

The Emergence of Social Status Among Preschoolers: Measuring the Will and the Way

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Abstract:

Relationships between dominance and social skills (Study 1), and between popularity and social skills, and social control motivation and dominance (Study 2), were investigated in preschool children. As predicted, motivation and the ability to pose positive emotions predicted dominance. Unexpectedly, motivation also predicted popularity. Results suggest that both social skills and motivation relate to children's social status.

Introduction

The relationships that result from the emergence of social status among early peer groups form dominance hierarchies. Hierarchical status relationships develop among children as young as four years of age (Sluckin, 1980) and remain stable during the preschool years for at least as long as nine months (LaFreniere & Charlesworth, 1983; Strayer & Trudel, 1984). Moreover, the positions of dominance and submission that are described for each child correspond with later developmental outcomes and social experiences (Asher & Rose, 1997; Coie & Kupersmidt, 1990; Putallaz & Wasserman, 1990; Rubin, Bukowski & Parker, 1998). High status within dominance hierarchies predicts the acquisition of desired resources such as attention, toys, and assumption of leadership roles during group play (Camras, 1984; Charlesworth & LaFreniere, 1983; Hold-Cavell & Borsutsky, 1986; Strayer, 1981). Successful competition for resources requires both the social skills (Denham, McKinley, Couchoud & Holt, 1990; Jones, 1984; Jones, Abbey & Cumberland, 1998; Keating, 1994; Keating & Heltman, 1994;) and the social motivation to influence others (Hawley & Little, 1999). Thus, social dominance hierarchies can be construed as the manifestation of asymmetries in children's ability and will to wield social power (Hawley & Little, 1999). The focus of the present study is on the individual differences, in young children's social skills and levels of motivation, and their status within group hierarchies.

Two conceptual orientations apply to the emergence of social dominance. One position views dominance as an outcropping of a relationship (Dovidio & Ellyson, 1985). From this perspective, dominance develops from peer interaction, rather than from qualities residing within an individual. According to the social relations approach to dominance, however, dominance derives instead from the individuals involved in that peer interaction (Hawley & Little, 1999). From this perspective, children within group hierarchies bring differential behavioral traits and motivations to relationships that become structurally defined. In fact, Hawley and Little (1999) suggest that variables at the individual level of analysis serve as stronger predictors of dominance than do variables describing relationships or the structure of the entire peer group. Yet, traditional

research has focused on the pattern of the group to infer dominance. The individual attributes of children at varying status levels have not been thoroughly explored (Hawley & Little, 1999). Thus, an interest in the emergent properties of social leadership necessarily examines not only the emergence of a dominance hierarchy among the peer group, but also, the emergent social qualities of the individuals involved.

At the outset of the preschool years, dominance overlaps substantially with aggressive behavior (Boulton & Smith, 1990; Hold-Cavell & Borsutsky, 1986; Rubin, et al., 1998; Williams and Schaller, 1993). For example, agonistic, assertive actions are distributed according to dominance status at the beginning of the preschool year; children who maintain high statuses within hierarchies act aggressively to meet social goals (Strayer & Trudel, 1984). Aggression may be an acceptable tactic among this age group because it is associated with activity, extroversion, willfulness and visibility. Although young preschoolers do not reject coercive strategies, they become repelled by the sole use of such behavior with age (Hawley, 1999b). Thus, later in the preschool years, the association between outright aggression and dominance declines (Hawley; 1999b; Jones, 1984; Jones, et al., 1998; Strayer & Trudel, 1984). In fact, high levels of behavioral and verbal assertiveness become correlated with peer rejection (Rubin et al., 1998); less forceful, more implicit behavioral strategies become more accurate predictors of popularity and perceived social competence (LaFreniere & Charlesworth, 1983). Thus, among preschoolers, the use of aggressive tactics alone becomes increasingly less effective in establishing and maintaining dominance and influence over peers.

In fact, during the pre-school years, coercive strategies become augmented by less direct, more affiliative strategies for obtaining social influence (Hold-Cavell & Borsutsky, 1984). Cooperative, pro-social strategies are combined with overtly competitive strategies among dominant children (Hawley, 1999a). A child's behavioral approach to securing dominance is broadened to include such social skills as reciprocity, ingratiation, bargaining and compromise, appeals to friendship obligations, and even manipulation or deception (Hawley, 1999a; Keating & Heltman, 1994). Relative to aggression, these tactics become valuable predictors of high social status (Denham, et al., 1990; Jones, et al., 1998).

What skills do these tactics depend on? Social skills have been defined as emotional situation knowledge, or the ability to maintain affective balance and both interpret and react appropriately to the emotions of others (Denham, Bouril & Belouad, 1993). The social strategies that develop among dominant preschoolers are described as being 'other-oriented,' because they include subtle verbal and nonverbal communication tactics enabled by a perception of the minds of others (Hawley 1999a). An understanding of the process by which cognitive and social behaviors interact allows for the ability to communicate and identify emotions (Denham et al., 1993; Iannotti, 1978; Hawley 1999a; Rubin et al., 1998). In fact, observed success in social interactions, or achieved dominance over a targeted peer, is predicted by both the ability to perceive the perspectives of peers (Hawley, 1999a), and to regulate one's own emotional reactions (Calkins, Gill, Johnson & Smith, 1999). Further, behaviorally observed dominance is also associated with nonverbal deception and manipulation skills (Keating & Heltman, 1994). The presence of emotion judging skills predicts high levels of likability among peers, as indicated by sociometric ratings (Denham et. al, 1990). In contrast, rejected children reveal an inability to read the emotional states of others and difficulty in regulating their

own emotions (Dorsch & Keane, 1994). Thus, the absence of social knowledge predicts low social status, and the presence predicts popularity. Thus, enhanced social cognition allows for emotion communication and identification, and even deception, and serves to help a child achieve social status.

Having emotion situation knowledge may be a necessary but not sufficient means for achieving high social status. The motivation to secure social power may be an essential quality of dominant children. Social motivation inspires the transition from the employment of purely aggressive approaches to children's repertoires' including verbal, gestural approaches (Hawley, 1999a). The first behavioral manifestation of a child's motivation to control social resources is an undifferentiated coercive pattern. Again, less assertive, more 'other-oriented' approaches seem to develop with time, until strategy types become distinct. Differential levels of motivation are required to mobilize the types of behavioral strategies that children use to acquire resources (Hawley, 1999a). When social centrality, or aggression, and competence, or popularity, eventually become independent, the social status of an individual is largely determined by his/her level of social motivation (Hawley, 1999a). Individual social abilities, then, may not predict on their own the emergence of dominance in preschoolers; social motivation must also be involved. Ultimately, social competence requires both the appropriate means for achieving dominance, and the motivation to meet social goals.

The type of research needed to address the emergence of social status approaches dominance by examining the differences in the competent strategies employed by children, and in the levels of motivation that underlie the use of these strategies (Hawley & Little, 1999). Defining dominance as relative competitive ability, it is viewed as an attribute of the child (Hawley, 1999b). The social relations approach to social status suggests that asymmetries in individual social skills and motivations underlie hierarchical peer organization (Hawley, 1999b).

Although Hawley (1999a) postulated that dominance results from inequalities in both individual abilities and motivation for social control, she investigated only social abilities. The two studies presented here explored both abilities and motivation for social control in order to address how they related to dominance and to other social qualities. Motivation was a predicted correlate of dominance, while social skills were a predicted correlate of popularity. It is hypothesized that neither abilities nor motivation are both necessary and sufficient in determining dominance. Instead, social status is produced by varying levels of both.

STUDY 1

In Study 1, I tested whether social/emotional skills predicted dominance. It used previously unanalyzed data, from a study done by Keating and Heltman in 1993, which compared measures of skills that are allowed by emotional situation knowledge, with dominance scores of fifty children. Specifically, the abilities to identify and pose emotions, and to adopt another's social-cognitive perspective were assessed. I predicted that these social-emotional skills would correlate positively with observed social dominance, and teacher rankings of dominance.

Method

Social skills were assessed by measuring each child's abilities to encode emotions, adopt social and emotional perspectives, and elicit both truthful and deceptive performances. Social and emotional perspective-taking skills were measured in tasks that challenged children's abilities to (a) select appropriate gifts for a variety of other people, and (b) manipulate an opponent during a penny hiding game. These tasks were modeled after Ianotti (1975).

The purpose of the 'emotion posing' task was to measure a child's ability to encode emotions; participants were asked to display facial expressions appropriate to the emotions described in given scripts. Skills were measured by videotaping each child, as he/she posed positive and negative emotions. The purpose of the 'emotion judging' task was to measure a child's ability to perceive the emotions of others, and asked participants to indicate the emotions expressed on picture cards. Finally, the purpose of the 'persuasion/deception' task was to assess a child's ability to persuade or manipulate the state of mind of another child. Deception skills were measured using a taste-test task (Feldman, White & Lobato, 1982), but this portion of the data was omitted, as it was previously analyzed by Keating and Heltman (1994).

Participants

Data were gathered from 54 girls and boys from preschools in central New York. Ages ranged between 48 and 72 months.

Materials

For the 'Emotion Posing' task, six scripts (See Appendix A) written on 5" X 7" index cards, were read to each participant, describing situations appropriate for happy, sad, angry, surprised, fearful, and disgusted emotional reactions. The order of presentation was counterbalanced across all participants. A digital camera was used to videotape participant responses.

For the 'Emotion Judging' task, six faces taken from Ekman and Friesen (1975), 5-inch by 7-inch face cards indicated happy, sad, angry, surprised, fearful and disgusted emotional expressions. Six scripts were read, corresponding to each of the cards (See Appendix B). The face cards were shuffled after each reading to control for position preference.

Procedure

For the 'Emotion Posing' task, the child was seated at a table, with one experimenter positioned beside him/her and the other across from him/her, with her back turned. The six scripts were read to the child by the experimenter whose face he/she could not see, while the other experimenter recorded his/her facial expressions. Throughout the task, a digital camera also recorded the actions of the participant.

For the 'Emotion Judging' task, the child was seated at a table, with the experimenters positioned in the same fashion as in the 'Emotion Posing Task.' The face cards were placed in random order in front of the child, while the turned experimenter read the six scripts. After each script was read, the experimenter sitting beside the child recorded the card that was chosen, shuffled the face cards, and replaced them in front of the participant again.

Undergraduate students coded dominance-related behavior during free play. They observed participants during regularly scheduled free play periods in classrooms. The observers were blind to the results of all social skill measures. Dominance was assessed during free play by tabulating the number of times each child dominated a classmate 75% of the time or better. Frequency counts were made of physical, verbal, and gestural behaviors typically associated with dominance and submissiveness¹.

Results

Among this population of children, dominance was predicted only by the ability to pose emotions. High teacher dominance rankings correlated with the ability to pose positive emotions, $r(54) = .28$, $p < .05$. Teacher rankings were correlated with behavioral observations of dominance, $r(54) = .32$, $p < .01$. Neither teacher rankings of dominance nor behavioral observations of dominance were not correlated with emotion identification abilities, or social-cognitive skills.

Discussion

Dominance was predicted by children's ability to pose positive, but not negative, emotions. Dominance rankings for the same population have also been previously associated with children's ability to deceive (Keating & Heltman, 1994). However, identification of positive and negative emotions, and the social-cognitive skills that were measured using the gift and penny games, did not predict behavioral dominance.

Thus, Study 1 illustrates the profile of social skills associated with dominance, using both teacher rankings and behavioral observations. Thus, dominance here is still conceptually overlapped by aggressive behavior. The results, then, are consistent with hypotheses that link social skills instead with popularity. Since Study 1 suggests which particular social skills may influence a child's dominance without adequately addressing the complete picture of the dominant child, it leaves social status open to the involvement of popularity, and to other individual attributes.

Clarifying the insufficiency of social skills alone in determining dominance, the results impel not only a different approach to the construct of dominance, but also a look at motivation for social control. Study 1, then, suggests more strongly an examination of the other possible factors involved in social status. Specifically, it drives at a testing of the hypothesis that social motivation, too, underlies a child's dominance.

STUDY 2

The purpose of Study 2, then, is to more broadly consider the interrelating roles of individual social skills and social motivation in determining high social status. I had two goals in designing Study 2. I sought to explore differential levels of motivation among a new population of children to test the hypothesis that social motivation will predict dominance. Here, I consider a possible shift in the use of aggressive, to more considerate techniques (Hawley, 1999a). Thus, a child's status is not determined according to observed aggressive strategies, but instead according to teacher and peer ratings of a child's influence over his/her peers. Furthermore, considering also the developing

association between popularity and dominance, I used Study 2 to expand upon the findings of Study 1, and validate the predictive quality of pro-social strategies, by investigating their effects on a child's status, relative to the effects of motivation. Specifically, I assessed levels of motivation and social skills among all of the participants, to look at how they interrelate to predict peer-nominated popularity and unpopularity. Thus I broadly looked to determine how motivation and social skills compare, in their ability to predict dominance and popularity.

Because motivation underlies the assumption of social skills in the behavioral repertoires of dominant individuals (Hawley, 1999a), I predicted that dominant pre-school children are necessarily motivated towards acquiring social power. I also predicted that among this age group, social-emotional skills will be a stronger correlate of popularity than they are of dominance, as peer acceptance of familiarly aggressive tactics for achieving dominance, should be declining among this age group. Further, although motivation will predict dominance, I predict that those skills allowed by emotional situation knowledge are also necessary to a child's competence (Denham et al., 1993). Popularity among peers in preschool, then, will be a result of emergent pro-social strategies in the behavioral repertoire of motivated children. Without adequate social skills, the motivation to exert social control will predict low social status. Thus, I hypothesized a deficit of social skills to facilitate a child's social incompetence.

I predicted an association between motivation and dominance, and between social skills and popularity. Further, I did not consider motivation alone to predict popularity; nor skills alone to predict dominance. Accordingly, I did predict social motivation without the presence in a child of verbal and gestural skills to predict low peer-rated popularity.

This investigation necessitated the development of a measurement of motivation. Thus, a primary goal of Study 2 was to develop measurement tools to assess this construct. For the present study, I develop several new measures of motivation for social control.

First, I developed the 'Leadership Role Game,' within the context of a pretended "funny face" game. The derivation of this creative means for measuring motivation was based on the traditional characterization of social dominance models by organization of nonhuman primate groups (Hawley, 1999a; Strayer & Trudel, 1984; Vaughn & Waters, 1981). I assumed that as with primates, motivation can be evidenced by either work to obtain, or forfeiture of incentives. This task asked each participating child to establish the rules of a group game. Specifically, the child was asked to decide whether or not he/she should assume various leadership roles in the game (i.e. handing out pieces, judging the final faces, etc.), or if someone else should assume those roles. Thus, the 'Leadership Role Game' offered imaginable positions of overt social leadership, asking participants to assign themselves to either dominant or submissive roles in the organization and direction of a group game. Stickers were given to participants at the beginning of the task, and were used as payment by each child for their assignment to different roles. Motivation for dominance was measured according to the difference in the amount of these rewarding objects that each child was willing to relinquish for assumption of dominant, relative to submissive roles.

I developed a second task, the 'Dominant-Submissive Role Picture Game,' to measure motivation for social control. In this task, participants were presented with

images of relationships that stereotypically represent the dimension between dominance and subordination. Children were asked to choose between cards depicting traditionally dominant roles and cards depicting traditionally subordinate roles. I modeled this tool after a task used by Williams & Schaller (1993), used to validate dominance among children who assigned themselves to dominant imaginary positions and targets to subordinate positions, during theme play. Motivation was measured according to the number of dominant roles depicted across the five relationships that were preferred by the child, relative to submissive roles.

Finally, Social Motivation Questionnaires were developed. These teacher-ratings were designed to measure a child's social preferences in terms of dominance or submission among his/her peers.

Assessment of social skills amongst the new population of children measured their ability in three separate tasks to encode or pose emotions, perceive and judge the emotions of others, and to persuade and deceive peers. It is predicted that among those children previously shown to be motivated, only those capable of these skills will be socially competent and ultimately, well-liked by their peers. Those previously indicated as being socially motivated, who are without the verbal, gestural skills, may currently be dominant, but not well-liked. Without eventually acquiring these skills, motivated children are predicted to be ultimately rejected by peers.

Assessment of the abilities to detect and pose emotions, used the same tasks used by Keating and Heltman (1994) in Study 1. Again, for emotion-posing, participants were asked to display facial expressions appropriate to emotions described by an experimenter. And for emotion-judging, participants were asked to indicate the emotions expressed on various picture cards.

The persuasion task was based on the association between social skill and deception abilities, obtained by Keating and Heltman (1994). Testing for the ability to perceive and then manipulate the mind state of another child, this final task asks participants to either present persuasive "commercials," both for a desirable and an undesirable toy, or to persuade an outsider of the sweetness of both a good and bad-tasting juice². These tasks were videotaped and then judged for the degree of deception elicited by the performances. Popularity is measured according to teacher rankings and sociometric interviews with the children.

Methods

Participants

The study was conducted in central New York, with a total of 31 children from two separate preschool classes. Children's ages in both classes A (6 boys and 7 girls) and B (6 boys and 12 girls) ranged between 42 and 105 months. The children were predominantly white and came from lower to higher-middle socioeconomic backgrounds.

Materials

Social Motivation Measures. For the 'Leadership Role Game,' props included five clear bags, one each for class nametags, face platforms, face pieces, a plastic watch, and a toy medal of honor. Nametags were printed on squares of white felt. Three circular platforms were constructed out of felt-covered plastic for either a person, alien or animal face. Face pieces included various sets of eyes, ears, noses, mouths and hairpieces for all

three face types, and were constructed from felt, Styrofoam, pipe-cleaners and cotton. The participant was presented with five opportunities to assign him/herself to be “in charge” of certain aspects of the game, according to a script (See Appendix C) that related each opportunity with one of these bags of props. A 13-inch by 8-inch piece of felt-covered Styrofoam depicted a group of four children illustrated with blank faces, such that one child stood on a pedestal in front of a table of three others, emphasizing his/her dominance over the rest of the group. Various designs of stickers were used, all of them the same relative size, chosen for use because of apparent independence from gender-specific preferences.

For the ‘Dominant-Submissive Role Picture Game,’ two sets of five pairs of images were derived from a profit Internet graphics company. The graphics were printed and formatted onto 12-inch by 8-inch laminated platforms. Each set included a parent/child pair, a teacher/student pair, a royalty/servant pair, a boss/employee pair, and a doctor/patient pair. The graphics were manipulated using PhotoShop, such that the two sets included the same graphics to be used differentially with boys and girls, so that the gender of the person in each image could be portrayed appropriately according to the gender of each participant.

The Social Motivation Questionnaires asked teachers for ratings of each participant's apparent motivation for social control, based on a 15-item questionnaire. The items were based in part on Tellegen & Waller's (in press) scale assessing social potency in adults. Items were rated on a 7-point Likert Scale (see Appendix D).

Social Skills Measures. For the ‘Persuasion’ task, two plastic boxes covered with brown paper bags were used as containers for a VTech Computer toy and a block. One box was decorated with multi-colored dots and the other was decorated with multi-colored strips. The placement of the toys in the containers was randomly determined for each participant. Experimenters read from a script that contained questions for the child, which were used to guide his/her production of the commercials (See Appendix E).

Procedure

Before the start of the experiment, parents of the participants signed consent forms. Experimenters visited the preschool to familiarize themselves with the environment and the students, one week before the study was conducted.

Experimenters escorted each child from the classroom during regular school hours. Within a separate room, they introduced themselves and administered the tests within the context of games, their order of presentation counterbalanced across all of the participants. The tasks in combination took about 20 minutes for each child. Children were rewarded for their participation with verbal praise and stickers.

Social Motivation Measures. For the ‘Leadership Role Game,’ each child was seated at a table in front of the experimenter, upon which the five clear bags of props were presented. The poster was stood upright facing the child. The child was given a small closed container with a slit on its top, and between the experimenter and the child was a larger open box.

To begin, the child was given five stickers and told that the game’s rules would require that he/she give a portion of them back. For the first part, the experimenter held up the clear bag filled with nametags for all of the children in the class, and the child was told that some of the children needed to be picked out from the classroom to play a ‘Funny Face Game.’ The child was given the option of picking out the players

him/herself, or having someone else in the classroom do so. Upon his/her decision, the experimenter pointed with the participant's own nametag, to either the child depicted as leader on the displayed poster, or to one of the other children, depending on which role was chosen. The child was asked how many of the five stickers he/she would give up and place in the open box, in order to assume the role chosen and have his/her nametag placed on the appropriate child in the poster. The poster was used to allow, within the context of a pretended game, for the child's concrete conceptualization of his/her chosen amount of influence over other people.

Upon completion of the first part of the game, the clear bag of names was removed from the child's sight, the poster was laid flat, and the child's nametag was removed. The child was asked to put his/her remaining stickers in the given container, and was told that he/she and the experimenter needed to start over to play the next part. The poster was stood upright again, and the child was given five new stickers.

The four remaining parts proceeded in the same fashion, with a clear bag of props corresponding to each question. With the bag holding platforms for either alien, person or animal faces, the child was asked to decide if either he/she or someone else should pick the types of faces the players would make. With the bag full of face pieces, he/she was asked who should be in charge of deciding who in the game should get what pieces and of then handing them all out. With the bag holding the plastic watch, the child was given the option of having him/herself tell the players when to begin and stop making the faces, or of having someone else keep the time. Finally, with the bag holding the fake medal, the child was asked to decide who should be the judge at the game's end, as to which of the constructed faces was funniest. Thus, the combination of scenarios presented allowed for opportunities for resource control, play organization and rule imposition.

The order of presentation for all questions except for the first, was counterbalanced across all of the participants. Each question was scored according to the amount of stickers relinquished for assumption of either a leadership or a more passive role. The total amount of stickers relinquished for both dominant and passive roles were totaled, with the subtotal from the first three questions weighted, to control for the possibility of decreasing reward value with the child's increasing accumulation of stickers.

After all five decisions were made, the child was congratulated and thanked, and all relinquished stickers in the box were given back as reward for playing.

For the 'Dominant-Submissive Role Picture Game,' the experimenter presented each pair of images to the child, by first asking which of the two illustrated people appeared to "be in charge" over the other, or which of the two was probably able "to tell the other what to do. Once the relationship being portrayed by the two images was clarified between the experimenter and the child, and the titles of each of their dominant or submissive roles were established, a script was read (See Appendix F) asking each participant to indicate their preference for pretended assumption of the role portrayed by either the dominant or submissive image. Spatial (right or left hand) displays of the images were counterbalanced across presentation of all five sets of pictures. The order of presenting the five relationships was counterbalanced across all participants. Scoring consisted of comparing the numbers of dominant and submissive roles chosen by the child.

Social Skills Measures. For the ‘Persuasion’ task, each participant was seated at a table with an experimenter who read aloud the script. He/she was given one of the two decorated boxes, the toy was removed, and an explanation of how to play with it was given. For the computer toy, participants were shown how to play a musical train game and were allowed to do so for two minutes. With the block, participants were shown how to move it around to examine its color and shape.

The second experimenter entered the room after these explanations, and instructed the child to present a commercial for the given toy. While videotaping the participant’s responses, this experimenter assisted in the child’s presentation by asking questions relating to how much fun the toy was to play with, etc. This procedure was repeated for both toys, for each child. For the Computer toy, the child was supposed to answer the questions honestly, and for the block, the child was asked only to pretend that the toy was fun while making the commercial. After the task was completed, participants were given stickers for their participation.

Teacher Assessments. Teachers were compensated for assessing children's dominance and popularity, with monetary rewards. For teacher assessments, they were asked to complete several questionnaires describing the children, in addition to the newly developed Social Motivation Questionnaire. Each teacher filled out one Peer Popularity Scale (See Appendix G), which asked for a rating describing each child's popularity among peers, and a Child Dominance Scale (See Appendix H), which asked for a rating describing each child's influence over his/her peers. Finally, teachers were also asked to fill out a Dominance Ranking, and evaluate the entire preschool class (See Appendix I).

Peer Assessments. Sociometric rankings were derived from participant responses to questions about their play preferences. These interviews were conducted after all social skills and social motivation tasks were completed. Each participant was escorted from the classroom during regular school hours, and in a separate room, was interviewed for about five minutes, according to a script (See Appendix J). The child was shown a photograph of his/her entire class, and was asked to use it to list the three children he/she most enjoys playing with, and the three children he/she least enjoys playing with. Finally, the child was asked to name a classmate who most often tells other kids what to. Responses were recorded, and the participant was rewarded with stickers for participation.

Results

Class A was used alone, as a small subset of the population (N=13), to assess reliability among the different measures used for motivation, popularity, and dominance. The small subset was also used for a preliminary investigation of the associations between motivation and teacher-rated dominance, and between social skills and both teacher and peer-rated popularity.

Two teachers provided data for Class A. An average of each of their scores was taken for the Social Motivation Questionnaires (SMQ), which were ranked on a 7-point scale. For the ‘Leadership Role Game (LRG),’ the total number of stickers given back by the children for both dominant and submissive roles, were compared, and differences were also taken between number of sticker given back for leadership roles and the number given for submissive roles. For the ‘Dominant-Submissive Role Picture Game (D-SRPG),’ the total numbers of both dominant and submissive roles chosen by children

were compared, and differences were again taken between the number of dominant and the number of submissive roles chosen. The teachers' average scores for each child on the SMQ correlated, $r(12) = .63$, $p < .05$. The average on at least one of the teacher's questionnaires correlated with the difference in roles chosen in the D-SRPG, $r(13) = .60$, $p < .05$. Lastly, the total number of submissive roles chosen during this game correlated negatively with that same teacher's average, $r(13) = -.60$, $p < .05$.

For peer measures of popularity and unpopularity, proportions were taken to compare the number of times a child was nominated for each, with the number of times he/she could have been nominated. The purpose of proportions was to address the different numbers of children represented in each class. The two teachers also gave ratings for each child, based on a 5-point scale. The two teacher ratings correlated, $r(13) = .61$, $p < .05$.

For peer measures of dominance, proportions were taken again. Teachers rated each child on a 5-point scale, and ranked the entire class. These teacher scores needed to be inverted, so that larger numbers always indicated greater dominance. Both teachers' dominance rankings correlated, $r(13) = .64$, $p < .05$, with at least one also correlating with children's nominations for dominance, $r(13) = .69$, $p < .01$.

Several positive correlations were indicated in the preliminary assessment of a relationship between motivation and dominance (See Table 1). The first SMQ average correlating with her on dominance ratings, $r(13) = .91$, $p < .01$, and dominance ranking, $r(13) = .83$, $p < .01$. The second teacher's average correlated with her own dominance ranking, $r(12) = .89$, $p < .01$, and both the first teacher's dominance rating, $r(12) = .62$, $p < .05$, and ranking, $r(12) = .73$, $p < .01$. It was also correlated with peer nominations of dominance, $r(12) = .61$, $p < .05$.

The 'Emotion Judging' Task was scored according to the total number of expressions correctly identified by each child; averages were also taken, and identification of positive emotions (happy, surprise) was compared to identification of negative emotions (anger, disgust, fear, sad). For the 'Emotion Judging Task,' ten undergraduate students who were blind to the children's behavior were asked to judge the videos of the children. The judges were asked to indicate the emotions that were being expressed by each child, and again, scores were taken of the total number correctly identified, with averages taken, and positive emotions were compared to negative. An initial factor analysis using varimax rotation was computed for posed emotions. The factors surprise and happy were loaded on one dimension (surprise = .16, happy = .34). They were combined into a Positive Emotion Posing score, with a Cronbach alpha of .34. Anger, disgust and fear were loaded onto a second dimension, (anger = .13, disgust = .89, fear = .79). They were combined to make a Negative Emotion Posing score, with a Cronbach alpha of .58. Sadness (.88) did not relate to any other factor, and was analyzed separately. The deception/persuasion measure was scored according to the differences in the percent of judges who believed each child was telling the truth when the truth was being told, and the percent that thought they were being deceived, when they were being deceived.

Correlations were also indicated among this subset between social skills and popularity. Positive Emotion Posing scores were correlating with at least one teacher's popularity ratings, $r(11) = .71$, $p < .05$. And though not correlated with nominations for

popularity, scores on the persuasion task correlated negatively with nominations for unpopularity, $r(11) = -.65$, $p < .05$.

There were no correlations indicated between social skills and any of the dominance scores. In addition, the relationship between motivation and popularity was different than expected (See Table 2). The first teacher's SMQ correlated with popularity ratings of the second teacher, $r(13) = .61$, $p < .05$. Further, the second teacher's SMQ correlated with her own popularity ratings, $r(12) = .80$, $p < .01$, and with those of the first teacher, $r(12) = .61$, $p < .05$. Yet, consistent with predictions, the differences between the roles chosen in the D-SRPG correlated with peer nominations of unpopularity, $r(13) = .64$, $p < .05$.

For all 31 of the children, peer nominations were used to assess popularity, unpopularity and dominance. The number of nominations received for each became categorical variables, split at the median, so that each child was ranked as being high (2) or low (1) for each construct.

Using an analysis of variance to examine dominance and motivation, with the number of stickers relinquished serving as the covariate, and the total number for dominant roles, and the total number for submissive roles, serving as the repeated measures, an interaction was indicated between ranked dominance and roles chosen, $F(1,29) = 5.41$, $p < .05$ (See Table 3). Dominant children relinquished a greater number of stickers ($M = 12.08$) for dominant roles than for submissive roles ($M = 2.00$). Further, a main effect was indicated for dominance, $F(1,29) = 40.5$, $p < .01$, such that more stickers were given by all children for dominant roles ($M = 10.36$) than for submissive roles ($M = 2.97$).

Using an analysis of variance to examine dominance and social skill, with Positive Emotion Posing and Negative Emotion Posing scores serving as the repeated measures, an unexpected interaction was indicated between ranked dominance and the ability to pose positive emotions, $F(1,24) = 5.46$, $p < .01$ (See Table 4). Dominant children indicated greater ability in posing positive emotions ($M = 6.35$), than in posing negative emotions ($M = 3.98$). More consistent with predictions, an interaction was approached by an analysis of variance for popularity and social skills, using the same covariate and repeated measures, $F(1, 24) = 3.70$, $p = .07$. Though not significant, popular children also indicated greater ability in posing positive emotions ($M = 6.23$), than in posing negative emotions ($M = 4.56$).

Examining the independent contributions of social skills and motivation to popularity and dominance, simultaneous multiple regression analyses were performed. With the total number of stickers relinquished for dominant roles in the LRG, and the total number of dominant roles chosen in the D-SRPG as predictors of nominations for unpopularity, the number of stickers given back predicted a child's unpopularity, $T(30) = 2.04$, $p = .05$. With the differences in the amounts of stickers given back, the differences in the roles chosen, and scores on the deception task as predictors of nominations for being a least preferred playmate, a child's unpopularity was negatively predicted by deception scores, $T(24) = -3.09$, $p < .01$.

Discussion

Results suggest that there was reliability among the newly developed measures used for motivation, popularity and dominance, with a less substantial association evidenced between the 'Leadership Role Game' (LRG) and the other two measures, than between the "Dominant-Submissive Role Picture Game,' (D-SRPG) and the Social Motivation Questionnaire. This task was the only one of the three measures that attempted to measure direct, behavioral displays of social motivation through the context of an interactive game that the child played with the experimenter. The SMQ scores corresponded with those of the D-SRPG but the former was a measure for teachers, and not for the actual children, and the latter was largely projective in nature. Thus, the validity of the newly developed LRG has yet to be determined.

Nevertheless, the three measures seemed to converge among the subset of the population, to correlate with teacher and peer ratings of dominance. These thirteen children were initially tested to establish an association between the levels of motivation measured by the new tools, and the levels of dominance, as reported by both teachers and peers. Consistent with predictions, the SMQ scores were correlated with both teacher and peer dominance ratings and rankings, as were the number of dominant roles chosen by the children during the D-SRPG.

Furthermore, an association was also established between social skills and popularity. The ability to pose positive emotions was correlated with a teacher ranking of popularity, and the ability to deceive or persuade was negatively correlated with peer nominations of unpopularity.

Though the preliminary tests with this small group of children yielded results that were consistent with predictions of motivation corresponding with dominance, and social skills with popularity, it was more difficult to indicate negative evidence for inversions of the hypotheses. There were no correlations between social skills and dominance. But, the relationship between motivation and popularity was more ambiguous. Inconsistent with predictions, teacher SMQ scores corresponded positively with their popularity rankings. Yet, the number of dominant roles chosen during D-SRPG corresponded with nominations of unpopularity.

Using peer ratings to measure dominance and popularity among the entire population of children yielded interesting results. A relationship was indicated between dominance and motivation. Dominant children were consistently willing to relinquish a greater amount of stickers during the LRG for pretended assumption of a leadership role over a submissive role. Also, they were willing to relinquish more stickers overall, than were children ranked low for dominance. Children who were ranked high for dominance were also significantly better at posing positive emotions, than they were at posing negative emotions. And more consistent with predictions, significance was approached between popularity and the ability to pose positive emotions, suggesting that popular children might be better at posing positive rather than negative emotions. Finally, the ability to deceive or persuade was significantly related to popularity. Success on the deception task correlated negatively with the likelihood of being nominated an unpreferred playmate. Furthermore, as expected, motivation did not relate to popularity among the entire population of children, though it did among the initial subset. Increased

levels of motivation measured by the LRG also predicted nominations for unpopularity. Thus, the associations between certain skills and both dominance and popularity, partly confirm predictions. Results not only suggest that skills correspond with likability, but that in combination with social control motivation, dominance is also in part determined by their employment.

That significance was greater in the relationships that were established in the preliminary subset of the population that was tested, calls our attention to the measures used on the entire population for dominance and popularity. Correlations were initially consistent with predictions, with motivation corresponding with dominance and social skills corresponding with popularity. Yet, these correlations were established using teacher rankings, whereas, these relationships were sought again with the entire population, relying only on peer rankings. Though significance was achieved in support of some of the predictions, results suggest that either teachers and peers may perceive popularity differently, or that sociometric interviews with children address a different construct than teacher rankings. Thus, convergence by both teacher and peer ratings may offer greater validity to these measures, and in turn, yield more significant results.

More importantly, the significance that was achieved in the initial tests done alone on Class A, make the results of the overall study especially promising. Again, the strength of the correlations between motivation and dominance, and social skills and popularity, suggests the possible use of several measures of popularity and dominance, other than peer rankings alone, to determine more significant relationships between the variables predicted. Because these correlations were based on such a small group of children, they should be interpreted with caution, and they strongly suggest continued investigation. Specifically, studies that are more long-term, test larger populations, and look at more restricted age groups, are made more optimistic by these results.

Future investigations of social dominance should explicitly incorporate and account for developmental changes, while specifying which behaviors are adaptive (Hawley, 1999a). The adaptive quality of behaviors changes with age, and as aggression and social competence eventually diverge, dominance must be viewed as relying on both effective coercing and successful cooperating (Hawley, 1999a).

In addition, measures of dominance should be refined. Here, dominance was scored according to the opinions of teachers and peers on how much influence a particular child has over the other children in his/her class. But behavioral observations would have been helpful. Aggression has been indicated the most conspicuous cause of rejection, only when combined with deficiencies in social skills and social information processing (Underwood, Coie, & Herbsman, 1992). Thus, perhaps popularity, too, should be accounted for within a measure of dominance, instead of being treated as a separate construct. With age, dominance can not be achieved without popularity (Hawley, 1999a), and it would be interesting in a longer-term investigation that includes a follow-up study, to investigate the precise stage and social-emotional context of the individual child in which the two concepts begin to overlap.

Investigations of the determinants of social status among young children are directed towards a greater understanding of individual personality development in relation to group processes. Later developmental outcomes for the individual are influenced by his/her early social reputation. Specifically, the presence or absence of dominance in a child, which is determined during the preschool years, is persistent and

affects subsequent social experience (Asher & Rose, 1997; Coie & Kupersmidt, 1990; Putallaz & Wasserman, 1990; Rubin, et al., 1998). Continuation of this type of research is crucial, considering that influence that peer rejection and acceptance may have on the individual child. The qualities of social status, when even more precisely uncovered by future research, may in turn, be impressed upon young children by their adult mentors, in order to maximize their social and emotional experience. The present study suggests that a child's motivation can be apparent, and that early on in preschool, it is an important determinant of status within dominance hierarchies.

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Footnotes

¹ See Keating and Heltman (1994) for details.

¹ The 'Persuasion' Task was dropped from Study 2, from Class A to Class B for validity purposes. The task was designed for an earlier project done by different students, and was replaced by the 'Taste-Test' task, since the validity of the former tool has been established (Feldman, et al., 1982; Keating & Heltman, 1994) and was effective in predicting dominance ratings in Study 1.

Table 1
Correlations Between Motivation (As Measured by SMQ's and 'Dominant-Submissive Picture Role Game') and Dominance

	Differences Between Roles Chosen	Ave. Score on SMQ (T1)	Ave. Score on SMQ (T2)
Dominance Rank (T1)	.68*	.83**	.73**
Dominance Rank (T2)	.57*	.48	.89**
Dominance Ratings (T1)	.63*	.91**	.62*
Dominance Ratings (T2)	.33	.03	.52
Peer Nominations	.48	.09	.61*

NOTE: N = 13

* $p < .05$; ** $p < .01$

Table 2
Correlations Between Motivation (As Measured by SMQ's) and Popularity

	Ave Score on SMQ (T1)	Ave Score on SMQ (T2)
Popularity Ratings (T1)	.32	.61*
Popularity Ratings (T2)	.61*	.80**

NOTE: N= 13

* $p < .05$; ** $p < .01$

Table 3

Tests of Within-Subjects Effects for Dominance and Motivation (As Measured by 'Leadership Role Game')

	Mean Square	F	Sig.	Eta Squared
Motivation	801.97	40.48	.00	.58
Motivation + Dominance	107.12	5.41	.03	.16

NOTE: N = 29

Estimated Means

Dominance	Stickers Given Back	Means
1	For Dominant Roles	8.63
	For Submissive Roles	3.95
2	For Dominant Roles	12.08
	For Submissive Roles	2.00

Table 4

Tests of Within-Subject Effects for Dominance and the Abilities to Pose Positive and Negative Emotions

	Mean Square	F	Sig.	Eta Squared
Posing	24.61	11.82	.00	.33
Posing + Dominance	11.37	5.46	.03	.19

NOTE: N= 29

Estimated Means

Dominance	Posing	Means
1	Positive emotions	5.44
	Negative emotions	5.02
2	Positive emotions	6.35
	Negative emotions	3.98

Appendix A: Script for 'Emotion Posing' Task

I'm going to tell you some stories and I want to know how you would feel if you were the little boy/girl in the stories.

(Surprise) You are at a birthday party and all of a sudden you hear a loud noise. A balloon popped and you are surprised. What would your face look like?

(Disgust) You are walking outside and you step in stinky, smelly garbage. It is disgusting. What would your face look like?

(Anger) You are playing at school with your favorite toy and a mean kid takes it from you. You are mad. What would your face look like?

(Fear) It is dark outside and there is thundering and lightning. There was a big crashing noise and the lights go out. You are scared. What would your face look like?

(Happy) For your birthday, you get a toy that you asked for and really wanted. You are happy. What would your face look like?

(Sad) Your best friend is very sick and has to go to the hospital. You miss your friend, and you are sad. What does your face look like?

Appendix B: Script for 'Emotion Judging' Task

(Using Ekman Face Cards)

(Surprise) This mommy is sitting alone in the living room. Suddenly, she hears a loud bang - a balloon popped! This mommy is surprised. How does the mommy's face look?

(Disgust) This mommy stepped in dirty, stinky, smelly, garbage and the garbage gets all over mommy's shoes. This mommy is disgusted. How does the mommy's face look?

(Anger) This mommy tells her little boy/girl "no more cookies," but the boy/girl doesn't listen. He/She steals all of the cookies and mommy catches him/her. The mommy is mad. How does the mommy's face look?

(Fear) This mommy is all alone and walking out in the woods at night. It is very, very dark and it begins to thunder and lightning. This mommy is afraid. How does the mommy's face look?

(Happy) It is this mommy's birthday. This mommy got a pretty, new dress as a gift. She is very happy. How does the mommy's face look?

(Sad) This mommy's little boy/girl is very sick and is in the hospital. This mommy misses her boy/girl very much. This mommy is sad. How does the mommy's face look?

Appendix C: Script for 'Leadership Role' Game

All props are set up on the table in front of the child, and he/she has a closed box next to him/her with a slit in the top to insert stickers into.

- You and I are going to play "The 'Leadership Role Game'. I'm going to give you these stickers to play the first part, but as part of the game, you're going to have to give some of them back to me. Child is given 5 stickers. Hold up the clear bag of props pertaining to the players that can be

picked.

- Here are all the names of the kids in the class. Now, the first thing we need to do is decide who in the class should be picked out to play "The 'Leadership Role Game'. Pretend that this kid (pointing to the illustrated leader in the poster) here is who picks the players, and these kids down here (pointing to the illustrated group) are other kids. Do you want your name here so you can be this kid and be in charge of picking who gets to play, or do you want me to put your name here so you can be one of these kids and have someone else pick out the players?

Wait for answer, picking up the child's nametag and holding it in front of the poster, pointing out that the leader in the picture is the child who will pick the players.

- Well, how many of those stickers do you want to give back to me (if I let you pick the players/if I let you put someone else in charge of picking the players)?

Place nametag on the child in poster denoting (leader/another child in group), while waiting for response.

Wait for answer, and then take back stickers.

- Okay, now put the rest of your stickers away into your box there, because we're done with the first part.

Clear away bag with class names/pictures in it, and quickly pull poster down so it lies flat, and remove the nametag on it before standing it upright again.

- I had to clear the board to get ready for the next part. I'm also going to give you 5 new stickers to play the next part.

Give child 5 stickers that are different from the last set of stickers given. Hold up the clear bag of props pertaining to the types of faces that can be made.

- These are the boards where the faces are going to be made. Now, the players can either make person faces, space alien faces or animal faces. Pretend that now, this kid is in charge of deciding which kinds of faces everyone will make. (He/She) will tell people whether or not to make a person face, an alien face, or an animal face. Who gets to decide which kinds of faces everyone makes? Do you want to be the boss over picking everyone's faces? Or do you want someone else in the class to pick?

Wait for answer, picking up the child's nametag and holding it in front of the poster, pointing out that the leader in the picture is the child who will pick the players.

- Well, how many of those stickers do you want to give back to me (if I let you pick the kind of face we make/if I let you put someone else in charge of picking the kind of face)?

Place nametag on the child in poster denoting (leader/another child in group), while waiting for response. Wait for answer, and then take back stickers.

- Okay, now put your stickers away into your box there.

Clear away bag with face type props in it, and quickly pull poster down so it lies flat, and remove the nametag on it before standing it upright again.

- Again, I'm going to give you five more stickers for the next question.

Give child 5 new stickers. Hold up the clear bags filled with face pieces.

- Now, these are the pieces to make the faces. So, we also need someone to be in charge of handing out all of these different pieces to the players, and we're going to pretend that his kid decides who out of all these other kids gets what pieces. Do you want to be this kid and be in charge of deciding who gets what pieces? Or do you want to be down here and have someone else to hand all of them out?

Wait for answer, picking up the child's nametag and holding it in front of the poster, pointing out that the leader in the picture is the child who will pick the players.

- Well, how many of those stickers do you want to give back to me (if I let you hand out all the pieces/if I let you put someone else in charge of handing out the pieces)?

Appendix C (cont'd): Script for 'Leadership Role' Game

Place nametag on the child in poster denoting (leader/another child in group), while waiting for response. Wait for answer, and then take back stickers.

- Okay, now put your stickers away into your box there.

Clear away bags of face pieces, and quickly pull poster down so it lays flat, and remove the nametag on it before standing it upright again.

- And here are five more stickers.
Give child 5 new stickers. Hold up the clear bag holding egg timer.
- Now, we also need someone to use this watch to be in charge of telling all the kids when to start making their faces and when to stop. So now the leader in the poster is the time-keeper over all of these other players. Do you want to be (him/her) and be the boss over keeping the time? Or do you want to be down here and have someone else be the time-keeper?

Wait for answer, picking up the child's nametag and holding it in front of the poster, pointing out that the leader in the picture is the child who will pick the players.

- Well, how many of those stickers do you want to give back to me (if I let you keep time/if I let you put someone else in charge of keeping time)?

Place nametag on the child in poster denoting (leader/another child in group), while waiting for response. Wait for answer, and then take back stickers.

- Okay, now put your stickers away into your box there. We have one last part left in our game.

Clear away bag with egg timer, and quickly pull poster down so it lays flat, and remove the nametag on it before standing it upright again.

- And here are five new stickers for the last part of the game.
Give child 5 new stickers. Hold up the clear bag holding blue ribbon.
- Our last thing: we need someone in the game to be the judge at the end to give this medal to whichever player makes the funniest face. Now, (he/she) is the boss over who made the funniest face. Do you want to be up here and be the judge of the funniest face? Or do you want someone else to be the judge?

Wait for answer, picking up the child's nametag and holding it in front of the poster, pointing out that the leader in the picture is the child who will pick the players.

- Well, how many of those stickers do you want to give back to me (if I let you be the judge/if I let you put someone else in charge of judging the faces)?

Place nametag on the child in poster denoting (leader/another child in group), while waiting for response. Wait for answer, and then take back stickers.

- Okay, now put your stickers away into your box there.

Clear away bag with ribbon in it, and lay the poster flat on the table.

- Okay, we're done with our game, and you did such a good job helping me out, that I'm going to give back all of these stickers to you, and I'm going to let you play with all of these pieces while I get our next game ready.

Hand back all of the relinquished stickers.

Appendix D: Social Motivation Questionnaire (items as modified for children)

The child:

1. Likes to be "the boss" when playing with a group of children.
2. Is having the most fun during games when he/she is making up the rules.
3. Makes efforts to "be in the spotlight."
4. Is uncomfortable in situations where he/she is chosen to act as a "leader" over social activities.

5. Performs for adults to get their attention.
6. Is happier while playing within a group, if someone else is “running the show.”
7. Enjoys organizing games amongst his/her peers.
8. Likes assigning “roles” to different people during group role-play activities.
9. Is uncomfortable when he/she is the center of attention among other children.
10. Tries to be convincing and persuasive when he/she wants something from either adults or other children.
11. Seems the most enthusiastic about conversations when he/she is directing them.
12. Is uneasy giving demands to other children.
13. Is pleased when attention is drawn to him/her.
14. Does not like being encouraged to perform for an audience.
15. Prefers telling people what to do, over being told by someone else what to do.

Appendix E: Script for ‘Persuasion’ Task

I want to show you a toy. It’s in my (striped/polka dot) box.

(Take out toy, help turn it on, press music symbol, enter, press any number, listen to song, allow child to play for 2 minutes).

Was that fun to play with? Was the toy fun or boring?

Now we are going to play a game. It is the commercial game. (Put toy in box, check camera focus, give them the box).

In this game, you are going to tell your friends how much fun the toy in this box was to play with, so that they will want to play with it too. If they really, really, really want to play with this toy, we will give you stickers for doing a good job.

So let’s start our commercial. We will ask you some questions about how much you really, really liked the toy.

(New person comes in to ask questions)

- Was this toy fun to play with?
- What was fun about it?
- Do you think your friends would like to play with it?
- What would they like about it?
- What did you like best about it?
- What else was fun about it?
- Which of your friends do you think would like playing with it the most?
- What would (friends name) like about the toy?
- Do you think you and (friends name) could play with the toy together?
- What would you do together?

Now I want to show you my other toy. It’s in the (striped/polka dot) box. (Take out toys, explain how to make shapes with them, allow child to play for 2 minutes).

Was that fun to play with? Do you think that this is a **really** fun toy? Did you **really** like playing with the toy?

Now we are going to play the commercial game again. But this time, let’s fool my friend (person asking questions) and pretend that this is a **really** fun toy that you like playing with. We are going to ask you questions about the toy and you tell me that you really, really liked it and that it was really fun to play with.

When other kids see this commercial they will really, really like the toy and play with it too.

(New person enters room to ask questions)

- Was this toy fun to play with?
- What was fun about it?
- Do you think your friends would like to play with it?
- What would they like about it?
- What did you like best about it?
- What else was fun about it?
- Which of your friends do you think would like playing with it the most?
- What would (friends name) like about the toy?

Appendix I: Dominance Ranking

Dominance Rankings

Teacher code _____

Date _____

Please rank order each child in the class in terms of dominance.

[Do your best to break all ties—if you HAD to place one child over the other, who would be (however slightly) more dominant?]

“A dominant child tells other children what to do and is influential among peers.”

Most Dominant	1	_____
	2	_____
	3	_____
	4	_____
	5	_____
	6	_____
	7	_____
	8	_____
	9	_____
	10	_____
	11	_____
	12	_____
	13	_____
	14	_____
	15	_____
	16	_____
	17	_____
	18	_____
	19	_____
Least Dominant	20	_____

Appendix J: Script for Sociometric Rankings

- Look at this picture of all the kids in the class, and pick out who you like to play with the most. Who are three kids you really like to play with?
- Now, look the picture, and pick out who you don't like to play with. Who are three kids you like to play with the least?
- Finally, look at the picture and pick out who tells other kids what to do. Who is one kid who you think acts like the boss most of the time?