - 1) frequency 2) verbal form 3) success 4) goals and 5) legitimacy of requests. Another research goal was to determine whether preschoolers' social cognition skills were related to spontaneous classroom request behavior. Three-year-olds and older four-year-olds were observed at free-play in the nursery classroom. Three role-taking measures (Flavell Birthday task, Urberg and Docherty task, and DeVries Hide-A-Penny task) were administered individually to tap social cognition skills.

Males issued more requests and more imperatives than females. Older males addressed more requests to boys than girls. Boys issued more imperatives in both same-sex and opposite-sex interaction than girls and were increasingly more successful with both sexes when they phrased their requests in imperative form. Girls tended to increase the proportion of requests with indirect form and were more successful

than boys when they selected this form. The proportion of direct requests used in female/female interaction decreased. Children did not differentiate the frequency or verbal form of requests according to status characteristics of speaker and target. However in dyadic analysis, with status observational derived and conceptualized as a property of the dyad rather than individual, some older preschoolers syntactically signalled their status relative to their partner. This ability was in its embryonic stage. Preschoolers social cognition skills were not related to either the success or verbal form of requests.

It was recommended that future research should extend the age range studied and conceptualize status in dyadic terms in order to further chart the developmental course of syntactic encoding of requests to mark status. In addition, semantic, paralinguistic and discourse aspects of requests as carriers of status information should be investigated.



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## Introduction

Two approaches to the study of language have yielded conflicting views regarding the preschooler's skill in communicating effectively with others. Developmental psychologists, notably Piaget (1926), suggested that preschoolers' communication skills are limited because of their cognitive inability to consider the viewpoint of the other when formulating their message. The large amount of egocentric communication they engage in with peers and their poor performance in conveying information to others in storytelling and instructional laboratory tasks (eg. Flavell, Fry, Wright & Jarvis, 1968; Glucksberg & Krauss, 1967) was taken as evidence of their inadequacies. In contrast with this view is that of the speech act or communicative competence approach, which focuses on language as social action originating in the early gestural and nonverbal communication of social intent between infant and caretaker (eg. Bruner, Roy & Ratner, 1978; Bates, 1976). The focus of this approach is the appropriate use of language to realize social goals rather than the study of grammatical or semantic structures thought to underlie the linguistic competence of an "ideal speaker". Naturalistic methods, characteristic of the speech act approach, have indicated that preschoolers are capable of eliciting responses to a significant number of their communication attempts with peers (eg. Mueller, 1972; Garvey & Hogan, 1973) and show rudimentary skill in adapting their speech to a variety of characteristics of their listeners (eg. Shatz &

Gelman, 1973).

Both cognitive and speech act schools have studied one important aspect of general social competence - namely the speaker's skill in directing the behavior of others (Weinstein, 1969). Skill in influencing others is of interest to developmental psychologists because it is hypothesized to be particularly sensitive to the speaker's ability to consider the perspective of the listener. The communicative competence school has investigated the use of directives, as it is one of the five primary social acts that speech accomplishes (Searle, 1975); directives can be realized using a variety of syntactical forms, and the competent speaker selects a particular means of conveying this intent based on elements of the social context eg. the social characteristics of the listener.

The present study examined the nature of preschoolers' verbal directives to peers. The type of verbal request forms employed with age-mates was examined as was the selective use of the request repertoire in relation to the sex and status characteristics of the target child. The extent to which the child's skill in addressing requests to his peers reflected his underlying perspective-taking skill was also investigated.

An overview of the introduction may help the reader understand how the present study emerged from both theoretical and empirical work in a variety of areas. First I consider the theoretical views underlying the cognitive approach to language, and the empirical

evidence that perspective-taking ability underlies communication skills in general and persuasive or request skills in particular. The communicative competence approach is then elaborated and the idea that language expresses and reinforces the existing social structures is advanced. I then examine empirical evidence that adult language is context sensitive, and expresses differences in the status of speaker and listener in a variety of ways including the choice of verbal request form selected from possible alternatives. Following this, I examine the request repertoires of adults and children and highlight the limitations in children's use of this repertoire. I then further elaborate how adult's selection of request forms expresses aspects of the social relationship between participants and examine the extent to which children exhibit this competence in interacting with non-peers of different status. I then cite evidence that preschool social groups are organized in a way that accords differential status to members of the peer groups and consider the extent to which children vary their request selection according to status features within the peer group. Finally, I conclude the introduction by presenting the specific hypotheses which guided the present study.

#### The Cognitive Approach

Piaget (1926) proposed that verbalizations of preoperational children were egocentric and lacking in social will as a result of children's inability to decentrate and consider simultaneously or even

sequentially their own and other's point of view. He provided evidence for this claim by demonstrating that a considerable number of children's utterances produced in the context of free-play with peers were non-social and unadapted to their listeners. Piaget detailed 8 categories of speech that occurred during free-play: 1) repetitions - repeating words and phrases for their own sake, 2) monologues - speech about the self or self's activity while alone, 3) collective monologues - speech about the self or self's activities in the presence of others, 4) adapted information, 5) criticism, 6) commands, requests and threats, 7) questions and 8) answers. The first three categories were considered to be egocentric speech devoid of social communicative function. Piaget reported that egocentric speech characterized between 40% and 70% of the utterances of children aged 4-7. He suggested that children's cognitive egocentrism diminished as a result of exposure to the conflicting views of peers which forced them to become aware of the different viewpoints of others.

Piaget's theoretical formulations were the impetus for a variety of empirical studies. This research has confirmed the existence of egocentric speech (eg. Fisher, 1934; Smith, 1935; Kohlberg, Yaeger & Hjertholm, 1968), although the proportion of egocentric speech to all speech reported has varied. The differences in the proportions reported were probably due to differences in the definition of egocentric speech, the situation in which the child was studied (with more egocentric speech with peers than adults) (Kohlberg et al., 1968)

and the responsivity of the listener (McCarthy, 1954). Studies exploring the extent to which role-taking skills underlie performance on communication tasks have generally focused on referential communication performance as measured by laboratory tasks. For example, Glucksberg & Krauss (1967) devised an experimental situation in which the child was separated from his listener by a screen and was required to give instructions in such a way that the listener could replicate the speaker's arrangement of blocks each containing a different low codable design. The results of numerous studies have yielded mixed results with some researchers reporting no relationship between role-taking and referential communication skills (eg. Looft, 1972; Shantz & Steinlauf, 1976; Steinlauf, 1974) in subjects ranging in age from 5 1/2 to adult. Other investigators reported a significant relationship only for specific ages studied and particular measures used (eg. Ceresnie, 1974; Coie & Dorval, 1973; Kingsley, 1971). For example, all three investigators found spatial role-taking skills correlated with referential communication ability in the 8-year-old subjects. However Coie and Dorval found this to hold true only for male subjects this age and Kingsley did not find this in his younger subjects. Still others have reported significant, albeit modest, relationships between these skills in children ranging from preschool to 11 years of age. (Berner, 1971; Cowan, 1967; Rubin, 1973). The discrepant results are thought to reflect methodological differences in terms of the age of subjects included as well as the

variety of role-taking measures used, many of which were of questionable reliability and validity (Rubin, 1978). The results taken together suggest that perspective-taking seems to account for only a small portion of the variance in referential communication skills - rarely more than 25% of the variance (Shantz, 1981). Some researchers attributed these findings to the referential communication task being complex and requiring a variety of other perceptual and cognitive skills (eg. Asher, 1978). Others questioned the degree to which the referential communication skills measured actually required sophisticated role-taking skills (Shantz, 1981).

The failure to find any strong relationship between social cognition and communication skills forced investigators to reconceptualize the way in which perspective-taking ability should contribute to adequate communication. Some researchers investigated whether role-taking skills were more closely linked to persuasive or requestive communications given their greater need to consider the listener's perspective in order to be successful. Clark and Delia (1977) and Delia, Kline and Burleson (1979) have examined this relationship in an experimental role-play situation.

They devised a hierarchical scoring system to score persuasive messages according to the extent to which they reflected or implied different levels of perspective-taking. Three main levels of perspective-taking skills were inferred from these messages. The first (level 1) showed no discernible recognition of and adaptation to



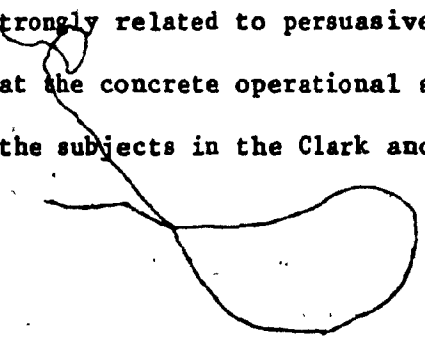
the target's perspective; the second (level 2) indicated implicit recognition and adaptation to the listener in that reasons for the requests were elaborated, and counterarguments of the listener anticipated; the third (level 3) was marked by attempts to provide the listener with arguments concerning how compliance with the request would benefit him/her personally. In children age 7-14, Clark and Delia (1977) reported a positive and significant relationship between persuasive message scores and performance on a measure of affective perspective-taking. They proceeded to extend their conception of the relationship between social cognition and persuasive communication by suggesting that role-taking skills form only a subset of the person-perception skills which underlie effective communication. Their research has indicated that the complexity of constructs that a person uses in describing friends and non-friends (an index of his person perception) was significantly related to the scores on the persuasion measure for children from kindergarten through twelfth grade (Delia, Kline & Burleson, 1979; Delia & Clark, 1977).

Lefebvre-Pinard and Bouffard-Bouchard (1980) examined the relationship between laboratory measures of perspective-taking and referential communication and the frequency and success of requests used in a naturalistic dyadic-free-play setting. Three types of same-sex, same-age dyads of preschoolers were formed, reflecting pairs of high, average and low social cognitive ability as judged by a battery of laboratory tasks. The three perspective-taking groups did not

differ in terms of the feedback they gave their partner following a request, the adaptiveness of their re-request behavior following initial failure, nor the success of their requests. There was a marginal trend for groups higher in role-taking skills to issue requests that were more informative during the first of two play sessions. Results of this study suggested that role-taking behavior was not strongly related to request skills in a more naturalistic dyadic context.

A similar investigation of the relationship between perspective-taking and referential communication skills and the request ability of preschoolers, grade one and grade three children in a dyadic free-play situation was conducted by Levin and Rubin (1979). They reported a positive relationship between the child's performance on one of several role-taking measures (the DeVries Hide-A-Penny task) and the proportion of request attempts that were successful. In addition, performance on the Glucksberg and Krauss referential communication task was positively correlated with 1) the proportion of successful requests produced, 2) the proportion of flexible modifications made following requestive failure, and 3) the proportion of topic changes following requestive failure.

The results of these studies suggest that perspective-taking skills may be more strongly related to persuasive or request behaviors in children who are at the concrete operational stage of cognitive development as were the subjects in the Clark and Delia study and some



of the children in the Levin and Rubin research. Furthermore, it may well be that the relation between these skills emerges most clearly when the level of decentration skills tapped by the role-taking measures is more advanced than the simple awareness that the other has a perspective different than one's own (eg. simple decentration). In fact, the discrepant results of Lefebvre et al. and Levin and Rubin regarding the relationship between requestive success and perspective-taking skill might have reflected the fact that in the former study, measures tapped simple decentration (Lefebvre-Pinard & Strayer, 1980) while in the latter one, the DeVries task also tapped more advanced levels of decentration.

#### Communicative Competence

Hymes (1971) coined the term communicative competence to highlight his theoretical stance that skill in speaking requires not only knowledge of linguistic rules and structures but also rules concerning the appropriate use of language in social interaction. This focus on the use of language in its naturally occurring context was in marked contrast to the emphasis of linguists in the '60's and '70's who attempted to discover the grammatical universals thought to characterize the competence of the "ideal speaker" (eg. Chomsky, 1965). The impetus to examine language as it occurred in social interaction resulted from several concurrent developments. Linguists such as Fillmore (1968) and McCawley (1968) began to question the

purely syntactical characterization of language while others such as Campbell and Wales (1970) suggested that certain nonlinguistic aspects such as the context in which language was used might play an important part in determining the syntactical structure of an utterance. In addition, the work of researchers in child language demonstrated that early language consisted of verbal representations of meanings underlying sensorimotor actions (eg. Brown, 1973). By studying the context of children's two word utterances, Bloom (1970) demonstrated that the child could use the same construction to realize a variety of semantic relationships. These two findings among others served to focus attention on the context of language use for an understanding of the child's unfolding linguistic competence.

Furthermore, the writings of philosophers of language such as Austin (1962) and Searle (1969) were instrumental in redirecting interest to the use of language in its interactional context. They suggested that utterances could be regarded as "speech acts" that conveyed not only propositional meaning i.e. informational content, but also the speaker's intention in making the utterance i.e. its "illocutionary force". Searle and other philosophers tried to account for the fact that a wide variety of utterances differing in syntactical form were understood to convey the same illocutionary force. For example, the utterances "Pass the salt", "Could you pass the salt" and "I need the salt" are understood to have the illocutionary force of a request despite variation in their

syntactical form. They proposed that speakers and listeners understood these varied forms as having a certain intention by virtue of their shared knowledge of certain rules concerning the performance of speech acts (eg. Searle, 1969, Gordon & Lakoff, 1971) and their awareness of principles of conversation (Grice, 1975).

Sociolinguists contributed to the communicative competence approach by demonstrating that despite the many lexical and grammatical options available to speakers in expressing their message, selection from among these alternatives was not random and was related to social variables. Ervin-Tripp (1971) coined the term "alternation" to refer to the systematic manner in which selection from linguistic options was made in accord with characteristics of the speaker (eg. cultural identity, sex, SES rank), characteristics of the listener (eg. age, familiarity, sex, rank), the social relationship between participants and the situational context of the interaction (eg. setting, goal). Communicatively competent speakers were said to be skilled in selecting the option best suited to the interactional context, termed the unmarked option. In addition, competent speakers were able to convey additional information about their attitudes, beliefs and evaluations of the speech situation and their listener by strategically using an unexpected or "marked" form (Geoghegan, 1973). For example, most requests directed to children by adults have the unmarked form of the imperative. However, the utterance "Could you be so kind as to trouble yourself to put out the garbage" addressed by a

parent to a child would convey the parent's feeling concerning the child's behavior, based on its unexpected syntactical form.

Among the variety of information conveyed by speech, the social relationship between participants was felt to be both expressed and realized through language (Bernstein, 1972; Halliday, 1969; Mishler, 1975). Bernstein proposed that the different social relationships characteristic of lower and middle class parents and their children resulted in differences in the linguistic alternatives and codes they acquired which in turn affected the nature of the social relationships they developed with others. Sociolinguists and anthropologists have investigated the ways in which other aspects of the social relationship are signalled linguistically. Their research has shown that solidarity, intimacy, friendship, and status between participants are indicated at the paralinguistic, lexical, prosodical, and syntactic levels of language (eg. Brown & Gilman, 1960; Emihovich, 1981; Thorne & Henley, 1975; Ervin-Tripp, 1977).

Of relevance to the present research is the way in which status has been found to be signalled directly or indirectly through choice among linguistic alternatives. Status as used in the present study refers to the power which an individual actually has or is perceived to have to control resources (Becker, 1982). Originally, research in the area attempted to find a one-to-one correspondance between status and a linguistic element such that a particular linguistic variable acted for participants as a signal of the social relationship. Brown

and Levinson (1979) called such one-to-one indicators Level 1 direct markers of status. For example, the selection of address forms from the range of possible alternatives (eg. Sir, Madame, first name, last name, title plus first names) has been found to convey information about the status and relative rank between speakers (eg. Ervin-Tripp, 1972, Brown & Ford, 1964, Geoghegan, 1973). In one study, Slobin, Miller and Parker (1968) found that in the insurance company they observed, the higher ranking members used first names to address lower ranking individuals while subordinates used "title plus last name" to address superiors.

Brown and Gilman (1960) have shown that status is signalled linguistically through the choice of pronouns in languages in which there are two second person singular pronouns (eg. French, Italian, German). The absolute use of the T ("tu" in French) or V ("vous" in French) form itself was not found to be a direct marker of the superiority or inferiority of the speaker. Rather, the relative rank of the two participants was indicated by the reciprocated or asymmetric use of these two pronouns. The higher rank of the speaker was indicated by his use of T form relative to his receipt of V form from the other. Although these results suggest that the relative use of T/V pronouns serves as a direct marker of status, Brown & Levinson (1979) noted that the "marked" or unexpected usage of either form could convey other types of meanings about participants. For example, the use of T when V was expected could be used to insult the listener

by reducing his status while the use of V when T was expected could indicate an attempt to show social distance or withdrawal of speaker from listener.

Theorists such as Lakoff (1972) and Thorne and Henley (1975) have suggested that the lexical, syntactical and paralinguistic differences claimed to exist between male and female speech reflect the differential status inequities and dominant/subordinate role-relations occupied by the sexes in our society. Stereotypes and folklinguistic studies have reported that women's speech is thought to contain different expletives and adjectives of admiration than men (Lakoff, 1972; Key, 1975), more tag questions (Lakoff, 1972; Hartman, 1976; Dubois & Crouch, 1974), more hedges such as "kinda", "you know", "I think" and more modal constructions such as "could you" (Key, 1975). Using Brown & Levenson's terminology, these grammatical and lexical alternatives would be considered direct markers of status. It should be noted that none of these grammatical or lexical forms are used uniquely by either sex and it is only the relative difference in the frequency of their usage which has been thought to reveal the differential status of males and females.

In addition to Type I markers, Brown and Levenson (1979) have suggested that status relationships are even more frequently signalled linguistically by indirect Type II markers. These speech markers are "ambiguous markers" in that they can convey a variety of meanings and are open to interpretation via inferences and additional contextual



information. One of the Type II markers found to signal the relative status between participants is the use of particular types of request forms. The empirical evidence supporting request alternation as an indirect marker of status is reviewed below after the reader is familiarized with the request repertoire of adults and children.

In summary, 1) language consists of speech acts conveying social intent; 2) a variety of linguistic means are available to express the intended meanings, 3) selection among possible alternatives is not random but systematically related to features of the social context and 4) information about the role relationships between participants eg. their relative status can be signalled directly or indirectly by a variety of linguistic means. The communicatively competent speaker possesses a wide repertoire of alternatives and is knowledgeable concerning the rules for the selection of linguistic features appropriate to the speech situation.

### The Request Repertoire

#### Adults' Alternate Forms of Requests

Ervin-Tripp (1976; 1977) has studied the forms adult speakers of English use to request actions from their listeners and has found that six major categories of request forms existed. They are: 1) imperatives eg. "Give me the salt", 2) personal need or desire statements eg. "I need the salt", 3) embedded imperatives in which the actor, verb, and desired act are made explicit eg. "Could you pass me

the salt?", 4) permission directives eg. "May I have the salt", 5) question directives which differ from embedded imperatives in that they do not make the desired act and often the agent explicit and seem identical in form to an information question eg. "Is there any salt at the table?" and 6) hints which require inference on the part of the listener to interpret them as requests and often involve shared understandings between familiar participants eg. "This meat is tasteless". These six forms function as requests in the appropriate social context.

Searle (1969) has proposed that the five categories of requests that have syntactical forms other than imperative are understood by virtue of their relation to four felicity conditions for the performance of speech acts. According to his theory, an utterance is understood to be a well-formed reasonable request if 1) the speaker has reason for wanting it done (sincerity condition), 2) the speaker has reason for assuming that the hearer (H) can do act (X) (preparatory condition), 3) the speaker has reason to believe that H would be willing to do X (proposition condition) and 4) the speaker has reason to assume that H would not do X otherwise (essential condition). Need statements, permission directives, and embedded imperatives could be understood in terms of their asserting or questioning of the felicity conditions. The last two of Ervin-Tripp's categories of requests were understood as requests based on an understanding of felicity conditions in conjunction with Grice's

Cooperative Principle (1975) - Be clear, Be as informative as required but not more so, Say only what you believe is true, Be relevant, Be lucid and succinct. According to these theorists, the utterance "Is there any salt?" is understood in the following manner: Speaker (S) is asking whether there is any salt; however, it is clear that he knows there is salt on the table so he is violating the cooperative principle of being relevant; therefore, he must mean something else. S is asking about the presence of the salt, possibly to assert that H is able to pass the salt - one of the preparatory conditions for issuing a request. Therefore S by implication is requesting the salt.

Although the meaning of such indirect request forms is logically explained by this deductive model, such conceptions suggest considerable cognitive and inferential processes are necessary to interpret these utterances. A variety of experimental and naturalistic evidence has questioned whether requests are actually produced and understood in this manner. First, reaction time tasks have generally not indicated that indirect requests take longer to process as might be predicted on the basis of this model (eg. Ackerman, 1978). Second, a body of literature has found that children as young as two respond to the question directives of their mothers in the same way they respond to direct requests (eg. Shatz, 1975). Third, children have been found capable of producing all six types of requests by the end of their preschool years when inference skills are limited (eg. Garvey, 1975, Levin & Rubin, 1979). A variety of

explanations have been proposed to account for these data. For example, Sadock (1974) suggested that many of the indirect request forms produced and understood by young children are highly conventionalized and idiomatic in form and can be generated directly by the performative deep structure. Bates (1976) incorporated Sadock's explanation in her three stage model of indirect requests. Stage I, characteristic of children up to 3 1/2 or 4 years, is the stage of idiomatic direct mapping not involving any inference skills. Children from 4 until 6 or 7 are functioning at Bates' Stage II. At this stage, the child is not restricted to idiomatic mapping and can manipulate a wide range of surface forms to express his intent as a result of his developing role-taking skills. "The child now understands that he and the listener share certain rules about the goals of the speaker and the nature of the conversation and hence that the listener can recover the child's intent despite variation in form" (Bates, 1976, p.292). Further elaboration of perspective-taking skills allow the Stage III child to hint at desired goals without making them explicit.

The model proposed by Bates suggests that perspective-taking skills should be unrelated to the production of indirect requests by children younger than 3 1/2 or 4, since their indirect requests are idiomatic in nature and do not reflect inferential processes. However, role-taking skills should underlie the use of indirect request forms produced by children 4 and over which are not restricted


to idiomatic form. No empirical studies testing out this hypothesis had been conducted at the time the present research was undertaken.

### Children's Request Repertoire

Preverbal children have been found to indicate directive intent by gestures such as arm extensions and reaching motions. These are later accompanied by unconventionalized vocalizations which gradually become phonologically constant forms of request intent and which with increasing lexical development approximate conventional naming of the desired object (eg. Bruner et al., 1978; Dore, 1974). The use of words such as "want" or "more" to indicate requests are followed developmentally by the emergence of need statements as well as statements of condition eg. "I'm hungry". Direct imperatives which specify both actor and object occur at approximately the same time as well as indirect location questions eg. "Where's my dolly?" and claims such as "that's mine". During the third year embedded imperative forms which specified both object and act desired have been observed in the request repertoire (Ervin-Tripp, 1977).

Several studies have examined the type of request forms used by preschoolers when playing with their peers. Both Garvey (1975) and Levin and Rubin (1979) videotaped same-sex dyads of familiar children interacting in a laboratory playroom. In the Garvey study, children ranged in age from 3 years 6 months to 5 years 7 months with a mean age of 46.3 and 60 months for younger and older preschoolers

respectively. In the Levin and Rubin study, the youngest children overlapped the age range studied by Garvey with the average age of the preschool group being 53.95 months. In addition, these investigators examined the request behavior of dyads of first and third graders, mean age 78.1 and 106.2 months respectively. In both studies, all request utterances were identified and then coded according to 1) their verbal form, 2) their success in gaining acknowledgement (illocutionary effect), 3) their success in gaining their desired goal, 4) their supporting justifications for the requests, 5) reasons for refusal and 6) in the Levin and Rubin study, re-request strategies used following initial failure. Both investigators found that direct requests were the most frequent verbal form of request used in the dyadic social context. However, other forms such as indirect request forms that had embedded imperative form, permission requests, and imperatives with softeners were also observed. Garvey reported an increase in raw frequency of indirect request forms over the preschool years while Levin and Rubin found that the proportion of requests that had indirect forms (i.e. forms other than imperative) did not change across the age range - kindergarten through grade three. In their study, approximately 20% of the requests produced by dyads of same-sex same-age peers in free-play had an indirect form. Request forms which were more indirect such as hints were not observed in preschoolers in Garvey's study when expressing directive intent to peers; however, Doré (1977) reported that 3 year olds in his study used requests which



did not specify the desired goal (i.e. hints) with other peers in free-play (e.g. "Oh that's my juice"). These differences may reflect the greater difficulty observers have in correctly identifying these more indirect verbal forms (Becker, 1982), as well as the fact that Doré's data were derived from classroom observations while that of Garvey was based on dyadic behavior in a laboratory context. In interaction with adults, children of preschool age have been observed to use hints (Ervin-Tripp, 1977).

Garvey (1975) has identified an indirect "pretend" strategy sometimes employed by preschoolers in directing the behavior of a peer. An often cited example of the "pretend" strategy involves two children interacting and A wanting to use the toy car B was just riding on. The following "pretend" strategy was employed.

A: Pretend this was my car.

B: No.

A: Pretend this was our car.

B: All right.

A: Can I drive our car?

B: Yes, OK.

Such evidence, along with the findings of Mitchell-Kernan and Kernan (1977) that children aged 7-12 produced all six of the directive forms used by adults in the course of their role-play, suggests that children and even preschoolers have a request repertoire similar to that found in adults. In addition, even preschoolers exhibit an

awareness of the rules underlying the performance of the speech act of requesting as evidenced by their use of supporting justification for their directives, and their framing of excuses for noncompliance in terms of features of willingness, ability or permission, and reasons or rights (Garvey, 1975; Levin & Rubin, 1979). However, a variety of evidence suggests that young children's comprehension and skill in using this repertoire is deficient relative to that of older children and adults.

First, the success of requests produced by preschoolers has been found to be little better than chance for direct requests (Garvey, 1975) and for requests in general (Levin & Rubin, 1979). With increasing age the proportion of requests that achieve their intended perlocutionary effect (i.e. are successful) becomes larger (Levin & Rubin, 1979). These results may reflect a shift with increasing age from requests that are "egobound and relatively unconcerned with whether or not the listener is either willing or able to carry out the requested act" (Levin & Rubin, 1979, p. 16) to increased competence in formulating reasonable requests.

The second piece of evidence which indicated less skill on the part of preschoolers in making requests was the finding that they were less able to modify their request strategy following initial failure (Levin & Rubin, 1979; Lubin & Whiting, 1977). Levin et al. found that 31% of the re-request strategies of kindergarten children were unmodified repetitions (i.e. "rigid" re-requests) compared with only



9% in the case of third graders. As Flavell (1981) has suggested, the continuous monitoring of the conversation and its consequences seems an important aspect of communication skill.

A body of laboratory studies of request skills of children and adults has shown that while young children can modify their requests to make them "nicer" or "bossier", their modifications are less elaborate and differ from those of adults. For example, Becker (1983) had subjects aged 5, 10 and adult pretend to ask a peer to return a borrowed item over the telephone. The first request was made with no special instructions given by the experimenter, while the second and third requests were issued under the instructions to make a "bossy" and "nice" request respectively. While in general, bossy requests were found to be syntactically more direct than nice requests across all subjects, Becker found differences in the way in which bossy and nice attempts varied at each age level. Only 70% of 5-year-olds modified their requests according to directions, while all older subjects clearly differentiated their directives. Furthermore, a sizeable proportion of the 5-year-olds relied primarily on semantic softeners (eg. please, reasons, umm) and semantic aggravators (eg. name-calling, threats) in making their bossy and nice requests different. Ten-year-olds and adults more consistently used both semantic and syntactical variation (eg. imperative vs indirect request forms) in modifying their requests. These results suggest that preschoolers show communicative competence in terms of their ability to adjust their

requests according to situational demands (in this case instructions), however their syntactic skill shows limitations relative to that of older children and adults.

The fourth piece of evidence suggesting some limitations to the communicative competence of young children comes from laboratory studies dealing with children's comprehension of indirect request forms. Although children have been found to comprehend question directives as requests for action at the age of 2 (Shatz, 1975), their "comprehension" has been thought to be the result of their tendency to respond to adult's requests with an action-bias. Shatz (1978) demonstrated this bias in an experiment she conducted with children aged 18 1/2-36 months. She issued imperatives, embedded imperatives, question directives, and hints in her interaction with each child while playing with toys. Children responded with action to 91% of all request forms and were equally likely to exhibit this bias regardless of the syntactical form of the request. The children with greater productive language skills were found to break this action bias and produce a few more responses that indicated they had understood the directive as a possible question and therefore responded with a suitable verbal response. Even when children were "primed" to respond by virtue of their hearing imperatives or questions before the test sentence, they still showed an action-bias though there was some effect of condition. Similar findings of an action-bias have been found with language-disordered children (Shatz, Shulman, & Bernstein,

1980). Findings such as these make it clear that children's "comprehension" of indirect requests may be over-estimated because of their action-bias response to request forms presented to them. Before concluding that young preschoolers "understand" indirect requests as directives, it would be necessary to assess their comprehension using experimental techniques other than those requiring an action response.

In order to assess more closely the degree of comprehension children have of indirect requests, researchers have used a variety of techniques such as requiring children to paraphrase requests (Reeder, cited in Shatz, 1978), respond to questions after hearing paragraphs which bias a literal or a requests for action interpretation (Ackerman, 1978), or view videotapes of adults interacting and judge whether the subsequent behavior of the adult was in compliance with what was asked of him (Leonard, Wilcox, Fulmer & Davis, 1978). Results of these studies indicated that 4 and 5-year-olds understood both the informational and directive features of indirect requests despite their action responses to them (Reeder, 1980). In the videotape paradigm, children of this age correctly judged adult listener's compliance at better than a chance level for embedded imperatives phrased with modal verbs "Can" or "Will" although their performance was less than chance for "Must" and "Should" request forms. Their correct judgements could not be explained by virtue of whether the adult performed some action, since often the embedded requests involved altering or stopping the listener's ongoing

behavior. Leonard et al. noted, however, that performance on this task did improve with increasing age, suggesting refinements in the comprehension of embedded imperatives with development.

To summarize, the data of these studies indicate that by the end of the preschool years, children produce ~~the six~~ types of requests found in the request repertoire of adults. However, their skill in using these alternate forms differs in some important ways from that of adults. They are less successful in gaining compliance from others than are older children and adults and are less able to use flexible re-request strategies if their initial requests fail. In addition, they show a more restricted range of means to manipulate the niceness or bossiness of their requests. Finally, although children from age four on show some understanding of indirect requests that surpasses a mere "action-bias" comprehension, they are less able than older children and adults to understand embedded imperatives particularly those using less common modal verbs.

While a clearer picture of the request repertoire of preschoolers has emerged over the past decade, there still exists some gaps in our knowledge. First, since the production of requests has been studied mainly in role-play and dyadic contexts, it is unclear whether a similar developmental picture would emerge if request behavior were examined in the social context of the classroom. Second, little information exists as to whether there are sex differences in either the frequency or verbal form of requests used by preschoolers. Given

the stereotype that adult males are more direct than adult females when they issue directives (Lakoff, 1972), it would be interesting to examine at what age these differences first emerge. Finally, little is known concerning how request behavior in preschoolers is affected by the identity of the addressee and the presence of other adults on children. Future research in the area should begin to address these questions.

Although possession of a varied request repertoire is a prerequisite to communicative competence, the competent speaker has been considered to be one who is able to selectively employ this repertoire in ways that are appropriate to the interactive context and the type of relationships between participants. As discussed above, adults have been found to signal the status differences between themselves and others using a variety of linguistic and paralinguistic means. We now review the evidence that adults selectively use their request repertoire to provide information about the status relationship between themselves and others. Following this, we consider the extent to which young children show this aspect of communicative competence.

#### Variation in the Social Distribution of Requests Used by Adults

Ervin-Tripp (1976) and her students have studied the variation in requests forms used as a function of the social relationship between participants. Using paper and pencil recordings of conversations occurring in a variety of social settings eg. hospital, office,

laboratory and coffee shop, they found that the verbal form of request selected varied systematically according to the relative status of the participants. In status sensitive or formal settings, need statements as well as imperatives were generally used by superiors addressing lower ranking individuals. Hints were used in these settings to request the performance of duties regularly expected by virtue of the relative positions of participants. In less formal settings, imperatives were used to convey requests among familiar equals. Embedded imperatives and permission directives were generally used in situations involving unfamiliar participants, or by lower ranking speakers addressing people of higher rank than themselves. When compliance to requests was uncertain, question directives were used, allowing participants to indirectly state their request in a way that was not presumptuous and allowed them to save face in the case of non-compliance. Amongst family and in groups of well-acquainted members, hints tended to be used to express directive intent as well as to indicate the shared understandings and solidarity between participants.

Although Ervin-Tripp found that the verbal form of request encoded information about the relative status of speaker/listener in a variety of settings, she found that syntactical variation also reflected other aspects of the interactive context such as the nature of the request. For example, although direct requests were the norm among familiar adults of equal status in informal settings, the use of

embedded request forms or hints might be used if the task requested of the listener was a demanding one or one outside what was normally expected. In view of the variety of factors affecting request choice, Geoghegan (1973) suggested that information concerning the social relationships, as well as affective and attitudinal beliefs of the speaker were more likely retrieved by virtue of any deviations from the expected or unmarked form appropriate to a particular context. The "marked" or unexpected use of a request strategy could be used strategically to assert or manipulate the status among participants (Ervin-Tripp, 1977).

The differential status of men and women in our society has been found to be linguistically expressed in a variety of ways (Lakoff, 1972; Key, 1975; Zimmerman & West, 1975). For example, the type of requests attributed to males and females has been found to bear striking resemblance to the differences in requests issued by superior and lower-ranking speakers respectively. Specifically, women have been thought to use more compound forms of directives (Lakoff, 1972), and more indirect requests having the syntactical form of questions and embedded imperatives (Key, 1975). In addition, empirical studies have indicated that women actually differed from men in terms of the length of their request utterances, with women more likely to frame their requests in longer sentences which made them sound less brusque (Levenston, 1982). In a mixed-sex problem-solving group, females were found to use more intensifiers, modal constructions, tag questions and

imperative constructions with syntactical form of questions than did males (McMillan, Clifton, McGrath & Dale, 1977). Similarly, Eakins and Eakins (1978) found that males were more direct in their request forms than females based on transcripts of a mixed-sex faculty meeting. In the home environment, males and females differed in the frequency with which they use imperative forms of requests to their children (Gleason, 1975). Fathers issued more imperatives than mothers did, particularly when addressing their sons (Malone & Guy, 1982).

The above results suggest that the adult speaker has the ability to use his request repertoire to express his/her sex-associated status, as well as to signal the differential status relationships between himself and his listener. It seems likely that the child must develop similar competencies in terms of the rules governing the use of his request repertoire to express his sex-role and his status relative to others with whom he interacts.

#### Syntactical Variations in the Request Forms of Children

Sociolinguists and developmental linguists have amassed a growing body of literature which suggests that even young children differentiate their type of requestive strategies according to the status characteristics of the targets with whom they interact. The reader should note that status as used in this context refers to the differential power which an individual has or is thought to have to.



control resources (Becker, 1982). There is some evidence that children respond differently to targets of different status as represented in their age, sex, and rank. For example, naturalistic case studies have shown that even 2-year-olds differentiated the types of requests used in addressing children in nursery school and adults in the family environment (Lawson, 1967, cited in Ervin-Tripp, 1977). The two-year old girl observed by Lawson (1967) used imperative and embedded imperative requests with peers, however, she used mainly need statements and permission and question directives when addressing her parents. Similarly, a case study of a 5-year-old showed that he addressed direct requests to peers but softened his requests with please and used more indirect request forms to adults (Martlew, Connolly & McLeod, 1978). Similar findings have been reported in naturalistic studies involving larger numbers of children (Ervin-Tripp, 1974; Gelman & Shatz, 1977; McTear, 1980; Sachs & Devin, 1976; Shatz & Gelman, 1973).

Several studies have employed the methodology of the role-play set to investigate the extent to which children alter the syntactical forms of their requests according to the status of roles they enact and the complimentary roles of other participants in the scenes. Andersen (1978) examined the role-play data produced by children age 4-7 years while enacting three types of role-play scenes. The first, depicted a family consisting of mother, father and child; the second, a transactional hospital setting involving a doctor, nurse and patient

and the third, a classroom setting with teacher, student and foreign student. She found that children encoded the status differences between parent and child by selecting imperatives and hints as requests when enacting the parent role and need statements and embedded imperatives when playing the child role. In addition, children signalled the status or sex-based differences between males and females by using more imperative requests in the role of "husband" and more hints in the role of "wife". They also addressed more imperatives to "mothers" than to "fathers" when role-playing the "child". In the transactional hospital and school setting, they also differentiated the verbal forms of their requests according to the status of the person they enacted. In the doctor and teacher roles, they expressed their directives more frequently in imperative form while in the nurse and student role they more often used embedded imperatives.

Other role-play studies have found similar results with preschoolers aged 2 1/2 to 5 (Corsaro, 1979) and older children aged 7-12 (Mitchell-Kernan and Kernan, 1977). In the latter study, the experimenters noted that in the few instances in which the directive intent of a low status character was expressed in imperative form, the portrayed character used the form in self-defense to protest a prior transgression or prevent a potentially aversive act.

The extent to which children varied their verbal forms of request according to status characteristics of their listeners has also been

studied in laboratory elicitation tasks. For example, James (1978) conducted an experiment in which children aged 4 1/2-5 1/2 were required to make a doll (representing themselves) issue requests to three different doll targets - an adult male, a same-sex peer, and a younger female child. One situation involved requesting the target to return something he/she had borrowed from the child while the second one concerned asking the doll target to perform a favor. James found that children differentiated the types of requests used according to the targets they addressed, issuing more permission and question directives to the adult doll and more imperatives and embedded imperative forms to the younger child doll. Although children did alter their requests in accordance with status differences of the targets, they also varied the form of their directives according to other features of the context. For instance, in the "favor condition" most children selected an embedded imperative form regardless of the type of target addressed, probably reflecting their awareness of the need to be less direct when asking a favor of another. While the James study indicated variation in request form as a function of target addressed, status in terms of relative age of the target is confounded with the sex of the target making it unclear which of these two indicators of "status" were responsible for the effect.

Another approach taken to investigate the link between request type and information about status has been to see whether children can systematically retrieve information about the status of the speaker

based on the verbal information contained in a request. Becker (1982) has shown that young children were able to use the syntactical directness of the request as well as semantic cues and tone of voice to differentiate dominant (bossy) from submissive (nice) speakers. Bossy directives (characteristic of requests addressed to lower status listeners) were identified as those having imperative tone, semantic aggravators eg. threats like "or else", and a loud negative tone. In contrast, nice requests (characteristically issued to higher status listeners) were those which were syntactically indirect, had semantic softeners such as "please" and were delivered in a soft positive tone. While the five-year-olds could identify bossy and nice requests, they relied on semantic more than syntactic cues in their judgements when several cues were simultaneously included. Older children 10 and over were able to use a variety of cues simultaneously to make more subtle judgements of dominant and submissive status.

A conceptually similar study was conducted by Edelsky (1977) to determine whether children could retrieve information about the sex of the speaker based on the linguistic form of sentences presented to them. Since adults have been found to attribute more indirect request forms to females and direct imperatives to males, it was expected that children would acquire similar language/sex-role stereotypes. Edelsky presented first, third and sixth graders with a series of sentences containing linguistic features thought to differentiate male/female speech. Subjects were required to guess the sex of the speaker and

give reasons for their choices. Children did not consistently attribute indirect request forms such as "Won't you please close the door?" to female speakers until third grade. In addition, subjects did not consistently attribute commands to male speakers until sixth grade. These findings seem surprising given the fact that 5-year-olds in Becker's study could identify the "bossiness" and "niceness" (dominance/subordination) of requests. The discrepancy in findings are probably understandable in view of the methodological differences which limited the identification cues to syntax in the Edelsky study.

It is possible that younger children can correctly identify dominance/submission and male/female status using semantic and intonation cues; however, they are less able to consistently make these distinctions based on syntax alone until third grade.

Alternately, it might be that bossiness/niceness distinctions are more salient to preschoolers than male/female based language differences.

These studies taken together indicate that children use different verbal request forms with targets of different status. Furthermore, they are able to retrieve information about the status and sex of speakers based on semantic cues as well as the syntactical form of directives they hear. However, few empirical studies have investigated whether preschoolers actually alter the verbal form of their requests when addressing peers as opposed to adults of different status. Peers have differential status by virtue of their varying popularity in the classroom, their varying ability to win classroom

possessions or direct the behavior of others, and their varying prestige based on their sex. Therefore, it seemed reasonable to expect that children would also encode status differences among themselves and their peers by varying the verbal forms of their directives to classmates.

Before reviewing the empirical evidence which examined the type of requests children addressed to peers of differing status, it seems necessary to document the nature of the status differences which exist in children's groups. Specifically, we shall examine how children's social groups are organized in terms of the resolution of conflict, the leadership of others and the friendship bonds between members.

#### The Organization of Children's Social Groups

Ethologists have found that stable groups of human and non-human primates have a particular social organization which characterizes the way in which aggressive and competitive episodes are resolved. The organization is hierarchically structured so that member A wins in aggressive exchanges with member B, who in turn wins in aggressive episodes with member C and so on. Ethologists have termed this organization a social dominance hierarchy and have suggested that its function is to define a status position for each member of the group so that aggressive conflict between members is minimized and more cooperative group activity is facilitated. Once members of a group have established their position on the dominance hierarchy, they are able to maintain and assert their status by a variety of dominance

gestures (eg. threats, postural stance, facial expressions) without resorting to full-scale aggressive exchanges whenever conflict situations arise (Strayer, 1980).

Ethologists have derived the social dominance hierarchy from their observations of the way in which aggressive and competitive episodes are resolved among all possible dyads in the social group. They have labelled a member of a dyad as dominant if he elicits submission in response to his aggressive gestures (eg. hits, verbal and nonverbal threats, and object or position struggles) more often than his partner. They have found that social conflict is markedly unidirectional, with the dominant member initiating almost all conflict and the other member submitting in most episodes.

Ethologists have employed a measure called the rigidity index to indicate the degree to which this unidirectional dominance/submissive pattern is actually found among dyad members. 100% rigidity indicates that the subordinate members of the dyads never elicited submissive gestures from their dominant partners. Low rigidity indexes indicate that dominant/submissive relationships are less rigid and that subordinate members sometimes successfully take the more dominant role in the dyad. Generally, ethologists have reported rigidity indexes in the 90% range for human social groups indicating that in most cases of social conflict, dyad members maintain their dominant or submissive role.

Ethologists have devised another measure, the linearity index, to

indicate the degree to which members of the group display the status positions predicted by the linear hierarchy model. 100% linearity would indicate that each member is dominant over all persons below him on the hierarchy. Lower percentages of linearity would indicate the presence of some role-reversals, such that an individual has a dominant position in his relationship with a group member higher than himself on the hierarchy. Linearity indices of greater than 90% have been found in human social groups. Social dominance hierarchies with high linearity and rigidity have been found in groups of toddlers (Strayer & Trudel, in press), preschoolers (Strayer & Strayer, 1976; Strayer, 1980, 1981, LaFreniere & Charlesworth, 1983; Sluckin & Smith, 1977), school-age children (Jones, 1983) and adolescents (Savin-Williams, 1979). These findings confirm the claim that children occupy differential status in terms of their ability to gain submission from other peers.

Similar hierarchical organizations have been found based on patterns of compliance to nonaggressive attempts to direct the behavior of peers (Barner-Barry, 1977; Strayer, 1980, 1981; Jones, 1983; Hold, 1976). For example, Barner-Barry examined the social organization of authority behavior among children aged 3 1/2-6 1/2. She differentiated authority behavior from more traditional dominance behaviors using the criterion that any attempt to direct a peer which did not alienate him from interaction was a "legitimate" authoritative behavior. Barner-Barry calculated an authoritative score derived from



the mean proportion of success relative to attempts to influence each group member. Based on this score, she found that authoritative behavior was organized at the group level in terms of a hierarchy that had high linearity (87%) but was less rigid at the dyadic level (76%) than that typically found for dominance hierarchies.

Strayer (1981) found a similar hierarchy of social influence among groups of preschoolers. He based his hierarchies on the relative success of dyad members in altering their partner's behavior and getting their partner to copy or join in whatever they were doing. Strayer found social influence hierarchies with high linearity but, somewhat less rigidity to exist in groups of 3 1/2 to 4 1/2 and 4 1/2-5 1/2 year olds. The existence of social influence and authority hierarchies suggest that preschoolers occupy differential status in their peer groups based on their skill in gaining compliance to their nonaggressive directives.

Ethologists have begun to examine social behaviors thought to be important to the cohesive functioning of groups. For example, they have investigated the social organization of affiliative behavior in groups of children. Typically, they have determined affiliative preference based on proximity and contact behavior between peers (Strayer, 1980). In contrast to dominance and social influence behavior, affiliative gestures have been found to be less unidirectional or asymmetric at a dyadic level. On the average, one out of three affiliative behaviors is reciprocated by the other

partner. At a group level, affiliative exchanges are not hierarchically arranged; however, they are organized into affiliative networks comprised of subgroupings of same-sex cliques. Strayer (1980) has derived a measure of the centrality of each child in the social group based on the number of affiliative ties which link the child to other group members. Using this approach, Strayer was able to rank children according to their importance in the social group. From his work it is clear that individual children differ considerably in terms of their centrality in the peer group.

The above review has demonstrated the existence of several status positions a child can occupy in his social group based on his dominance rank, his leadership or social influence rank and his affiliative centrality rank. Some ethologists have attempted to verify the degree of interrelation between the child's rank in each of these social structures. In younger preschoolers, (3-4 1/2), the child's dominance rank was not correlated with either his affiliative integration with peers or his position on the social influence hierarchy (Strayer, 1980); however, among older preschoolers the more dominant children were found to also occupy more central positions in the affiliative network. In addition, their dominance status was found to correspond to their status on the social influence hierarchy (Strayer, 1980). Similar relationships between dominance status and position on a leadership organization hierarchy have been reported in same-sex social groups of first and second graders (Jones, 1983). Strayer has

suggested that the convergence of dominance, affiliative and social control status toward the end of the preschool years reflects a developmental trend towards consolidation of previously independent aspects of peer relations.

Since this review has documented the existence of status differences among peers, it is possible that these differences are encoded linguistically in the verbal form of directives children issue to each other. For example, dominant children might select imperative request forms to indicate their status and to signal their expectation that less dominant peers comply with their directives. In contrast, children of lower status might select indirect request forms when addressing more dominant group members to express their subordinate position and indicate their acknowledgement of the other's higher rank. To date, no empirical research has been conducted to verify whether variation in verbal request form systematically reflects the dominance status of either speaker or target. However, Becker (1983) has recently proposed that syntactic variations in request forms might serve a comparable function to dominance gestures in that they might ritualize and mark relative status of participants "while at the same time accomplishing other business... allowing children to avoid more serious conflict over power, rights and obligations" (Becker, 1983, p. 16).

#### Children's Variation in Request Forms with Peers

Case studies and anecdotal evidence suggest that children do indeed differentiate their requests according to their status and that of their peers. (Status is used here to indicate differential access to potential resources and does not refer to dominance, leadership or affiliative status as defined by ethologists). For example, the 2-year-old studied by Lawson (1967) used only permission and question directives with the 5-year-olds in her school, while she issued some imperative requests with softeners such as "OK", and "please" with the children who were a year closer to her in age. Mitchell-Kernan and Kernan (1977) reported the anecdotal evidence that among the 7-12 year olds they observed, children modified the form of their directives they used when they were temporarily labelled as outcasts in the peer group. When occupying such marginal status, they used more embedded imperatives and added semantic softeners such as "please" to their requests than they did when occupying accepted status.

These investigators also found that children often attempted to get their peers to rephrase their requests in a submissive manner in order to assert their own status. They give the following example of two twelve-year-olds talking:

S. Gimme that ruler.

A. Huh?

S. Gimme that ruler, girl.

A. Huh?

S. Will you please gimme the ruler before I knock you down?

Only three larger scale studies have been conducted to assess whether children systematically alter the syntactical form of their requests according to status characteristics of either themselves or their peer target. All three of these studies were conducted in a dyadic social context.

An experimental study conducted by Jack (1934) suggested that children of high vs low status used different verbal control strategies in their interactions with peers. Jack classified children as "high" and "low" ascendant based on the frequency and success of their agonistic and nonaggressive attempts to direct the behavior of a peer in several dyadic situations. Subsequent to this identification, she used an informal observation technique consisting of recording running accounts of the ongoing behavior to investigate the qualitative differences in the verbal strategies employed by these children. Specifically, she noted the types of directives they used eg. commands, questions, and "let's" suggestions, as well as their verbal accompaniments such as bargains, threats, reproofs or statements of reason. High ascendant children made significantly more control attempts of each verbal form and accompanied a larger proportion of their directives with verbal threats and indicators of self-confidence. In contrast, low ascendant children more often phrased their requests in the form of questions rather than more direct requests or suggestions. While Jack's finding supports the premise that children encode their status in terms of the directness

of the request forms they use, methodological weaknesses of the study necessitate further replication. The major difficulty with Jack's study was that she was biased in her observations of subjects, given that she herself had classified them as high and low ascendant. Furthermore, the reliability of her data is open to question given that she was the only observer.

A more recent study by Wood and Gardner (1980), conducted subsequent to the collection of data for the present research, examined the type of directives issued by peers of varying status. Preschoolers at two age levels (3 1/2-4 1/2 and 4 1/2-5 1/2) were randomly assigned to play with a same-aged partner in a playroom on two occasions, each time with a different play partner. All interactions occurring during the free-play were video-taped and the tapes were then scanned for all occurrences of requests for action which were coded according to their illocutionary force (order vs request) and their success (compliance vs noncompliance). Teachers were then asked to judge whether the randomly formed dyads were composed of children of equal or unequal status and in the latter case, to identify the more dominant member of the dyad. Results indicated that in dyads of unequal status, the higher status members issued more directives to the lower status member than vice-versa and this was particularly true among older dyads. Furthermore, the higher status children were more likely to gain compliance when issuing directives possibly as a result of the greater illocutionary force of

their requests. Coders more often rated the requests of high status as "order" rather than "requests" than they did the requests of lower status dyad members. The codings reflect syntactical form as well as semantic cues and intonation. Particularly relevant to the present discussion was the finding that the lower status child in the pair used politeness cues such as "please" and syntactical indirect forms such as interrogatives and conditionals approximately two-thirds of the time they issued directives. In contrast, only about 10% of higher status children used semantic softeners or indirect request forms.

Although this study sheds considerable light on the differential verbal requests used by high and low status peers, the status and the sex of dyad members are confounded. Children were paired at random with peers of either sex and the contribution of sex-composition to the results was not analyzed or reported by Wood and Gardner. Furthermore, none of the data is presented with standard deviations or statistical analysis so that it is unclear whether these results have statistical significance. Finally, from the results reported, it is unclear the extent to which syntactic variation rather than semantic cues are used to encode status differences.

A recent study by Rubin and Borwick (in press) indicated that children of differential sociability differed in the frequency and type of directives they produced. Specifically, these investigators found that isolates produced fewer total requests and fewer direct

requests than did normal and highly sociable children when observed in a dyadic situation with a familiar peer who was not a close friend. Furthermore, although isolates were not statistically less successful than their more sociable peers, they produced a greater proportion of requests involving "low-cost" bids for attention and significantly fewer "high-cost" requests aimed at eliciting action from a peer. These findings are relevant to the present discussion given the relationship between isolate/sociable distinctions and sociometric popularity status in the classroom (Rubin, in press). Rephrasing Rubin and Borwick's results, it is likely that less popular children issue fewer requests to peers and phrase them less often in imperative form.

A study conducted by Haas (1979), indicated that boys and girls differed in the frequency with which they directed peers using the imperative verbal form. Haas observed children aged 4, 8, and 12 in a play situation with a same-sexed and a different sex partner. Boys were found to issue more direct requests than girls at all ages in both same-sex and mixed-sex dyadic conditions. Four year-old-boys produced more imperative directives than any other age or sex group. Females in the mixed dyads were found to issue the least number of requests. Furthermore, in the mixed-sex dyads males produced significantly more direct request forms than girls. Of interest was the finding that females were more compliant when interacting with males than with same-sex peers. These findings may be interpreted to



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suggest that males signal their sex-role associated status by issuing more dominant request forms particularly when in the company of lower-status females. Furthermore, females might indicate their less dominant status by displaying submissive compliant behaviors in the presence of higher-ranking males. Although the findings of the Haas study are interesting, they are as Haas himself indicates, only suggestive given the small number of children (4) studied at each age range. Furthermore, Haas suggests that further research examine the differences in male/female language at younger ages, since children by the age of 4 already possessed some sex-role associated language features.

Summarizing these studies, there is evidence to suggest that preschoolers of lower ascendancy, status and sociability and female-sex produce fewer requests than higher status or more sociable or male-sex peers. Furthermore, the directives they produce are more often syntactically indirect and involve "low-cost" goals such as attracting the attention of a classmate. Although research has suggested these differences in request behavior, further replication is necessary given the methodological weakness of some of the studies reviewed. While both Jack (1934) and Wood and Gardner (1980) focused on the frequency as well as verbal form of requests issued by children rated as "high" or "low" ascendant or "one-up" and "one-down", their data were not analyzed statistically so that it is unclear how significant the differences they report are. Furthermore, neither

study provides a clear developmental view of whether these differences become more pronounced during the preschool years. While both studies mentioned syntactical as well as semantic, and nonverbal characteristics which differentiated high from low status preschoolers, it is unclear the extent to which these differences in status are specifically encoded at the syntactical level in children this age.

Although the Haas study is important in that it has highlighted sex differences in the frequency and verbal requests of children, the small number of subjects studied, necessitates further replication using a larger sample size. The presence of sex differences in request behavior as a function of both the sex of the speaker and that of the partner, suggests that greater care must be taken when studying alternation in verbal requests to separate "sex" effects from other "status" factors such as leadership or popularity status. Only by such an experimental approach would it be possible to tease apart which characteristics summarized by the term "status" are most relevant in request variation.

Finally, all three studies that examined request variation among preschoolers interacting with their peers conducted their observations in a dyadic social context. To date, there have been no similar studies in group settings such as the classroom free-play situation. Further research should examine whether similar patterns of variation occur in this context where status might have particular relevance

to patterns of social interaction and social influence.

### The Present Study

The present study examined preschoolers' competence in the use of verbal request forms during free-play in their nursery classroom.

Given the importance of the social context in determining the syntactical form of the request as well as expressing information about the social relationships and status factors operating within the social groups, it was considered important to expand previous research by studying request behavior in its naturally occurring context. In addition, previous research has questioned the extent to which dyadic attempts to direct the behavior of peers generalized to other situations such as the group setting (eg. Mummery, 1947).

The range of verbal request forms studied in the present research overlap with the six categories of requests for action identified by Ervin-Tripp; however, several additional types of requests were included based on pilot data suggesting they had similar directive intent. These forms included 1) declarative statements with "we" pronoun eg. We are going to play house, 2) prohibitions requesting a peer to stop a behavior 3) suggestions and 4) assertions that announced a child's right as an indirect means of implying the other child should change his behavior. These categories are elaborated in the method section.

Developmental changes in the frequency of attempts to direct the behaviors of others, the verbal forms used to express the requests,

the goals motivating their use, and the success of these directives in realizing their goals were examined. Previous research (eg. Garvey, 1975; Levin & Rubin, 1979), has examined the developmental changes in the success and verbal form of requests in a dyadic social context. However, no similar studies have been conducted in the preschool free-play setting. In addition, the "legitimacy" of requests was studied according to Barner-Barry's suggestion that the continuation of the interaction following a directive could be used as a criterion indicating its appropriateness as judged by peers.

Two age groups of preschoolers were included in the study in order to facilitate comparison with other research in the field. It was expected that older preschoolers would issue more directives to peers than younger children and would produce more requests that had indirect verbal form. Despite differences in raw frequency of indirect requests, it was hypothesized on the basis of work by Levin and Rubin (1979) that the proportion of indirect to total requests would remain equivalent at the two age levels. As suggested by Bates' (1976) model of requests, hints which did not specify the desired goal were expected to be used more frequently by older preschoolers who were able to manipulate form and function in other than idiomatic ways. While a sizeable proportion of the directives of the three-year-olds were expected to involve attempts to gain possession of toys from others, the proportion of requests with this goal was hypothesized to decrease with age and the child's increasing orientation to

associative play (Parten, 1932). The proportion of requests successful in obtaining the desired goal was expected to be equivalent at the two age levels and be slightly higher than chance success. Finally, older children were expected to produce a higher proportion of requests that were "legitimate" in that they maintained the ongoing interaction. The greater legitimacy of their requests was expected to reflect the fact that their directives were less egobound, more related to the ongoing interaction and more considerate of what was reasonable to request of their playmate.

In order to expand on our understanding of the communicative competence of preschoolers, the present study examined whether children this age systematically signalled information about their sex-role or dominance status via their selection of alternate verbal request strategies. The competent selection of syntactical request form was expected to parallel the adult system in which both sex and status of the speaker has been found to be marked by the degree of directness of requests. Adult males and higher ranking speakers have been found to select imperative forms of requests more frequently than adult females and lower ranking persons who have been found to issue directives phrased as embedded imperatives and questions. Although research has indicated that children acquire sex-stereotypes at an early age and show some rudimentary awareness of the differences males and females exhibit in terms of language in general and request skills in particular, at the time the present research was begun no empirical

studies had examined sex differences in preschooler's verbal directives. For this reason, no directional hypothesis were originally formulated concerning whether preschool boys and girls would use verbal request forms that signalled their male/female status. However, on the basis of literature published subsequent to the commencement of the present research (eg. Haas, 1979), males were expected to issue more directives overall and more imperative requests than females.

Specific directional predictions were advanced as to whether preschoolers would mark their status via the frequency of their influence attempts and their request form selection. High status children were hypothesized to issue more requests than low-status children. Older preschoolers were expected to indicate their status position in the classroom dominance hierarchy by either selecting more direct verbal forms to mark their high status or more indirect forms to mark their low status. The younger children were not expected to alter the syntactic form of their requests in accord with their status in the peer group as a result of their lesser awareness of their status relative to others (Omark & Edelman, 1975) and their lack of ability to strategically manipulate the verbal form of their directives (Bates, 1976). In addition to differences in the surface form of requests, it was hypothesized that children of different status would differ in terms of the goals of their directives. Lower status children were expected to issue a higher proportion of requests

that were "low cost" in terms of their demands on the listener (eg. bids for attention) while higher status children were expected to produce a higher proportion of "high cost" more demanding requests.

The second goal of the present research was to examine whether preschoolers systematically varied the syntactical forms of their requests in accordance with characteristics of their targets such as their sex or status position on the dominance hierarchy. While role-play and laboratory data suggested that preschoolers did use different verbal forms when making requests of adults vs children, mother vs father, and older vs younger peers, at the time the study was begun it was unclear as to whether preschoolers would make similar adjustments in their request selection based on more subtle status factors such as the sex and dominance status of same-aged peers. While younger children were not expected to systematically alter their request choice in line with the status characteristics of their listeners, older preschoolers were hypothesized to address more direct requests to lower status targets and more indirect verbal forms to children who were more dominant in the social group. Furthermore, it was expected that status of speaker and status of target would interact in such a way that high status children would issue a higher proportion of direct requests to lower status peers than would low status speakers addressing high status targets. In addition, less dominant children were expected to issue a higher proportion of indirect request forms to high status children than vice versa. At a dyadic level, similar

results were expected with the more dominant member phrasing requests in imperative form and the subordinate member using more indirect verbal directives. Such a finding would suggest that syntactical variation signalled the relative status of participants interacting.

Although some research evidence suggested that the sex of the target resulted in lexical, topic and sometimes syntactic variation in adults, at the commencement of this research it was unclear whether similar modifications would be found among preschoolers playing with male and female classmates. For this reason, no specific hypothesis was advanced as to the type of verbal requests that would be selected in response to the sex characteristics of the listener.

The success of requests expressed in direct or more indirect verbal form was expected to vary as a function of the sex and status characteristics of the speaker as well as the sex and status characteristics of the child to whom they were addressed. It was expected that direct requests would be most successful when they were addressed to equal or lower status targets than the speaker or when addressed by males to female targets. In contrast, it was hypothesized that indirect requests would be most successful when addressed to higher status targets than the speaker or when used by females issuing requests to males. These hypotheses were based on the notion that requests that were most suitable to the sex and status characteristics of interactions would be most likely to be reinforced i.e. meet with success. Although these hypotheses run counter to the



findings of Garvey (1975) who found that indirect requests met with greater success than direct requests in a dyadic social context, they are based on the premise that status and sex characteristics play a more important role in determining both the verbal form of requests and their success in the classroom context.

The third goal of the present research was to examine the extent to which perspective-taking skills were related to skill in the use of requests. It was expected that the child's success in directing the behavior of others would be related to his social cognitive ability as suggested by the theoretical work of Piaget (1926) and Flavell et al. (1968). In addition, the verbal form of request selected was expected to be associated with perspective-taking skills in children 4 and older according to the Stage model proposed by Bates (1976). Specifically, it was hypothesized that social cognitive ability would be unrelated to the relative frequency of indirect forms of requests in 3-year-olds since these forms were idiomatic in nature; however, they would be positively associated with the relative frequency of indirect verbal forms used by the older preschoolers.

## Method

### Subjects

The subject population consisted of 64 preschoolers ranging in age from 3 years 2 months to 5 years 1 month. All children were caucasian and of middle-middle to upper-middle socioeconomic status. They were all enrolled in a 5-day-a-week half-day nursery school programme in a Y located in Montreal. While the original sample size included 78 children, subjects were excluded from the final sample on the basis of incomplete data ( $n=3$ ), emotional difficulties ( $n=1$ ), Peabody IQ scores below 80 ( $n=1$ ), absence from school more than one-third of the time ( $n=2$ ), and non-English speaking background ( $n=1$ ). Six other children were dropped from the present study in order to equate groups as to sex and status composition.

This sample was subdivided into two age levels. The younger children were selected from two nursery classrooms and included 16 boys and 16 girls ranging in age from 38 months to 46 months, with a mean age of 41.4 months for boys and 41.9 months for girls. The older preschoolers were selected from two other nursery classes and consisted of 16 children of each sex ranging in age from 54 months to 61 months, with a mean age of 58.1 months for boys and 58.3 months for girls.

Male and female children at each of the two age levels did not differ in terms of their level of intellectual functioning as measured

by the Peabody Picture Vocabulary Test (PPVT). The mean PPVT scores were 110.5 (SD=10.3) and 110.7 (SD=10.70) for younger and older preschoolers respectively. Males' PPVT scores averaged 111.7 (SD=10.3) while those for females averaged 109.5 (SD=10.6).

### Procedure

#### Observational Data

All subjects were observed in their nursery school classroom on a weekly basis during the free-play period over a four month period. Two different sets of observational data were collected by the author and six undergraduates trained as observers.

The first set of observations, called the social influence data, was collected by pairs of observers using a three-minute focal sampling technique. Four undergraduates plus the author served as observers. The pairing of observers was varied in such a way that no two observers worked exclusively as a pair. This variation in pairing was considered important so that no pair of observers would devise their own idiosyncratic manner of processing the classroom interaction. Both observers watched the same randomly selected focal child and recorded verbatim all verbal influence attempts issued by or directed to the focal child. In addition to the actual directives used, the observers recorded the apparent goal of the utterance, the name of the child to whom it was directed, its success in obtaining the desired goal, its effect in terms of maintaining or terminating

the interaction, and the play materials used during the time sample. This information was noted on the Social Influence Coding Sheet which is found in Appendix A-1. The manual used in training observers is included in Appendix A-2.

The verbal form of the utterance was recorded verbatim rather than assigned an observational code because this technique allowed for a more accurate check of reliability and did not require observers to make coding discriminations as to verbal form under forced time constraint. The coding of the goal of the directive, its success in obtaining the desired goal and its effect on the ongoing social interaction was performed by observers at the time of data collection.

The four mutually exclusive goals of requests included: 1) attention (A) for bids to gain the attention of a peer 2) toyself (TS) for requests to secure or defend an object or area 3) mutual participation (MP) for bids to initiate or maintain cooperative or joint activity with a peer and 4) control (C) for attempts to assert status over a peer by controlling his behavior. Each influence attempt was coded according to one of the four goal categories in order to determine whether the motivations underlying children's requests showed a developmental change over the preschool years and whether they varied as a function of the sex or status of the speaker and addressee.

The outcome of each directive was coded as 'successful' (S) or 'unsuccessful' (U) according to its success in obtaining the desired

goal and 'maintained' (M) or 'terminated' (T) according to whether or not the interaction continued following the issuing of the request. Since previous reports of children's success in directing the behavior of their peers were based on a dyadic social context, it was considered important to assess the comparability of the success of requests in the classroom setting both overall and as a function of their verbal form. In addition, these data allowed for a consideration of the legitimacy of influence attempts as indicated by the willingness of peers to continue the ongoing social interaction following the receipt of directive.

A total of 12 three-minute focal samples were collected for each of the 64 children included in the study. No observational data was collected at times when the teacher was engaged in structured interaction with the focal child.

Subsequent to data collection, the author and one of the observers coded each of the recorded verbal request utterances according to a 14 category coding scheme. The number of verbal influence categories coded was more extensive than those used in previous research in order to preserve more subtle differences in the verbal form that might prove important in conveying status or sex-role information. The 14 verbal forms along with an example of each are summarized in Appendix A-3. These forms included the imperative, embedded imperative, need statement, permission directive, question directive and hint described by Ervin-Tripp (1977), the pretend

directive noted by Garvey (1975), and the imperative plus tag and declaratives coded by Levin & Rubin (1979). In addition, the verbal codes included declarative requests with "we" rather than "you" as agent, suggestions, threats, assertions and counterassertions. These latter categories were included in the present study on the basis of pilot work (Elman, unpublished pilot work manuscript, 1976) in which observers consistently recorded these verbal forms when asked to record all utterances aimed at directing the behavior of peers.

The reliability of the social influence data was assessed by calculating the percent agreement between observers in the recording of request attempts. Agreement was judged to exist at the level of the request utterance if coders found inter-observer agreement on at least two of the following: the identity of the speaker, the identity of the addressee, and the semantic meaning of the influence attempt. The latter was based on coders judgement of whether the utterances recorded by the two observers shared the same meaning in terms of what was being requested of the listener. The verbal form used to express the request did not effect judgements of similarity on this criterion. The percent agreement between observers averaged 72.53% over all subjects. Since this figure was rather low and seemed to reflect difficulty in hearing and/or seeing certain influence attempts rather than disagreement in judging illocutionary effect, the decision was made to retain two observers throughout the collection of the social

influence data and restrict the actual analysis to those request utterances reliably recorded by both observers.

In order to ensure that the consensual data was not biased by the elimination of specific forms of utterances, the percentage of requests with each verbal form that were dropped from the analysis was calculated. The percentage of directives eliminated from each of the fourteen verbal categories ranged from 19.9% to 49.4%. Four verbal forms showed more unreliability than others - direct request plus tags, need statements, declaratives II (declarative requests with "we" as agent), and threats. The low reliability of direct requests plus tags and threats was likely the result of their low frequency in the overall data base. It is unclear why observers were more unreliable in their recording of need statements and declaratives. Perhaps these two verbal forms were sometimes interpreted as statements of condition or descriptions of ongoing activities as opposed to indirect request forms. The percentage of each verbal form recorded by only one of the two observers is summarized in Appendix A-4.

Despite the slightly greater unreliability of these four verbal categories only the consensual data was employed in the data analysis. Although this approach reduced the data base by approximately 30%, the remaining consensual request data showed fairly high inter-rater reliability for the verbal form of the request (95.87%), its apparent goal (92.28%), its success in obtaining the desired goal (92.9%), its success as a function of its verbal form (88.91%), and maintaining

the social interaction (85.69%). The percent agreement between observers for all observational categories broken down according to the age of subjects are summarized in Appendix A-5.

The reliability of coders in assigning each request utterance to its appropriate verbal form category was assessed by calculation of the percent agreement between coders working independently and without consultation. These figures for each of the 14 categories were based on independent coding of 10% of the request data and are summarized in Appendix A-6. The mean reliability ranged between 46-100% with a mean of 83.86%. The major categories in which coding disagreements occurred were declaratives II, hints and assertions and these disagreements were resolved through further discussion and joint coding. A subsequent check of inter-rater reliability on another 10% of the data indicated close to 100% agreement on coding decisions.

The internal stability of the social influence data was assessed by correlating the number of influence attempts issued on odd numbered observation sessions with those made on even numbered ones. The 12 session data base has a corrected Spearman-Brown reliability coefficient of .695 suggesting moderate internal stability.

Two observers collected the social influence hierarchy data using an event-sampling scan-technique (Altman, 1974) during the free-play period in the nursery classroom. The observer recorded the name of the child making the influence attempt, the tone of the attempt -



positive or negative, the target of the directive, and its outcome - successful or unsuccessful. Observations were recorded on a social influence hierarchy coding sheet. A sample of the coding sheet and the training manual used in training observers is found in Appendix A-7 and A-8 respectively.

This data was collected in order to construct a social influence hierarchy similar to that constructed by Strayer (1981), which would be independent of the social influence observational data. Unfortunately due to the constraint on observation time imposed by the school's active programming, the reluctance of teachers to have more than two observers in the classroom at any one time, and the occurrence of a teacher walkout which resulted in a temporary school closedown, the data collected was not substantial enough to use for construction of the social influence hierarchy. As a result, the status position of each child in terms of his classmates was derived from teacher rankings of leadership and popularity.

### Teacher Rating Measures

#### Teacher Rankings of Leadership

In order to derive a measure of children's leadership status relative to their classmates, the senior teacher in each class was asked to complete the Teacher Ranking of Leadership Form. This form contained directions to the teacher to rank students in terms of their leadership status by assigning each a numerical rank from 1 to N (the

number of children in the class) with 1 indicating the class leader and N the child with the least leadership skills. In order to ensure that teachers understood the term leadership in a similar manner, the instructions included behavioral criteria on which to base their ranking decisions. A copy of this form as well as the behavioral criteria given to teachers is found in Appendix A-9.

#### Teacher Rankings of Popularity

In order to obtain information as to the popularity of children relative to their classmates, the senior teacher in each class was asked to complete the Teacher's Ranking of Popularity Form. As on the leadership ranking form, she was required to rank students according to their popularity by assigning each a numerical rank from 1 to N with 1 indicating the most popular and N the least popular child. Behavioral criteria on which to base rankings were provided to teachers in order to ensure similarity of referents across the four classes. The criteria and a sample rating form are found in Appendix A-10. Teachers' ratings of popularity have been found to be good indicators of preschool children's social competence (Connolly & Doyle, 1981).

#### Status Measure Derived From Teacher-Ranking Data

In order to construct a measure of status to replace the observationally based status measure originally planned, children's ranks of leadership and popularity as rated by their teacher were

summed to yield a single indicator of status. The decision to derive the status measure from a combination of these two measures was based on the moderate intercorrelations between the two teacher rankings ( $r=.581$ ) as well as on research on aggregation which suggested that such an approach resulted in more reliable and stable measures (Roughton, Brainerd & Pressley, 1983). Within each class, children were dichotomized into high and low status categories separately for each sex according to their aggregate rank score. The rationale for this approach was that equal numbers of males and females would be represented in high and low status groups allowing for the effect of sex and status of both subject and target on the verbal form of request to be examined without confound.

This dichotomous status measure was used in order to assess whether preschoolers signalled their status in the peer group by means of the directness/indirectness of the verbal forms of requests they selected.

#### Psychometric Measures

Each child was taken out of his/her classroom for two half-hour sessions and was individually administered a battery of psychometric measures in another room in the school. These measures were given by two trained undergraduates and the author. Neither of the undergraduates were involved in the collection of the social influence data, but all were familiar with the children from other aspects of

the research.

Peabody Picture Vocabulary Test (PPVT)

Form B of the PPVT was administered to each child individually in order to obtain a time-efficient estimate of the child's level of intellectual functioning. Such an estimate was necessary in order to ensure that differences in influencing ability between sex or age groupings were not artifacts of intellectual differences existing between comparison groups. The PPVT has been found to be a reliable measure of intelligence which has good congruent validity with other vocabulary and intelligence tests (PPVT Manual, 1965).

Three role-taking measures were used to tap social cognition skills in the present research. Due to the variety of role-taking tasks that have been used in the literature, the selection of measures was made based on their age appropriateness, as well as the extent to which information as to their reliability and validity was available.

Flavell Birthday Gift Task (ROLE 1)

In this cognitive role-taking task (Flavell et al., 1968), the child was required to select from a variety of items the birthday present he would select for his father, mother, sister or brother, teacher and for himself. The child was assigned one point for each choice that was appropriate to the age and sex of the recipient. The resulting score ranged from 0 to 5. This task has been found to have

good test-retest reliability and correlates with other measures of role-taking. Details on the instructions and on the scoring procedures are given in Appendix A-11.

#### Urberg & Docherty Affective Role-taking Task (ROLE 2)

In this task, the child was presented with three pictorally illustrated story sequences involving two same-sex children. In the first story, a child's candy is taken away by another child; in the second one, a child's friend wins the game they are playing and in the third sequence, the teacher gives a sought after toy to the other child. In each story, the child was required to identify how each character was feeling and explain why he or she was feeling that way. The task was scored by assigning one point for each affect correctly identified and another point for each explanation that was appropriate to the story sequence.

The resulting score ranged from 0 to 12. This task has been found to correlate well with other role-taking measures tapping simple sequential decentering skills (Urberg & Docherty, 1976). Details of the administration and scoring procedure as well as the scoring sheet are found in Appendix A-12.

#### DeVries Hide-A-Penny Task (ROLE III)

In this task the child was instructed to "Guess which hand the penny is in" as the experimenter's hands were repeatedly hidden behind her back and closed fists were presented to the child for a series of

eleven guessing trials. The hand the child selected on each trial was recorded on the DeVries Hide-A-Penny Coding Sheet. The experimental situation was set up in such a way that the child experienced positive reinforcement on the first 6 trials as the experimenter had hidden a penny in both hands. On the next 4 trials, negative reinforcement was received as the experimenter had ~~no~~ penny in either hand. Positive reinforcement was again provided on the last trial. The patterning of guesses was thought to reflect the extent to which the child was able to consider the experimenter's possible strategies in hiding the penny.

In the second portion of this task the child was invited to hide the penny for 11 hiding trials in order to give the experimenter a turn to "guess". During the child's hiding trials, the experimenter attempted to guess the wrong hand for the first 6 trials by looking at a mirror set-up behind the child's chair. On the following 4 trials the experimenter made the correct guess, while on the last trial, the experimenter again answered incorrectly. The child was assigned a score on this task based on the number of the ten item criteria devised by DeVries (1970) that he passed. These criteria described the extent to which the child hid the penny discreetly, randomly altered its position, and showed an appropriate strategy in guessing the location of the penny during the guessing trials. The resulting score ranged from 0 to 10. A copy of the DeVries Coding Sheet and details of task administration and scoring are presented in Appendix

A-13 and A-14 respectively.

### Observational Data Reduction

Since the frequencies of many of 14 verbal influence categories were too low to allow for statistical analysis, pearson-correlations were calculated between the relative frequencies of the 14 verbal influence forms in order to determine an empirically meaningful way of combining categories. These intercorrelations are summarized in Appendix A-15. An examination of the correlation matrix failed to indicate a viable means of data reduction. What did emerge clearly from the matrix was that assertions and counterassertions both correlated negatively with several of the other verbal forms and negatively with each other.

Given the failure to find an empirically based means of reducing the data, the 14 verbal forms of directives were reduced into the two rather global categories used by Garvey (1975) and Levin and Rubin (1979) as well as two other categories specific to the present study. Category I - Direct Requests was identical to that of Garvey and Levin and Rubin and included all requests expressed in imperative form. This category included both the imperative and "pretend" verbal forms originally coded. Category II - Indirect Requests included the four subtypes of requests that Levin and Rubin classified as indirect requests - 1) interrogatives that specified what the listener was requested to do, 2) imperatives with rising intonation (eg. Put the

crayon away, OK?), 3) declaratives and 4) inferred requests in which what the listener has to do was not specified. Specifically, indirect requests included the following 8 of the originally coded verbal request forms: direct requests plus tags, embedded imperatives (I & II), need statements, permission directives, hints and declaratives (I & II). Category III - Assertions, was kept separate from indirect requests given their negative correlation with three of the verbal forms comprising this category as well their not being previously included by other researchers as requests for action. Category IV - Counterassertions was maintained as a separate verbal influence form based on its negative correlation with three of the verbal forms comprising indirect requests, its negative correlation with assertions and its lack of inclusion in other investigations of request forms.

#### Class differences and preliminary analyses

Since two classes of children at each age level were included in the subject population, it was necessary to verify the comparability of the use of these four verbal request categories across classrooms. A multivariate analysis of variance was conducted for each age and sex grouping with class as the independent measure and the relative frequency of the four verbal request categories as the dependent measures. In all four Age X Sex groups, there was no significant multivariate effect suggesting that the relative frequency of the four verbal categories as a group did not differentiate the children drawn



from the 2 classrooms participating at each age level. However, among three-year-old females, the univariate  $F$  ratios indicated that girls in one classroom issued a significantly higher proportion of direct requests and a significantly lower proportion of assertions than girls in the other class. Despite these minor differences, the data from children in both classes at each age level was combined so that the analysis could have within cell variations as error term rather than interactions with class. Appendix A-16 has the summary tables of the multivariate analysis of class differences in verbal form.

## Results

The result section examines in turn the degree of differentiation in five aspects of request behavior as a function of the characteristics of the child issuing the request (age, sex, and status), the characteristics of the peer addressed (sex, and status), and the interaction between speaker and target characteristics. The five aspects of request behavior discussed include 1) the total frequency of requests 2) their specific verbal form 3) the success of requests overall and as a function of their specific verbal form 4) the legitimacy of requests and 5) the goals of requests. Following the presentation of these results, the relationship between request behavior and social cognitive skills is examined.

The overall frequency of request behavior was examined in order to determine whether preschoolers differed in terms of their use of directives in the classroom context as a function of their age, sex and status. It was expected that influence attempts would be issued more frequently by older as compared with younger children, by males more than by females, and by high status more than by low status preschoolers. These hypotheses were based on previous experimental findings suggesting that request behavior increased with age (Levin & Rubin, 1979; Garvey, 1975) and the theoretical premise that attempts to influence the behavior of others were more characteristic of males and more dominant members of social groups (Lakoff, 1972; Strayer,

1981).

An Age (younger, older) X Sex of Subject X Status of Subject (high, low) analysis of variance was conducted on the number of influence attempts produced by each child. The number of requests differed significantly with age,  $F(1,56)=4.032$ ,  $p<.05$ , as hypothesized. Older children produced more, with a mean of 12.813 directives ( $SD=7.855$ ) compared with a mean of 9.469 ( $SD=5.388$ ) for the younger children. As expected, males and females differed significantly in the number of influence attempts they issued to their peers,  $F(1,56)=7.001$ ,  $p<.01$ . Males produced more, with a mean of 13.344 directives ( $SD=7.550$ ) relative to a mean of 8.938 ( $SD=5.430$ ) for the females. No other main effects or interactions were significant. The summary of the analysis of variance statistics are shown in Appendix B-1.

In order to determine whether preschoolers of different age, sex and status varied the distribution of their influence attempts according to the sex and status characteristics of their peers, an Age X Sex of Subject X Status of Subject X Sex of Target X Status of Target repeated measure analysis of variance was conducted. The latter two factors were the repeated factors in the design and the dependent measure in this analysis was the total number of influence attempts produced. No specific hypotheses were formulated due to the paucity of research examining the relevance of target characteristics in determining how influence behavior is distributed in the classroom

context. Therefore, Scheffé unplanned comparisons were employed (with significance levels of  $p < .10$ ) wherever there was a significant main effect or interaction. The analysis of variance summary table is included in Appendix B-2.

A highly significant Sex of Subject X Sex of Target effect,  $F(1,56)=31.433$ ,  $p < .001$ , indicated that males and females differed significantly in their distribution of directives according to the sex of their target. While both sexes addressed a similar number of requests to targets of the opposite sex, males directed significantly more requests to same-sex peers than females did,  $F(1,112)=7.760$ ,  $p < .05$ . Girls issued an equivalent number of directives to children of either sex (means = 3.469 vs 5.313 to male and female targets respectively); however, boys directed more requests to other boys than to girls (means = 9.781 vs 3.031 respectively).

A significant main effect of sex of target,  $F(1,56)=10.098$ ,  $p < .002$ , indicated that a different number of requests were issued to male and female targets. As expected, based on the higher order interaction, more directives were addressed to males than to females ( $M_M=6.625$  (SD=6.373) vs  $M_F=4.172$  (SD=3.485)).

The Status of Target X Sex of Target interaction was statistically significant,  $F(1,56)=4.660$ ,  $p < .05$ , indicating that children differed in the number of directives they issued to targets of different sex and status. Preschoolers issued the most requests to high status males ( $M=3.688$ ) followed by low status males ( $M=2.938$ );

then low status females ( $M=2.344$ ) and the least to high status females ( $M=1.828$ ). Significantly more directives were addressed to high status males than to either high status females,  $F(3,252)=16.673$ ,  $p<.02$ , or low status females,  $F(3,252)=8.705$ ,  $p<.10$ .

The four-way Sex of Subject X Status of Subject X Sex of Target X Status of Target interaction was statistically significant,  $F(1,56)=4.660$ ,  $p<.05$ . Both high status and low status males tended to issue more directives to low status males than low status females ( $M_{HM}=4.313$  vs  $F.750$ ;  $M_{LM}=4.563$  vs  $1.813$ ). This difference was only marginally significant in the case of low status male speakers,  $F(3,60)=9.115$ , n.s. and of borderline significance for high status males,  $F(3,60)=5.845$ , n.s. High status females did not differ in the frequency of requests they issued to low status males and low status female targets ( $M_{HF}=1.688$  vs  $2.500$ ); however low status females tended to direct more requests to low status female than low status male targets ( $M_{LF}=1.188$  vs  $3.313$ ),  $F(3,60)=5.441$ , n.s. Table 1 summarizes the relevant means and standard deviations for this interactional effect.

The Age X Sex of Subject X Sex of Target interaction was marginally significant,  $F(1,56)=3.392$ ,  $p<.10$ , indicating a trend for males and females of different ages to differentially distribute their directives according to the sex of their target. Five-year-old males addressed more directives to male than female targets,  $F(3,124)=18.930$ ,  $p<.01$ , whereas all three-year-olds and five-year-old girls did not differ significantly in the number of requests they

Table 1

Means and Standard Deviations in the Rate of Influence  
Attempts as a Function of the Sex and Status of Subject  
and the Sex and Status of Target

Group	Sex of Target	
	Male	Female
High Status Target		
Male		
High	6.188(4.475)	.875(1.204)
Low	4.500(5.020)	1.625(2.391)
Female		
High	1.813(2.316)	3.063(2.380)
Low	2.188(2.786)	1.750(1.880)
Low Status Target		
Male		
High	4.313(4.634)	1.750(1.949)
Low	4.563(4.016)	1.813(2.228)
Female		
High	1.688(1.622)	2.500(2.338)
Low	1.250(1.183)	3.313(3.177)

issued to boys compared with girls,  $F(3,124)=3.461$ ,  $F(3,124)=.737$ , respectively. Table 2 summarizes the relevant means and standard deviations.

A marginally significant Age X Sex of Target effect,  $F(1,56)=2.822$ ,  $p<.10$ , indicated that children attempted to influence male and female targets with different frequency at the two age levels. As seen from the higher order Age X Sex of Subject X Sex of Target interactions, three-year-olds issued an equivalent number of directives to male and female classmates,  $F(3,124)=2.246$ , while five-year-olds addressed more requests to male than female targets,  $F(3,124)=23.989$ ,  $p<.01$ .

Finally, a marginally significant Age X Status of Subject X Status of Target effect,  $F(1,56)=3.063$ ,  $p<.10$ , was found. High status five-year-olds tended to address more directives to low status targets than did three-year-old children of high status; however, this difference was not statistically significant,  $F(3,60)=3.174$ , n.s.

In summary, these analyses indicated that children increased the frequency of their attempts to direct the behavior of peers over the preschool years. Males issued more requests to peers than females did and they were also the recipients of a greater number of requests. Over the preschool years, boys in particular showed increasing specificity in whom they chose to influence. While younger children and girls showed some degree of preference for same-sex targets, only older males showed this differentiation to a significant effect.

Table 2

Means and Standard Deviations in the Rate of Influence  
Attempts as a Function of Age, Sex, and Sex of Target

Group	Sex of Target	
	Male	Female
Younger		
M	7.188(5.695)	3.188(3.391)
F	3.000(2.708)	4.750(3.587)
Total younger	5.094(4.875)	3.969(3.524)
Older		
M	12.375(7.623)	2.875(2.419)
F	3.938(3.924)	5.876(3.810)
Total older	8.156(7.345)	4.375(3.490)
Total	6.625(6.373)	4.127(3.485)



Prior to examining the effect of speaker and target characteristics on the verbal form of requests selected, it seemed worthwhile to examine the range of request variations used by preschoolers in the classroom context. Although a body of literature exists suggesting that children this age use a variety of request alternatives similar to those used by adults, the majority of previous studies have focused either on requests in laboratory settings with same-age dyads or role-play situations so that the representativeness of these findings is open to question. It was expected that preschoolers would show the six verbal request forms identified by Ervin-Tripp (1977) and that speech to peers in the social context of play would be similar to speech found among adults who were familiar equals and would contain imperatives and embedded imperative forms as the most frequent forms. Hints that did not specify the goal or agent of the request were expected to be infrequently used by preschoolers although their use was hypothesized to increase with age.

In the classroom context, preschoolers used all of the six types of requests identified by Ervin-Tripp (1977) - imperatives, embedded imperatives, need statements, permission directives, hints and question directives. In accordance with the reports of Doré (1978), but in contrast to those of Garvey (1975), some requests to peers were expressed as hints and question directives, although infrequently. Hints and question directives comprised between 3-6% of all directives used by preschoolers when influencing their classmates. Examples of

some of the request utterances coded as hints included:

That's enough. (to mean stop)

Where's my chair? (to mean Give me that chair. It's mine)

You forgot me. (to mean Give me some of that too)

You're sitting on the baby. (to mean Get off)

As expected, the most frequent verbal form of requests used in the classroom was the imperative comprising between 33-45% of the total directives. Embedded requests were the next most frequent type of request form making up approximately 10% of the influence attempts issued. Both need statements and permission directives were much less frequent accounting for between 2-9% and 2-8% of all directives respectively.

In addition to the six categories of Ervin-Tripp, several additional categories were included in the present study - declaratives (16-32%), assertions (5-13%), counterassertions (11-20%), suggestions (1-8%), and threats (<1%). The numbers in parenthesis indicate the proportion of requests having these verbal forms.

These descriptive data correspond well with other reports of the request repertoire of preschoolers. Furthermore, they suggest that the most indirect forms of requests such as hints and question directives are used by preschoolers on occasion when interacting with peers and are not restricted to adult-child dialogue.

Due to the low frequency of many of the verbal form categories,

the fourteen verbal request forms were combined to form four larger verbal form categories - direct requests (DR), indirect requests (IR), assertions (A), and counterassertions (CA). (See method section for a discussion of which verbal forms were summed to form each of the four categories). It should be noted that suggestions were recorded as directives, however they were not included in any of the four verbal categories due to their failure to correlate positively with other request forms and their lack of consideration by other researchers as requests for action. Suggestions tended to increase in frequency with age and were more frequent among males as opposed to females, particularly those of high status.

In order to determine whether the four verbal request forms were differentially used by children of different age, sex, and status, a 2 X 2 X 2 multivariate analysis of variance was conducted with the four verbal request forms as the dependant measures. It was considered important to examine not only the proportion of requests having each of the four verbal forms, but also the raw frequency, given that frequency of specific type of requests has been found to be an important parameter of status (Wood & Gardner, 1980). The multivariate  $F$  ratio for the main effect of age approached significance,  $F(4,53)=2.045$ ,  $p<.10$ . Younger and older children differed significantly in the frequency of both direct requests,  $F(1,56)=5.727$ ,  $p<.05$ , and indirect requests,  $F(1,56)=4.401$ ,  $p<.05$ . More requests of both types were produced by the older subjects. The

means and standard deviations of the four verbal forms are summarized in Table 3.

The main effect of sex approached significance, Multivariate  $F(4,53)=2.387$ ,  $p<.10$ . Univariate  $F$  ratios indicated that DRs were produced at a significantly different rate by the two sexes,  $F(1,56)=9.217$ ,  $p<.005$ , with boys producing more of this form than girls ( $M_M=5.875$  vs  $M_F=3.219$  respectively). No other main effects or interactions were statistically significant. The analysis of variance summary table is found in Table B-3 of the Appendix.

In order to determine whether preschoolers differentiated the verbal forms of their requests according to the sex and status of the child they addressed, an Age X Sex of Subject X Status of Subject X Sex of Target X Status of Target multivariate repeated measures analysis was conducted on the frequency of each of the four forms of influence attempts: DR, IR, A, CA. The "within" portion of the analysis revealed a highly significant Sex of Subject X Sex of Target interaction, Multivariate  $F(4,53)=8.302$ ,  $p<.001$ . The univariate  $F$  ratios were significant for all four verbal requests (See Table B-4). Post hoc Scheffé analyses indicated that boys issued significantly more DRs, IRs, and CAs to other boys than to girls,  $F(3,124)=29.869$ ,  $p<.01$ ;  $F(3,124)=9.417$ ,  $p<.10$ ;  $F(3,124)=12.376$ ,  $p<.05$ , respectively. However, girls did not significantly differ in the frequency with which they directed these forms to boys and girls even though they generally addressed more of each form to other girls. In the case of

Table 3

Means and Standard Deviations of Four Request  
Forms as a Function of Age and Sex of Subject

Group	Type of Request <sup>a</sup>			
	DR	IR	A	CA
<b>Age</b>				
Younger	3.500(2.272)	2.875(2.406)	.875(1.157)	1.594(1.500)
Older	5.594(4.649)	4.438(3.292)	.969(1.204)	1.469(1.502)
<b>Sex</b>				
Male	5.875(4.441)	3.938(3.232)	1.000(1.344)	1.813(1.491)
Female	3.219(2.379)	3.375(2.697)	.844(.987)	1.240(1.459)

Note. Standard deviations appear in parenthesis following the mean.

<sup>a</sup> DR = direct requests

IR = indirect requests

A = assertions

CA = counterassertions

assertions, boys issued more assertions to other males<sup>2</sup> compared with females but this difference was not significant at the level needed for aposteriori comparisons,  $F(3,124)=6.280$ , n.s. When the frequency of these verbal forms was compared among same-sex partners, boys issued significantly more DRs to other boys than girls did to other girls,  $F(3,124)=20.131$ ,  $p<.01$ . There was a nonsignificant trend for boys to issue more CAs than girls when interacting with same-sex peers,  $F(3,124)=6.886$ ,  $p>.10$ . Table 4 summarizes the means and standard deviations of each verbal form according to the sex of the speaker and the sex of the target.

In addition, a significant Age X Sex of Target effect was found, Multivariate  $F(4,53)=2.626$ ,  $p<.05$ . Older and younger children differed in their rate of direct requests to male and female targets,  $F(1,56)=7.336$ ,  $p<.01$ . Three-year-olds addressed a similar rate of DRs to both girl and boy targets; however, at the five-year-old level more direct requests were addressed to male than to female targets,  $F(3,124)=12.678$ ,  $p<.05$ . Table 5 summarizes these means and standard deviations.

The main effect of sex of target was statistically significant, Multivariate  $F(4,52)=3.633$ ,  $p<.01$ , as were the univariate  $F$  ratios for frequency of DRs and CAs toward targets of different sex,  $F(1,56)=11.400$ ,  $p<.001$ , and  $F(1,56)=4.569$ ,  $p<.04$  respectively. Both DRs and CAs were addressed to boys more than girls ( $MS=2.906$  vs  $1.484$ ;  $.953$  vs  $.531$  respectively). No significant main effect or

Table 4

Means and Standard Deviations of the Four Verbal FormsAccording to Sex of Speaker and Sex of Target

Variate	Group	Sex of Target	
		Male	Female
DR			
	Male	4.500(4.212)	1.188(1.533)
	Female	1.313(1.595)	1.781(1.497)
	Total	2.906(3.544)	1.484(1.533)
IR			
	Male	2.625(2.420)	1.125(1.561)
	Female	1.250(1.524)	2.094(2.347)
	Total	1.937(2.122)	1.609(2.036)
CA			
	Male	.719(.958)	.250(.568)
	Female	.250(.622)	.594(.712)
	Total	.484(.836)	.422(.662)

Table 5

Means and Standard Deviations of the Four Verbal  
Forms According to the Age and Sex of Target

Variate	Group	Sex of Target	
		Male	Female
DR	Younger	1.813(1.908)	1.531(1.760)
	Older	4.000(4.407)	1.438(1.294)
IR	Younger	1.531(1.831)	1.188(1.674)
	Older	2.344(2.336)	2.031(2.293)
A	Younger	.500(.842)	.375(.660)
	Older	.469(.842)	.469(.671)
CA	Younger	.906(1.174)	.625(1.040)
	Older	1.000(1.368)	.438(.759)



interactions were found for the factor status of target. Although the Sex of Target X Status of Target effect was nonsignificant, Multivariate  $F(4,53)=1.65$ , n.s., DRs were distributed differently to targets of different sex and status,  $F(1,56)=4.10$ ,  $p<.05$ . Preschoolers tended to direct more DRs to high status males than to high status females ( $M=1.625$  vs  $.953$ ) however, this difference fell short of the significance level required for unplanned comparisons  $F(3,189)=5.821$ , n.s.

Although the multivariate Age X Sex of Subject X Sex of Target effect was nonsignificant, Multivariate  $F(4,53)=1.66$ , there was a significant univariate  $F$  ratio for the dependant measure IR,  $F(1,56)=6.58$ ,  $p<.05$ . Post hoc Scheffé tests showed that both males and females significantly increased the frequency of their IRs to same-sex peers over the preschool years,  $F(3,45)=10.798$ ,  $p<.05$  and  $F(3,45)=15.757$ ,  $p<.01$  for males and females respectively. The mean number of IRs increased from 1.875 ( $SD=2.094$ ) to 3.375 ( $SD=2.553$ ) for males addressing males and from 1.188 ( $SD=1.884$ ) to 3.000 ( $SD=2.503$ ) for females addressing female peers. In contrast, both males and females issued an equivalent number of IRs to opposite sex targets at each age level,  $M_{M \rightarrow F}=1.188$  ( $SD=1.559$ ) and 1.063 ( $SD=1.611$ ) and  $M_{F \rightarrow M}=1.188$  ( $SD=1.515$ ) and 1.313 ( $SD=1.580$ ) for younger and older ages respectively.

These results indicate that the increase in influence behavior over the preschool years was the result of children's increased use of

both direct and indirect verbal request forms. Direct request forms were produced more frequently by males than females and this verbal form accounted for the greater overall frequency of influence attempts among males. The greater frequency of directives addressed to male targets and particularly high status males was the result of the greater amount of imperative request forms and counterassertions addressed to them. Boys interacting with their same-sex peers addressed their requests in imperative form or as counterassertions more often than girls did when with other girls. With increasing age, imperative forms of requests became increasingly differentiated in terms of their use and were more often reserved for influence bids directed to males rather than females.

The frequency of each verbal form relative to the total number of influence attempts produced was also examined as a function of the age, sex, and status of the subject to assess whether the age and sex differences described above were independent of the age and sex differences in the total rate of influence behavior. Again, an Age X Sex of Subject X Status of Subject multivariate analysis of variance was conducted on the relative frequency of each of the four verbal forms. In this and all subsequent analyses of proportion Arcsin transformation were performed prior to the analysis to normalize the proportional data (Winer, 1974). The analysis revealed no significant multivariate main effects or interactions. However since the univariate  $F$  ratio for the Age X Sex of Subject interaction for the

proportion of IRs produced approached significance,  $F(1,56)=3.262$ ,  $p<.10$ , an a posteriori comparison was conducted between cell means. Five-year-old females tended to issue a higher proportion of requests that were indirect than three-year-old females,  $F(3,64)=6.872$ ,  $p<.10$ , suggesting that girls became increasingly indirect in their request behavior with age. Thus, it appears that although request frequency increased with age, the proportion of requests of a given type did not change significantly. Only the proportion of IRs tended to increase with age and for girls only. The analysis of variance summary table is included in Table B-5 of the Appendix and the means and standard deviations for the proportion of requests with each verbal form appear in Table 6.

In order to determine whether the age and sex differences in the distribution of the four verbal request forms were independent of the differences in the total frequency of influence behavior, a multivariate repeated measures analysis of variance was conducted on the proportion of the four verbal forms relative to the total frequency of influence attempts. Separate analyses were conducted for the two repeated factors of sex of target and status of target. This approach was necessary given the considerable number of subjects making no requests to targets of a particular sex or status. Because of this limitation, for the Age X Sex of Subject X Status of Subject X Sex of Target analysis, the number of subjects was reduced to six per cell. Because of the skewed distribution of the data, an equal number

Table 6

Mean Proportions and Standard Deviations of  
Each Verbal Form as a Function of Age and Sex

Group	Type of Request			
	PDR	PIR	PA	PCA
Younger				
Male	.374(.116)	.302(.159)	.048(.065)	.200(.122)
Female	.405(.273)	.248(.187)	.127(.129)	.141(.149)
Older				
Male	.450(.206)	.301(.203)	.071(.074)	.145(.151)
Female	.327(.145)	.430(.235)	.125(.242)	.113(.122)

Note. Standard deviations appear in parenthesis following the mean.

of subjects per cell was maintained by inserting the mean for the cell in 2 cells where only 5 subjects had data (3-year-old high status males and 3-year-old high status females). Since the "between factor" portion of the analysis was discussed above, only the "within factor" analysis is presented here.

As in the frequency analysis, a statistically significant multivariate Sex of Subject X Sex of Target interaction was found,  $F(4,37) = 3.299, p < .02$ . Males and females produced different proportions of assertions to targets of different sex,  $F(1,40) = 7.298, p < .01$ . Both males and females issued a higher proportion of assertions to same-sex peers than to opposite-sex peers ( $M_M = .083$  vs  $.049$ ;  $M_F = .134$  vs  $.077$ ). However, this comparison fell short of the significance ratio needed for aposteriori comparisons  $F(3,92) = 5.465, n.s.$  Relative to their overall higher rate of influence behavior differences in the proportions of the verbal forms DR, IR, CA, to targets of different sex were not statistically significant. Even though males directed more DRs, IRs and CAs to male compared with female targets, these differences did not hold when the differences in base rate of influence attempts was accounted for. Table 7 summarizes the proportion of each verbal form as a function of the sex of the speaker and the sex of the target.

In addition, a significant main effect of sex of target was found, Multivariate  $F(4,37) = 3.501, p < .02$ ; however, none of the univariate  $F$  ratios were significant. The proportion of all verbal

Table 7

Proportions and Standard Deviations of Verbal Forms  
According to the Sex of Speaker and Sex of Target

Variate	Group	Sex of Target	
		Male	Female
PDR			
	Male	.411(.200)	.407(.362)
	Female	.359(.279)	.382(.292)
	Total	.385(.241)	.395(.326)
PIR			
	Male	.275(.181)	.332(.336)
	Female	.362(.253)	.316(.256)
	Total	.319(.222)	.324(.296)
PA			
	Male	.083(.085)	.049(.120)
	Female	.077(.141)	.134(.184)
	Total	.808(.115)	.091(.159)
PCA			
	Male	.179(.235)	.188(.343)
	Female	.173(.180)	.129(.181)
	Total	.176(.207)	.159(.273)

forms relative to the total number of influence attempts addressed to targets of each sex was comparable, although as described above, the raw frequency of DRs and CAs was greater to males than females.

A marginally significant multivariate Age X Sex of Subject X Sex of Target effect was found,  $F(4,37)=2.546$ ,  $p<.06$ . Males and females at the two age levels differed in the proportion of DRs addressed to targets of different sex,  $F(1,40)=5.060$ ,  $p<.03$ . Examination of the means indicated that 3-year-old girls tended to address a higher proportion of their directives to other girls in imperative form than did 5-year-old girls ( $M=.456$  vs  $.245$ ); however, this difference failed to reach the  $F$  ratio needed for aposteriori comparisons  $F(3,44)=4.530$ , n.s. Table B-6 gives the multivariate analysis of variance summary table.

A similar  $2 \times 2 \times 2 \times 2$  multivariate repeated measures analysis of variance with status of target as the repeated factor was conducted. The number of subjects per cell was decreased to 6 and a equal number of subjects per cell was maintaining by inserting the mean for the cell in the 2 cells where only 5 subjects has data (5-year-old low status girls and 3-year-old high status girls). There was no significant multivariate main effect of status of target or any significant interactions. Although the multivariate Sex of Subject X Status of Subject X Status of Target interaction was nonsignificant,  $F(4,37)=2.00$ , n.s., two of the univariate  $F$  ratios were statistically significant. The proportions of DRs issued by subjects of different

sex and status to targets of different status differed significantly,  $F(1,40)=4.81, p<.05$ . Males tended to issue a higher proportion of their directives to children of equal status to themselves in imperative form compared with females ( $M_M=.457, .444$  vs  $M_F=.286, .295$  for same-status high and low targets respectively); however, this difference fell short of the level required for post-hoc comparisons,  $F(3,44)=6.519, n.s.$  Table 8 summarizes the relevant means and standard deviations.

Children of different sex and status groups differed significantly in the proportion of directives that were indirect addressed to high and low status targets,  $F(1,40)=4.45, p<.05$ . Low status girls tended to issue a higher proportion of requests that were indirect to low status targets than either low status boys, or high status girls did,  $MS=.439$  vs  $.212$  vs  $.259$  for LF, LM and HF respectively. However, none of these results were significant at the level required for unplanned comparisons,  $F(3,44)=5.006, p<.10$ ,  $F(3,44)=3.972, n.s.$  Table B-7 gives the summary table for this multivariate analysis of variance.

In summary, when the differences in base frequency of requests were taken into account, preschoolers of different age, sex and status characteristics showed few differences in the proportions of each verbal request form they issued to targets of different sex and status. Females tended to phrase a higher proportion of their requests in indirect verbal form with increasing age. There were



Table 8

Means and Standard Deviations of the Relative  
Frequency of DRs and IRs as a Function of the Sex  
and Status of the Subject and the Status of the Target

Variate	Group	Status of Target	
		High	Low
PDR	Male		
	H	.457(.270)	.311(.259)
	L	.378(.213)	.533(.244)
	Female		
	H	.286(.219)	.444(.352)
	L	.338(.246)	.295(.292)
PIR	Male		
	H	.243(.208)	.360(.323)
	L	.343(.199)	.212(.199)
	Female		
	H	.341(.261)	.260(.193)
	L	.331(.288)	.440(.310)

nonsignificant trends for children to use a higher proportion of assertions with same-sex peers compared with opposite-sex peers. Males tended to express a higher proportion of their requests to equal status partners in imperative form than females did, while females tended to decrease the proportion of direct requests they addressed to other girls with age. Finally, low status girls tended to use a higher proportion of indirect requests with other low status partners than either high status females or low status males.

Up to this point in the results section, the analysis has been at the level of the individual child and his rate and type of directives issued, as well as the distribution and variation of these directives as a function of status and sex characteristics of the target addressed. In this section, the focus is switched to the level of the dyad and consideration is given to the relative frequency and success of each member of the dyad in directing the behavior of the peer. Particular attention is paid to the verbal form of directives used by each member of the dyad and its relation to the relative status between members of the dyad. The rationale behind this analytic approach lay in the theoretical argument that status is better conceptualized as a property of the dyad rather than the individual. Following this line of reasoning, only at the dyadic level would the more dominant member issue a higher proportion of direct requests and the subordinate member a higher proportion of indirect requests.

It was expected that influence behavior was similar to more aggressive forms of social control, in that it was a behavior that was quite asymmetric at a dyadic level. Put more simply, one member of a dyad was likely to be the one to direct the behavior of the other member who in turn was likely to yield or comply. Strayer and Strayer (1976) have devised a measure called the rigidity index. It measures the degree to which members of dyads actually maintain their dominant/subordinate status in all episodes in which influence attempts are exchanged. The rigidity measure was calculated by determining the number of episodes in which less successful dyad members managed to gain compliance in their attempts to direct the behavior of their more successful partners. These violations in usual position were termed episodic reversals. The rigidity index was calculated by determining the proportion of total dyadic episodes in which no episodic reversals occurred. The rigidity formula suggested by Strayer and Strayer is the following:

$$\% \text{ Rigidity} = 100 \times \frac{\text{Total episodes} - \text{Episodic Reversals}}{\text{Total Episodes}}$$

A high rigidity index would indicate that the dominant member of the dyad maintained that position over the other dyad member in most instances of influence attempts made by members of that dyad. At the two age levels only slightly more than a third of all possible dyads engaged in any attempts to direct behavior (39.0% and 37.5% for younger and older preschoolers respectively). Episodes were found to

be quite rigid (91.5% and 88.5% for younger and older preschoolers respectively) suggesting that one member of the dyad was likely to be the one to submit or comply with the directives of the other member while the reverse roles were found only occasionally. The frequency distribution of the number of requests exchanged by all possible dyadic combinations is summarized in Appendix B-8.

Prior to examining the relative frequency of total requests, DRs, and IRs exchanged by members of the dyad, it was necessary to eliminate from the analysis any dyads in which there was no member who was more dominant. Asymmetric dyads included in the analysis were defined as those dyads in which one member issued more successful directives than the other member and that the more successful child was able to control the behavior of his peer at least  $2\frac{1}{3}$  of the time he tried to do so. This definition of an asymmetric dyad was similar to that used by other researchers (eg. LaFreniere & Charlesworth, 1983). A total of 137 asymmetric dyads were found across the two age levels - 66 and 71 at the younger and older levels respectively.

At both age levels there was a significant correlation between the number of successful directives the child issued and his frequency of influence behavior ( $r=.937$ ,  $df=31$ ,  $p<.001$ ; and  $r=.907$ ,  $df=31$ ,  $p<.001$  at older and younger age levels respectively). That is, these correlations show that the more dominant member of the dyad (defined in terms of success of directives) issued more directives to his partner than the less dominant member. By definition, the more

dominant member of the dyad had to issue more successful requests. Given the highly significant correlation between the number of successful directives and the rate of influence behavior, it was expected that the more dominant member would also issue more overall requests. To illustrate this further, a repeated measure analysis of variance was conducted with age of the dyad as the "between" factor and the status of the dyad member as the "within" factor. There was no age effect,  $F(1,35)=.01$ . However, significantly more directives were issued by high to low status members than by low to high status members,  $F(1,35)=105.84$ ,  $p=.00$ . The Age X Status interaction was not significant. The magnitude of the status effect suggests that at a dyadic level one member is not only more successful than another member but also that he is much more likely to be the source of any attempts to control the behavior of the other. Table B-10 of the appendix summarizes this analysis.

A similar multivariate repeated measure analysis of variance was conducted on the rate of DR and IR produced by high and low status members of the dyad. There was a significant correlation between the number of successful directives and the frequency of DR and IR at each age level ( $r=.844$ ,  $df=31$ ,  $p<.001$ ; and  $r=.613$ ,  $df=31$ ,  $p<.001$  for older children and  $r=.611$ ,  $df=31$ ,  $p<.001$ ; and  $r=.820$ ,  $df=31$ ,  $p<.001$  for younger children). Therefore, it was expected that the more dominant member would issue more direct and indirect requests than would the less dominant member. There was a significant multivariate

status of target effect,  $F(2,134)=38.78$ ,  $p=.000$ . The number of direct requests addressed by high and low status members was significantly different  $F(1,135)=63.13$ ,  $p=.00$ , as was the number of indirect requests addressed by children of different status,  $F(1,135)=32.29$ ,  $p=.00$ . As expected, in both cases more direct and indirect requests were issued by high status to low status targets (high to low) than low to high status targets. There was no significant age effect nor any interaction of Age X Status of Target for either verbal form of directive. The mean number of DRs, IRs and total directives as well as the standard deviations are summarized in Table 9 while the summary table of the analysis is presented in Table B-9 and B-10 of the Appendix. The results of the two analyses suggest that high status members issued more directives to low status members of the dyad than vice versa and this effect held for requests with both direct and indirect verbal forms.

Given the difference in the overall rate of influence attempts as well as DR and IR produced by high and low status partners of the dyad, to further understand status differences in directives, it seemed necessary to examine the relative proportion of directives produced by each dyad member that had a particular verbal form. Since a large number of dyads were such that only one member of the dyad issued any directives, only those dyads in which each member issued some requests could be included in any statistical comparison based on proportions. Out of 137 dyads only 46 dyads were observed in which

Table 9

Mean Frequency and Standard Deviation of DRs, IRs and Total  
Requests as a Function of the Relative Status of Dyad Members

Variate	Relative Status of Dyad Members	
	H <sub>a</sub> -> L	L -> H
DR	.876(1.053)	.204( .502)
IR	.715( .977)	.263( .667)
Total	2.080(1.937)	.577(1.027)

both high and low status members attempted to direct the behavior of their partner. A sign test was used to compare the differences in the proportion of DRs and IRs issued by dominant and low status members of this subgroup of dyads. Among older preschoolers, it was expected that high status members would issue a higher proportion of their directives in the imperative form than would the low status members. For the indirect requests, it was expected that a higher proportion of these requests would be issued by the lower status compared with higher status dyad member. Results of the sign test, however, conducted separately for younger and older children, indicated that there were no statistically significant differences in the proportion of DR issued by high compared with low status members. At the younger age level, 18 dyads showed differences in the proportion of DRs produced, with 8 in the predicted direction with the higher status member issuing a higher proportion of DR than the low status member; and in 10 in the opposite results. The probability of these results did not differ from chance ( $p=.41$ ), suggesting that at this age level dyad members were not syntactically coding their relative status when issuing direct requests to each other. At the older age level, 15 dyads were found to differ in the proportion of DR issued, with 10 as predicted with the higher status member issuing a higher proportion of directives that were imperatives. In 5 dyads, it was the lower status member who used a higher proportion of imperative influence attempts. Although the probability of these results using Binominal



Tables was not statistically significant ( $p=.15$ ), it does suggest what might be a developmental trend for children to increasingly encode at a syntactic level status aspects of their relationship when issuing directives. Clearly, only further study with a larger number of dyads and an extended age range could determine whether this is the case or the findings reflect chance variation.

The results of the Sign Test based on the proportion of indirect requests produced by high and low status members are presented separately for younger and older dyads. At the 3-year-old level, only 5 of 15 dyads showed the expected results of a higher proportion of IRs produced by the lower status compared with higher status member of the dyad ( $p=.15$ ). At the older age level, the results although not statistically significant, were in the expected direction. In 10 out of the 15 dyads showing differences in the proportion of indirect requests, it was the lower status member who issued a higher proportion of influence attempts that were indirect ( $p=.15$ ). Again, the results suggest what might prove to be a developmental trend for children to syntactically code aspects of the relationship when issuing requests. Replication with a larger number of dyads and an extended age range is indicated to determine whether this reflects chance findings or a true developmental trend.

The findings of the dyadic analysis differed from those based on individual data concerning the status of speaker and target effects on the frequency and type of verbal form of requests. The expected

status effects tended to emerge only in the dyadic analysis. High status preschoolers issued more requests of both direct and indirect verbal form than low status peers did. Furthermore, older preschoolers showed some tendency to syntactically encode relative status when issuing requests in a dyadic context. It seems likely that the discrepancy in results can be understood on the basis of differences in the status measures used in the two analyses (observationally based in terms of success vs based on teacher ratings) as well as the differential level of analysis (dyad vs individual child).

The next series of analyses presented examines the effect of speaker and target characteristics on the success of request behavior. It was considered important to examine this aspect of request behavior so that the reinforcement contingencies provided by peers for influence behavior in general and the different verbal forms of request in particular could be examined. Based on social learning theory, this information would be crucial in understanding age increases in differentiation of request behavior as a function of speaker and target characteristics.

An Age X Sex of Subject X Status of Subject analysis of variance was conducted to determine whether successful use of requests varied as a function of the age, sex, and status of the speaker. The dependent measure was the proportion of influence attempts that was

successful. As hypothesized, the success rate of requests did not vary across the two age groups. 69.5% of preschoolers' directives were successful in obtaining their desired goal. There were no significant main effects of age, sex or status of subject on the success rate of requests nor any significant interaction. The summary table for this analysis is found in Table B-11.

In order to determine whether the success of requests varied as a function of the sex and the status of the child to whom they were addressed, two univariate repeated measures analysis of variance were conducted. Since not all children issued directives to targets of both sexes and status and the same children did not always attempt to influence all 4 types of targets, the effects of the sex and status of the target on the success of requests were examined in separate analyses. The number of subjects per cell decreased to 6 in each analysis. The "between" factors were age, sex of subject and status of subject while the repeated factor in the analysis was first sex of target then status of target. In both analyses the means for the cell were inserting in the groups in which there were only 5 members per cell issuing requests to a particular target (3-year-old low status females and 3-year old high status males for the first analyses and 3-year-old high status females and 5-year-old low status females in the second analysis).

The "within" portion of the first analysis showed a significant Age X Sex of Target interaction,  $F(1,40)=6.022$ ,  $p<.05$ . Three-year-

olds' requests met with statistically equivalent success regardless of whether they were addressed to male or female peers (means=.749 and .650 respectively); however, 5-year-olds tended to gain more compliance when addressing females as opposed to male classmates,  $F(1,80)=4.011$ ,  $p<.10$  means=.774 vs .637 respectively. (See Table B-12 of the Appendix for the analysis of variance summary table.)

The "within" portion of the second analysis showed that the success of requests did not vary as a function of either the status of the target or any interaction of status of target with the age, sex or status of the speaker. The average success rate of directives across all subjects was 73% and 62.6% for high and low status targets respectively. Table B-13 of the Appendix summarizes this analysis.

The success of each verbal request form was examined as a function of the age, sex, and status of the child issuing the request. This analysis was performed in order to determine whether particular verbal request forms were more likely to be reinforced when issued by preschoolers of varying age, sex and status characteristics. The number of children using each verbal form as well as the mean success rate of the four types of directives are summarized in Table B-14 of the Appendix. The percentage of children making each type of request varied considerably as a function of the verbal form of directives (89.1, 87.5, 51.6, and 65.5 percent for DR, IR, A, and CA respectively). Since cell frequencies were too low for analyses other than that of DR and IR, only the success of these two verbal request

forms was statistically examined as a function of the age, sex, and status of the child.

An Age X Sex of Subject X Status of Subject multivariate analysis of variance was conducted with the proportion of direct and indirect requests that were successful as dependent measures. The number of subjects per cell was kept at 6 so as not to compound the effect of heterogeneity of variance. The mean of the cell was inserted in the case where only 5 subjects in a cell had issued a particular verbal form of request (3-year-old low status females and 3-year-old high status females). The Age X Sex of Subject interaction was marginally significant, Multivariate  $F(2,39)=2.458$ ,  $p<.10$ . Males and females at the two age levels differed in the success of their direct requests,  $F(1,40)=4.682$ ,  $p<.04$ . At the older age level, boys and girls did not differ in the proportion of their direct requests that were successful,  $F(1,40)=1.016$ , n.s.; however, among 3-year-olds a higher proportion of imperative requests obtained their goals when used by girls as compared with boys,  $F(1,40)=4.219$ ,  $p<.05$ . The proportion of direct and indirect requests that were successful for boys and girls at each age level are summarized in Table 10.

Although the multivariate  $F$  ratio for the main effect of sex was nonsignificant, boys and girls were found to differ in their success using indirect requests,  $F(1,40)=4.077$ ,  $p<.05$ . Females were more successful than males when using indirect request forms;  $M_F=.735$  ( $SD=.262$ ) vs  $M_M=.561$  ( $SD=.351$ ). The summary table for this analysis is

Table 10

Proportion of Direct and Indirect Requests  
Successful as a Function of Age and Sex of Subject.

Group	Type of Request	
	DR	IR
Younger		
Male	.661(.217)	.564(.329)
Female	.865(.169)	.840(.189)
Older		
Male	.792(.212)	.558(.386)
Female	.679(.302)	.629(.289)
All males	.726(.220)	.561(.351)
All females	.772(.258)	.735(.262)

<sup>a</sup> N = 48

found in Table B-15.

In order to determine whether the success of each verbal form of request varied as a function of the sex and status characteristics of the child to whom they were directed, a similar Age X Sex of Subject X Status of Subject X Sex of Target X Status of Target analysis of variance was originally planned. However, given the unequal numbers of subjects issuing each verbal form of directive to each of the four targets, statistical examination of this data was impossible. For example, Table 11 shows that the number of children issuing each verbal request form to male and female targets. In the case of DRs, the number of children addressing this verbal form to either sex target ranged from 6 to 14 (of the 16 subjects per cell), depending on the Age X Sex group to which they belonged. Similarly, in the case of IRs, the number of children issuing this request form ranged from 7 to 14. Since the success of requests of different verbal form was considered of importance in terms of understanding learning contingencies when addressing targets having different sex and status characteristics, this data is presented in descriptive form.

The success of the four verbal forms when addressed to targets of different sex is summarized in Table 11. The data are presented in terms of the independent measures age, and sex of speaker but collapsed across status of speaker due to the small number of subjects represented in each cell. Over the preschool years, girls became less successful in influencing male targets in general, especially when

Table 11  
Success of the Four Verbal Request Forms As A Function  
of Age, Sex of Speaker and Sex of Target

Variate	Group	Sex of Target					
		Male			Female		
		n	X	SD	n	X	SD
PSDR	Younger						
	M	(13)	.724	(.219)	(6)	.500	(.422)
	F	(8)	.844	(.352)	(12)	.847	(.194)
	Older						
	M	(14)	.801	(.178)	(10)	.900	(.316)
	F	(11)	.526	(.423)	(12)	.847	(.295)
PSIR	Younger						
	M	(12)	.806	(.324)	(8)	.281	(.411)
	F	(9)	.817	(.339)	(7)	.764	(.354)
	Older						
	M	(14)	.546	(.407)	(8)	.729	(.454)
	F	(8)	.688	(.458)	(13)	.560	(.317)
PSA	Younger						
	M	(7)	.429	(.536)	(10)	.725	(.416)
	F	(3)	.833	(.289)	(5)	1.000	(0)

(table continues)



## Sex of Target

Variate	Group	Male			Female		
		n	X	SD	n	X	SD
	Older						
	M	(7)	.500	(.500)	(9)	.704	(.423)
	F	(2)	.750	(.354)	(5)	1.000	(0)
PSCA	Younger						
	M	(10)	.725	(.416)	(6)	.833	(.408)
	F	(5)	1.000	(0)	(6)	.833	(.279)
	Older						
	M	(9)	.704	(.423)	(3)	1.000	(0)
	F	(5)	1.000	(0)	(7)	.929	(.189)

they phrased their requests in imperative verbal form (success rate .844 vs .526 for DRs issued by younger and older girls respectively).

In contrast, requests phrased in imperative verbal forms maintained their effectiveness in influencing the behavior of other girls over this age range. In fact older girls were more likely to be successful in their requests to their same-sex peers when using DR and opposed to IR verbal form (.847 vs .560).

In contrast to girls, boys were increasingly successful when they selected imperative verbal form to influence opposite-sex peers (.500 vs .900 for younger and older boys respectively). Similarly, with increasing age, boys were more likely to be successful in their requests to other boys when they phrased them in imperative rather than indirect verbal form (.801 vs .546 respectively). Boys' greater success using imperative requests with same-sex peers was the result of the decreasing responsiveness of other boys to indirect request forms (.806 vs .546 for younger and older boys respectively) rather than any increase in boys' responsiveness to the imperative requests of other boys (.724 vs .801).

The data on the success of assertions and counterassertions are based on an even smaller number of subjects given their less frequent use. Assertions met with considerable success when used by girls at either age level addressed to classmates of either sex ( $M_{\text{younger}} = .833$  and 1.000,  $M_{\text{older}} = .750$  and 1.000 for male and female targets). However, boys at both ages were less successful than girls when

phrasing requests as assertions especially when addressing same-sex peers ( $M_{\text{younger}} = .429$  and  $.725$ ;  $M_{\text{older}} = .500$  and  $.700$  for male and female targets respectively). It is interesting to note that again, females are quite successful in influencing both male and female peers using this very indirect request strategy.

The use of counterassertions is based on so few children that any interpretations are highly suspect. In general, it appears that CAs are effective means of stopping the behavior of a peer. They seem particularly effective with targets of the opposite sex.

The success of the four verbal forms as a function of the status of the child addressed was examined in a similar descriptive manner. Over the preschool years the success of girls requests varied as a function of the verbal forms they selected in addressing targets of different status. Girls became increasingly less successful when they addressed high status targets using imperative verbal form (.924 vs .574 for younger and older girls respectively). In addition, girls became less successful in influencing low status targets using indirect request forms (.975 vs .519 for younger and older girls respectively). In fact, older girls were more likely to be successful in influencing low status targets when they phrased their requests in imperative rather than indirect verbal form (.743 vs .519 respectively).

Over this age range, the success of boys requests did not change as a function of the verbal form of request they addressed to high

status targets. However, boys became increasingly successful in influencing low status targets when they phrased their requests in imperative form (.600 vs .848 for younger and older boys respectively). In fact, older boys were more likely to be successful in directing the behavior of low status peers using imperative rather than indirect verbal forms (.848 vs .504 respectively).

Three-year-old boys were equally successful in influencing high and low status playmates when using direct and indirect requests ( $M_{DRs} = .683$  vs .600;  $M_{IRs} = .641$  vs .654 for high and low status targets respectively). Three-year-old girls were more successful with imperative requests addressed to high as opposed to low status targets (.924 vs .760); while the reverse was true of indirect influence attempts (.673 vs .975). Among older children, direct requests tended to be most effective when addressed to low status peers ( $M_M = .848$  vs .690;  $M_F = .743$  vs .574 for low and high targets respectively) while indirect requests were most successful with high status targets ( $M_M = .722$  vs .504 and  $M_F = .689$  vs .519 for high and low targets respectively).

Table 12 summarizes the mean proportion of requests that were successful as a function of the age and sex of subject and the status of the target.

In summary, girls were more successful than boys in the use of indirect verbal request forms over the preschool years. With increasing age, females became less successful in gaining

Table 12

The Success of DR, IR, A, CA as a Function of Age  
and Sex of Speaker and Status of Target

Variate	Group	Status of Target					
		High			Low		
		n	X	SD	n	X	SD
PSDR /	Younger						
	M	(13)	.683	(.356)	(10)	.600	(.402)
	F	(11)	.924	(.173)	(10)	.760	(.255)
	Older						
	M	(13)	.690	(.415)	(14)	.848	(.201)
	F	(9)	.574	(.401)	(12)	.743	(.354)
PSIR	Younger						
	M	(13)	.641	(.466)	(9)	.654	(.428)
	F	(8)	.673	(.367)	(10)	.975	(.079)
	Older						
	M	(12)	.722	(.343)	(13)	.504	(.441)
	F	(11)	.689	(.274)	(13)	.519	(.428)
PSA	Younger						
	M	(5)	.600	(.548)	(3)	.333	(.577)
	F	(5)	.600	(.548)	(6)	.722	(.443)

(table continues)

## Status of Target

Variate	Group	High			Low		
		n	X	SD	n	X	SD
PCA	Older						
	M	(3)	.333	(.577)	(9)	.556	(.527)
	F	(5)	.800	(.447)	(5)	.667	(.471)
	Younger						
	M	(11)	.818	(.405)	(6)	.625	(.494)
	F	(7)	.857	(.378)	(5)	.900	(.224)
	Older						
	M	(7)	.667	(.471)	(7)	.857	(.378)
	F	(8)	1.000	(0)	(5)	.900	(.224)

compliance from male classmates in general and particularly so when they phrased their requests as imperatives. It is likely that the greater success they experienced in addressing males with indirect request forms might form the learning contingencies necessary for girls' increasing indirectness with their male peers. In addition, girls experienced more success in the use of assertions with both boys and girls than did boys. Again, such learning contingencies would be expected to foster increased use of this indirect type of request strategy amongst females. In contrast, in the later preschool years males were most successful in influencing peers of both sexes when they phrased their requests in direct imperative form. These learning contingencies would be expected to reinforce increasing directness in the requests of male children.

High and low status preschoolers did not differ in terms of the success they experienced using direct and indirect verbal forms of requests when influencing their peers. In the later preschool years, both boys and girls were more successful in influencing low status peers when they used imperative rather than indirect requests. Girls also became increasingly less likely to influence high status targets using imperative verbal requests. These learning contingencies would likely result in the increasing differentiation of the verbal form of request as a function of the status characteristics of the target with increasing development.

Barner-Barry (1977) had introduced the idea that the legitimacy of requests was an important indicator of children's increasing competence in influencing the behavior of peers. She stated that children's requests were the most effective and mature if they not only were successful in achieving their desired goals but also if they resulted in a continuation of the social interaction following the issuing of the request. The maintenance of the interaction was thought by Barner-Barry to reflect the more reasonable and appropriate nature of the requested behavior. In order to determine whether children of different age, sex and status differed in the proportion of requests they issued which maintained the social interaction, a 2 X 2 X 2 analysis of variance was conducted. The dependent measure, the proportion of requests maintaining the social exchange, was submitted to arcsin transformation before the analysis. Contrary to expectation, the requests of preschoolers at the two age levels did not differ significantly in terms of their effect on the course of the ongoing social interaction. Influence attempts maintained the social interaction 68.4% of the time for both ages. However, there was a tendency for males and females to differ in the proportion of directives that maintained the ongoing social interaction,  $F(1,56) = 3.451$ ,  $p < .10$ . Girls' requests tended to maintain the interaction 73% (SD=.229) relative to 63.9% (SD=.209) for males. No other significant main effects or interactions were found. Table B-16 gives the summary



table for this analysis.

An Age X Sex of Subject X Status of Subject X Sex of Target repeated measures analysis of variance was conducted to determine whether the proportion of requests which maintained the interaction varied as a function of the sex of the child to whom they were addressed. The number of subjects per cell decreased to 6 per cell since some subjects issued no directives to targets of a particular sex. The mean of the cell was inserted in those cases in which only 5 subjects per cell issued a particular verbal form to targets of either sex in order to maintain equal number of subjects per cell (3-year-old low and high status females and 3-year-old high status males). The "within" portion of the analysis indicated that the maintenance of the social interaction following request behavior did not vary as a function of the sex of the target addressed. The social interaction was maintained 62.7% and 68.2% following influence attempts directed to male and female targets respectively. There were no other significant interactions. Table B-17 of the Appendix gives the summary table for this analysis.

A similar Age X Sex of Subject X Status of Subject X Status of Target repeated measures analysis of variance was conducted to determine whether the effect of requests on the social interaction varied as a function of the status of the target to whom they were addressed. Again, the number of subjects per cell decreased to 6 since some children issued no directives to targets of a particular

status. The mean of the cell was inserted in those cases where only 5 subjects per cell issued a particular verbal form to targets of either status (3-year-old high status females and 5-year-old low status girls). The "within" portion of the analysis indicated that the proportion of requests which maintained the interaction did not vary as a function of either the status of the target or any interaction of the status of target with the age, sex or status of the speaker. Requests addressed to high and low status peers maintained the social interaction 64.1% and 68.7% of the time respectively. Table B-18 of the Appendix summarizes this analysis.

The results of these analyses taken together suggest that the fate of the ongoing social interaction following request behavior did not vary as a function of either the age or status of the speaker or the sex and status of the child addressed. However, there was a trend for girls' requests to maintain the social interaction a higher proportion of the time than did those issued by boys. Perhaps the reason for these results was that two developmental processes were occurring simultaneously and therefore cancelling out each other's effect. Specifically, it is possible that the reasonableness of preschoolers' requests increased over the preschool years. However, preschoolers, especially boys, became less likely to comply with requests and maintain social interactions following requests due to their increased interest in asserting their status and saving face (Haslett, 1983). These two

processes might cancel out each other and explain the lack of change in legitimacy as a function of either speaker and target characteristics during the preschool years.

The results presented below concern the nature of the goals underlying the requests of preschoolers and whether they differ as a function of the characteristics of the child issuing the request and the type of target addressed. It was expected that the goals of requests would be increasingly involved with gaining the mutual participation of peers and decreasingly motivated by concern for obtaining toys from others. Furthermore, it was hypothesized that high status children would be more likely to issue more high cost requests such as obtaining a toy or possession from a peer than low status children.

An Age X Sex of Subject X Status of Subject multivariate analysis of variance was conducted to determine whether the goals of influence attempts varied as a function of the age, sex, and status of the child issuing the request. The dependent measures were the frequency of 1) attention bids (A), 2) toy bids (TS) and 3) mutual participation bids (MP). The frequency of control bids (C) was not included as a dependent measure due to its linear dependency with the other measures. A statistically significant main effect of sex was found, Multivariate  $F(3,54)=2.703$ ,  $p=.05$ . Males and females differed in

their number of influence attempts with the goal of MP,  $F(1,56)=5.947$ ,  $p<.02$ , with boys issuing an average of 7.188 ( $SD=5.544$ ) MP directives compared with an average of 4.406 ( $SD=3.078$ ) for girls. No other main effects or interactions were statistically significant. Table B-19 of the Appendix summarizes this multivariate analysis of variance.

An Age X Sex of Subject X Status of Subject X Sex of Target X Status of Target multivariate repeated measures analysis of variance was conducted to determine whether the goals of influence attempts varied as a function of the sex and the status of the target addressed. The dependent measures were the frequency of bids for attention (A), toyself (TS) and mutual participation (MP).

The multivariate Sex of Subject X Sex of Target effect was highly significant overall,  $F(3,54)=10.95$ ,  $p=.000$ , and for each of the three dependent measures - A, TS, and MP,  $F(1,56)=4.72$ ,  $p<.04$ ;  $F(1,56)=17.95$ ,  $p<.0001$ ;  $F(1,56)=19.85$ ,  $p=.000$ . Males and females addressed an equal frequency of attention bids to same sex targets (3.844 and 3.750 for male to male and female to female respectively). However, post hoc Scheffé comparisons indicated that females directed significantly fewer bids for attention to opposite-sex targets than did boys,  $F(3,124)=27.047$ ,  $p<.01$  (means=1.281 vs 2.063 for female to male and male to female targets respectively). Males and females issued an equivalent number of bids for toys to opposite sex peers (means=.969 and 1.000 for male to female, female to male

respectively); while males issued more bids for toys to other boys than girls did to other girls,  $F(3,124)=13.429$ ,  $p<.05$  (means=2.531 vs 1.625 for male to male, female to female respectively). In fact, boys addressed more bids for toys to other boys than did boys to girls, and girls to children of both sex,  $F(3,124)=40.576$ ,  $p<.01$ . Similarly, boys issued more bids for mutual participation to other boys than did boys to other girls and girls to targets of both sex  $F(3,124)=26.938$ ,  $p<.01$ , means=3.000 vs .406, .875 and .595 for boys to boys, boys to girls, girls to girls respectively. Taken together, these results suggest that bids for toys and for mutual participation are particularly characteristic of boys' interaction with other boys while attention bids are most frequently in same-sex peer interaction and next most frequent in male to female rather than female to male interaction.

The multivariate main effect of sex of target was statistically significant,  $F(3,54)=9.285$ ,  $p<.04$ , reflecting the greater number of bids for toys and bids for mutual participation addressed to male targets,  $F(1,56)=5.76$ ,  $p<.02$ ;  $F(1,56)=4.71$ ,  $p<.04$  respectively (means=1.766 vs 1.297 and 1.937 vs .500 for TS and MP bids to male and female targets respectively).

While the multivariate  $F$  ratio for the Sex of Target X Status of Target effect was nonsignificant,  $F(3,54)=1.82$ , NS., a different frequency of bids for attention were directed toward male and female targets of different status,  $F(1,56)=5.48$ ,  $p<.03$ . While a similar

frequency of attention bids were addressed to females of high and low status (1.406 vs 1.500 respectively), high status boys received far more bids for attention than low status boys,  $F(3,124)=109.053$ ,  $p<.01$  (means=.2359 vs .203 respectively). In addition, high status males received more bids for attention than high status females,  $F(3,124) = 21.352$ ,  $p<.01$  respectively (means = 2.359 (SD=3.067) and 1.406 (SD=1.823) respectively). However, among low status targets, females received more requests for attention than males,  $F(3,124) = 39.405$ ,  $p<.01$  (means = 1.500 (SD=1.690) and .203 (SD=.510) respectively). Thus the relative rating of subjects according to preference as targets for bids for attention was high status boys followed by high and low status girls who were equivalent and last, low status boys.

Although the multivariate  $F$  ratio for the Age X Status of Target effect was nonsignificant,  $F(3,54)=2.00$ ,  $p>.10$ , older and younger children addressed a different frequency of attention bids to high and low status targets,  $F(1,56)=5.23$ ,  $p<.03$ . While the frequency of requests for attention addressed to high status classmates was statistically equivalent at the two age levels (means=1.75 and 2.016 respectively), 5-year-olds addressed more bids for attention to low status peers than did 3-year-olds,  $F(3,124)=9.464$ ,  $p<.10$ , (means=1.078 vs .625 respectively). The summary table for this analysis is found in Table B-20 of the Appendix.

In order to determine whether this difference in bids for mutual

participation merely reflected the already described sex differences in rate of requests or, in addition, different motivations in the preschoolers' use of directives, a similar analysis was conducted using the proportion of total influence attempts having each goal as the dependent measures. The analysis of variance summary table is found in Table B-21.

Although the Age X Sex of Subject X Status of Subject interaction was nonsignificant, Multivariate  $F(3,54)=2.094$ , n.s., a significant univariate 3-way interaction was found for the proportion of requests that were bids for toys,  $F(1,56)=6.303$ ,  $p=.01$ . Low status children of both ages and high status older preschoolers issued an equivalent proportion of TS directives. However, 3-year-old high status males and females differed in the proportion of requests that were TS,  $F(1,56)=5.279$ ,  $p<.05$ . Three-year-old high status boys produced a higher proportion of TS requests than did girls of the same age and status. Table 13 summarizes the mean proportion of TS directives according to the age, sex, and status of the child.

While males were found to produce a greater number of bids for mutual participation of a peer than females did, they issued a similar proportion of directives with this goal.

A similar multivariate analysis was conducted to determine whether the proportion of influence attempts with each of the goals varied as a function of the sex and status of the child addressed. This analysis corrected for the different rates of directives with

Table 13  
Relative Frequency of TS Bids According  
to Age, Sex and Status of Subject

Group	X	(SD)
Younger		
Male		
H	.409	(.178)
L	.208	(.169)
Female		
H	.151	(.180)
L	.268	(.221)
Older		
Male		
H	.220	(.062)
L	.275	(.221)
Female		
H	.271	(.164)
L	.187	(.152)



each goal and allowed for a comparison of the motivations underlying requests issued to boys and girls of different sex and status. Separate analyses were conducted for sex of target, and status of target as the repeated measure, as not all children addressed classmates of both sex and status. The number of subjects per cell decreased to six for both analyses. An equal number of subjects per cell maintained by inserting the mean for the cell in the 2 cells where only 5 subjects had data (3-year-old high status males and 3-year-old high and low status females).

The "within" portion of the Age X Sex of Subject X Status of Subject X Sex of Target multivariate repeated measures analysis of variance showed a statistically significant multivariate Age X Sex of Subject X Sex of Target interaction,  $F(3,38)=4.253$ ,  $p<.01$ , as well as a significant univariate interaction for the proportion of TS requests,  $F(1,40)=4.686$ ,  $p<.04$ . Post hoc Scheffé tests showed that younger boys tended to address a higher proportion of requests that were bids for toys to female classmates than did older boys,  $F(3,44)=8.602$ ,  $p<.10$ , means=.424 vs .144 respectively.

In addition, the multivariate sex of target effect was significant,  $F(3,38)=7.047$ ,  $p<.001$ , as well as the univariate  $F$  ratio for the proportion of directives that were attention bids,  $F(1,40)=22.241$ ,  $p<.0001$ . A higher proportion of directives addressed to girls were bids for attention than was the case for requests to boys (.511 vs .326 respectively). It should be noted that

in the frequency analysis, more TS and MP bids were addressed to male than female targets. However, when the overall difference in base rate of requests to targets of different sex was accounted for, the two sexes received proportionately the same number of requests whose aim was the acquisition of toys and mutual participation of peers. In contrast, when the base rate of request behavior was controlled, the influence attempts directed to females were more often motivated by the peer's desire for their attention. The summary table for this analysis is reported in Table B-22 of the Appendix.

A similar Age X Sex of Subject X Status of Subject X Status of Target analysis of variance with status of target as the repeated measure was conducted. An equal number of subjects per cell was maintained by inserting the mean of the cell in the 2 cells in which only 5 subjects issued requests to targets of both status (3-year-old high status females and 5-year-old low status females). The "within" portion of the analysis showed a significant Age X Status of Target effect, Multivariate  $F(3,38)=4.65$ ,  $p<.01$ . Three-year-olds and 5-year-olds differed in the proportion of directives that were bids for attention addressed to high and low status targets,  $F(1,40)=7.90$ ,  $p<.01$ . While both age groups directed a similar proportion of directives that were attention bids to high status targets (.08 vs .06 for younger and older preschoolers respectively), older preschoolers issued a higher proportion of attention requests to low status targets than did 3-year-olds,  $F(3,92)=10.895$ ,  $p<.05$ , means=.172 vs .061. A

better understanding of the meaning of this result can be obtained by comparing the proportions of requests with each goal addressed to high and low status targets at each age level. At the 3-year-old level, preschoolers did not differ in the proportion of requests with each of the four goals. At the 5-year-old level, the proportion of directives aimed at securing toys or mutual participation was similar to high and low status targets (means=.245 vs .296 and .504 vs .481 for PTS and PMP respectively). However, 5-year-olds issued a higher proportion of attention bids and a lower proportion of control bids to low status compared with high status targets (means=.172 vs .060 and .069 vs .204 for attention and control bids respectively). Thus, it seems that the higher proportion of attention bids to low status targets on the part of 5-year-old preschoolers reflects their greater interest in noncompetitive goals rather than in asserting their status by controlling the behavior of the other. On the other hand, 5-year-olds show a greater concern with attempting to control or manipulate status of higher status classmates.

Although the multivariate Age X Status of Subject X Status of Target effect was nonsignificant,  $F(3,38)=1.75$ , the univariate  $F$  ratio for the proportion of requests that were bids for attention was statistically significant,  $F(1,40)=5.47$ ,  $p<.05$ . High status five year olds tended to issue a higher proportion of attention bids to low status than high status children, means=.229 vs .072 respectively, although this comparison did not reach the level of significance

required for post-hoc comparisons,  $F(3,44)=8.101$ , n.s. It is interesting to note that five-year-old high status preschoolers addressed a higher proportion of directives that had the goal of control to high status than low status targets (means=.236 vs .052 respectively). These findings suggest that the previously reported Age X Status of Target effect for the proportion of attention bids was largely the result of older high status children differentiating the motivation underlying the requests they issued to targets of different status. Specifically, older high status preschoolers addressed their lower status peers with a higher proportion of requests which were noncompetitive attention bids while they issued a higher proportion of requests which were status manipulating in nature to higher status classmates.

Although the multivariate Sex of Subject X Status of Target effect was nonsignificant,  $F(3,38)=2.10$ , the univariate  $F$  ratio was significant for the proportion of directives aimed at getting the attention of peers,  $F(1,40)=4.33$ ,  $p<.05$ . While females addressed a similar proportion of attention bids to high and low status targets (means=.104 vs .110 respectively), males tended to direct a higher proportion of attention bids to low status than high status targets (means=.121 vs .406 respectively); however, this difference was nonsignificant,  $F(3,92)=3.36$ , n.s. Males also issued a higher proportion of control bids to high status as opposed to low status targets (.204 vs .052 respectively). The multivariate analysis of

variance summary table is found in Table B-23 of the Appendix.

The results of the frequency and proportion analyses on the goals of requests suggested that males' requests to their same-sex peers more frequently involved bids for toys and for mutual participation than did girls' requests to their same-sex peers. These results were explained by differences in the base rate of request rather than by differences in the motivations underlying their influence attempts. Requests with the goal of gaining the attention of peers were more frequently issued by boys rather than girls when interacting with opposite-sex peers. Furthermore, the proportional data suggested that a higher proportion of requests to females were motivated by a desire to get their attention than was the case for requests to males. These results might reflect sex-stereotyped socialization of females which leads to their assuming a nurturing role and providing confirmation and attention to others.

The results of the status of target analysis suggested that preschoolers addressed more attention bids to high status males than either high status females or low status males. Children did not differentiate the number of attention bids they directed to girls of high and low status peers. This finding only partially supports the findings of Abramovitch (1976) that the more dominant members of the social group receive more bids for attention than do less dominant members of the social group. The results from the proportional data on attention bids demonstrated that older preschoolers particularly

those of high status showed differential motivations in the requests they directed to high and low status targets. When interacting with low status targets, they were motivated by noncompetitive (attentional) rather than competitive status-manipulating (control) goals. In contrast, when interacting with high status targets they were motivated by noncompetitive goals.

In summary, the findings suggest that the main motivational differences in the goals of directives as a function of the sex and status characteristics of the targets addressed were a) the greater tendency to look toward female targets for attention and confirmation than male targets and b) the greater tendency for older preschoolers particularly those of high status to be motivated by status-manipulating goals when interacting with other high status targets and less competitive goals of attention when interacting with low status targets.

The final section of the results examines the relationship of role-taking skills to influence behavior. Theorists such as Piaget (1926) and Flavell (1968) have speculated that the ability to understand the perspective of another is a necessary component of effective social functioning in general and communicative skill in particular. In order to assess whether role-taking skills were related to skill in influencing the behavior of another child - a particular social communication skill, children's performance on three

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role-taking measures were correlated with several dimensions of request behavior. The three role-taking tasks were 1) the Flavell Birthday Gift task (ROLE 1) 2) the Urberg and Docherty affective role-taking task (ROLE 2) and 3) the DeVries Hide-A-Penny cognitive role-taking task (ROLE 3). The means and standard deviations as well as the intercorrelations between these two measures are summarized in Table 14. The scores on these three measures and the total role-taking score were correlated with the frequency of influence attempts, the proportion of requests that were successful, the proportion of requests that were direct requests and the proportion that were indirect requests. These correlations are presented in Table 15. As can be seen, role-taking skills were not strongly related to the child's skill in influencing his peers. The only significant relationship to emerge was that affective role-taking scores were significantly correlated with the frequency of requests among younger preschoolers. Three-year-olds with more developed role-taking ability were more likely to produce a higher frequency of influence attempts in the classroom. Contrary to expectation, perspective-taking ability was not related to the degree to which preschoolers were successful in influencing their peers. Similarly, the expected positive correlation between role-taking skills and the use of indirect verbal forms in older children was not supported. Rather, the non-significant trends that emerged suggested that cognitive perspective-taking skill might be more associated with the selection of direct rather than indirect

verbal request forms in the classroom.



Table 14

Means and Standard Deviations of the  
Role-Taking Measures

Role-taking Measure <sub>a</sub>	X (SD)
ROLE 1	3.825 (1.056)
ROLE 2	8.766 (3.240)
ROLE 3	7.250 (1.380)
ROLE TOT	19.781 (4.424)

Pearson Correlation Coefficients for the Intercorrelations  
of Role-taking Measures

Role-taking Measure	1	2	3	4
ROLE 1	-	.424**	.230*	.607**
ROLE 2	-	-	.255*	.909**
ROLE 3	-	-	-	.563**
ROLE TOT	-	-	-	-

\* $p < .05$ . \*\* $p < .001$ .

- <sup>a</sup> ROLE 1 = Flavell Birthday Gift task  
 ROLE 2 = Urberg and Docherty affective role-taking task  
 ROLE 3 = DeVries Hide-A-Penny cognitive role-taking task  
 ROLE TOT = Sum of all role-taking measures

Table 15

Pearson Correlation Coefficients Between Role-Taking  
Measures and Request Frequency, Form and Success  
At the Two Age Levels

Role-taking Measures <sub>a</sub>	Request Measures			
	Total	PSUCS	PDR	PIR
ROLE 1				
Younger	.053	-.035	-.101	-.022
Older	.212	-.139	-.074	-.007
ROLE 2				
Younger	.317*	-.112	-.209	.060
Older	-.024	-.062	-.250 <sup>t</sup>	.037
ROLE 3				
Younger	-.040	.133	.094	-.245 <sup>t</sup>
Older	.275 <sup>t</sup>	.222	.258 <sup>t</sup>	.110
ROLE TOT				
Younger	.267 <sup>t</sup>	-.065	-.174	-.026
Older	.200	.069	.015	-.086

<sup>t</sup>  $p < .10$ . \* $p < .05$ .

- <sup>a</sup> ROLE 1 = Flavell Birthday Gift task  
 ROLE 2 = Urberg and Docherty affective role-taking task  
 ROLE 3 = DeVries Hide-A-Penny cognitive role-taking task  
 ROLE TOT = Sum of all role-taking measures

### Discussion

The first goal of the research was to examine the developmental change in verbal request behavior in preschoolers in a naturalistic environment, the nursery classroom. While other researchers have examined request behavior in children this age, most have restricted their studies to either experimental elicitation tasks, role-play, or observation of dyads interacting in a laboratory playroom. The present research was considered to have greater ecological validity due to its full complement of contextual cues operating in naturalistic settings. As hypothesized on the basis of Levin and Rubin's research, older preschoolers issued more directives than younger children, in the classroom environment. Specifically, they issued significantly more direct as well as indirect verbal request forms. These findings are somewhat in contrast with other naturalistic dyadic studies such as that of Garvey (1975) who found that only indirect and not direct requests increased in frequency over the preschool years. Although the raw frequency of both these forms was greater in older children, the number of each of these verbal forms relative to the total number of directives was similar at both age levels. These results suggest that preschoolers at each age level produced a similar profile in terms of the relative amount of each verbal form comprising their request behavior.

A descriptive examination of the types of requests used in the classroom environment confirmed the hypothesis that direct requests

and embedded imperatives were the most frequent means of directing the behavior of peers. In the present study, direct and indirect requests comprised 35 to 45% and 35% of all influence attempts respectively. The number of indirect requests observed in the classroom environment was greater than the 20% and 6 to 13% reported by Levin and Rubin (1978) and Garvey (1975) respectively. In fact, when the proportion of indirect requests was calculated on the same subset of directives as these researchers, the proportion of indirect requests issued in the present study composed 44% of all directives. The discrepancy in the prevalence of indirect requests is likely the result of the differential context in which the observations were made. In the dyadic context, it is likely that clarity is the major determinant of request form selection. However, in the classroom, indirectness may be motivated by other social factors operating in the peer group. Further discussion of this point will be undertaken when the variation in the verbal form of request as a function of speaker and target characteristics is examined. It is interesting to note that in a classroom context, preschoolers did occasionally express their directive intent in the form of hints or question directives which did not express the goal or agent explicitly. Such verbal forms have not been observed in child-child dyadic observational studies (eg. Garvey, 1975) but have been identified in child-child interaction in other classroom observational research (eg. Dore, 1978).

Confirming Garvey's findings, the success of directives did not

change over the preschool years. In our sample, however, approximately 2/3 of requests were successful in obtaining their desired goal, a figure somewhat higher than the 50% figure reported by Garvey. While Garvey found that indirect requests were more successful than direct requests in gaining their intended perlocutionary effect, i.e. compliance of their partner, the present research did not find this to be the case, although as in Garvey (1977) the design did not permit a statistical analysis. Direct requests were successful approximately 75% of the time while indirect request forms gained compliance approximately 65% of the time. The discrepancy in results might be explained by a variety of factors. First, it may be that direct requests are more successful than indirect in a classroom setting. That is, in the classroom vs the dyad it may be more important to assert ones' status and to maintain face in the presence of other peers (Haslett, 1983). The direct imperative form might be more often reinforced by peers due to its more assertive nature. Second, it is possible that direct requests are more successful in the classroom compared with the dyadic context. Since the classroom permits selective interaction direct requests may be issued to chosen targets who are friends, while in the dyadic situation they are addressed to a same-sex peer who is not a close friend. Other researchers (Gottman & Parkhurst, 1980) have found that friends are more motivated to comply with requests of other children than are acquaintances.

The present research extended previous developmental studies by also considering whether preschoolers mark their sex and/or status by means of the selection of verbal request forms from their request repertoire. Substantiating the results of the small sample study by Haas (1979), in the present study, boys issued significantly more directives overall and more imperative direct forms of requests than girls did. These findings suggest that preschool boys have learned to speak in a manner that is in accord with both sex-role stereotypes and actual empirical data which has shown males to express their directive intent more directly than females (Lakoff, 1972; Key, 1975; Eakins & Eakins, 1977). In contrast, preschool girls tended to become increasingly indirect in their request behavior with age, although some caution is needed in interpreting this result given its *a posteriori* nature and borderline significance. Thus over the preschool years, females seem to issue directives that are increasingly similar to those prescribed according to sex-role stereotypes and observation of female adults in our culture (Lakoff, 1972; Key, 1975). How these differences emerge is unclear, although several explanations have been advanced. One possibility is that females are differentially reinforced according to the verbal form of their directives by both adults and peers (Lakoff, 1972). In the present study, however, 3-year-old girls were found to be more successful (ie. were reinforced more) using direct requests forms than three-year-old boys. Thus it seems that, if anything, young preschool

girls are reinforced for directness in the early preschool years. However, males and females are also differentially reinforced for indirectness by peers. In the present study, girls were more successful (ie. more reinforced) using indirect request forms than were boys. Thus, it seems that while young girls are positively reinforced for their use of direct requests, girls at all ages are more likely to be reinforced by peers for indirectness than males are.

An alternative and/or concurrent process that could explain the greater directness of boys at all ages and the increasing indirectness of girls over the preschool years may lie in the differential treatment that the sexes receive from teachers and parents and the differential role-models they are exposed to. For example, Reed and Cherry (1978) have found that teachers address more directives in imperative form to boys and more questions to girls in the classroom context. Thus, males are exposed to teachers who speak to them in a manner more in keeping with the male sex-role stereotype of directness. Females, on the other hand, are exposed to a teacher, generally of their own sex, who models the use of more questions and less directness when interacting with them. A similar situation has been found to exist in the home environment where fathers and mothers model typical male and female behaviors in terms of the expression of directives. Specifically, fathers have been found to use more imperative requests than their spouse particularly in their interactions with their sons (Gleason, 1975; Malone & Guy, 1982). If

fathers are the primary socializing agent of sex-role stereotypes, (Lynn, 1974) the male child is exposed to a male model who accentuates sex-role appropriate behavior and to school personnel such as teachers who similarly interact with him in the sex-role prescribed way.

A third possibility is that the directives of males and females become more sex-role stereotyped as a result of the increasing differences in whom they interact with and in the type of play activities they engage in over the preschool years. Thus, the emerging differences in directive behavior may be the result of their language becoming increasingly tailored to suit their sex-typed pursuits. We shall elaborate and consider this explanation when we have finished summarizing the variation in request form as a function of the sex of the child, with whom they are interacting.

Although the sexes encoded their directives differently, contrary to expectation, high and low status children did not. Both high and low status children issued an equivalent number and type of directives and were equally successful in gaining compliance from peers when status was defined on the basis of teachers' ratings. High status children did not use a higher proportion of DRs than low status children at either age level. The only status effect that emerged was that three-year-old high status boys produced a higher proportion of high cost directives aimed at obtaining toys from others than high status girls. These differences in directive intent among younger male and female preschoolers probably reflects the well-



documented sex-differences in boys' rate of agonistic or competitive behaviors relative to girls' (eg. Smith & Green, 1975; Howes, Rubenstein & Eldredge, 1983). The fact that older high status boys and girls did not show the same differences in the proportion of their directives aimed at obtaining toys from peers, may reflect the tendency of boys' interactions to become more positively toned and less conflictual and competitive with increasing age (Langlois, Gottfried & Seay, 1973).

The second aim of the present study was to determine whether preschoolers varied the syntactical form of their requests according to the sex and status characteristics of their partners. Although no specific hypotheses were formulated regarding how children would respond to targets of different sex, the results of the present research indicated that preschoolers responded differently to male and female play partners. Both boys and girls addressed more requests to same-sex peers than opposite-sex peers; however, only older boys displayed this preference to a statistically significant extent. Given the often cited findings that preschoolers play in sex-segregated groups (Abel & Sahinkaya, 1962; McCandless & Hoyt, 1961; Parten, 1933; Strayer, 1977; Serbin, Tonick, Sternglanz, 1972), it is not surprising that children also issue more requests for action to the same-sex partners. Furthermore, it is not surprising that in the present study males show this sex-preference in terms of their request.

behavior at a time when girls do not differentiate in their social interactions to the same extent. Boys have been found to initiate interactions more frequently with other boys at both 3 and 5 years, while girls develop this pattern only later, possibly as a result of the lower levels of success they experience when attempting to initiate interactions with boys (Howes, Rubenstein, Eldredge, 1983). Since the rate of social interaction with targets of each sex was not recorded in the present study, it is not possible to determine whether males' greater frequency of requests to males compared with females merely reflected their greater frequency of overall social interaction with boys compared with girls. It is equally possible that these differences were the result of differential motivations underlying males' social interactions when interacting with male and female peers. In male-to-male interactions, a desire to direct the other child's behavior in an active way might be more salient. In contrast, male-to-female interactions might reflect other less active social interactive roles. Recent research has confirmed the presence of differences in the way males and females initiate social contact with same-sex and opposite-sex peers (Burge, 1982). These differences in social overture likely reflect differences in the subsequent nature of the resulting social interaction and the types of play engaged in (Rubin, 1977; Ettaugh, Collins & Gerson, 1975).

Boys issued more of all 4 verbal request forms to same-sex compared with opposite-sex peers. In contrast, girls issued an

equivalent number of each type of verbal form to male and female peers. This difference reflected the fact that males but not females differentiated the total number of requests they issued to their peers of different sex.

Since girls have been found to be as socially active as boys when with same-sex peers (Haas, 1979), males and females were compared in terms of their frequency of each verbal form when interacting with their same-sex peers. Boys and girls did not differ in their use of indirect requests or assertions to other children of the same sex. However, boys issued more direct requests to same-sex partners than girls did and showed a similar trend for counterassertions.

Preschoolers issued more imperative (direct) requests to male than female targets and tended to follow a similar pattern for counterassertions. This differentiation in verbal form was more marked in the later preschool years when older but not younger children directed more imperative requests to male compared with female classmates. This effect was the result of boys increasingly issuing more requests to same-sex peers and selecting DRs and CAs as a preferred verbal form for male-to-male directive interaction.

These findings suggest that imperative forms of requests and to a lesser extent counterassertions are most frequently used by males addressing other male peers. It is possible that their prevalence in male dyads reflect the marking of masculine sex-role which is reinforced by male peers in much the same way that masculine toy

preference has been found to be reinforced by the presence of other boys (Serbin, Conner, Burchardt, & Citron, 1979). In the present study, older boys in particular were more likely to be successful in their directives (ie. reinforced) when they addressed other boys using imperative rather than indirect request forms.

While the frequency of imperative request forms differed for males and females when interacting in same-sex dyads, it did not vary in cross-sex dyads. These findings are in contrast to Haas (1979) who found no difference in the rate of direct requests among boys and girls when with a same-sex partner but that boys issued more imperative requests when with an opposite-sex partner than girls did. Haas interpreted his results to suggest that sex-roles become more defined when individuals are with members of the opposite sex and that one way this is manifested is by boys using more "male-stereotyped" imperative requests. The discrepancy in results between those of Haas and the present study probably reflects differences in the social contexts in which the observations were made. In Haas' study, same-sex and mixed-sex dyads were observed in a laboratory playroom with no other choice of play partner. However, in the present study children were unconstrained in their choice of play partner and interactions occurred with other peers present. It is possible that the nature of boys' interactions with girls in the classroom is quite different from that occurring in a dyadic context (ie. less frequent and more selective) with no other play partners available. In the classroom,

boys selected other boys as the targets of their requests aimed at obtaining toys and eliciting mutual participation. However, a larger proportion of requests addressed to girls were aimed at engaging their attention and acknowledgement than was the case with males.

Although the frequency of verbal request forms varied as a function of the sex of the target and the sex of the subject, males and females showed fewer differences in their use of these verbal forms when the differences in their base rate of requests was taken into account. Given Smith's (1979) claim that sex-markers in speech are indicated by the differences in the frequency with which a linguistic feature is used by males and females, it seems likely that correcting for discrepancies in the rate of request behavior would minimize male/female differences. In the present study, preschoolers did not differ significantly in the proportion of each verbal form they addressed to boys and girls, despite a significant multivariate  $F$  ratio. In contrast to the frequency analysis, boys did not issue a higher proportion of direct requests to other boys than girls did with other girls. One of the few differences to emerge was the finding that both boys and girls tended to issue a higher proportion of assertions to same-sex partners than to opposite-sex partners. The same-sex specificity of assertions reflected the fact that they tended to occur in social situations in which well-established norms and expectations of participants existed, eg. during board games or other ritualized activities. These predominantly involved interactions with

same-sex peers.

The only other difference to emerge with regard to the use of verbal forms as a function of the sex of target was the finding that older girls tended to issue a lower proportion of their directives in imperative form to other females than did younger girls. This trend suggested that females became increasingly less direct in their requests particularly with same-sex peers. The reason for this decrease in directness could not be explained in terms of a change in the reinforcement (ie. success) that girls experienced with direct requests addressed to other girls since the success rate was equivalent at both ages in the present study. Rather, the decrease in relative frequency of imperatives might reflect girls' increasing competence in "talking like a lady" as modeled by both mother and teacher.

It has often been claimed that boys develop sex-stereotyped language patterns at an earlier age than girls (eg. Meditch, 1975; Garcia-Zamor, 1973). The evidence cited to support this claim has been that 1) males of preschool age have been found to be more accurately identified by tape-recordings of their spontaneous speech than females (Meditch, 1975; Sachs, Lieberman & Erickson, 1973) and 2) kindergarten age boys showed a stronger awareness of sex-stereotyped distinctions in language than did girls (Garcia-Zamor, 1973). Meditch (1975) has claimed that boys develop sex-stereotyped language earlier than girls since the development of male-associated

language consists of losing features boys exhibited earlier while girls have the additional task of losing features they exhibited earlier and then acquiring female marked language patterns. In contrast, Lakoff (1972) has proposed that both boys and girls learn women's language first and then males lose these features while females retain these original patterns. The results of the present study suggest that Meditch's theoretical explanation is more accurate, since girls lost the original directness they displayed during the early preschool years and tended to become increasingly indirect when issuing requests over the age range studied. In contrast, boys displayed the male-stereotyped directness in their request behavior, even at the 3-year-old level. This pattern did become increasingly differentiated over the preschool years particularly when interacting with other males.

It is interesting to note that submissiveness or compliance - an often cited female-stereotyped characteristic (Haas, 1979) was differentiated in terms of request behavior in males and females. At the older age level, requests directed to girls were more successful than those addressed to boys. This greater success may reflect the fact that females become increasingly compliant with age as Haas (1979) has claimed or conversely that males become less compliant with age as they show greater interest in exhibiting their dominance.

While the above discussion suggests that the request form selected varies as a function of the sex of both the speaker and the

target, systematic variation was not found as a function of status characteristics of participants. Contrary to expectation, preschoolers did not differentiate the directness of requests they addressed to high and low status classmates. While it was expected that among older preschoolers, a higher proportion of direct requests would be issued by high status children speaking to low status targets than vice-versa, this hypothesis was not supported. In addition, high and low status targets did not differ in the proportion of indirect request forms they received. These findings were in contrast to those expected based on research suggesting that direct requests were distributed downward in rank while indirect requests were directed upward in rank.

The only effects of the target's status on request variations found in the present study was that children tended to address more direct request forms to high status males compared with high status female targets. In addition, high and low status males tended to issue a higher proportion of their requests to peers equal in status to themselves in imperative form than did females of high and low status. Low status females tended to issue a higher proportion of indirect request forms to other low status targets than either high status females and low status males did.

The lack of the expected variation in request form as a function of the status characteristics of participants might be the result of several factors. First, due to practical difficulties, status was not



measured by the child's position on the social influence hierarchy as originally planned. Rather status was based on composite rankings of the child's leadership and popularity as indicated by teacher's rankings. It is possible that status defined in this way bears little resemblance to status position on a social influence hierarchy that is empirically based. Perhaps requiring teachers to rank all possible dyads in the class in terms of who was the dominant member and then forming a linear hierarchy based on this data might have increased the likelihood of comparability between status based on teacher's rankings and that based on a social influence hierarchy.

Second, the lack of systematic variation in request form might have been the result of the way in which children were dichotomized into high and low status separately by sex. Previous studies had confounded sex and status of target factors so that it was unclear the relative importance of each for request variation. The present approach to assignment of status separately for each sex ensured that sex and status factors could be statistically separated. While this approach had statistical merit, it is possible that it distorted the actual overlap between sex and status in the preschool environment. In fact, in the present study in two of the three classes in which leadership rankings were available, males were over-represented and females under-represented in high leadership positions. By dichotomizing children into high and low status separately by sex, it is likely that females classified as high status in the present study

actually occupied lower status positions than the equivalently ranked high status males. Given the actual overlap of sex and status in the preschool social groups studied, the only way to tease apart the importance of each of these factors to request variation would be to have a large enough sample of subjects to select from so that enough high status females and low status males could be identified and their request behavior studied. The few effects of status that did emerge often involved high status males who were probably the most accurately identified even by the dichotomous approach taken in the present study.

Despite the difficulties with the status measure reviewed above, it is also possible that status characteristics were not salient enough for children this age and therefore they did not affect their request selection to an appreciable extent. Furthermore, it is possible that children were not capable of the cognitive operations necessary in making judgements of their status relative to that of their peers. Empirical evidence has indicated that preschoolers have little skill at comparing themselves with others in terms of such characteristics as "toughness" and "fastness" prior to age four (Sluckin & Smith, 1977; Norris & Nemchek, 1982). At age 4 some children were able to rank their classmates accurately in terms of their "toughness" while many were able to do so in terms of their "fastness" relative to others. Despite their rudimentary social comparison skills, children in this age range were found to

overestimate their own ability relative to others (Edelman & Omark, 1973; Norris & Nemchek, 1982). The failure to find the expected request variation might therefore have been the result of their overrating of their own status relative to others and thus not correctly recognizing the differential status and the need to signal it linguistically. Future research might examine whether the expected variation is more evident among the subgroup of 4-year-olds capable of accurately comparing their "toughness" with that of their peers without excessive overrating of their own prowess.

A fourth possibility to explain the failure to find the expected syntactical variation might be that relative status is better conceptualized as a property of the dyad rather than the individual. Following this line of reasoning, only at the dyadic level would the more dominant member issue a higher proportion of direct requests and the subordinate member a higher proportion of indirect requests. In order to assess this possibility, syntactic variation in request form was examined at the level of the dyad. Members of each dyad were classified as high and low status based on empirical criterion that they issued more successful directives than their partner and were able to direct their peer's behavior at least 2/3 of the times they tried. The advantage of this approach was that it came closer to the planned manner of measuring status at a dyadic and then group level. Optimally, it would have been preferable to have the data base from which success and status was calculated independent from data

concerning the verbal request forms used to influence others; however since this was not possible, the present approach was considered a fair approximation. High status members of the dyad were found to issue more requests to low status members than vice-versa and more requests of both direct and indirect verbal form. As expected, in younger dyads, the more dominant member did not issue a higher proportion of direct requests than the more subordinate member. However at the older age level in 2/3 of the dyads, the more dominant child was the one to produce a higher proportion of direct requests.

Similar results were found at a dyadic level for indirect request forms. At the 3-year-old level, only 1/3 of the dyads showed the expected effect of the lower status member issuing a higher proportion of indirect request forms than the high status partner. By contrast in 2/3 of the older dyads, it was the subordinate member of the dyad who issued the higher proportion of indirect request forms. While these results were not statistically significant, it seemed possible that they reflect a developmental trend for preschoolers to increasingly encode status aspects of their relationship at a syntactic level via their request selection. Clearly, only replication with an extended age range, utterance base, and sample size will allow this possibility to be empirically validated.

Although the present study focused on syntactic variation in request forms as a function of sex and status characteristics of speaker and target, it should be noted that request strategies vary

on other dimensions. For example, requests can differ at a level, as well as in terms of stress and intonation patterns, discourse properties such as turn taking, and nonverbal accompanying behaviors such as posture and facial gesture. While preschoolers in the present study appeared to begin systematically altering their requests at a syntactic level at the older age level, it is quite possible that they had already mastered other means of signaling the status relative to their partners. For example, Cook-Gumperz and Corsaro (1977) have found that preschoolers utilize stress and intonation in their requests to mark status and authority. In addition, the work of Becker (1983) has suggested that for younger children, positive vs negative tone and the use of semantic softeners such as "please" and aggravators, such as threats, are used to vary requests along the bossiness/niceness or dominance/submission dimension before syntactical variation is systematically used. In addition, the work of Meditch (1975) has indicated that factors such as the hesitancy of the speech and certain voice characteristics carry information about the sex and associated sex-role status of preschool age children.

Further carriers of status information found in adults have included the patterning of turn-taking. Zimmerman and West (1975) have found that in conversation between males and females, practically all the interruptions and overlaps were made by male speakers and these tactics were a means of expressing and asserting their control and status. Thus it seems likely that children would gradually come

to employ discourse features such as interruptions and overlaps as another channel by which status information is communicated. Finally, the work of Thorne in the area of nonverbal communication has shown that dominance is communicated nonverbally by a variety of behaviors such as a stare, lack of smile, relaxed posture, forceful gestures, touch, use of more space and closer approach to others. It is quite likely that children also learn to use the nonverbal channel to convey similar status information. In fact, it is possible that nonverbal behaviors, being phylogenetically more primitive, might actually be used to convey such information before either semantic or syntactic variation is used. In fact, Argyle, Salter, Nicholson, Williams & Burgess (1970) have presented evidence that even in adults more of the information regarding relative status of interactors is expressed via the nonverbal rather than the verbal channel.

Therefore, further work on children's request behavior as a function of status and sex-role should examine not only syntactical features but also other aspects of the request exchange such as semantic features, intonation patterns, turn-taking, and non-verbal behaviors. Only in taking a more holistic approach can children's developing communicative competence be accurately detailed.

Up until this point in our discussion, we have considered that request variation had the function of marking the status and the sex of participants. However, as pointed out in the introduction, variation in request form accomplishes other functions in social

interaction. Bates (1976), Lakoff (1972) and Mitchell-Kernan (1977) have suggested that the use of more indirect request forms has a politeness function of allowing the target to feel that he has some options. For example the use of the question form "Could you close the window?" gives the target the apparent option in deciding whether he would or would not shut the window. As well the use of "please" makes the directive sound like a favour. While Bates has detailed children's development of politeness forms over the preschool years in adult-child interaction, the work of Ervin-Tripp (1982) as well as that of Wood and Gardner (1980) suggest that politeness among family members and peers does not have the same effect nor the same underlying function. In these situations politeness (ie. greater indirectness) does not result in increased success in influencing others. In fact Wood & Gardner have suggested that children who occupy one-up positions in a dyadic situation with peers act as if they "do not need to be polite to get their way with their peers while one-down children behave as if politeness will work for them". In the present study, indirect verbal requests to peers tended to be somewhat less successful than more direct request forms.

Ervin-Tripp (1982) has suggested that indirectness in directives has the function of signalling not only status of speaker and addressee but additionally serves to indicate "that the child separates these cases of presupposed, presumed cooperation from the cases where compliance cannot be assumed". She suggests that

politeness markings are brought into play when the other child has rights over the desired goods requested. In addition school-age children add politeness cues to their directives in cases where they are requesting a particularly difficult task or if their directives disrupt ongoing activities or conversations of the addressee. For example, Ervin-Tripp (1982) found that in 54% of cases where the activity proposed would interrupt the listener, children age 5-8 added politeness modifiers such as "please", indirectness, and explanations or justifications to their requests.

In the present study, it was originally hoped that the coding of social goal of the request would allow for an examination of status factors when aspects of the social context such as task difficulty could be controlled. However, the social goals coded (attention of a peer, toy for self, mutual participation and control) were not fine-grained enough to allow a further analysis of whether indirect request forms used by more dominant members reflected other aspects of the social situations calling for politeness such as difficult requests, goods in the possession of others, or interruptions of the activities of partners. The only way to assess the other functions of indirectness among children this age would be to use the approach suggested by Geoghegan (1973) whereby detailed study is made of the social situations that normatively call forth indirectness in a particular social group. Only deviations from this expected form would be considered to express or signal other aspects of the social



relationship such as the status between participants. It should be noted that this approach would necessitate the derivation of separate norms for each social group or class. For example, in the present study, in one of the classes observed the "I need" or "I want" form of request was never used; however, in all other classes this form was considered an appropriate form of directive to use when requesting goods or services. Clearly each social group evolves its own social norms and expected or unmarked forms of social influence. Following Geogheghan's approach, future research in this area should examine status factors as they operate against the background of the groups' social norms for requesting.

The third goal of the present research was to examine the degree to which role-taking skills underlie children's success in influencing their peers. Theorists such as Piaget (1926) and Flavell et al. (1968) have claimed that children's developing ability to consider the viewpoint of others resulted in more effective communication and greater success in directing the behavior of others. The results of the present study failed to confirm this hypothesis either developmentally or within either of the ages studied. Two of the three role-taking measures showed no association or a weak negative correlation with children's success at influencing their peers. The third measure, the DeVries Hide-A-Penny task showed a weak positive relationship to directive success; however these correlations were nonsignificant. These results are similar to those of Levin and Rubin

(1979) who found no relationship between role-taking ability as measured by the Bourke and Chandler tasks and the child's success in influencing same-sex peers in a dyadic setting. However these investigators found that performance on the DeVries task was positively and significantly related to effectiveness in request behavior. The larger correlations reported by Levin and Rubin probably reflect the fact that success of requests in a dyadic situation may be more affected by the child's ability to consider his partners' viewpoint while other motivations such as the degree of friendship between participants might be more influential in determining the outcome of requests in a classroom setting. It is quite likely that children chose friends as the targets of their social influence in the classroom and these friendship factors positively affect the willingness of the target to comply with the request (Gottman & Parkhurst, 1980).

In both Levin and Rubin (1979) and the present study it is interesting to note that role-taking as measured by the Bourke and Urberg and Docherty task respectively was unrelated to the outcome of directives. However performances on the DeVries was positively related to children's success in influencing their peers. It is possible that this pattern of correlations reflect the fact that different levels of role-taking ability are tapped by the two tasks and it is only the ability to simultaneously consider one's own perspective and that of the other that underlies effectiveness in

influencing the behavior of others. In contrast the rudimentary sequential perspective-taking skills tapped by the Bourke and Urberg and Docherty task are not sufficient to allow the child to strategically alter his behavior in consideration of the differing perspective of his partner. Since Selman has suggested that simultaneous perspective-taking ability does not emerge until the end of the preoperational period, it is possible that the success of requests would be more closely related to role-taking skills in children aged 6 or 7.

It is interesting to note that in the present study, there was a positive relationship between the child's role-taking scores and his frequency of issuing requests. Among three-year-olds, children who scored high on the Urberg and Docherty affective role-taking task made more influence attempts with peers. It is possible that the association between role-taking and request frequency are in keeping with Piaget's claim that experiences in situations in which the child's needs are in conflict with those of his peers are instrumental in forcing him to recognize the differing perspectives of others. Since request behavior frequently results in social conflict, it is possible that children who engage more often in such behavior derive experiential training in considering the perspectives of others.

Theorists such as Bates (1976) have suggested that the production of indirect requests having modal verbs as well as those in which the goal and the agent of the request is not made explicit require

perspective-taking skills. Specifically she has suggested that prior to age 3 1/2 the only indirect requests children are able to produce are those that they have learnt as idioms. From age 4 onward, children are able to express directive intent using more indirect forms such as modal verbs since they are able to recognize that their intended meaning was retrievable by both themselves and their listeners by virtue of their shared knowledge of the goals of interaction and certain rules of conversation. Based on Bates' theory it was expected that children age 4 and older who displayed more advanced role-taking skills would issue a higher proportion of indirect requests. Results of the present study failed to confirm any positive association between indirectness in directives and perspective-taking skills. In fact, the few nonsignificant trends that emerged among the older children suggested that higher level more simultaneous type role-taking skills tended to be associated with the use of more direct request forms with peers. In contrast, sequential role-taking skills tended to be negatively correlated with the use of imperative requests. While these results were contrary to those hypothesized, they are understandable in view of the fact that direct rather than indirect request forms were the most effective in the preschool social context. Children more able to consider the viewpoint of the other would certainly be more likely to select the form that was most appropriate to this social context. It is possible that role-taking and syntactical indirectness might be positively

related in situations in which indirectness was socially valued such as in adult-child interactions or in situations involving requesting tasks or services outside those normatively requested or involving greater effort of the target in order to comply.

The failure to find any significant relationship between role-taking skills and either the success or the verbal form of requests, might have been due to the simplicity of the hypothesized relationship. It is possible that perspective-taking skills relate more closely to other aspects of request behavior other than indirectness in terms of syntax. Specifically role-taking abilities might influence the extent to which children actively tailor their requests to the needs of their listener by 1) accompanying their directives with supporting explanations or justifications, 2) anticipating the possible objections of the target and 3) phrasing the requests in terms of their potential benefit to the listener (Delia & Clark, 1977). Future research might examine whether these three aspects of naturally occurring request behavior correlate with performance on role-taking tasks such as the DeVries Hide-A-Penny task. Additionally researchers such as Levin and Rubin have examined the types of re-request strategies children use following the initial failure of their directives. It is possible that children with greater ability to consider the perspective of the other would be better able to modify and clarify their requests in ways likely to lead to increased compliance from their listeners.

### Conclusions

In summary, it seems that preschoolers encode their gender status linguistically in terms of the type of request forms they use when influencing the behavior of their peers. Males select more direct forms of requests than girls and increasingly use these forms when interacting with other boys. Females tend to increase the proportion of their requests that they express in indirect form over the preschool years and become increasingly less direct in issuing requests to other girls.

In contrast, preschoolers do not consistently encode their social status relative to others in terms of the type of requests they use. The failure of preschoolers to respond in the expected manner was thought to reflect methodological difficulties with the measurement of status, the more abstract nature of status relative to that of gender, the immature social comparison abilities of preschoolers, and the fact that variation in request form occurred as a function of relative status factors operating at the level of the dyad as opposed to the individual. Dyadic analysis indicated that some of the older children are able to syntactically signal their status relative to their partner as evidenced by their systematic selection of request forms. It was suggested that syntactic variation as a channel to express status aspects of a relationship is in an embryonic stage in older preschoolers. However, other channels such as tone, semantic cues, and nonverbal behaviors might be more readily available to children

this age in conveying status aspects of their relationship with peers.

Preschooler's perspective-taking skills were not related either to the success of their influence attempts or to the verbal forms used in issuing directives to classmates. It was suggested that simultaneous as opposed to sequential ability to consider the viewpoint of the other might underlie the success of influence attempts in slightly older children.

Further research in the area of requestive skills in preschoolers should take a more holistic approach and examine not only the syntactical form of requests used but also the accompanying nonverbal behaviors, intonation patterns as well as discourse features surrounding the request. In order to chart the developmental course of how status aspects of the relationship between peers become encoded at a syntactical level, future research should extend the age range of children studied and examine classroom influence attempts in terms of the relative status of dyad members issuing these requests. Although classroom observations have some disadvantages in terms of the difficulty of reliable observations, and the small number of request utterances observed relative to the amount of observation time expended, the results of the present research suggest that request behavior in this social context may differ in some important ways from that found in a dyadic laboratory play situation. If our goal in studying the development of children's increasing sensitivity in the use of requests is to generalize to their ability to use these skills

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**Appendix A****Research Measures: Techniques of Data  
Collection, Data Recording, Reliability and  
Data Reduction**

## Appendix A-1

## Social Influence Coding Sheet

Class: \_\_\_\_\_

[illegible]

## Appendix A-2

Manual for Collection of Social Influence Data

Goal: The aim of these observations is to record all verbal utterances which are used with the apparent intent of directing the behavior of a peer. The present research is interested in the verbal form of the requests that preschoolers use when influencing their classmates as well the success which they experience in gaining the desired goal and maintaining the social interaction.

Observation Technique: Each observer is given a randomized list containing the names of all children in the class. In turn each child is designated the focal child and two observers simultaneously observe this child for a 3-minute time period. Each observer has a stop watch which he or she starts at the same time as the other observer and stops at the end of the 3-minutes of observation.

Behaviors to Record: On the Social Influence Coding Sheet the name of the observer, the date, and the class are recorded at the top of the sheet. Next the name of the first child on the randomized list is written under the column titled FC (for focal child). During the 3-minute time period the following behaviors are recorded:

1) a verbatim recording of any utterance aimed at directing the behavior of a peer.

Specific attention must be paid to how the child expresses his request eg. in imperative form, as a question, or statement, or as a suggestion.

Examples of possible verbal forms of requests:

Imperative - Look at my sand castle.

Give me the ball.

Imperatives & tags - Dress up as a gorilla, ok?

Give me the crayons, please.

Questions - Could you help me build a tower?

Will you help me dress the baby?

Would you pass me the scissors?

Wanta play house?

Could I have the ball?

Statements - You have to be the daddy.

We have to clean up the dishes.

I need the crayons.

I want the ball now.

Indirect Ways of Making a Request -

That's a nice gun you have (to attempt to get to  
play with the desired toy).

It's my turn (as a way of stopping the other child from  
taking his turn).

Is that yours? (as a way of implying give it to me)

2) the target - the name of the child to whom the request is  
directed is recorded on the coding sheet under the column titled  
"target".

3) the goal of the influence attempt - One of four possible goals  
is selected and recorded under the column titled "goal" on the coding  
sheet. The definitions for each goal category are listed below.

a) attention: (A) - any request designed to gain visual  
attention of a peer.

eg. Look at the picture I made.

Look at what I can do.

b) to myself: (TS) - any request designed to gain or defend possession of a toy or space.

eg. I need that toy.

It's mine.

Don't!

Could I have the ball?

Could you give me the scissors?

c) mutual participation: (MP) - any request designed to elicit or maintain the mutual participation of a peer.

eg. Wanta play house?

You have to be the daddy.

Could you give the baby her bottle?

Build the castle wall here.

d) control: (C) - any request whose objective is to control the behavior of a peer. The behavior is of little interest to the child making the request. Its manipulative intent is what is of most relevance.

eg. You have to say pretty please.

4) The outcome of the request: Any request is coded successful (S) or unsuccessful (U) according to whether it is successful in gaining its desired goal.

eg. Give me the doll (S) - would indicate that the child making the request got the desired doll.

Could you pour the milk? (U) - would indicate that the other child did not pour the milk as requested.

The (S) or (U) code is recorded on the Social Influence Coding Sheet under the column labelled "outcome" with the subheading

"success".

The other column under "outcome" titled "maint" is used to indicate whether the interaction was maintained (M) or terminated (T) after the request.

eg. Give me the doll (T) - would indicate that the interaction was terminated following the issuing of this request.

5) The first activity or material used by the focal child - the first activity engaged in by the focal child at the start of the 3-minute time sample is recorded.

eg. If Johnny is playing a puzzle at the start of the observation period, the code for puzzle is recorded under the category titled "activity" on the coding sheet.

The following is the numerical code for each activity:

- |                                  |                                 |
|----------------------------------|---------------------------------|
| 1- large blocks                  | 15- small blocks                |
| 2- playdough                     | 16- Fischer-Price garage        |
| 3- puzzles                       | 17- Fischer-Price castle        |
| 4- sandbox                       | 18- Stacking rings, number pegs |
| 5- water table and water         | 19- chairs                      |
| 6- painting                      | 20- dolls                       |
| 7- doll bed and cradle           | 21- paster and paper            |
| 8- sink and stove                | 22- magnets                     |
| 9- board games                   | 23- little cars                 |
| 10- scissors, paper, crayons     | 24- bristle blocks              |
| 11- tinker toys                  | 25- lego                        |
| 12- books                        | 26- pegs and peg board          |
| 13- telephone                    | 27- cash register               |
| 14- magnetic letters and numbers | 28- unoccupied                  |



- |                                 |   |
|---------------------------------|---|
| 29- Fischer-Price little people | 37- tools                                 |
| 30- kitchen table               | 38- weaving                               |
| 31- record player               | 39- conversation                          |
| 32- watching others             | 40- sewing cards                          |
| 33- stapler                     | 41- pretend                               |
| 34- puppets                     | 42- purse, costumes, dress<br>up, make-up |
| 35- beads                       | 43- other                                 |
| 36- stuffed animals             |   |

## Appendix A-3

The Fourteen Verbal Forms of Requests

**Direct requests** - requests phrased in imperative form without semantic softeners such as 'please' or 'OK' eg. Give me the ball.

**Direct requests plus tags** - requests phrased in imperative form with rising intonation of question, or semantic softeners such as 'please' or 'OK' eg. Give me the ball, OK?

**Embedded imperatives I** - requests phrased as questions containing modal verbs such as "could you", "would you", "will you". These requests reference sincerity conditions (Gordon & Lakoff) but make explicit reference to the desired goal and the agent to accomplish this goal eg. Could you give me the ball?

**Embedded imperatives II** - requests phrased as interrogatives questioning the other person's desire to accomplish a certain goal eg. Do you want to play ball?

**Need statements** - requests phrased as declaratives containing 'need' or 'want' as verbs eg. I want the ball; I need the ball.

**Permission directives** - requests phrased as interrogatives in which the child asks permission as a means of gaining the desired goal eg. May I have the ball?

**Hints** - requests in which neither the goal of the request or the agent is made explicit, but that the other partner understands as a request eg. That's enough (to mean stop)

**Assertions** - requests made indirectly by asserting ones own rights which would necessitate an action on the part of the listener. Form is usually declarative eg. It's my turn (implying that it was not the other person's turn so that he should allow the speaker to proceed).

**Pretend imperatives** - requests expressed in imperative form and containing the verb 'pretend' eg. Pretend this is my car.

**Declaratives I** - requests expressed in declarative form in which the desired goal and agent are made explicit eg. You have to be the baby.

**Declaratives II** - requests expressed in declarative form in which the desired goal and agent is made explicit but the agent is 'we' in contrast to 'you' as in Declarative I eg. We have to feed the dog (The intention is to get the other person to perform the desired activity in this case feed the dog).

**Suggestions** - requests expressed in the form Let's do X eg. Let's play ball.

**Threats** - requests expressed by threatening an aversive state of affairs if the other fails to comply with the desired behavior eg. If you don't give me the ball, I won't let you come to my birthday party.

**Counterassertions** - requests expressed as exclamations eg. "Don't" stated with forceful intonation and high pitch.

## Appendix A-4

Percentage of Each Verbal Form of RequestsRecorded by Only One Observer

Direct Requests	19.9%	( 649 )
DR + Tags	36.6%	( 41 )
Embedded Imperatives I	26.1%	( 46 )
Embedded Imperatives II	24.6%	( 69 )
Need Statements	49.4%	( 83 )
Permission Directives	22.7%	( 88 )
Hints	20.6%	( 68 )
Assertions	31.7%	(145)
"Pretend"	33.3%	( 24 )
Declaratives I	33.3%	(153)
Declaratives II	39.9%	( 81 )
Suggestions	33.3%	( 90 )
Threats	43.8%	( 16 )
Counterassertions	28.6%	(217)

Note. Numbers in brackets refer to the raw frequency of each verbal form both consensual plus disagreement.

(table continues)

Percentage of Four Verbal Form Categories Recorded

by Only One Observer and the Number of Each

Form Retained at Each Age Level

Group	Verbal Form							
	DR		IR		A		CA	
	%	<sup>a</sup> #	%	#	%	#	%	#
Younger	36.5	219	38.9	162	31.9	47	31.4	72
Older	29.1	297	32.5	222	30.2	44	30.3	76

## Appendix A-5

Percent Agreement Between Observers  
on Social Influence Data Collection  
(Consensual Data)

Age of subjects

Observational Category	3 yr	5yr	Overall Ss
Verbal Form	97.16	94.58	95.87
Success	91.93	93.90	92.91
Maintenance	82.39	88.99	85.69
Success of Verbal Form	88.71	89.11	88.91
Goals	91.83	92.72	92.28

## Appendix A-6

Percent Agreement Between Coders in the Assignment  
of Verbal Form Codes Prior to Discussion

<u>Verbal Form</u>	<u>% Agreement</u>
Direct Requests	91%
Direct Requests + tag	100%
Embedded Imperatives I	80%
Embedded Imperatives II	86%
Need Statements	100%
Permission Directives	85%
Hints	50%
Assertions	79%
Declaratives I	100%
Declaratives II	46%
Suggestions	100%

## Appendix A-7

Social Influence Hierarchy Coding Sheet

Observer: \_\_\_\_\_ Date: \_\_\_\_\_ Class: \_\_\_\_\_

Area: \_\_\_\_\_

Children in Quadrant: \_\_\_\_\_

Leads Peer Positive

Successful

Initiator Succ Target

Leads Peer Positive

Unsuccessful

Initiator Succ Target

Leads Peer Negative

Successful

Initiator Succ Target

Leads Peer Negative

Unsuccessful

Initiator Succ Target



## Appendix A-8

Social Influence Hierarchy Observation Manual

Goal: The aim of this observational approach is to gain as much information as possible concerning the relative success of classmates in directing the behavior of their peers.

Observational technique: This data is collected by an observational scan technique in which each classroom is divided into quadrants and each quadrant is observed sequentially for a 3-minute time period. If no children occupy the quadrant slated for observation the observer moves onto the next quadrant and returns to the quadrant following the 3-minute time period if children are then engaged in play in the area.

Definition of "Attempts to direct the behavior of peers": All verbal and nonverbal attempts to direct the behavior of a peer are included. These attempts could take the form of leadership behavior in terms of one child suggesting or directing the course of play, or might include attempts by the child to get another classmate to imitate his behavior by setting himself up as a model. If a particular child's behavior is spontaneously imitated by another, that child is considered to have lead the behavior of the other child. As well, a child's attempt to gain a toy from a peer is considered an attempt at directing the behavior of another child.

In addition to positively toned attempts to direct the behavior of others, all strongly worded commands showing hostility are included in this behavioral category with the exception of physical aggression such as hitting or verbal abuse such as name-calling.

All attempts to direct others can occur as initiation attempts or

as part of an ongoing social interaction.

Elements of "Attempts to direct the behavior of peer" to be noted:

- 1) the quadrant in which the observation takes place is recorded at the top of the observation sheet as well as names of the children in the quadrant
- 2) the name of the child making the attempt
- 3) the name of the child who was the target of the attempt
- 4) the success of the attempt
- 5) the tone of the attempt positive or negative

With the exception of writing the name of the child who made the influence attempt and the name of the target, all other elements to be noted are coded by putting a tick under one of the four possible categories: 1) leads peer positive successful

- 2) leads peer positive unsuccessful
- 3) leads peer negative successful
- 4) leads peer negative unsuccessful

Example: If Jane is successful in obtaining a toy from John using a positive tone, this behavior would be coded in the left upper box of the coding sheet as follows:

Leads Peer Positive Successful		
Initiator	Succ	Target
Jane	X	John

Decision Rules if more than one attempt to direct the behavior of peers occurs simultaneously:

- 1) choose the influence attempt occurring in the largest group of children interacting in the quadrant.
- 2) if the groups are of the same size select the group closest to the observer.

## Appendix A-9

Teacher Ranking of Leadership Form

Directions: Please assign a number from 1 to N (number of children in class) for each child according to the extent to which the child leads his peers in the following ways:

- 1- successfully obtains desired toys in nonaggressive ways
- 2- decides on the course of activities or games
- 3- succeeds in getting others to do as he/she wishes by  
nonaggressive means

A '1' is placed beside the name of the child who displays the most leadership relative to his peers. The largest number is assigned to the child who is the lowest in terms of his leadership status in the class.

Alphabetical List of StudentsRank

a

b

c

d

e

f

g

h

i

j

k

l

m

## Appendix A-10

Teacher Ranking of Popularity

Directions: Please assign a number from 1 to N (number of children in the class) for each child according to the extent to which the child is popular and sought after by classmates. Popularity is to be based on the following criteria:

- 1- the child is sought after by many children to be partner, or to be sat beside at snack time
- 2- the child is sought as a playmate often and readily included in games

A '1' is placed beside the name of the most popular child and an 'N' is assigned to the least popular child.

Alphabetical ListRanking

a

b

c

d

e

f

g

h

i

j

k

l

m

n

Appendix A-11Cognitive Role-Taking Task"Flavell Birthday Gift" Selection

The child was seated at a low table and was first presented with each object individually and asked to name it. If the child could not name the object, the experimenter told him/her the name and probed to determine that the child understood its use. The objects were: a pair of men's socks, a necklace, a pair of pantyhose, an adult pocketbook, a toy pocket car, a ball, playdough, nail polish, and tie.

After each object had been named, they were all placed on the table facing the child. The child was then asked to pretend that "we are in a store" and that he/she was to select from the objects in front of him/her a birthday gift for his/her "mummy". After selecting an object, the child was verbally reinforced, and the object was replaced. He/she was then asked to select a present for his/her "daddy". After making his selection, the chosen gift was also replaced and the same selection procedure was repeated for "your teacher" for "your brother or sister" and for "yourself". If the child did not have any siblings he was asked to select a gift for a little boy or a little girl for male and female children respectively.

Scoring: One point was assigned for each age- and sex-appropriate gift selection. Range 0 to 5.

## Appendix A-12

Urberg and Docherty Affective Role-Taking Task

## Procedure and Instructions:

Prior to the administration of the three story sequences, the child was first presented with different pictures of a child's face on 8 1/4" X 11" sheets of paper. Each picture portrayed a different emotional state - happy, sad, mad, and afraid - and the child was requested to "tell me how this little (boy/girl) feels". If the child was unable to identify the emotions the examiner provided him with the answer. All subjects were presented with pictures of same-sex children.

Story 1. The examiner presented the first picture and said "Here you are with a bag of your favorite candy". The second picture was then shown and the examiner said, "Now another child has found your bag of candy and is eating them all up. How do you feel? Do you feel happy, sad, mad or afraid?" The examiner then waited for the child to respond. After stating how he/she would feel, the examiner then pointed to the other child in the picture and said "How does this child feel? Happy, sad, mad or afraid?". After the child had replied the examiner asked "Why does he/she feel \_\_\_\_\_?".

Story 2. The examiner presented the first picture and said "You and your friend are playing a game together." The second picture was then presented and the examiner said, "Now your friend has won the game. How do you feel? Do you feel happy, sad, mad or afraid?" After the child has responded to this question, he/she was asked "Why do you feel \_\_\_\_\_?". The examiner then pointed to the other child in the picture and asked about that child's feelings and why he/she would be feeling that way.

Story 3. The examiner presented the first picture to the child and said, "You and your friend both want the same ball to play with". The second picture was then presented and the examiner said, "Now the teacher gives the ball to you. How do you feel? Do you feel happy, sad, mad or afraid?". When the child responded, he was asked to justify his answers as in the previous stories. The examiner then pointed to the other child in the picture and asked how he/she felt, and why he/she felt that way.

#### Scoring.

For each story, one point was awarded for correctly identifying the emotional state of the first child and another point was awarded for providing an adequate explanation of that feeling. A third point was given if the emotional state of the second child was correctly identified and a final point was given if the child provided an adequate explanation for that feeling. The labelling of the emotional state and the adequacy of the explanation were judged in terms of the story content.

In Story 1, the correct answer for the first child was "mad" and the correct answer for the second child was "happy". Adequate justification for the emotions required that the subject refer to the loss or gain of the candies as the cause of the emotional states. In story 2, the correct answer for the first child was "sad" and for the second child was "happy". Adequate justification of the emotions required that the subject refer to the outcome of the game as the cause of the emotions in the two children. In story 3, the correct answer for the first child was "happy", and the correct answer for the second child was "sad". Adequate justification of the emotions

required that the child refer to the outcome of the teacher's intervention as the cause of the children's emotions.



## Appendix A-13

DeVries Hide-A-Penny Task

Name: \_\_\_\_\_

Date: \_\_\_\_\_

	<u>L/R</u>	<u>Comments</u>
<u>Guessing Trials</u>	1.	
	2.	
	3.	
	4.	
	5.	
	6.	
	7.	
	8.	
	9.	
	10.	
	11.	
<u>Hiding Trials</u>	1.	
	2.	
	3.	
	4.	
	5.	
	6.	
	7.	
	8.	
	9.	
	10.	
	11.	

Scoring: Circle Appropriate P (pass) or F (fail) for each item.

- |  |   |   |
|--|---|---|
| 1. attempts to hide penny                              | P | F |
| 2. does not always hide penny in same hand             | P | F |
| 3. changes the hand containing penny<br>more than once | P | F |
| 4. makes at least one appropriate hiding<br>attempt    | P | F |
| 5. does not always guess the same hand                 | P | F |
| 6. changes the hand guessed more than once             | P | F |
| 7. almost always hides the penny correctly             | P | F |
| 8. displays competitive attitude                       | P | F |
| 9. uses a shifting hiding strategy                     | P | F |
| 10. uses a shifting guessing strategy                  | P | F |

Total Score: \_\_\_\_\_

## Appendix A-14

DeVries Hide-A-Penny Task

The experimenter introduced the game to the child by saying "Let's play a different game. I'm going to hide a penny in one of my hands. Let's see if you can guess which hand the penny is in." The experimenter continued this procedure for 11 trials. On the first 6 trials the child was always correct in his/her guess as the experimenter had hidden a penny in each hand. On trials 7 through 10 the child received negative reinforcement since the experimenter had not hidden a penny in her hand but had left it concealed on the back of her chair. On the final trial the child was once more successful. The experimenter recorded an 'L' or 'R' on the coding sheet after each guessing trial to indicate whether the child had guessed the penny was in the experimenter's left or right hand respectively.

On the second portion of the task, the child was invited to take the role of "hider". "Now it's your turn to hide the penny and my turn to see if I can guess which hand you hid it in". The child was given 11 opportunities to hide the penny and the experimenter attempted to guess the wrong hand on the first 6 trials, the correct hand on the following 4 and the incorrect hand on the final trial. This guessing pattern was made possible by the positioning of a mirror on a chair behind the child. After each hiding attempt of the child, the experimenter recorded in which hand the child had concealed the penny. In addition, notes were made of any unusual ways of hiding the penny or displaying fists for the experimenter to guess. For example, some of the children put the fist containing the penny in a more or less prominent position relative to the examiner. A few children

tricked the examiner by concealing the penny in their pocket or behind them on the chair. At the end of the task administration, the experimenter noted the attitude of the child to the task and whether or not the child wanted the experimenter to guess the correct location of the penny when the child was "hider".

## Appendix A-15

Pearson Correlations Between the 14 Verbal Influence Forms

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														

-.211\*

-.303\* -.330\*

-.272\*

.210\*

-.227\*

-.245\*

.233\*

-.285\*

-.233\*

-.280\*

.255\*

.239\* -.365\*

-.268\*

Note. Only significant correlations are included in this table to improve readability.

## Appendix A-16

Multivariate Analysis of Variance Summary Table:Effect of Class Membership, Age and Sex on the RelativeFrequency of the Four Verbal Request FormsClass Membership

## Younger Males

Multivariate  $F(4,11) = 2.170$ Univariate  $F$ 's (1,14)

	<u>MS</u>	<u>F</u>
DR	.091	1.588
IR	.268	1.526
A	.306	2.742
CA	.319	2.045

Error

	<u>SS</u>	<u>MS</u>
DR	.806	.058
IR	2.457	.175
A	1.564	.112
CA	2.186	.156

## Younger females

Multivariate  $F(4,11) = 2.320$ Univariate  $F$ 's (1,14)

	<u>MS</u>	<u>F</u>
DR	1.936	4.722*
IR	.019	.050
A	1.356	5.582*
CA	.028	.091

(table continues)

214

ErrorMSF

DR

5.739

.410

IR

5.318

.380

A

3.400

.243

CA

4.244

.303

## Older males

Multivariate  $F(4,11) = .638$ Univariate  $F$ 's (1,14)MSF

DR

.378

1.429

IR

.014

.064

A

.213

1.499

CA

.327

1.532

ErrorMSF

DR

3.702

.264

IR

3.067

.219

A

1.989

.142

CA

2.934

.213

## Older females

Multivariate  $F(4,11) = .555$ Univariate  $F$ 's (1,14)MSF

DR

.398

1.907

IR

.061

.139

A

.301

.532

CA

.000

.002

(table continues)

ErrorSSMS

DR

2.924

.209

IR

6.139

.439

A

7.933

.567

CA

3.705

.265

 $*p < .05$



**Appendix B****Analysis of Variance Summary Tables**

Table B-1

Analysis of Variance Summary Table: Effects of Age.Sex and Status of Subject on the Rate of Influence Attempts

Source of Variation	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Main effects	490.797	3	163.599	3.687*
Age	178.891	1	178.891	4.032*
Sex	310.641	1	310.641	7.001**
Status of Subject	1.266	1	1.266	.029
2-Way Interactions	15.547	3	5.182	.117
Age X Sex	15.016	1	15.016	.338
Age X Status of Subject	.391	1	.391	.009
Sex X Status of Subject	.141	1	.141	.003
3-Way Interactions	.766	1	.766	.017
Age X Sex X Status of Subject	.766	1	.766	.017
Explained	507.109	7	72.444	1.633
Residual	2484.625	56	44.368	
Total	2991.734	63	47.488	

\*  $p < .05$ . \*\*  $p < .01$ .

Table B-2

Multivariate Repeated Measures Analysis of Variance Summary Table:Effects of Age, Sex, Status of Subject, Sex of Target,and Status of Target on the Frequency of Requests

Source of Variation	df	MS	F
Between			
Age (A)	1	46.410	4.092*
Sex (B)	1	67.035	5.911*
Status of Subject (C)	1	1.410	.124
AB	1	7.910	.697
AC	1	.191	.017
BC	1	.004	.000
ABC	1	.035	.003
Error Between	56	11.341	
Within			
Sex of Target (D)	1	96.285	10.098** t
AD	1	26.910	2.822
BD	1	299.723	31.433***
CD	1	3.285	.345
ABD	1	32.348	3.392 t
ACD	1	1.129	.118

(table continues)

	<u>df</u>	<u>MS</u>	<u>F</u>
BCD	1	6.566	.689
ABCD	16	.035	.004
Error Within	56	9.535	
Status of Target (E)	1	.879	.123
AE	1	5.941	.828
BE	1	.473	.066
CE	1	5.941	.828
ABE	1	.473	.066
ACE	1	21.973	3.063
BCE	1	.004	.001
ABCE	1	2.848	.397
Error Within	56	7.174	
DE	1	25.629	3.860*
ADE	1	.004	.001
BDE	1	.660	.099
ABDE	1	1.723	.259
CDE	1	.191	.029
ACDE	1	10.973	1.652
BCDE	1	30.941	4.660*
ABCDE	1	.3.285	.495
Error Within	56	6.640	

$p < .10$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Table B-3

Multivariate Analysis of Variance Summary Table:Effects of Age, Sex, and Status of Subjecton the Verbal Form of RequestsAgeMultivariate  $F(4,53) = 2.045$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
DR	70.141	5.727*
IR	39.063	4.401*
A	.141	.095
CA	.250	.111

SexMultivariate  $F(4,53) = 2.387$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
DR	112.891	9.127**
IR	5.063	.570
A	.391	.264
CA	5.063	2.241

Status of SubjectMultivariate  $F(4,53) = .123$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
DR	2.641	.216

(table continues)

221

IR	.563	.063
A	.141	.095
CA	.250	.111

Age X SexMultivariate  $F(4,53) = 1.399$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
DR	26.266	2.145
IR	3.063	.345
A	1.266	.855
CA	1.000	.443

Age X Status of SubjectMultivariate  $F(4,53) = .606$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
DR	1.266	.103
IR	5.063	.570
A	.391	.264
CA	1.563	.692

Sex X Status of SubjectMultivariate  $F(4,53) = .338$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
DR	.016	.001
IR	1.563	.176

(table continues)

A	.141	.095
CA	2.250	.996

Age X Sex X Status of SubjectMultivariate  $F(4,53) = .743$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
DR	.766	.063
IR	3.063	.345
A	1.266	.855
CA	3.063	1.358

Error (df=56)

	<u>SS</u>	<u>MS</u>
DR	685.875	12.248
IR	497.000	8.875
A	82.875	1.480
CA	126.500	2.259

<sup>t</sup>  
 $p < .10$ . \* $p < .05$ . \*\* $p < .005$ .

Table B-4

Multivariate Repeated Measures Analysis of Variance Summary Table:

Effects of Age, Sex, Status of Subject, Sex of Target and  
Status of Target on the Frequency of the Four Verbal Forms

## Within Effects

Sex of TargetMultivariate  $F(4,53) = 3.63$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
DR	32.348	3.63**
IR	1.723	11.40***
A	.063	1.03
CA	2.848	4.57*

Age X Sex of TargetMultivariate  $F(4,53) = 2.63^*$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
DR	20.816	7.34***
IR	.004	.00
A	.063	.31
CA	.316	.51

Status of Subject X Sex of TargetMultivariate  $F(4,53) = .30$ 

(table continues)



224

Univariate F's (1,56)

	<u>MS</u>	<u>F</u>
DR	.473	.17
IR	1.723	1.03
A	.063	.31
CA	.004	.01

Sex X Sex of TargetMultivariate F (4,53) = 8.30\*\*\*Univariate F's (1,56)

	<u>MS</u>	<u>F</u>
DR	57.191	20.15***
IR	21.973	13.18***
A	2.641	13.07***
CA	4.785	7.68**

Age X Status of Subject X Sex of TargetMultivariate F (4,53) = 1.18Univariate F's (1,56)

	<u>MS</u>	<u>F</u>
DR	.473	.17
IR	2.441	1.46
A	.563	2.76
CA	.004	.01

(table continues)

Age X Sex X Sex of TargetMultivariate  $F(4,53) = 1.66$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
DR	4.785	1.69
IR	10.973	6.58*
A	.016	.08
CA	.098	.16

Status of Subject X Sex X Sex of TargetMultivariate  $F(4,53) = .34$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
DR	1.723	.61
IR	.879	.53
A	.141	.70
CA	.191	.31

Age X Sex X Status of Subject X Sex of TargetMultivariate  $F(4,53) = .26$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
DR	.035	.01
IR	.191	.11
A	.141	.70
CA	.098	.16

(table continues)

Error	<u>SS</u>	<u>MS</u>
DR	158.906	2.838
IR	93.344	1.667
A	11.313	.202
CA	34.906	.623

Status of TargetMultivariate F (4,53) = .92

Univariate <u>F</u> 's (1,56)	<u>MS</u>	<u>F</u>
DR	.098	.06
IR	.035	.03
A	.391	1.79
CA	1.129	1.85

Age X Status of TargetMultivariate F (4,53) = .61

Univariate <u>F</u> 's (1,56)	<u>MS</u>	<u>F</u>
DR	.097	.06
IR	2.066	1.68
A	.391	1.79
CA	.004	.01

(table continues)

Status of Subject X Status of TargetMultivariate  $F(4,53) = .99$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
DR	.004	.00
IR	1.410	1.15
A	.766	3.52 <sup>t</sup>
CA	.316	.52

Sex X Status of TargetMultivariate  $F(4,53) = .19$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
DR	.879	.52
IR	.098	.08
A	.000	.00
CA	.035	.06

Age X Status of Subject X Status of TargetMultivariate  $F(4,53) = .87$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
DR	3.285	1.94
IR	2.066	1.68
A	.391	1.79
CA	.098	.16

(table continues)

Age X Sex X Status of TargetMultivariate  $F(4,53) = 1.29$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
DR	.004	.00
IR	.473	.38
A	.563	2.56
CA	.316	.52

Status of Subject X Sex X Status of TargetMultivariate  $F(4,53) = 1.01$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
DR	2.066	1.22
IR	2.066	1.68
A	.063	.29
CA	.098	.16

Age X Status of Subject X Status of TargetMultivariate  $F(4,53) = .75$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
DR	1.410	.83
IR	.191	.16
A	.250	1.15
CA	.098	.16

(table continues)

229

Error	<u>SS</u>	<u>MS</u>
DR	94.906	1.695
IR	68.844	1.229
A	12.188	.218
CA	34.156	.610

Sex of Target X Status of TargetMultivariate  $F(4,53) = 1.65$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
DR	5.941	4.10*
IR	1.129	.88
A	.000	.00
CA	2.441	3.55 <sup>t</sup>

Age X Sex of Target X Status of TargetMultivariate  $F(4,53) = .33$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
DR	.004	.00
IR	.191	.15
A	.250	1.08
CA	.004	.01

(table continues)

Status of Subject X Sex of Target X Status of TargetMultivariate  $F(4,53) = .74$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
DR	1.410	.97
IR	.879	.68
A	.063	.27
CA	.004	.01

Sex X Sex of Target X Status of TargetMultivariate  $F(4,53) = .27$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
DR	.098	.07
IR	.316	.25
A	.141	.61
CA	.098	.14

Age X Status of Subject X Sex of Target X Status of TargetMultivariate  $F(4,53) = 1.93$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
DR	.191	.13
IR	.004	.00
A	1.563	6.76*
CA	1.723	2.50

(table continues)

Age X Sex X Sex of Target X Status of TargetMultivariate  $F(4,53) = 1.52$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
DR	1.410	.97
IR	.473	.37
A	.766	3.31 <sup>t</sup>
CA	.004	.01

Status of Subject X Sex X Sex of Target X Status of TargetMultivariate  $F(4,53) = 1.34$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
DR	5.348	3.69 <sup>t</sup>
IR	2.848	2.21
A	.141	.61
CA	1.723	2.50

Age X Status of Subject X Sex X Sex of Target X Status of TargetMultivariate  $F(4,53) = .83$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
DR	.191	.13
IR	.191	.15
A	.141	.61
CA	1.723	2.50

(table continues)



232

Error

SSMS

DR

81.156

1.449

IR

72.219

1.290

A

12.938

.231

CA

38.531

.688

t  
p<.10. \*p<.05. \*\*p<.01. \*\*\*p<.001.

Table B-5

Multivariate Analysis of Variance Summary Table:  
Effects of Age, Sex, and Status of Subject on the Relative  
Frequency of the Four Verbal Request Forms

AgeMultivariate  $F(4,53) = 1.612$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
DR	.272	.116
IR	.304	3.625 <sup>t</sup>
A	.297	.246
CA	.229	1.356

SexMultivariate  $F(4,53) = 1.048$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
DR	.210	.772
IR	.027	.088
A	.539	1.813
CA	.657	2.865 <sup>t</sup>

(table continues)

Status of SubjectMultivariate  $F(4,53) = .694$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
DR	.298	1.095
IR	.029	.094
A	.123	.415
CA	.038	.165

Age X SexMultivariate  $F(4,53) = 1.039$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
DR	.431	1.584
IR	.990	3.262
A	.034	.113
CA	.037	.163

Age X Status of SubjectMultivariate  $F(4,53) = .430$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
DR	.363	1.333
IR	.184	.605
A	.006	.019
CA	.071	.310

(table continues)

Sex X Status of SubjectMultivariate  $F(4,53) = .469$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
DR	.000	.000
IR	.018	.060
A	.285	.960
CA	.009	.038

Age X Sex X Status of SubjectMultivariate  $F(4,53)$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
DR	.059	.216
IR	.108	.355
A	.010	.034
CA	.840	3.663 <sup>t</sup>

Error

	<u>SS</u>	<u>MS</u>
DR	15.254	.272
IR	17.004	.304
A	16.638	.297
CA	12.835	.229

Note. Analysis based on the arcsin of the proportion of each verbal form  
<sup>t</sup>  
 $p < .10$ .

Table B-6

Multivariate Repeated Measures Analysis of VarianceSummary Table: Effects of Age, Sex, Status of Subject,and Sex of Target on the Relative Frequency ofthe Four Verbal Forms

## Within Effects

Sex of TargetMultivariate  $F(4,37) = 3.501^*$ Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
DR	.000	.000
IR	.187	.327
A	.003	.014
CA	.534	.764

Age X Sex of TargetMultivariate  $F(4,37) = .818$ Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
DR	.161	.255
IR	.419	.731
A	.074	.391
CA	.002	.003

(table continues)

Sex X Sex of TargetMultivariate  $F(4,37) = 3.299^*$ Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
DR	.220	.348
IR	.259	.451
A	1.386	7.298**
CA	.025	.035

Status of Subject X Sex of TargetMultivariate  $F(4,37) = .077$ Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
DR	.081	.129
IR	.052	.091
A	.006	.029
CA	.000	.000

Age X Sex X Sex of TargetMultivariate  $F(4,37) = 2.546^t$ Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
DR	3.192	5.060*
IR	1.500	2.615
A	.013	.071
CA	1.173	1.679

(table continues)

Age X Status of Subject X Sex of TargetMultivariate  $F(4,37) = 1.286$ Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
DR	.000	.000
IR	1.040	1.814
A	.556	2.929 <sup>t</sup>
CA	.387	.554

Sex X Status of Subject X Sex of TargetMultivariate  $F(4,37) = .770$ Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
DR	.711	1.127
IR	.455	.793
A	.001	.004
CA	.044	.063

Age X Sex X Status of Subject X Sex of TargetMultivariate  $F(4,37) = 1.158$ Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
DR	.486	.771
IR	.334	.583
A	.540	2.844 <sup>t</sup>
CA	.012	.016

(table continues)

Note. Analysis is based on arcsins of proportions of requests with each verbal form.

<sup>t</sup>  
 $p < .10$ . \* $p < .05$ . \*\* $p < .01$ .



Table B-7

Multivariate Repeated Measures Analysis of Variance  
Summary Table: Effects of Age, Sex, Status of Subject,  
and Status of Target on the Relative Frequency  
of the Four Verbal Forms

## Within Effects

Status of TargetMultivariate  $F(4,37) = 1.13$ Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
DR	.131	.21
IR	.006	.01
A	.065	.16
CA	1.447	2.51

Age X Status of TargetMultivariate  $F(4,37) = .05$ Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
DR	.047	.08
IR	.038	.09
A	.026	.06
CA	.004	.01

(table continues)

Status of Subject X Status of TargetMultivariate  $F(4,37) = .35$ Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
DR	.281	.45
IR	.005	.01
A	.167	.41
CA	.226	.39

Sex X Status of TargetMultivariate  $F(4,37) = .32$ Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
DR	.176	.29
IR	.097	.23
A	.004	.01
CA	.261	.45

Age X Status of Subject X Status of TargetMultivariate  $F(4,37) = .26$ Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
DR	.515	.83
IR	.052	.12
A	.255	.63
CA	.033	.06

(table continues)

Age X Sex X Status of TargetMultivariate  $F(4,37) = .92$ 

Univariate $F$ 's (1,40)	<u>MS</u>	<u>F</u>
DR	.124	.20
IR	.193	.46
A	1.364	3.38 <sup>t</sup>
CA	.030	.05

Sex X Status of Subject X Status of TargetMultivariate  $F(4,37) = 2.00$ 

Univariate $F$ 's (1,40)	<u>MS</u>	<u>F</u>
DR	2.969	4.81*
IR	1.858	4.45*
A	.038	.09
CA	.006	.01

Age X Sex X Status of Subject X Status of TargetMultivariate  $F(4,37) = .84$ 

Univariate $F$ 's (1,40)	<u>MS</u>	<u>F</u>
DR	.120	.19
IR	.504	1.21
A	.785	1.95
CA	.210	.36

(table continues)

243

Error	<u>SS</u>	<u>MS</u>
DR	24.714	.618
IR	16.717	.418
A	16.138	.403
CA	23.062	.577

Note. Analysis is based on arcsin proportions of requests with each verbal form.

<sup>t</sup>  
 $p < .10$ . \* $p < .05$ .

Table B-8

Frequency Distribution of Dyadic Requestsas a Function of Age of Dyad

Group	Dyadic Request Frequency	Number of Dyads
Younger	0	152
	1	39
	2	23
	3	15
	4	9
	5	4
	6	1
	7	2
	8	1
	10	1
	12	1
	19	1
Total possible dyads		249
Older	0	113
	1	53
	2	24
	3	12
	4	7

(table continues)

**Dyadic Request Frequency      Number of Dyads**

5	4
6	3
7	3
8	1
9	1
10	2
12	1
13	1

**Total possible dyads****225**

Table B-9

Repeated Measures Analysis of Variance Summary Table:  
Effects of Age and Status of Subject Relative to  
Target on the Frequency of Directives

## Source of Variation

<u>Between Effect</u>	<u>MS</u>	<u>df</u>	<u>F</u>
Age	.027	1	.01
Error Between	3.381	135	

Within Effects

## Status of Subjects

Relative to Target	154.533	1	105.84***
--------------------	---------	---	-----------

## Age X Status of

## Subject Relative to

Target	.023	1	.02
--------	------	---	-----

Error Within	1.460	135	
--------------	-------	-----	--

\*\*\*  $p < .001$ .

Table B-10

Multivariate Repeated Measures Analysis of VarianceSummary Table: Effect of Age and Status of SubjectRelative to Target on the Frequency of DRs and IRs

## Between Effect

AgeMultivariate  $F(2,134) = .53$ Univariate  $F$ 's (1,135)

	<u>MS</u>	<u>F</u>
DR	.779	.89
IR	.003	.00

## Within Effects

Relative Status of Dyad MemberMultivariate  $F(2,134) = 38.78^{***}$ Univariate  $F$ 's (1,135)

	<u>MS</u>	<u>F</u>
DR	30.443	63.13***
IR	14.114	32.39***

Age X Relative Status of Dyad MemberMultivariate  $F(2,134) = 1.49$ Univariate  $F$ 's (1,135)

	<u>MS</u>	<u>F</u>
DR	1.012	2.10
IR	.143	.33

\*\*\*  $p < .001$ .



Table B-11

Analysis of Variance Summary Table: Effect of Age,  
Sex, and Status of Subject on the Success of Requests

<u>Source of Variation</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Age (A)	1	.671	1.190
Sex (B)	1	.053	.156
Status of Subject (C)	1	.012	.037
AB	1	.503	1.493
AC	1	.082	.243
BC	1	.154	.457
ABC	1	.066	.195
Error Between	56	.337	

Table B-12

Repeated Measures Analysis of Variance Summary

Table: Effect of Age, Sex, Status of Subject and  
Sex of Target on the Success of Influence Attempts

<u>Between Effects</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Age (A)	1	.107	.379
Sex (B)	1	.636	2.255
Status of Subject (C)	1	.001	.003
AB	1	.008	.030
AC	1	.005	.016
BC	1	.002	.007
ABC	1	.054	.191
Error Between	40	.282	
<u>Within Effects</u>			
Sex of Target (D)	1	.082	.185
AD	1	2.662	6.022*
BD	1	.000	.001
CD	1	.735	1.661
ABD	1	.159	.360
ACD	1	.504	1.140
BCD	1	.221	.500

(table continues)

	<u>df</u>	<u>MS</u>	<u>F</u>
ABCD	1	.124	.280
Error Within	40	.442	

\*  $p < .05$ .

Table B-13

Repeated Measures Analysis of Variance SummaryTable: Effect of Age, Sex, Status of Subject and  
Status of Target on the Success of Influence AttemptsBetween Effects

	<u>df</u>	<u>MS</u>	<u>F</u>
Age (A)	1	.125	.527
Sex (B)	1	.172	.728
Status of Subject (C)	1	.030	.125
AB	1	.120	.506
AC	1	.205	.865
BC	1	.014	.061
ABC	1	.004	.016
Error Between	40	.237	

Within Effects

Sex of Target (D)	1	1.821	2.56
AD	1	.001	.00
BD	1	.737	1.04
CD	1	.024	.03
ABD	1	.055	.08
ACD	1	1.413	1.99

(table continues)

	<u>df</u>	<u>MS</u>	<u>F</u>
BCD	1	1.184	1.67
ABCD	1	.637	.90
Error Within	40	.711	

Table B-14

Number of Children Making Each Verbal Request and Mean  
Proportion Successfulness According to  
Age, Sex and Status of Child

Proportion Successful According to Verbal Form				
Experimental Group	DR	IR	A	CA
Younger				
HM	<sup>e</sup> .643 (.178)	<sup>e</sup> .582 (.437)	<sup>b</sup> .500 (.577)	<sup>f</sup> .688 (.458)
LM	<sup>e</sup> .776 (.278)	<sup>d</sup> .615 (.207)	<sup>a</sup> .333 (.577)	<sup>c</sup> .950 (.112)
HF	<sup>e</sup> .859 (.197)	<sup>d</sup> .806 (.179)	<sup>a</sup> .500 (.500)	<sup>b</sup> .875 (.250)
LF	<sup>f</sup> .856 (.189)	<sup>d</sup> .875 (.209)	<sup>c</sup> .767 (.325)	<sup>c</sup> .950 (.112)
Older				
HM	<sup>a</sup> .782 (.186)	<sup>f</sup> .479 (.361)	<sup>c</sup> .500 (.500)	<sup>b</sup> .917 (.167)
LM	<sup>e</sup> .768 (.186)	<sup>f</sup> .587 (.419)	<sup>b</sup> .688 (.473)	<sup>e</sup> .679 (.473)
HF	<sup>f</sup> .734 (.242)	<sup>f</sup> .662 (.252)	<sup>c</sup> .667 (.471)	<sup>c</sup> 1.000 (0)
LF	<sup>d</sup> .711 (.393)	<sup>e</sup> .549 (.322)	<sup>b</sup> .750 (.500)	<sup>b</sup> .917 (.167)
a	b	c	d	e
n=3.	n=4.	n=5.	n=6.	n=7.
				n=8.

Table B-15

Multivariate Analysis of Variance Summary Table:  
Effect of Age, Sex, and Status of Subject on the  
Success of the Verbal Request Forms

AgeMultivariate  $F(2,39) = .341$ Univariate  $F$ 's (1,40)

SDR

MSF

.088

.174

SIR

.566

.651

SexMultivariate  $F(2,39) = 2.016$ Univariate  $F$ 's (1,40)

SDR

MSF

.280

.551

SIR

3.547

4.077\*

Status of SubjectMultivariate  $F(2,39) = .570$ Univariate  $F$ 's (1,40)

SDR

MSF

.496

.979

SIR

.392

.451

(table continues)

Age X SexMultivariate  $F(2,39) = 2.458$ Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
SDR	2.374	4.682*
SIR	1.099	1.263

Age X Status of SubjectMultivariate  $F(2,39) = .207$ Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
SDR	.164	.323
SIR	.176	.203

Sex X Status of SubjectMultivariate  $F(2,39) = .063$ Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
SDR	.008	.015
SIR	.111	.128

Age X Sex X Status of SubjectMultivariate  $F(2,39) = .363$ Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
SDR	.242	.478
SIR	.093	.107

(table continues)



256.

Error (df=40)MSF

SDR

20.279

.507

SIR

34.804

.870

Note. Analysis is based on arcsins of proportions of verbal request forms that are successful.

t

p&lt;.10. \*p&lt;.05.

Table B-16

Analysis of Variance Summary Table: Effect of Age.Sex and Status of Subject on the Maintenance of Social  
Interaction Following Requests<sup>a</sup>

<u>Source of Variation</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Age (A)	1	.094	.245
Sex (B)	1	1.323	3.451 <sup>t</sup>
Status of Subject (C)	1	.008	.021
AB	1	.196	.511
AC	1	.093	.243
BC	1	.109	.285
ABC	1	.010	.027
Error Between	56	.383	

<sup>a</sup> N=64.<sup>t</sup> p<.10.

Table B-17

Repeated Measure Analysis of Variance Summary Table:  
Effect of Age, Sex, Status of Subject and Sex of Target  
on the Maintenance of Social Interaction Following Requests

<u>Between Effects</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Age (A)	1	.127	.598
Sex (B)	1	.280	1.316
Status of Subject (C)	1	.022	.104
AB	1	.011	.049
AC	1	.006	.028
BC	1	.142	.213
ABC	1	.117	.551
Error Between	40	.213	
<u>Within Effects</u>			
Sex of Target (D)	1	.753	.900
AD	1	.097	.116
BD	1	.030	.036
ABD	1	.919	1.098
ACD	1	.014	.016
BCD	1	.700	.837
ABCD	1	.379	.453
Error Within	40	.837	

Table B-18

Repeated Measures Analysis of Variance SummaryTable: Effect of Age, Sex, Status of Subject and  
Status of Target on the Maintenance of  
Social Interaction following RequestsBetween Effects

	<u>df</u>	<u>MS</u>	<u>F</u>
Age (A)	1	.273	.884
Sex (B)	1	.040	.131
Status of Subject (C)	1	.026	.085
AB	1	.293	.948
AC	1	.077	.249
BC	1	.007	.023
ABC	1	.017	.055
Error Between	40	.309	

Within Effects

Sex of Target (D)	1	.490	.82
AD	1	.450	.75
BC	1	.046	.08
CD	1	1.318	2.20
ABD	1	.013	.02

(table continues)

	<u>df</u>	<u>MS</u>	<u>F</u>
ACD	1	.375	.63
BCD	1	.558	.93
ABCD	1	.060	.10
Error Within	40	.600	

Table B-19

Multivariate Analysis of Variance Summary Table:Effects of Age, Sex and Status of Subject  
on the Goals of RequestsAgeMultivariate  $F(3,54) = 1.960$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
A	5.063	2.930 <sup>t</sup>
TS	4.000	.873
MP	34.516	1.659

SexMultivariate  $F(3,54) = 2.703^*$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
A	1.563	.904
TS	6.250	1.365
MP	123.766	5.947*

Status of SubjectMultivariate  $F(3,54) = .597$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
A	1.563	.904
TS	2.250	.491
MP	6.891	.331

(table continues)

Age X SexMultivariate  $F(3,54) = 1.259$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
A	6.250	3.618 <sup>t</sup>
TS	.563	.123
MP	.016	.001

Age X Status of SubjectMultivariate  $F(3,54) = .209$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
A	.250	.145
TS	1.563	.341
MP	.766	.037

Sex X Status of SubjectMultivariate  $F(3,54) = 1.580$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
A	.250	.145
TS	7.563	1.651
MP	34.516	1.659

Age X Sex X Status of SubjectMultivariate  $F(3,54) = 1.165$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
A	.063	.036

(table continues)

263

	<u>MS</u>	<u>F</u>
TS	12.250	2.674
MP	4.516	217
<u>Error (df=56)</u>	<u>SS</u>	<u>MS</u>
A	96.750	1.728
TS	<del>256</del> .500	4.580
MP	1165.375	20.810

<sup>t</sup> p<.10. \*p<.05.

X



Table B-20

Multivariate Analysis of Variance Summary Table:

Effects of Age, Sex, Status of Subject, Sex of Target and  
Status of Target on the Frequency of Goals of Directives

Within EffectsSex of TargetMultivariate  $F(3,54) = 2.98^*$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
A	.004	.01
TS	4.516	5.76*
MP	22.563	4.71*

Age X Sex of TargetMultivariate  $F(3,54) = .76$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
A	.316	1.06
TS	1.266	1.62
MP	.563	.12

Status of Subject X Sex of TargetMultivariate  $F(3,54) = 1.32$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
A	.660	2.21

(table continues)

265

	<u>MS</u>	<u>F</u>
TS	1.000	1.28
MP	.250	.05

Sex X Sex of TargetMultivariate F (3,54) = 10.95\*\*\*Univariate F's (1,56)

	<u>MS</u>	<u>F</u>
A	1.410	4.72*
TS	14.063	17.95***
MP	95.063	19.85***

Age X Status of Subject X Sex of TargetMultivariate F (3,54) = 1.45Univariate F's (1,56)

	<u>MS</u>	<u>F</u> <sub>t</sub>
A	1.129	3.78
TS	.250	.32
MP	.563	.12

Age X Sex X Sex of TargetMultivariate F (3,54) = 1.78Univariate F's (1,56)

	<u>MS</u>	<u>F</u> <sub>t</sub>
A	.191	.64
TS	2.250	2.87 <sub>t</sub>
MP	16.000	3.34 <sub>t</sub>

(table continues)

Status of Subject X Sex X Sex of TargetMultivariate  $F(3,54) = .58$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
A	.316	1.06
TS	.766	.98
MP	.250	.05

Age X Status of Subject X Sex X Sex of TargetMultivariate  $F(3,54) = .01$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
A	.004	.01
TS	.016	.02
MP	.000	.00
Error	<u>SS</u>	<u>MS</u>
A	16.719	.299
TS	43.875	.783
MP	268.250	4.790

Status of TargetMultivariate  $F(3,54) = .35$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
A	.191	.71
TS	.063	.07

(table continues)

	<u>MS</u>	<u>F</u>
MP	.063	.02

Age X Status of TargetMultivariate F (3,54) = 2.00Univariate F's (1,56)

	<u>MS</u>	<u>F</u>
A	1.410	5.23*
TS	1.000	1.08
MP	4.000	1.15

Status of Subject X Status of TargetMultivariate F (3,54) = .82Univariate F's (1,56)

	<u>MS</u>	<u>F</u>
A	.098	.36
TS	.391	.42
MP	5.063	1.46

Sex X Status of TargetMultivariate F (3,54) = .01Univariate F's (1,56)

	<u>MS</u>	<u>F</u>
A	.004	.01
TS	.016	.02
MP	.063	.02

(table continues)

Age X Status of Subject X Status of TargetMultivariate  $F(3,54) = 1.15$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
A	.660	2.45
TS	1.266	1.36
MP	3.063	.88

Age X Sex X Status of TargetMultivariate  $F(3,54) = .06$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
A	.004	.01
TS	.016	.02
MP	.563	.16

Status of Subject X Sex X Status of TargetMultivariate  $F(3,54) = .47$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
A	.098	.36
TS	.250	.27
MP	3.063	.88

Age X Status of Subject X Sex X Status of TargetMultivariate  $F(3,54) = .49$ 

Univariate $F$ 's (1,56)	<u>MS</u>	<u>F</u>
A	.191	.71

(table continues)

	<u>MS</u>	<u>F</u>
TS	1.000	1.08
MP	1.000	.029
Error	<u>SS</u>	<u>MS</u>
A	15.094	.270
TS	52.000	.929
MP	194.625	3.475

Sex of Target X Status of TargetMultivariate F (3,54) = 1.82

Univariate <u>F</u> 's (1,56)	<u>MS</u>	<u>F</u>
A	1.723	5.45*
TS	.766	.63
MP	1.000	.39

Age X Sex of Target X Status of TargetMultivariate F (3,54) = .98

Univariate <u>F</u> 's (1,56)	<u>MS</u>	<u>F</u>
A	.098	.31
TS	1.266	1.05
MP	2.250	.87

Status of Subject X Sex of Target X Status of TargetMultivariate F (3,54) = .06

(table continues)

Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
A	.004	.01
TS	.063	.05
MP	.250	.10

Sex X Sex of Target X Status of TargetMultivariate  $F$  (3,54) = .22Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
A	.191	.61
TS	.063	.05
MP	.063	.02

Age X Status of Subject X Sex of Target X Status of TargetMultivariate  $F$  (3,54) = 2.14Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
A	.035	.11
TS	5.063	4.18*
MP	3.063	1.18

Age X Sex of Target X Status of TargetMultivariate  $F$  (3,54) = .45Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
A	.035	.11
TS	1.000	.83
MP	.000	.00

(table continues)

Sex X Status of Subject X Sex of Target X Status of TargetMultivariate  $F(3,54) = 2.96^*$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
A	.035	.11
TS	3.516	2.91 <sup>t</sup>
MP	14.063	5.44*

Age X Status of Subject X Sex X Sex of Target X Status of TargetMultivariate  $F(3,54) = .98$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
A	.035	.11
TS	3.516	2.91 <sup>t</sup>
MP	.063	.02

Error

	<u>SS</u>	<u>MS</u>
A	17.594	.314
TS	67.750	1.210
MP	144.750	2.585

<sup>t</sup>  
 $p < .10$ .    $*p < .05$ .    $**p < .001$ .



Table B-21

Multivariate Analysis of Variance Summary Table:Effects of Age, Sex and Status of Subject on  
the Relative Frequency of Each GoalAgeMultivariate  $F(3,54) = .453$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
A	.267	1.061
TS	.006	.025
MP	.045	.012

SexMultivariate  $F(3,54) = 1.060$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
A	.000	.000
TS	.771	3.213
MP	.198	.497

Status of SubjectMultivariate  $F(3,54) = .787$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
A	.456	1.814
TS	.134	.560
MP	.514	1.291

(table continues)

Age X SexMultivariate  $F(3,54) = .535$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
A	.152	.606
TS	.130	.541
MP	.104	.260

Age X Status of SubjectMultivariate  $F(3,54) = .218$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
A	.156	.622
TS	.010	.040
MP	.008	.021

Sex X Status of SubjectMultivariate  $F(3,54) = .636$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
A	.031	.125
TS	.273	1.139
MP	.414	1.042

(table continues)

Age X Sex X Status of SubjectMultivariate  $F(3,54) = 2.094$ Univariate  $F$ 's (1,56)

	<u>MS</u>	<u>F</u>
A	.002	.009
TS	1.513	6.303**
MP	1.078	2.711

Error (df=56)

	<u>SS</u>	<u>MS</u>
A	14.073	.251
TS	13.438	.240
MP	22.271	.398

Note. Analysis is based on arcsins of proportions of directives with each goal.

t

p&lt;.10. \*p&lt;.01.

Table B-22

Multivariate Repeated Measures Analysis of Variance Summary

Table: Effect of Age, Sex of Subject, Status of Subject and  
Sex of Target on the Relative Frequency of the Goals of Requests

## Within Effects

Sex of TargetMultivariate  $F(3,38) = 7.047^{***}$ Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
A	9.317	22.241***
TS	1.231	2.189
MP	1.029	1.376

Age X Sex of TargetMultivariate  $F(3,38) = .484$ Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
A	.082	.195
TS	.061	.108
MP	1.085	1.450

Sex X Sex of TargetMultivariate  $F(3,38) = .100$ Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
A	.024	.057

(table continues)

TS	.020	.036
MP	.225	.301

Status of Subject X Sex of Target

Multivariate  $F(3,38) = .884$

Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
A	1.110	2.650
TS	.101	.180
MP	.380	.507

Age X Sex X Sex of Target

Multivariate  $F(3,38) = 4.253^{**}$

Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
A	.165	.394
TS	2.634	4.686*
MP	1.183	1.582

Age X Status of Subject X Sex of Target

Multivariate  $F(3,38) = .592$

Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
A	.220	.524
TS	.997	1.774
MP	.176	.235

(table continues)

Sex X Status of Subject X Sex of TargetMultivariate  $F(3,38) = .633$ 

Univariate $F$ 's (1,40)	<u>MS</u>	<u>F</u>
A	.695	1.658
TS	.000	.000
MP	.539	.720

Age X Sex X Status of Subject X Sex of TargetMultivariate  $F(3,38) = .584$ 

Univariate $F$ 's (1,40)	<u>MS</u>	<u>F</u>
A	.664	1.585
TS	.014	.025
MP	.007	.010

Error

	<u>MS</u>
A	.419
TS	.562
MP	.748

Note. Analysis is based on arcsin transformations of the proportion of requests with each goal.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Table B-23

Multivariate Repeated Measures Analysis of Variance SummaryTable: Effects of Age, Sex, Status of Subject and Status of Targets on the Relative Frequency of the Goals of Directives

## Within Effects

Status of TargetMultivariate  $F(3,38) = 1.27$ 

Univariate $F$ 's (1,40)	<u>MS</u>	<u>F</u>
A	.551	3.43
TS	.014	.03
MP	.002	.00

Age X Status of TargetMultivariate  $F(3,38) = 4.65^{**}$ 

Univariate $F$ 's (1,40)	<u>MS</u>	<u>F</u>
A	1.271	7.90 <sup>**</sup>
TS	1.001	1.75
MP	.029	.05

Status of Subject X Status of TargetMultivariate  $F(3,38) = .37$ 

Univariate $F$ 's (1,40)	<u>MS</u>	<u>F</u>
A	.006	.04

(table continues)

TS	.574	1.00
MP	.639	1.01

Sex X Status of TargetMultivariate  $F(3,38) = 2.10$ 

Univariate $F$ 's (1,40)	<u>MS</u>	<u>F</u>
A	.695	4.33*
TS	.109	.19
MP	.003	.01

Age X Status of Subject X Status of TargetMultivariate  $F(3,38) = 1.75$ 

Univariate $F$ 's (1,40)	<u>MS</u>	<u>F</u>
A	.879	5.47*
TS	.000	.00
MP	.166	.26

Age X Sex X Status of TargetMultivariate  $F(3,38) = 1.35$ 

Univariate $F$ 's (1,40)	<u>MS</u>	<u>F</u>
A	.000	.00
TS	1.182	2.07
MP	.000	.00

Status of Subject X Sex X Status of Target

(table continues)



280

Multivariate  $F(3,38) = 1.16$ Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u> <sup>t</sup>
A	.566	3.52
TS	.118	.21
MP	.516	.82

Age X Status of Subject X Sex X Status of TargetMultivariate  $F(3,38) = 1.72$ Univariate  $F$ 's (1,40)

	<u>MS</u>	<u>F</u>
A	.305	1.90
TS	.775	1.35
MP	.169	.27

Error

	<u>SS</u>	<u>MS</u>
A	6.429	.161
TS	22.888	.572
MP	25.320	.633

