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The role of familiarity and similarity in friendship relationships in toddlers in Dutch daycare centers

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ABSTRACT: In this article a study is presented of selective affiliation of two- and three-year-old children in the natural situation of Dutch daycare centers. Data of (behavioral) characteristics of 674 pairs of children (dyads) were collected. Multi-level analyses of these dyadic data were conducted and showed that the chance of friendship between two children is related to similarity in age and gender. No friendship preference for similarity in cultural background was found. The friendship preference for similarity in gender and age seems to be related to a preference for specific play activities. In all groups except one, a relation between friendship and familiarity was found. Part-time attendance of the young children at the daycare groups caused group instability and probably restricts the chance to develop friendship relations. Children's tendency to be attracted to similar children raises the pedagogical issue of diversity in group daycare.

RESUME: Cet article présente une étude sur l'affiliation sélective chez des enfants de 2 et 3 ans dans une situation naturelle au sein de crèches hollandaises. Des données ont été collectées sur les caractéristiques (comportementales) de 674 paires d'enfants (dyades). Ces données dyadiques ont fait l'objet d'analyses à plusieurs niveaux qui ont démontré que la probabilité de développer une amitié entre deux enfants est liée à une similarité d'âge et de genre. Aucune préférence pour la similarité du contexte culturel n'a été observée. L'amitié préférentielle pour la similarité de genre et d'âge semble être liée à une préférence pour des activités de jeux spécifiques. Dans tous les groupes sauf un, une relation entre amitié et familiarité a été trouvée. Une présence à temps partiel des jeunes enfants dans un groupe de crèche génère de l'instabilité et restreint probablement les chances de développer des relations amicales. La tendance affichée par les enfants à être attirés par des enfants semblables soulève la question pédagogique de la diversité dans les groupes de crèche.

ZUSAMMENFASSUNG: In dieser Abhandlung geht es um eine Studie über die gezielte Aufnahme von 2- bis 3-jährigen Kindern in die normale Situation von Holländischen Kindertagesstätten. Es wurden hierzu Daten über (verhaltensbezogene) Charakteristika von 674 Kinderpaaren (Dyaden) gesammelt. Dabei haben mehrstufige Analysen dieser dyadischen Daten gezeigt, dass die Möglichkeit einer Freundschaft zwischen zwei Kindern in Bezug steht mit Alters- und Geschlechtsgleichheit, wobei jedoch keine Bevorzugung von gleichem kulturellem Hintergrund festgestellt werden konnte. Die Bevorzugung von Freunden in gleichem Alter und von gleichem Geschlecht scheint verbunden mit einer Vorliebe von speziellen spielerischen Aktivitäten. Ein Bezug zwischen

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Freundschaft und Vertraulichkeit wurde in allen Gruppen außer einer gefunden. Die nur teilweise Anwesenheit von kleinen Kindern in der Kindertagesgruppe verursachte eine Gruppeninstabilität und beschränkt vermutlich die Möglichkeit, freundschaftliche Beziehungen zu entwickeln. Die Neigung sich zu gleichartigen Kindern hingezogen zu fühlen, bringt das pädagogische Thema Diversität in Kindertagesstätten auf.

RESUMEN: En este artículo se presenta un estudio de afiliación selectiva entre niños de dos y tres años de edad llevado a cabo en guarderías de los Países Bajos, en situaciones naturales. Se recolectaron datos sobre las características del comportamiento de 674 parejas de niños (díadas). Con los datos diádicos se realizaron análisis multinivel que mostraron que la posibilidad de amistad entre dos niños está relacionada con su semejanza en edad y género. No se encontró que un entorno cultural semejante influyera en las preferencias de amistad. Esta preferencia por niños semejantes en cuanto a edad y género parece estar relacionada con actividades de juego específicas. Con excepción de un grupo, en todos los demás se encontró una relación entre amistad y familiaridad. El hecho de que los niños pequeños asistieran a la guardería sólo a tiempo parcial causó inestabilidad en los grupos y restringe, probablemente, la posibilidad de desarrollar relaciones de amistad. La tendencia de los niños a sentirse atraídos hacia niños semejantes plantea la cuestión pedagógica sobre la diversidad en las guarderías.

Keywords: friendship relationships; familiarity; similarity; young children

Introduction

Organized, early childhood daycare facilities have become important venues for young children's social life (Corsaro 2004; Howes 2009; Kernan and Singer 2010). In group settings, two- and three-year-olds not only meet playmates, but can also form friendships from a very early age (e.g., Howes 2009; Goldman and Buysse 2007; Vaughn and Santos 2008); sometimes these friendships last one year, or even longer (Howes 1988a). According to Goldman and Buysse (2007), there are multiple possible characteristics of friendship in young children, not all of which are consistently present. Every researcher uses slightly different characteristics and definitions of friendship. These include an interest in remaining in each other's proximity, a preference to play together, the use of relatively more pro-social behaviours such as sharing and helping, the use of relatively more initiatives, imitating each other more often, and play at a more complex level than non-friends (e.g., Goldman and Bruysse 2007; Howes 2009; van Hoogdalem et al. in press). Although researchers use slightly different definitions, friendships are generally viewed as 'reciprocal, predominantly positive relationships between two young children' (Goldman and Buysse 2007).

From the perspective of the child, opportunities to play with friends make attending a child care group attractive. As noted by Dunn (2004), 'we are missing a major piece of what excites, pleases, and upsets children, what is central to their lives even in the years before school, if we don't attend to what happens between children and their friends' (3).

Studies of older children demonstrate that having one or more friends has significant and positive consequences, both in the short- and long-term, including increased social competence and reduced anxiety (e.g., Berndt 1996; Ladd and Troop-Gordon 2003). Longitudinal studies on the effects of very young children's friendships in daycare centers are scarce, however. One exception is Howes' (1998) research that focused on daycare experiences and the development of children's social competence.

She found that children who engaged in more complex play with peers as toddlers were more pro-social and engaged in complex play as preschoolers, and were less aggressive and withdrawn when they were nine-year-olds. Recently, the Early Child Care Research network also reported that positive experiences with peers in daycare centers predict social competence with peers in middle childhood (NICHD 2008). Because the positive effects on social competence and the value children attach to having a friend, there is a growing acknowledgement that it is important to support friendship relations among young children in daycare settings (Kernan and Singer 2010; Saracho and Spodek 2007a, 2007b). There are still few studies that give insight into the process of friendship formation in very young children, however. Studies of older children have shown that friendships are not random, but rather tend to reflect processes of selective affiliation. In this article, we examine the selective affiliation of very young children in the natural setting of Dutch daycare groups. Specifically, we investigated whether familiarity and similarity – in terms of gender, age, cultural background and play activities – may predict friendship in two- and three-year-old children.

The social context and availability of peers

Friendship formation begins with ‘propinquity,’ or the prerequisite that children must have the opportunity to meet each other (Hartup and Abecassis 2002). In this regard, young children are extremely dependent on their parents’ goals and values for social relationships outside the family. In the family context, young children generally meet children from the same cultural, ethnic, and socioeconomic background. Likewise, parents tend to choose child centers and schools that correspond to their social and cultural values (Hay and Nash 2002). Daycare programs for infants and toddlers are tied to working mothers. In many Western countries, daycare centers can provide opportunities for relatively small and stable groups (Howes 2009). The groups can be unstable, however, when parental caregivers work part-time, on irregular days and times, or use a combination of formal and informal child care arrangements. Under such circumstances, the availability of specific peers are restricted and unpredictable (Phillips 1995).

Familiarity

The opportunity to repeatedly meet over a longer period of time is an important condition for becoming familiar, and making friends with, others (e.g., Gallagher et al. 2007; Hinde 1979). Recurrent interactions are especially important for very young children. Infants and toddlers are highly dependent on nonverbal communication, and are less skilled in coordinated interactions. Therefore, they need recurrent interactions to construct mutual expectations, shared meanings and patterns of behaviour like routines or ritualized jokes (e.g., Corsaro 2004; Verba 1994). Young children who spend more time with each other have the opportunity to build a shared history, which facilitates their interactions because they will better understand each other’s behaviour (Dunn 1993). Children who are familiar with each other show more positive behaviour (Herren 2004), and have higher frequencies of social play and higher cognitive levels of play than unfamiliar peers (Doyle, Connolly, and Rivest 1980), which are characteristics of social behaviour related to friendship (e.g., van Hoogdalem et al. in press).

Similarity

Studies of older children have established the significance of similarity in processes of selective affiliation (e.g., Morry 2005; Rubin et al. 1994). Children affiliate with peers who are similar to them on key characteristics. They tend to play with children of the same gender, age and cultural backgrounds. Youngsters also tend to affiliate more strongly with children who are similar in behavioural domains such as temperament, academic achievement or preference for certain play activities (e.g., Bukowski, Motzoi, and Meyer 2009). There are hardly studies of the role of similarity in friendship choice among very young children. Based on the prior body of literature concerning older children, however, we hypothesize that similarity also plays an important role at a younger age. Meltzoff (2005, 2007) suggests that young children socially interact sooner with peers who are viewed as 'like me.' In his neuropsychological studies of imitation, he has shown that imitation gives young children a better understanding of how the minds of others work, which is a crucial condition for successful social interaction. By being imitated, a child not only recognizes that the other is 'like me,' but also that they are liked, which gives the child a feeling of pleasure (Parker-Rees 2007). Given this prior body of evidence, we expect that young children affiliate with peers who are similar on key social characteristics.

Gender

Research shows that cross-gender interactions are common in children under four years of age. From an early age, however, children also develop a preference for interacting with same gender peers (e.g., Howes and Lee 2007; Vaughn and Santos 2008). There is an inconsistency in prior research regarding the age at which this same gender begins. Jacklin and Maccoby (1978), as well as Howes (1988b), reported this preference already in two-year-olds. Others have found a preference for same gender peers no earlier than at the end of the third or fourth year (e.g., Fabes, Martin, and Hannish 2004; Serbin et al. 1994). That this preference to affiliate with same gender peers becomes stronger with age is well established, however (e.g., Fabes et al. 2004; Gallagher et al. 2007).

Age

Studies on the relation between age differences and friendship are also rare. Anthropological studies in rural and non-industrialized cultures show that young children often play in small, informal dyads or groups of siblings, cousins and neighborhood children from different ages and gender (Göncü, Mistry, and Mosier 2000; Nsamenang 2010). In contrast, children in formal daycare settings are placed in groups with a restricted age range. Depending on the policy of the daycare setting, children meet peers with an age difference from one to four years. Some small-scale studies in group daycare settings show that young children tend to prefer interactions with children of similar age (Drewry and Clark 1985; Goldman and Buysse 2007; Goldman and Chaillé 1984).

Cultural background

From the age of three, young children become aware of differences in people's hair and skin color, and have an initial awareness of ethnic grouping such as 'black people' or

‘Moroccan people’ (Ramsey 1987). Children from ethnic majority groups are much less aware of their own ethnic affiliation than minority children (Phinney and Rotheram 1987). In highly polarized political situations, such as in North Ireland, for instance, children as young as one were already able to differentiate between Catholics and Protestants (Connolly, Kelly, and Smith 2009). Little research exists concerning two- and three-year-olds and their preference for becoming friends with children of the same ethnic background. Stevenson and Stevenson (1960), as well as Goodman (1952), found no preferences for becoming friends with children from the same cultural background in three- and four-year-old children. The sample sizes in these studies were small, however. The preference for affiliating with children from the same cultural background seems to grow with increasing age (e.g., Graham et al. 1998).

Play activities

Preference of interacting with same gender, same age or same ethnicity children can be related to similarities in the behavioural domain. The causal relationship can be twofold. On the one hand, children can become friends because they enjoy the same activity. On the other hand, friends enjoy the same activity because they often play together. There are hardly any studies of toddlers that explore the relationship between preferences of play activities and the chance to become friends, but there are many studies of the characteristics of play activities in relation to gender and age. Studies have repeatedly shown differences in play styles and toy choices between boys and girls, which arise early in life (e.g., Etaugh and Liss 1992; Rose and Smith 2009). These distinctions may be caused by differences in hormones and/or by gender stereotyping of the parents and teachers (Golombok and Hines 2002). Boys were found to play more actively and display more rough-and-tumble play than girls (e.g., DiPietro 1981; Poest et al. 1989; Pellegrini 2002), whereas girls engage in complex fantasy play more frequently (Pellegrini and Bjorklund 2004). With regard to toy choice, boys play more with toys like trucks and cars, and girls with toys like dolls (e.g., Fagot, Leinbach, and Hagan 1986; Pellegrini and Bjorklund 2004).

A preference for interacting with same age playmates can also be related to similarities in the behavioural domain, because of differences in developmental level and competences. Exploratory play and parallel play – where children are engaged in the same or a similar activity but not influencing each other’s behaviour – are more frequent among two-year-olds, whereas more complex play and associative play – where children are engaged in social interaction – are more common among three-year-olds (Camaioni, Baumgartner, and Ferucchini 1991). At the age of three, most children develop executive skills that make them less impulsive than two-year-olds. They develop a ‘theory of mind,’ enabling them to understand mental states in the self and in the other such as perceptions, feelings, desires and beliefs – (Leslie 1990). Theory of mind is thought to be essential for coordination of social interactions (Francis, Leudar, and Costall 2004).

Having the same cultural background is probably less influential for preferring specific play activities. Goldman and Buysse (2007) concluded in a review of peer friendship among very young children, that researches from diverse countries such as Norway, Israel, Hungary and the USA give similar descriptions of typical non-verbal play behaviour in befriended dyads of two- or three-year-olds. These behaviours include imitation, invitation to imitate, run-chase, offering objects, turn-taking, making

rhythmic noises on objects, looking, smiling and touching each other. van Hoogdalem et al. (2008) found a difference in helping behaviour, however, in which native Dutch toddlers were less inclined to intervene in peer conflicts than were Antillean or Moroccan toddlers.

Methods

Participants

Our study included observations of eight groups of children in four licensed Dutch daycare centers in urban areas – Arnhem, Den Haag, Eindhoven and Utrecht. The pedagogical staff and managers of these daycare organisations were recruited to select typical (in terms of costs, size and resources). Dutch daycare groups with experienced teachers who were interested in the study. Our research design was in line with ethical norms and was carried out with the informed consent of the parents.

Characteristics of the groups

Four of the eight groups were multicultural daycare groups, with children with native Dutch, Japanese, Caribbean, Ghanaian, Moroccan and Suriname backgrounds. In two groups there was a mixed age of 0- to four-year-olds, and in the other two groups the age ranged from two- to four-years. In the four multi-cultural groups, there was an average of 28 (range 20–38) different children present during a week who, on average, attended for six part-days (three days; $SD = 2.32$). During a week, a child met an average of 28 peers (range 15–37; $SD = 7.99$). The children in the other four daycare groups had native Dutch backgrounds and an age range from two- to four- years. In these groups, there was an average of 29 (range 21–34) different children present during a week who, on average, attended for four part-days (two days; $SD = 1.60$). During a week, a child met on average 20 peers, on average (range 6–29; $SD = 5.07$).

Characteristics of the included children

Children included in this study had to meet the following criteria: the age of the children had to be between 24 and 44 months at the beginning of the observation period, they had to be present on at least one of the observation days (Mondays, Tuesdays and Thursdays), and they had to participate in the group from the beginning until the end of the observation period. A total of 142 children met these criteria and were included in the research. The selected children had a mean age of 36 months ($SD = 6.55$), were 48% male (52% girls), and 85% had a Dutch background (15% had another cultural background).

Procedure

Before the observation period started, observers acquainted themselves with the children; they behaved in a friendly manner towards the children, but did not intervene in the children's activities. An observation period lasted three to four months, on average. During this period, observers were present three days a week.

Friendship is a reciprocal relationship, and data were therefore collected and analysed at the dyadic level. A dyad consisted of two individual children who had the opportunity to socially interact with each other in at least 25% of the observations. In total, 674 dyads were observed. To determine the dependent factor friendship of a

dyad, all the children were observed twice on different days during one hour of free play. Free play was defined as a situation in which children were free to choose what they wanted to do. Children could play with or without involvement of the teacher. Thereafter, multi-level analyses were used to determine whether the independent factors familiarity and similarity (i.e., gender, age, cultural background and play activities) predicted the friendship of a dyad.

Instruments

Friendship

For the dependent factor friendship, scores were calculated for each dyad. A friendship score describes the degree of friendship shared between two children in a dyad; the higher the friendship score, the higher the degree of friendship. A recent study showed that four characteristics of social behaviour – playing together, prosocial behaviour, initiatives and imitation – are related to each other and could be explained by friendship (van Hoogdalem et al. in press). A friendship score was therefore defined by the average of the proportion of time two children in a dyad were involved in these four social behaviours (van Hoogdalem et al. in press).

Familiarity

For the independent factor familiarity, the *part-days for which both children of a dyad were present during a week* were determined. When both children of a dyad were always present at the same days and five days a week, the score for familiarity was the maximum score of 10.

Similarity

For the independent factor similarity, the genders, ages and cultural backgrounds of both children in a dyad were determined. *Gender* of a dyad was divided in three categories, namely *boy-boy*, *boy-girl* or *girl-girl*. For *age* of a dyad, the *age difference* in months between the two children was calculated. Furthermore, a division into four age categories was made: *young-young*, *young-old*, *old-old* and *other*. A dyad was placed in the category *young-young* when both children of the dyad were younger than 36 months, and the age difference between them was no more than six months. A dyad was placed in *young-old* when children of the dyad differed at least 12 months in age, and the oldest child was at least 40 months old. A dyad was placed in the category *old-old* when both children of the dyad were 36 months or older, and the age difference between them was no more than six months.

Cultural background of a dyad was divided in three categories, namely *Dutch-Dutch*, *Dutch-migrant* and *migrant-migrant*. A dyad was placed in the category *Dutch-Dutch* when both children of the dyad had one or two native Dutch parents. A dyad was placed in the category *Dutch-migrant* when one child of the dyad had one or two native Dutch parents and the other child had two immigrant parents. A dyad was placed in the category *migrant-migrant* when both children of the dyad had two immigrant parents.

Play activities

To explore whether play characteristics were related to similarity in gender, age or cultural background of a dyad, the play activities of a dyad were noted every five

Table 1. Play activities of the dyads divided into 10 categories.

Play activity	Descriptive	Examples
Exploratory	Play in which actions are actively and attentively manipulated, in addition actions are repeated and variations are applied	Manipulating sand, investigating how water runs
Constructive	Play in which something is constructed	Building with blocks, making something with paper
Functional	Play in which there is repeated motor movements with or without objects	Biking, running, playing with a ball
Symbolic	Play in which there are pretend roles and/or a make-believe-world is created	Playing a story which involves cars or trains
Cars	Pretend play involving wheels	Playing father and mother, playing in the kitchen
Home corner	Pretend play involving home corner	Dressing as a pirate, playing a tiger, playing a fireman, playing a doctor
Rest	Pretend play involving all things excluding wheels and home corner	
Play-Learn	Play related to preparation for school	Puzzling, reading
Expression	Play in which thoughts and feelings (emotions) are expressed	Making music, dancing, painting
Onlooker behavior	Attentively looked at the activities of others without being actively involved	Looking attentively at what the teacher is doing, looking attentively at the play of other peers
Rest	Play other than in the nine categories above	Wandering, staring, talking to another child, helping teacher

minutes. First, a distinction was made between *parallel* and *associative* play of a dyad (Kontos et al. 2002). Parallel play was defined as playing within three feet of each other, being engaged in the same or a similar activity, and having incidental eye contact. Associative play was defined as being engaged in talking, smiling, offering and receiving toys and being engaged the same or similar activity. Second, play activities were divided into 10 categories, namely *exploratory*, *constructive*, *functional*, *symbolic cars*, *symbolic home corner*, *symbolic rest*, *play-learn*, *expression*, *onlooker behaviour* and *rest* (see Table 1). For each play category, we calculated the percentage of time a dyad was engaged in related behaviour.

Reliability

Observers were trained and allowed to take part in this study when their reliability for each of the observed behaviours was .7 or higher. A random sample of all observations was independently coded to assess reliability of the observations. Inter-reliability of codes was calculated with the Cohen's Kappa coefficient (κ ; Martin and Bateson 1993). Different observers were used during this research, and their reliability was determined by comparing their observations, of at least 2 hours, with those of the senior researchers. The overall reliability for friendship was .76.

Statistical analyses

Data were analyzed with multi-level analyses in SPSS (Mixed Models). Multi-level analysis, also known as hierarchical linear modeling, is a more advanced form of simple linear regression and multiple linear regression. Multi-level analyses are typically used in settings with nested data. In this study, the data were not only clustered (two children in a dyad), but individuals also participated in multiple dyads. To deal with this complex data structure, cross-classified analyses were used within the multi-level framework. Conforming to the cross-classification structure used by Hox (2002),¹ the first level was the dyadic level, and the second was the individual level.

In our analyses, the dependent variable was friendship and the independent variables were familiarity and similarity. Standardized Beta coefficients were used to compare the strength of the predictive values of familiarity and similarity. Descriptive data were used to determine whether the predictive value of similarity could be explained by similarities in play activities,

Results

Table 2 summarises the statistical results of the multi-level regression analyses.

Familiarity

All included children were present at the daycare group for 5.57 part-days during a week, on average ($SD = 2.15$). Familiarity did not have a significant predictive value on friendship (see Table 2; $\beta = 0.09$; $t = 1.40$; $SE = 0.18$; $p = .16$). Follow-up analyses of our data showed that this finding could be attributed to extraordinary circumstances in one of the groups; we return to this in the discussion. When excluding this group, part-days together had a significant effect on the friendship scores ($t = 2.00$; $SE =$

Table 2. Results of the multi-level regression analyses (all dyads included; results of additional tests excluded).

Independent factor	β	t	SE	p
Familiarity	0.09	1.40	0.18	0.16
Similarity				
Gender				
Boy–girl dyads compared to boy–boy dyads	–0.25	–3.77	0.64	0.00
Boy–girl dyads compared to girl–girl dyads	–0.22	–2.82	0.74	0.01
Age				
Young–old dyads compared to young–young dyads	–0.07	–1.18	0.78	0.24
Young–old dyads compared to old–old dyads	–0.13	–2.16	0.82	0.03
Cultural background				
Dutch–Dutch dyads compared to Dutch–migrant dyads	0.00	–0.12	0.91	0.99
Teacher involvement in children’s play				
Simple involvement during parallel play	0.00	0.01	0.01	1.00
Simple involvement during associative play	0.14	2.40	0.02	0.02
Complex involvement during parallel play	–0.07	–1.02	0.01	0.31
Complex involvement during associative play	0.05	0.78	0.02	0.44

0.18; $p = .05$); a higher friendship score was related to children in a dyad being together for more part-days during a week.

Similarity

Gender

The mean friendship score for boy–boy dyads was 4.84 ($SD = 5.90$), and for boy–girl and girl–girl dyads this was 2.70 ($SD = 3.73$) and 4.28 ($SD = 4.86$), respectively. Results showed that both boy–boy dyads (Table 2; $\beta = -0.25$; $t = -3.77$; $SE = 0.64$; $p = .00$) and girl–girl dyads (Table 2; $\beta = -0.22$; $t = -2.82$; $SE = 0.74$; $p = .01$) had higher friendship scores than boy–girl dyads. Further, tests showed that girl–girl dyads did not differ significantly from boy–boy dyads ($\beta = -0.03$; $t = -0.38$; $SE = 0.86$; $p = .71$).

Additional tests conducted with only two-year-old dyads ($n = 164$) showed no significant effect of gender. Statistical tests with only three-year-old dyads ($n = 153$) showed that boy–boy dyads had higher friendship scores than boy–girl dyads ($t = -2.66$; $SE = 1.87$; $p = .01$). No significant difference was found for girl–girl dyads ($t = -0.85$; $SE = 2.73$; $p = .40$).

Age

The friendship score of a dyad became lower when the age difference between two children of a dyad increased ($t = -5.55$; $SE = 0.05$; $p = .00$). Analyses conducted on age categories provide more in-depth information. The mean friendship score of young–young dyads was 4.15 ($SD = 4.80$), for young–old and old–old dyads this was 1.99 ($SD = 2.77$) and 7.98 ($SD = 6.33$), respectively. The results showed that dyads in the category old–old had a higher friendship score than dyads in the category young–old (Table 2; $\beta = -0.13$; $t = -2.16$; $SE = 0.82$; $p = .03$). No significant effect was found for young–young dyads compared to young–old dyads (Table 2; $\beta = -0.07$; $t = -1.18$; $SE = 0.78$; $p = .24$). Further, tests showed that old–old dyads had higher friendship scores than young–young dyads ($t = 5.62$; $SE = 0.92$; $p = .00$).

Cultural background

The mean friendship score of Dutch–Dutch dyads was 3.39 ($SD = 4.80$), and for Dutch–migrant dyads this was 4.43 ($SD = 4.53$). There were 16 dyads in the category migrant–migrant, which were not included in the analyses for statistical reasons. Statistical results showed that a Dutch–Dutch dyad did not significantly differ from a Dutch–migrant dyad with regard to friendship scores (Table 2; $\beta = 0.00$; $t = -0.12$; $SE = 0.91$; $p = .99$).

Additional statistical tests conducted with only boy–boy dyads showed a significant effect of cultural background on friendship scores; Dutch–Dutch dyads had a lower friendship score than Dutch–migrant dyads ($t = 2.07$; $SE = 2.42$; $p = .04$). Statistical tests conducted with only girl–girl dyads, however, showed no significant effect on friendship scores ($t = 0.53$; $SE = 2.54$; $p = .60$).

Play activities

For most categories of play activities, no differences were found between boy–boy, boy–girl and girl–girl dyads (see Table 3). The amount of functional play, for example, seemed

to be the same for boy–boy, boy–girl and girl–girl dyads. An exception to this pattern concerned gender difference in the types of symbolic play. Boy–boy dyads played at symbolic cars activities 16% of their time, whereas this was only 5% for boy–girl dyads and 0% for girl–girl dyads. Girl–girl and boy–girl dyads seemed to play at more symbolic home corner activities than boy–boy dyads. Boy–boy dyads engaged in slightly more frequently in other forms of symbolic play, like pretending to be a tiger, a fireman or a doctor.

Most play characteristics did not differ between young–young, young–old and old–old dyads (see Table 4). Some differences seemed to be present, however; exploratory activities, for example, were mostly seen in young–young dyads and not at all in

Table 3. Play activities – gender.

Play activity	Boy–boy (<i>n</i> = 94)	Boy–girl (<i>n</i> = 168)	Girl–girl (<i>n</i> = 77)
Exploratory	5	7	8
Constructive	8	6	2
Functional	13	14	10
Symbolic			
cars	16	5	0
home corner	4	8	10
rest	13	4	8
Play–Learn	11	20	16
Expression	9	13	16
Onlooker behavior	10	10	15
Rest	10	14	15
Total	100	100	100

Table 4. Play activities – age.

Play activity	Young–young (<i>n</i> = 96)	Young–old (<i>n</i> = 49)	Old–old (<i>n</i> = 25)
Exploratory	10	0	6
Constructive	4	4	6
Functional	12	12	18
Symbolic			
cars	6	6	6
home corner	10	5	6
rest	6	11	6
Play–Learn	16	21	18
Expression	11	11	10
Onlooker behavior	13	16	9
Rest	12	14	14
Total	100	100	100
Parallel play	71	83	58
Associative play	29	17	42
Total	100	100	100

young–old dyads. Furthermore, old–old dyads engaged in more associative play, and young–young dyads in more parallel play.

For cultural background, no differences in play characteristics seemed to be present.

Discussion

Multi-level analyses showed that similarity – particularly similarity in age – was the strongest predictor of friendship in two- and three-year-olds. In addition, this study confirms findings of Howes (1988b) that gender segregation is already present in groups of two- and three-year-olds. A weak indication was found that this segregation is stronger in three-year-old dyads than in two-year-old dyads.

There were some indications that the preference for friends similar in age and gender is related to similarities in play activities. With regard to similarity in age, descriptive analyses showed that young–young dyads were engaged in play activities of a lower level of complexity (explorative activities and parallel play) than the old–old dyads (associative play). With regard to gender, dyads showed a marked difference for two out of the 10 play categories. Boy–boy dyads engaged in more symbolic play involving trucks and cars, which was observed less in boy–girl dyads and not at all in girl–girl dyads. Girl–girl and boy–girl dyads engaged more symbolic play involving dolls and other home corner toys than boy–boy dyads. Boy–boy dyads engaged in other forms of symbolic play slightly more often, like pretending to be a tiger, a fireman or a doctor. These findings are in line with expectations based on traditional gender roles.

In line with our expectations, this study showed no preference for choosing a friend similar in cultural background. This preference may arise later on in life (e.g., Graham et al. 1998). Our finding that dyads of native Dutch boys and immigrant boys had higher friendship scores than dyads of two native Dutch boys cannot be explained in the context of this study. We also did not find differences in preference for play activities in dyads with native Dutch backgrounds compared with dyads of mixed cultural backgrounds.

Contrary to our expectations, familiarity had a very low predictive value. Further analyses showed, when excluding one of the groups, that familiarity had a significant positive association with friendship. This excluded group had some striking differences compared to the other seven groups. Firstly, the excluded group was the only group with an open-door policy, which meant that the children of two groups were free to move in and out two rooms, which resulted in a group size of 26 instead of 14 children, the regular group size in the Netherlands for this age group. A recent study of the quality of Dutch daycare centers showed that a high group size is related to a lower pedagogical quality (de Kruif et al. 2009). Secondly, in 53% of all dyads in this excluded group one or more quarrels were observed, whereas, on average, only 11% of all dyads in the other groups had one or more quarrels. Field notes showed that there were two conflicting boy subgroups (cliques) present in this excluded group. The phenomenon of antagonistic cliques indicates that familiarity might enhance both friendship and hostility in peer relations. Further qualitative analyses showed that the conflicting cliques may have formed due to a complex interaction of factors; large group size, open-door policy and low level of group management. Although entering children were welcomed by the teacher(s), they were not helped finding an activity or entering the play of other children. As a result, 26 children were wandering around in two rooms (due to the open door policy), and teachers often did not know where the children were. The three teachers were also wandering around in the two rooms and they invested little energy to

enhance a feeling of togetherness among the children. For instance, this could be seen during snack and lunch times when a specific child was excluded and the children were changing places several times to avoid sitting next to that child; although this happened several times, the teachers did not intervene. Observations in this childcare group half a year later, when the open-door policy was abandoned and the teachers were more actively involved with the children, showed that the conflicting cliques were no longer present. More studies on the dynamics among young children at the group level are needed in order to gain insight into the complexity of these processes. The formation of cliques, antagonism and presence or absence of hierarchy in groups may influence friendship.

This study clearly shows that, even at this very young age, children's interactions with peers are not random. They develop preferences and make choices that relate to age and gender, and are related to preference for certain play activities. More research is needed that examines the role of differences in play activities and style. Perhaps more subtle differences in play behaviours exist between two- and three-year-olds, and between boys and girls, than in this study were observed. Walker (2005), for example, mentioned that boys are more competitive in their play, while girls are more cooperative. Conflicts about hierarchy and leadership might also play a role in the development of friendship between children who differ in age and gender.

This study raises important pedagogical issues. Group daycare from a very early age can have the unintended effect of reinforcing segregation of children based on gender and age groups. In rural communities, young children often play in small informal groups with peers from different ages and gender (Nsamenang 2010). Teachers have to keep in mind that the segregation along the lines of age and gender can have negative effects on children who are different in some respect, such as childish children, boyish girls and girlish boys (e.g., McDougall and Hymel 2007). Several studies show that children who are different in some respect are often less popular than typically developing children (Von der Assen and Kernan 2010). Coping with diversity – in gender, age, ethnicity and developmental level – can be an important educational goal in daycare settings (Vandenbroeck 2009).

Finally, parents and teachers have to be aware that an attendance policy mainly based on demands related to the working hours of parents can impede the children's chances to make friends. Children's social needs also have to be taken into account. In short, this study shows that young children have clear preferences in friendship, but also that we are just beginning to understand the pedagogical challenges of this finding.

Note

1. All multi-level analyses were done in two ways; First of all, analyses were done where it was not taken into account that the 8 different groups on themselves could have a predictive value on the dependent factor friendship. Secondly, analyses where this group-structure was taken into account were done. Only the results of familiarity were not consistent. In this article only the results where the group-structure was taken into account are shown.

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