Recently, within the field of early childhood education, there has been an increasing emphasis on the role of social construction of knowledge and on the inter-relatedness of aspects of social and cognitive development. This study investigated a proposed relationship between young children's popularity status among peers and a representational theory of mind. Twenty-four 5-year-olds participated in a series of sociometric interviews in which they were asked to rate their peers according to whether they "liked to play with them a lot," "liked to play with them sometimes," or "didn't like to play with them." These ratings were used to generate an overall likability measure, which was then compared with a measure of performance on a series of theory of mind tasks. Comparison of these measures indicated a significant correlation between the ranking of individual children as popular, or unpopular, by their peers and a measure of theory of mind. These results indicated that social interactions among peers provide opportunities for understanding of self and others and for explaining and predicting the actions of others based on mental states. Teachers were also asked to rate the children in terms of perceived popularity. Comparisons of the ratings made by teachers and children indicated considerable differences. (Contains 26 references.) (Author/EV)
SOME IMPLICATIONS OF POPULARITY AT AGE FOUR

Sue Dockett and Sheila Degotardi
Faculty of Education
University of Western Sydney, Macarthur

ABSTRACT

Recently, within the field of early childhood education, there has been an increasing emphasis on the role of social construction of knowledge and on the inter-relatedness of aspects of social and cognitive development. This paper reports a study which investigated a proposed relationship between young children's popularity status among peers and a representational theory of mind.

In this study, 24 five-year-old children participated in a series of sociometric interviews where they were asked to rate their peers according to whether they 'liked to play with them a lot', 'liked to play with them sometimes' or 'didn't like to play with them'. These ratings were used to generate an overall likeability measure, which was then compared with a measure of performance on a series of false belief, appearance-reality and representational change tasks. Comparison of these measures indicated a significant correlation between the ranking of individual children as popular, or unpopular, by their peers and a measure of theory of mind. One explanation for this coexistence is that social interactions among peers provide opportunities for understanding of self and others and for explaining and predicting the actions of others based on mental states.

Teachers also were asked to rate the children in terms of perceived popularity. Comparisons of the ratings made by teachers and children indicate considerable differences. Possible reasons for this are discussed. Implications for early childhood education programs and possible avenues for future research are considered.

INTRODUCTION

In current research agendas, there is a focus on the connections between the areas of social and cognitive development, and on the 'inextricable' links that bind these (Erwin, 1993). This is apparent in the area of theory of mind research, where it has been noted that 'children cannot make much progress toward understanding everyday events involving people until they have some understanding of the mind' (Flavell, Miller & Miller, 1993:100).

Children's theories of mind, in the current research context, are described as understandings:

*children have of their own minds and others' minds and of the relation between the mind and the world. This understanding enables children to predict and explain actions by ascribing mental states, such as beliefs, desires and intentions, to themselves and to other people (Astington, 1991:158).*

Theory of mind research has focussed on describing the developments that occur within the early childhood years as well as identifying and investigating situations in which children demonstrate an understanding of several aspects of this development, such as the appearance-reality distinction, false-belief and representational change. In each of these tasks, children who report the awareness of perspectives which differ from their own and who also report
changes in their own perspectives are regarded to have developed a representational theory of mind.

A substantial shift in these understandings has been described in the early childhood years. Between the ages of about four and six years, children develop the ability to create and refer to different mental representations of the same thing. This means that they can accept that other people may see and interpret things in ways which are different from their own and recognise that at different times, they will also represent things in different ways. These understandings are reported to be based on an understanding of the mind as an interpretive mechanism, rather than as a mechanism that faithfully reproduces the physical world (Perner, 1991).

The importance of positive social interactions among young children has been recognised for some time, with early childhood educators promoting the importance of peer interaction and recognising that social competence is based on being accepted and valued by peers (Curry & Johnson, 1990).

As the debate about how children acquire knowledge embraces the importance of social contexts and social interactions in generating socially shared understandings (Rogoff, 1990; Wertsch, 1991), as well as the importance of the individual constructing knowledge (Piaget, 1965), attention has been paid to the types of social environments and interactions which promote such understandings.

Addressing this issue, recent research by Dockett (1994) has focussed on the context of children’s play and the opportunities that this may provide for the development of understandings about the mind and mental functions. Finding that children who were involved in complex social pretend play were more likely than others to have developed a representational theory of mind, it was concluded that the social nature of play provides opportunities for children to negotiate, discuss ideas, resolve conflicts and extend upon imaginative themes (Black, 1989). Much of the success of these interactions depends on children’s ability to consider the perspectives of others — the same ability as underlies a representational theory of mind.

This research also has considered the issue of children’s popularity as a factor influencing the nature and type of peer interactions. Children who were regarded as popular by their peers, apparently, were accepted more readily into a variety of social situations and therefore, had greater opportunities to become aware of and to consider the perspectives of others. In contrast, children regarded by their peers as unpopular may have been excluded from complex play and so also may have been excluded from social situations which promote the consideration of others’ perspectives.

In a recent discussion of the importance of peer interactions among children, Hartup (1996) has linked the notion of peer popularity with developmental outcomes, reporting that ‘being liked’ is associated with positive developmental outcomes and with ‘being disliked’ identified as a risk factor for future development. Being accepted as a preschooler has been linked to the development of social competence (Kemple, 1991), and conversely, being rejected as a preschooler has been linked to a recursive cycle of rejection and isolation that persists into later years (Katz, 1988).

This paper reports an investigation which aimed to investigate whether or not a connection exists between the two areas of children’s peer popularity and theory of mind; that is whether or not children who are regarded as popular by their peers are likely to have developed a representational theory of mind. In the pursuit of this aim, teachers as well as children, were asked to rate each child in their group in terms of popularity. The results of this rating procedure and a consideration of peer popularity among a group of four-year-olds raises a number of implications for early childhood policy and practice.

Journal of Australian Research in Early Childhood Education

Volume 1 1997

BEST COPY AVAILABLE
METHODOLOGY

Sample

The sample comprised one group of 24 children attending the same preschool in metropolitan south-western Sydney. All children had attended the same full-day preschool since the beginning of the year and participated in the data collection phase during terms 2 and 3, 1995. The average age of the thirteen girls and eleven boys was 54.75 months, with the range being 45 months to 64 months.

Procedures

The study was conducted in four phases:

• orientation visits
• interviews with children to determine peer popularity
• interviews with teachers about children's popularity
• theory of mind interviews.

The first of these phases consisted of a series of orientation visits made to the centre by the research team. The aim of these visits was to establish a level of familiarity between the researchers and the children and to take the photographs of individual children which would be used in the second phase of the study.

Interviews with individual children formed the second phase. Using the procedure developed by Asher, Singleton, Tinsley and Hymel (1979) and modified during recent research (Denham, McKinley, Couchoud & Holt, 1990), children were shown photographs of their classmates (those taken during the orientation visits) and asked to name them and then to 'post' each photo into a box on which there were drawings of positive, neutral and sad faces. Before placing the photos into the boxes, children were asked to consider how much they liked to play with the child in the photo. They were asked to place the photo in the box with a happy face on it if they liked to play with the peer a lot; the neutral face if they sometimes liked to play with the peer; and the sad face if they did not like to play with the peer. A short procedural training session, using photos of play equipment, preceded this task.

The third phase involved the three staff at the preschool rating each child in the group according to their perceived popularity among peers. Staff rated children as either popular with their peers, neutral, or unpopular with peers, using the same criterion as the children, that is, did others like to play with the child a lot, like to play with the child sometimes or did they not like to play with the child.

The fourth phase consisted of a series of theory of mind tasks drawn from previous research in this area (Dockett, 1994). Tasks covered the areas of cognitive connections (Flavell, 1988); appearance-reality distinctions (Flavell, Green & Flavell, 1990) false belief (Ferner, 1991) and representational change (Astington & Gopnik, 1988).

All interviews with children were conducted in a quiet area of the preschool, which was within sight of the other staff and children. Children were invited to participate in the interviews, which were conducted over a period of several days. Each interview lasted 10 to 15 minutes. Interviews followed a standard pattern, however there was the potential for the researcher to follow the interest of the child by responding to their questions or statements within the interview. Interview sessions were audio taped and transcribed for analysis.
Measures

For each child, several measures of popularity were generated from the data:

(i) the number of positive, neutral and negative nominations from peers;

(ii) a ‘likability score’, calculated by subtracting the number of negative ratings from the number of positive ratings and dividing this by the total number of responses (Denham et al., 1990);

(iii) a global or general rating, derived from the likability score (high, neutral or low);

(iv) general teacher ratings (popular, neutral, unpopular).

Each child’s understanding of theory of mind was also calculated, using the following measures:

(i) responses by task (cognitive connections; appearance-reality – picture, toy, pretend and illusory object; false belief–own and others; representational change);

(ii) an overall score (the sum of correct responses to all theory of mind tasks);

(iii) a global rating, based on responses to theory of mind tasks requiring a representational understanding of mind (high or low).

The global rating (high or low) was calculated for theory of mind based on the number of correct responses for specific tasks. Children were rated as high in relation to theory of mind tasks when they successfully completed the tasks related to appearance-reality with illusory objects and false belief. Successful performance on these tasks has been identified as requiring at least the beginnings of a representational theory of mind. Such an understanding is not required to successfully complete the cognitive connections, picture, toy and action-based appearance-reality tasks.

Each of these measures was included in a correlational analysis, using SPSS-X. Data relating to the patterns of children’s nominations were also analysed.

RESULTS AND DISCUSSION

Likeability ratings

Responses from children indicated that they enjoyed the posting box task and completed it with apparent ease. This response is consistent with previous research (Denham et al., 1990; Field, Miller & Field, 1994). Examples of responses to the task included:

Casey:  I don’t like Blake (places photo in box with sad face).

That’s Dale. I like to play with him every day, cause he’s funny (places in box with smiling face).

Mary:  Greg (looks at photo). He’s a really naughty boy ... (posts into box with sad face).

Terry:  Oh! Casey (looks at photo). I like her a lot (posts in box with smiling face).

Mmmm. Mary (looks at photo). I love her (posts into box with smiling face).

Ella (looks at photo). I don’t play with her at all (posts in box with sad face). (Picks up another photo). Oh, I play with her all right. Only a little bit (posts photo into box with neutral face).
But I don't play with him at all (photo of Blake). He's naughty.

Caitlin: Andrew ... (posts in box with happy face) 'cause he goes to my dancing.

(Picks up next photo) Amy (posts in box with sad face) she plays with Evan.


These responses suggest that not only do children rate their peers, but also that they use a variety of criteria when doing so. These criteria varied from 'liking the person', as indicated in Terry’s responses, to participation in similar activities, as is evident in Caitlin’s response (Field et al., 1994). Consistent with findings by Corsaro (1985), the children often highlighted personal characteristics of peers as the basis for their ratings. For example, Casey plays with Dean ‘cause he’s funny’ and Neil will sometimes play with Evan but ‘not when he’s angry’. One characteristic often cited as a reason for not liking to play with a particular child was ‘naughtiness’. In the limited examples above Blake is twice referred to as naughty and therefore as someone that these children do not like to play with. For some children, trends such as this became evident throughout the interviews.

Likeability scores for children ranged from +0.5 to -0.5. For the purposes of reporting, children were regarded as ‘popular’ if their overall likability rating was positive; neutral if their overall likeability score was zero; and ‘unpopular’ if there overall likeability score was negative. The patterns of ratings of peers are noted in Table 1.

**TABLE 1**

**PATTERNS OF POPULARITY RATINGS.**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Popular</th>
<th>Neutral</th>
<th>Unpopular</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>2</td>
<td>1</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>Girls</td>
<td>7</td>
<td>2</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>3</td>
<td>12</td>
<td>24</td>
</tr>
</tbody>
</table>

The number of positive ratings for individuals (out of a possible 23 nominations) ranged from 4 to 16, while negative ratings also ranged from 4 to 16. The great variation in this was remarkable, with one child (Alice, aged 57 months) positively nominating only one child, while rating all the other children as ones she did not like to play with. The majority of these children also nominated Alice as someone they did not like to play with. This contrasted with Casey (aged 58 months) who positively rated 9 peers, rated 12 as neutral and negatively rated 2 other children. The implications of one child being actually disliked by a majority of peers, the reasons for such dislike and the influence of this on patterns of interaction is an area requiring further, more detailed exploration.

**Comparison of ratings of staff and children**

In contrast with the findings of Field et al., (1994), there was a notable lack of consistency between the sociometric ratings generated by staff and children. After calculating the global popularity rating, only 9 out of the total number of children (24) were rated by staff and peers in the same way. The breakdown of these similarities for children rated as popular, neutral and unpopular groups is illustrated in Figure 1. In this diagram, for example, 8 children had an overall popularity rating among their peers and staff rated 13 children as popular, including 5 of the same children nominated by peers.
In seeking to explain the discrepancies, profiles of two children who were rated differently by staff and children are included.

**Ben**

Ben was rated as popular by 2 of the 3 staff. Ben was nominated by peers as the least popular child in the group. Specifically, of the 23 other children in the group, 4 rated Ben as someone with whom they would like to play; 3 were neutral and 16 said they did not like to play with Ben.

On observation, Ben was described as being of average build, height and weight, with a physical stance which suggested confidence. He seemed to be rather loud and impulsive in his actions. He had definite ideas about what he wanted to do and what he wanted others to do. He was observed to hit other children if they did not do as he wanted. He did not like to be challenged by others and acted as a leader in play experience, telling others what to do. He was described by a member of the research team as having a 'roguish' personality and as 'walking a fine line between being a leader and being a bully'.

**Caitlin**

Caitlin was rated by all 3 staff as unpopular. Only 5 of her peers nominated Caitlin as unpopular, with most of them rating her as popular (13). There were also 5 neutral ratings.

On observation, Caitlin was described as having an Asian background and being a very quiet child. Mainly she played with Prue, the only other child in the centre who also had an Asian background. Interactions between Prue and Caitlin were reported to be friendly and positive. Staff suggested that Caitlin was dependent on Prue.

From these rough sketches of these children, it seems clear that staff and children rate popularity according to different criteria. For example, Ben demonstrated many leadership qualities which gave him an obvious power among his peers. This power, according to Corsaro (1985), would enable him to enter play without apparently being rebuffed by his peers. A cursory glance around the room by staff would certainly find Ben engaged in similar activities to his peers. Staff may have rated him as popular because they noted no evidence of him being rejected; rather they would see him actively engaged with other children (Dodge, Coie & Brakke 1982). This highlights the importance of noting not only children's engagement in experiences, but also the nature of the interactions within these.

Caitlin's shyness and quietness may have been the basis for staff ratings of her as unpopular. It is possible that children who are quiet, shy and withdrawn are often considered rejected. Yet, the quiet nature seemed to have presented more difficulties for the staff than for the children. Caitlin's interaction with one seemingly close friend raises an interesting question:
Do children need to have many friends to be considered popular? While staff ratings suggested that this was the case, the children apparently did not apply this same criterion.

Reciprocal ratings

To examine the reciprocal nature of peer nominations, each child's positive nominations of others were analysed according to whether or not the others returned the positive rating. For example, if Caitlin rated Prue as someone she liked to play with a lot, did Prue also rate Caitlin in the same way? In keeping with findings of Roopnarine and Honig (1985), definite trends relating to social networks emerged from this analysis. For example, in nominating children they liked to play with, popular children tended to nominate other popular children. Generally, the children nominated also made reciprocal nominations. In other words, popular children said they liked to play with other popular children, who in turn, also said they liked to play with them. On average, popular children positively nominated 8 of their peers and received an average of 5 reciprocal positive nominations.

Another trend was that unpopular children were often rated as popular by other unpopular children. However, whilst these children made an average of nine positive nominations, they received substantially fewer reciprocal positive nominations than their popular peers' an average of only 2.8.

One further trend was that almost all of the children wanted to play with the children who were popular. These findings suggest that popular children are more 'in tune' with their peers, appearing to possess greater awareness of the children with whom they are likely to have positive social interactions.

Considering the stated importance of developing a circle of friends in the early childhood years (Corsaro 1985), these findings suggest that compared with popular children, unpopular children have limited opportunities to engage in reciprocal interactions, where both parties want to play with each other. The nature of these interactions may also mitigate against opportunities for complex social play and the social and cognitive development which occurs in this context.

Theory of mind tasks

In responding to theory of mind tasks, children demonstrated many of the same patterns as identified in previous research (e.g., Dockett, 1994). For example, few children had difficulty with the tasks of cognitive connections, identifying that they did not know what was in a box if they could not see or hear it. Responses to the appearance-reality tasks which used illusory materials demonstrated either a clear understanding that one object could be represented in more than one way, or the conviction that the object (a) was really what it looked like, or (b) looked like what is was.

Popular children and theory of mind

The overall or global measures were used to sketch the connection between these two areas. As indicated in Table 2, children who were rated as popular were more likely to respond to the theory of mind tasks in a manner which suggested that they had a representational understanding of mind.
TABLE 2
GENERAL COMPARISON OF LEVELS OF LIKABILITY AND THEORY OF MIND TASK PERFORMANCE

<table>
<thead>
<tr>
<th>Global rating of likeability</th>
<th>Global theory of mind rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
</tr>
<tr>
<td>Popular</td>
<td>6</td>
</tr>
<tr>
<td>Neutral</td>
<td>1</td>
</tr>
<tr>
<td>Unpopular</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
</tr>
</tbody>
</table>

 Significant correlations were identified between the overall theory of mind measure (sum of correct responses across all tasks) and the number of positive ratings for individual children ($r=.4797$, $p <.05$). In addition, a negative correlation was identified between the overall theory of mind measure and the combined number of neutral and negative ratings ($r= -.4769$, $p <.05$). A similar pattern emerged in relation to the global theory of mind rating (high or low), where this was significantly correlated with the positive ratings of individual children by peers ($r = .4257$, $p < .05$) and with the negative ratings of individual children ($r = -.5243$, $p < .01$). A summary of significant correlations between the global theory of mind rating and sociometric measures is detailed in Table 3.

TABLE 3
SIGNIFICANT CORRELATIONS BETWEEN GLOBAL THEORY OF MIND MEASURE AND SOCIOMETRIC RATINGS

<table>
<thead>
<tr>
<th>Sociometric measures</th>
<th>Global theory of mind measure (high/low)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive nominations (like)</td>
<td>$r = .4257$, $p &lt; .05$</td>
</tr>
<tr>
<td>Negative nominations (dislike)</td>
<td>$r = -.5243$, $p &lt; .01$</td>
</tr>
<tr>
<td>Global rating</td>
<td>$r = .4574$, $p &lt; .05$</td>
</tr>
<tr>
<td>(popular/neutral/unpopular)</td>
<td></td>
</tr>
</tbody>
</table>

These results indicate that children who were rated as popular were more likely to use a representational understanding of mind, indicating the ability to consider the perspectives of others and to explain and predict actions on the basis of this. Conversely, children who did not receive many positive nominations form their peers, and hence were classified as unpopular or neutral, were more likely to respond to theory of mind tasks in a way which indicated that they did not consider the prepositives of others.

Analysis of these patterns on the basis of gender revealed a significant correlation between popularity and theory of mind for boys, but not for girls. For example, boys considered as popular were also more likely to use a representational theory of mind ($r= .7271$, $p < .05$) and boys rated as unpopular were less likely to use a representational theory of mind ($r= -.6300$, $p < .05$). While the results for girls were in the same directions as those reported for boys, the correlations did not reach levels of significance. The small sample size precludes more than speculation as to the reasons for this, however, it is an important issue to be considered in future research.
The only measure significantly correlated with age was performance on false belief tasks overall. Such tasks included questions relating to each child's understanding of their own false belief as well as responses relating to the false beliefs of others. In keeping with the results of previous research (Dockett, 1994), children who were older performed at a higher level on false belief tasks ($r = .4277$, $p < .05$).

**GENERAL DISCUSSION**

While cautious about the generalisability of the findings from this limited investigation of the area, some patterns and issues have emerged which will guide future investigations and which have implications for policy and practice in the early childhood years.

In overview, the results of this study indicate that

- there is a significant positive correlation between children’s performance on theory of mind tasks and their reported peer popularity;
- it is possible for four-year-olds to rate their peers in terms of likability; and
- by about the age of four, some children are already perceived as popular by their peers, whereas others are not so.

Each of these findings is important in a number of ways. In relation to the first of these, it is evident that there is a connection between children’s popularity status—that is, whether or not they are liked by a majority of their classmates—and their representational theory of mind. This connection is more pronounced for boys than girls, although the reasons for this are far from clear and warrant further investigation. It may be, for example, that differences in the interaction styles of boys in general, as described by Black (1992), may influence popularity among peers, and hence also affect the social contexts in which boys engage.

The connection between popularity and a representational theory of mind reflects the importance of social interaction among young children in relation to both social and cognitive development. Through a range of social interactions, children can be alerted to the possibility that alternative views or perspectives exist (Bonica, 1993; Rayna, Ballion, Breute & Stambak, 1993) and can engage in a number of strategies which show acceptance of these alternative views and so promote interaction. In addition, social interactions may promote the development of shared meanings or understandings among children. This is the basis of intersubjectivity (Göncü, 1993) which can result in joint decision-making, joint construction of meanings and communication about these.

The potential for children to test out their ideas and understandings as well as to participate in the joint construction of knowledge in a social context is clear. In social interactions, children are likely to act in accord with their own theories of mind and to predict and explain the actions of themselves and others in accordance with the same theories. It is within the social context that children will be able to gauge the responses of others to their own actions and interactions and to use this as the basis for refining or adapting the strategies employed. The same context also provides a range of opportunities for children to develop a shared focus and to interact in a way which promotes a shared goal and the development of shared understandings.

The ease with which children involved in this study nominated peers according to popularity indicates that some patterns of social interaction were already well established. These patterns included the preference of all children to play with other children rated as popular; the likelihood that popular children would engage in social interactions with other children who also wanted to play with them; and the preference for children rated as unpopular to play with other unpopular children.

Several issues emerged in relation to the ratings. There was great variation in the ratings for individual children, with some strongly identified as unpopular and others as popular or
neutral. The implications of each of these types of ratings for individual interactions are enormous. For example, what are the implications of being regarded as ‘neutral’? Does this suggest that some children are almost insignificant and that their presence in a classroom goes largely unnoticed? What is the impact of this on their social development? Further research of this issue will aim to investigate these and other relevant questions.

There was also a considerable difference between the ratings of staff and those of children. There are several possible explanations for this, however, it seems most likely that staff and children use different criteria to assess the popularity of children in a group, or that children and staff have differing expectations in terms of interactions.

A number of questions have emerged regarding peer popularity. One of these relates to the connection between popularity and having friends. Is being popular the same as having friends? Could it be that having a small group of close friends is as important as being popular among the whole group? Is it possible to have a close circle of friends, yet be regarded as unpopular in general by the group? These are some of the issues which will be pursued in further research in this area.

CONCLUSION

The results of this study suggest that the social context of the peer group plays an important role in cognitive development. It may well be that the social context provides opportunities for children to engage in the joint construction of knowledge or to test out knowledge that they have already constructed. It is clear that children’s social interactions are important to them and that they provide the context in which a range of understandings can be developed. Such understandings clearly include those relating to the mind and the role of the mental world in explaining and predicting actions and responses.

REFERENCES


**AUTHORS**

Sue Dockett is a senior lecturer in early childhood education at the University of Western Sydney, Macarthur. Her research interests include children’s thinking, children’s theories of mind and play.

Sheila Degotardi combines part time work at the University of Western Sydney Macarthur with research related to children’s use of narrative and their developing theories of mind.