
Twins and Their Friendships: Differences Between Monozygotic, Dizygotic Same-Sex and Dizygotic Mixed-Sex Pairs

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This study examined the influence of twin status (monozygotic [MZ], dizygotic same-sex [DZss] and dizygotic opposite-sex [DZos]) on friendship patterns. It examined the friendships of 60 children from 30 twin pairs, mean age 8 years, 4 months. The study sought to establish how number of friendships and degree to which these are shared vary according to twin status. Additionally, it sought to assess the children's meaning of shared friendship and to examine whether there were group differences according to twin status. Results indicated that, while number of friends did not vary, the degree to which friendships were shared was significantly associated with twin status. MZ children shared approximately 50% of their friends, DZss 25% and DZos 5%. Group patterns emerged from interviews with the children concerning shared friendships. MZ twins were characteristically positive or accepting about shared friends; DZos pairs shared fewer friends and were, therefore, less challenged by the twin situation in negotiating friendships; and DZss pairs were more diverse in their reaction with some expressing ambivalent or negative views about the twin situation and sharing of friendship. The results are presented in the light of their implications for twin children's developmental and scholastic progress.

A growing body of literature documents the importance of children's friendships for their emotional and social development (Bukowski et al., 1996; Hartup, 1983; Vaughn et al., 2000, Vaughn et al., 2001). Relationships with peers have been identified as particularly important in the development of social skills such as conflict resolution and perspective taking (Hartup, 1983) and some theorists have suggested that friendships are integral to the child's development of self (Price, 1996; Sullivan, 1953). Difficulties with friendships have been found to be associated with both concurrent and long-term adjustment problems (Bukowski et al., 1996; Parker & Asher, 1987)

Twinship presents a unique situation in the formation of friendships in childhood. Each member of a twin pair brings to the social environment not only

their individual identity but also a couple identity (Rosembleu, 1987; Stewart, 2000; Thorpe, 2003). In early childhood twins rarely have opportunity to experience social settings in the absence of their co-twin. In this respect their situation is distinctly different, even in comparison to children who have siblings very close in age (Thorpe et al., 2003). Less is known about twins' experience in middle childhood, but available research suggests that in the early school years, twins share much of their social world (Koch, 1966; Preedy, 2001). As a consequence a twin child's negotiation of friendships with peers is different from that of a singleton child in two key ways. First, a twin child's friendships are established in the presence of a sibling of identical age. This may mean that twins are seen as competitors for friendships or that they are viewed as a single unit and therefore somewhat unusual or unique. Secondly, in contrast to their singleton counterparts, each member of the twin pair will have an established, life-long relationship with a child of the same age. Their experience of social interaction with a child of the same age will be greater. They may come to the social environment with greater experience of negotiation and co-operation, for example, but if their relationship is particularly close there is the potential for it to impede the development of other friendships.

There have been few studies of friendship patterns among twins. The key finding from existing studies is that children who are twins share their friends. Preedy (2001), in a British survey of more than 11,000 twins entering their first school year, found that only 8% of twins had their own circle of friends, the majority had shared friends, while 20% stayed together and had few other friends. The significance of this finding is not known. The development of friendships among twins has not been systematically documented, and the long-term impact of their unique social situation is not established. To date,

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research has focused on psychopathology and the hypothesis that the twin situation raises risk. While some studies have reported no differences between twins and singletons in rates of psychopathology (Gjone & Novik, 1995; Van den Oord et al., 1995), others suggest raised levels of externalizing behaviour (Gau et al., 1992; Levy et al., 1996; Simonoff, 1992). In contrast, one recent study has suggested that the twin situation might promote adaptive social behaviour (Pulkkinen et al., 2003). Detailed study of twin children's social relationships will inform this research because these relationships represent a potential underlying mechanism for either raised levels of psychopathology or social skill.

Preedy (2001) has proposed a model to assess the relationship of twin pairs with the purpose of identifying their educational needs as they enter school. A key theoretical underpinning of the model is that twins need to find a balance between their couple identity and their individual identity. Relationships between the twins which are exclusive and strongly dependent or those where the twin identity is denied, are viewed as potentially problematic because they may restrict social emotional development and/or academic attainment in the early school years. Though this model is not specifically concerned with friendship, it does identify friendship as one defining aspect of the relationship between co-twins. Twin pairs who are highly individual and share no friends (*highly independent*) and those who have no friends or have only shared friends (*closely coupled*), are depicted as being more likely to experience difficulties. A balanced relationship is described as one in which the children share some friends but also have separate friends (*mature dependent relationships*). This model provides a useful tool with which to examine friendships of children who are twins. One proposal we make working within this framework is that the ease with which children who are twins can achieve a balanced position of mature dependence (in which they have both shared and nonshared friends), varies according to two dimensions which define their twins' status. First, whether they are of the same sex, and second, whether they are monozygotic (MZ) or dizygotic (DZ).

Research has identified one key condition of friendship formation in childhood as social propinquity: to become friends children must share a social environment. Clearly, children who are twins share a great deal of their social environment. What is not yet known is how this varies according to twin status and what its effects are on the size of friendship pool. One previous study (Koch, 1966) reports no differences between MZ, DZ and singleton children in the size of their self-nominated friendship pool and suggests this indicates equal access to a social pool. Our first aim in the current study was to establish whether this is indeed the case. We asked whether the size of friendship pool varied according to twin status and examined its association with shared social environment. In this respect the most likely variant is sex difference with opposite-sex pairs

expected to have access to a broader social pool than same-sex pairs.

A second key variable associated with friendship formation is similarity: individuals tend to seek friends who are similar to themselves (Aboud & Mendelson, 1996). Friendships necessarily involve the active engagement of each twin child with others. Children who are twins are not only making choice about friendships but also are being responded to by potential friends. Children who are more similar in interest and appearance, and indeed those who are difficult to distinguish, are likely to have the greatest difficulty in establishing friendships independent of their co-twin within the same social pool. It may also be the case that they want to share friends. Rose (2002) in a study of adolescents, reports that MZ pairs are more likely than their DZ counterparts to nominate each other or a common classmate as best friends. Further, individuals who are friends of MZ twins are likely to be rated as more similar in type than friends of DZ twins by other classmates. There are no similar studies of twin children's friendships in early or middle childhood. If similarity is an underlying factor influencing friendship selection in our sample we would predict twin status, an index of similarity, to be associated with shared friendship. A second aim of the current study, therefore, was to establish the degree to which shared and nonshared friendships varied according to twin status (MZ, dizygotic same-sex [DZss] and dizygotic opposite-sex [DZos]). To this end each twin in a pair was questioned separately about their friends and the number of these who were shared and nonshared was calculated. Results were examined according to twin status.

While two previous studies have examined the association of twin status with friendship (Koch, 1966; Rose, 2002) we found no previous study which had focused on shared friendship and explored its meaning for the children themselves. A third aim of this study was to assess the meaning of shared friendships for children who were twins and again to assess whether there were group differences according to twin status. Interviews were conducted with each twin to ascertain their feelings about, and experiences of, friendships. We were specifically interested in whether children with different twin status had different expectations and interpretations of friendship and sharing of friendship.

Method

Participants

A sample of 60 children from 30 twin pairs and their primary carer participated in the study. The twins were aged between 6.0 and 11.9 years (mean 8.4 years). Of this sample 12 pairs were MZ (6 male, 6 female), 9 DZss (4 male, 5 female) and 9 were DZos. Zygosity for same-sex pairs was obtained from confirmed results of zygosity testing following participation in a previous study (33% of sample) or using a standard questionnaire of physical similarity (67% of sample). The groups did not differ in age (mean age: MZ = 8.3 years, DZss = 8.1 years, DZos = 8.5 years). The sample was

drawn from South West England and was obtained through advertising in the Twins and Multiple Births Association newsletter and contact with local schools.

Materials

To enable each child in the study to identify the number of friends he or she had and the closeness of his or her relationship with them, stickers were developed to represent the child, his/her friends and co-twin. The stickers were stylized person figures and were produced in five different colours with the intention of making them fun and to avoid implication of race or gender. The child was asked to choose a sticker to represent him/her. They placed this sticker at the left of a horizontal line marked on paper. They were asked to choose stickers to represent their friends and place them in order of closeness to the sticker representing themselves. If they had friends equal in closeness, then the stickers were placed one above the other. The child wrote the name of each friend under the appropriate sticker. The child was also asked to choose a sticker to represent his/her co-twin and place that sticker.

Measures

Shared Environment

A standard questionnaire was used to establish the degree of time the twin children spent together and their shared social environment: (1) whether the twins were taught in the same or different classes at school; (2) whether they visited friends' houses together or separately; (3) whether they went to clubs and activities together; and (4) whether they went to clubs and activities separately.

Additionally, two items were included which focused on similarity: (1) whether they had shared or different interests; and (2) whether they dressed differently or not.

Friends

Two separate measures were derived from the sticker task to assess the size of the twins' social circle. Additionally, the place of the co-twin in the friendship pool was assessed. Thus there were three measures:

1. *Number of friends*. This was a count of the total number of friends for each twin.
2. *Friendship pool*. This was an aggregate of the number of separate individuals listed as friends by both children in a twin pair giving a friendship pool for the pair.
3. *Co-twin as friend*. From the placement of the co-twin sticker, a rank was assigned to the co-twin which was expressed as a ratio to the total number of friends for each twin.

Shared Friends

Two measures of shared friendships were derived from the sticker task.

1. *Count of shared friends*. Each of the twin pair identified their friends independently. The researcher then counted the number of children

who were identified by both twins. This measure did not require the children to identify shared friends. Because there was great variation across twin pairs in the total number of friends listed, this measure was expressed as a proportion of the individual child's total friendships.

2. *Identified shared friends*. Once the children had completed the sticker exercise and were certain they had identified all their friends, the children were questioned about which of these were shared with their co-twin. This measure was taken for each twin separately and may not be the same for each child in the twin pair. It was a measure of perceived shared friendships for each child. This measure was expressed as a proportion of the individual child's total friendships.

Procedure

Data were collected during a single visit of approximately 1 hour duration to the home of each family. The primary carer completed the questionnaire concerning shared environment. Following this, the researcher saw each twin child separately. The sessions were recorded using audio tape, and were later transcribed. Children completed the sticker task in which they identified and ranked their friends and co-twin according to closeness. They were then interviewed, using the completed sticker task as a focus, about their friendships, the friends shared with their co-twin and the experience and meaning of sharing these friendships. This procedure focused specifically on the twin children's own friendships and experiences rather than on a generalized discussion about the experience of sharing.

Analysis

Categorical data for the parental questionnaire were analyzed using chi-square analyses (category \times twin status), to establish whether the three twin groups differed in terms of shared experience. These analyses were also conducted for same-sex pairs only. Analyses of variance were conducted to assess whether the number of friends, friendship pool, count of shared friends and identified shared friends differed according to twin status. Analyses of variance were also used to compare the rank closeness of the co-twin by twin status (MZ, DZss and DZos).

The tape recordings of interviews with each twin child were transcribed and the text content analyzed. Three key questions were derived from the data:

1. What is a friend? This addressed the children's definitions of friendship and the context within which children identify another as a friend.
2. Is a co-twin a friend or a sibling? This looked at the role ascribed to the co-twin.
3. What is the meaning of shared friendship? This was an exploration of the children's feelings about sharing friendships with their co-twin.

In the exploration of themes variations were examined according to twin status (MZ, DZss, and DZos).

Results

Quantitative Analysis

Shared Environment

A first aim of the analysis was to establish whether the degree to which the twin pairs shared environment might influence their exposure to friends. To this end analyses of parent questionnaire data concerning the amount of shared environment and exposure to friends by twin status (MZ, DZss, and DZos) was undertaken. This yielded no significant differences, though one variable, dressing alike, approached significance ($\chi^2 = 4.7, p = .9$). There were no significant differences between the twin categories: twins in the same versus different classes ($\chi^2 = 2.35, p = .31$); twins who went to clubs or activities together ($\chi^2 = 2.98, p = .23$); twins who went to clubs or activities separately ($\chi^2 = 4.68, p = .10$); twins who visited friends' houses together versus separately ($\chi^2 = 3.22, p = .52$); twins who shared interests versus twins with different interests ($\chi^2 = 4.84, p = .30$); twins who dressed differently versus those who did not ($\chi^2 = 8.59, p = .07$). In a rerun of the analyses for same-sex pairs only (MZ vs. DZss; $N = 21$), no significant differences emerged.

Friendships and Shared Friendships

Means for number of friends were MZ = 6.21, DZss = 5.77 and DZos = 6.61. These differences were not statistically significant, $F(2, 57) = 2.12, p = .13$. Means for friendship pool for each category of twin status were MZ = 9.58, DZss = 10.22 and DZos = 12.89. These differences were not statistically significant, $F(2, 27) = 1.00, p = .37$. Means for the ranking of co-twin as friend were MZ = 0.31, DZss = 0.46 and DZos = 0.34. These differences were not statistically significant, $F(2,57) = 1.29, p = .28$.

Figure 1 shows the percentage of shared friends out of the total number of friends nominated by each individual child, using the count of independently nominated shared friends. ANOVA analyses indicate that there are significant differences between the twin categories, $F(2, 59) = 22.38, p = .001$. A Scheffe post hoc test indicated that there was a significant difference between all three groups. MZ twins share a significantly higher percentage of their friends than either DZss or DZos twins. DZss twins also share more of their friends than do DZos.

Figure 2 shows the percentage of friends identified by each twin as shared. This graph paints a different picture from the one presented by the independent count of shared friends. Here it can be seen that the number of shared friends for the MZ and DZss twins is more similar. ANOVA results indicate that there was a significant effect of twin categories, $F(2,59) = 7.81, p = .001$. Scheffe post hoc tests indicated that there were significant differences between the MZ and DZos groups ($p > .05$), and between the DZos and DZss groups ($p > .05$), but not between the MZ and DZss groups.

Mean percentage of friendship pool that are shared by twin category

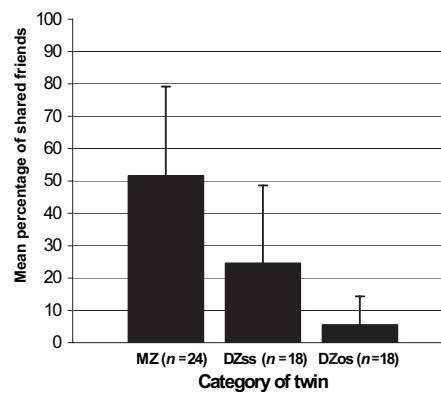


Figure 1 Percentage of friendships shared using independent count of shared friends.

Mean percentage of friendship pool shared by twin category

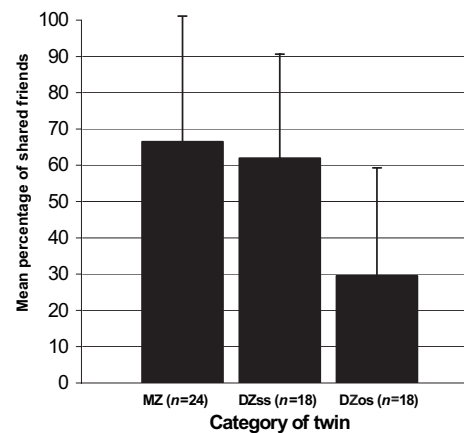


Figure 2 Percentage of friendship pool identified as shared in interview by twin status.

Qualitative Analysis

What Is a Friend?

The children were not directly asked to define friendship. Rather, definitions of friendship were derived from the children's descriptions of the basis of their specific friendships. Only half the sample specifically articulated the basis of friendship. A summary of the classification of the basis for friendship by twin type and for the total sample, expressed as percentages, are presented in Table 1. It is notable that far more DZss twins gave specific comment than either MZ or DZos pairs.

The children in the study, across all three categories of twin status, employed multiple definitions of friendship. Children nominated another child as a friend for a range of reasons and, amongst their pool of friends, may

Table 1
Category of Friendship Definition Used by Twin Sample by Twin Type (Per Cent)

Basis of friendship	MZ (24) %	DZss (18) %	DZos (18) %	All (60) %
Familiarity/being together	20.8	33.3	22.2	25.0
Shared activity	9.5	27.8	16.7	16.7
Shared interest	0.0	11.1	0.0	3.3
Admired possession	0.0	11.1	0.0	3.3
Personal attribute	12.5	44.4	27.8	26.7
Emotion	4.1	5.5	5.5	5.0
No comment/unclassified	58.3	38.8	50.0	50.0

have different bases for friendship. We classified the basis of the children's friendships into five categories:

Familiarity/being together. Frequency of access and ease of access to other children was one key theme. Thus children who live in the same street, are in the same class, or are family friends were identified as friends on this basis.

Researcher: Could you tell me a little bit about what it is you like about these people (those nominated as friends)? If you start with Jessica what is it you like about her?

Natalie: Well our mums are friends so that's how we became friends when we were babies we went to each other's houses We were just friends because we knew each other very much.

Shared activity, interests and attributes. The basis of some friendships were shared activities, whether these be formal structured activities like Brownies/Scouts or informal games.

Liam: He plays tag with me.

Some friends were defined as such not only by shared activity but shared attributes.

Jane: Harriet and Shannon they are tom-boys and we like playing with boys and stuff, and like playing football and stuff.

David: Sam and Kieran are fast runners like me.

Nicola: Her interests are like mine, she likes well ... she's interested in fashion which ... Olivia (twin) ... never will be interested in and just things that I like and am interested in.

Admired attributes. Some friends were listed as such because they had possessions which the children coveted.

Hannah: She has a nice pencil case and that sort of thing, I like her.

Rebecca: She's got a dog and my favourite animal's a dog.

Some friends were listed as such because they had attributes which the children viewed as positive.

David: William and Jonathon are really funny which I like and Jamie's really clever which is good

Shared emotion. The children listed a range of shared emotions which defined other children as friends. Principle among these were humour, kindness and trust.

Jessica: I like Natasha because she makes me giggle.

Tammy: Well I like Shakti because I know I can trust her and she is really kind to me and I like ... like Jane because she's kind to me and always funny and stuff but sometimes I can't trust her with my secrets

Jessica: She's kind and shares her things with people.

David: Ahh very good friends and they always help me at work and umm play with me a lot and if I get hurt they help me.

Olivia: She's got a good sense of humour umm because she likes ... likes to mess about a lot but as well as that she is caring she likes to ummm well thinks about other people a lot, she's generous.

Emily: Well she's a good friend because she is very sensitive but she is also the kind of person you can trust and you can really rely on her to do things.

The discussion of friends in this study drew upon all definitions of friendship.

Is a Co-Twin a Friend or a Sibling?

Each twin was asked to identify how they viewed their co-twin in the context of his/her friendships by placing a sticker representing their twin in their friendship sticker task. Using this activity as a stimulus, each twin was interviewed about their relationship and friendship with their co-twin. A summary of their view of co-twin as 'friend', 'sometimes friend' or 'not friend' (sibling only) by twin type is presented in Table 2.

MZ twins. For this group an overwhelming majority (75%) of those who provided comment described their co-twin as a friend.

Researcher: And thinking about Mark you have stuck him there as being a good friend do you think of him as being a friend as well as a brother, or just a brother, or just as a friend? How do you think about him?

Peter: Well I don't think he lives in a different house but mmm I don't actually think about him being my brother but I think about him being my friend a bit more.

Table 2
Role of Co-Twin by Twin Type (Per Cent)

Basis of friendship	MZ (14/24) %	DZss (14/18) %	DZos (17/18) %	All (41/60) %
Friend	75.0	42.8	47.0	52.8
Sometimes friend	8.4	35.7	17.7	21.6
Not friend	16.6	21.5	35.3	25.6

Researcher: And how do you think of Nicola, do you think of her as a friend, a friend and sister or a sister?

Olivia: Well at school it's really a friend because we play as sort of a group with Nicola, Hannah and Jane and Caroline and all of us play as a group so really I think of Nicola as a friend.

Only two MZ twin children, one pair, did not see themselves as friends.

DZss twins. Amongst this group we witnessed greater variation in the way co-twins viewed each other. Of those who commented 21.5% clearly saw the relationship with their co-twin as one strictly as siblings and not friend.

Researcher: Now choose a sticker to be Joshua and stick him where he fits (laughs as he indicates right at other end of the line as far away as possible).

And how do you think of Ben? Do you think of him as a friend, or a friend and brother or just a brother?

Joshua: Just as a brother

Others (35.7%), like their MZ counterparts, saw their co-twin as a friend.

Robert: At school I think he's a friend and at home I think he's a brother.

Rachel: She's a friend and a sister because she is my sister ... and she's a friend see ... I've got her 'cos people who are on their own ... I mean I have always got someone to play with.

The response for this group was distinguished by the higher proportion (27%) who described their co-twin as only sometimes a friend. Such ambivalence was lower for the DZos group and very low frequency among MZ twins.

Shannon: I've got two signs on my door (I use for her) ... I've got one saying don't bug me and another one saying come on in.

DZos twins. Among this sample the co-twin was freely chosen as a friend in the sticker activity. The coding of interview transcripts indicated that there was a clear dichotomy with 47% of the DZos twins who commented defining their co-twin as a friend and 35.3% not doing so: 64.7% defined their twin as a friend all or some of the time. The descriptions of friendship were quite distinct in depicting a separation between home and school environment. In contrast to the same-sex pairs, friendships were described as thriving in the home, away from the same-sex friendships established in school.

Rachel: Sometimes I find him as a friend, sometimes I find him as a brother because if he's at school he's always with the boys so he isn't much of a friend.

Elise: I look at him more as a brother than a friend but he is like at home he is a friend but at school we're sort of still friends but we don't really see each other because we go off with different people.

Caroline: He's a friend ... I'll tell you why he is a friend because sometimes he don't really play with me but when I've got no-one to play with, if I can't find anyone whose my friend ... I go and find Will ... and if he's playing with someone else I'll just say 'Will I've got no-one to play with' and he says 'You can play with me'.

What Is the Meaning of Shared Friendship?

Our interviews asked the twin children to identify the number of friends they shared with their co-twin and the basis of the sharing. The key categories of shared friendship were a 'shared social group', 'shared best friends', and 'shared friends — not specified'. Table 3 presents frequencies for these categories by twin type.

Table 3
Shared Friendship by Twin Type (Per Cent)

Basis of friendship	MZ (24) %	DZss (18) %	DZos (18) %	All (60) %
Share a group of friends	75.0	55.5	52.9	61.1
Shared affection ('best friend')	15.0	11.1	0.0	8.9
Shared friend — not specified	5.0	11.1	11.8	9.3
No shared friends	5.0	22.3	35.3	20.8

Results indicate that the basis of most shared friendships is a shared social group (social propinquity) although same-sex twins also indicated that they shared friendships based on emotional affiliation, including best friends.

We also sought to understand the reaction to of shared friendships for the children. The responses were categorized into 'enjoy', 'accept', 'unquestioned', 'dislike', 'no comment', and 'not applicable' (no shared friends). The categories in the table were 'enjoy', 'accepted', 'unquestioned', 'dislike', 'not applicable', and 'no comment'. These results are presented in Table 4.

Distinct patterns emerged for the three twin status groups:

MZ twins. For MZ pairs a key theme which emerged in interviews was that sharing friends was an integral part of their life and twin experience with the majority enjoying and/or accepting the sharing of friends. Many comments suggested that shared friendship was a positive experience associated with less conflict and more fun.

Researcher: How do you feel about sharing your friends with your sister?

Rebecca: It is easy, it is not that bad because it means we can ummm ... agree on people to invite around and things.

Researcher: How do you feel about sharing your friends with Lucy?

Nicola: I don't really mind. I think it makes us have more friends each which is really better because we have each other's friends as well as our own.

The experience of sharing friends, although more commonly accepted or welcomed, was not always positive. One set of the MZ twins indicated it was problematic.

Researcher: How do you feel about sharing your friends with your twin?

Lachlan: Mmmm its like if they are candy, it is like they're candy and I have to give most of them to my brother ...

Researcher: I wondered whether sometimes you fancied having a friend that you didn't share with your

brother? Or perhaps you haven't had any opportunity to have separate friends.

Lachlan: Well sometimes Nicholas ... I usually spend all the hard work getting friends and Nicholas steals them off me.

DZss twins. Children in this group presented a wider range of reaction to sharing friends and were more specific than other twin groups in defining the context and conditions of sharing friends. For many (43%) the experience of sharing twins was enjoyed.

Researcher: How do you feel about sharing your friends with Jane?

Tammy: I quite like it actually because like with Jane its lots of fun but without Jane its like we don't have as much laughs.

Researcher: How do you feel about sharing your friends with Jake?

Robert: Ok actually.

Researcher: That's alright.

Robert: I care about Jake like Jack at school he actually tripped Jake up and sat on him.

However, in contrast to their MZ counterparts, many were more specific about the circumstances and conditions in which they would share friends. Sharing a friend might be playing with the same person on separate occasions.

Kimberly: I'd play with someone else if Nicola is playing with Ellie ...

Researcher: So do you not play with Nicola then?

Kimberley: No ... usually I hate having to play with her.

Sharing might be acceptable on some occasions but not others.

Shannon: When they come around to play Antonia always wants to play with them as well but ...

Researcher: And is that alright?

Shannon: Sometimes alright and other times it isn't.

DZos twins. DZos pairs shared fewer friends than their same-sex counterparts and those they shared

Table 4

Feelings About Shared Friendship by Twin Type (Per Cent)

Basis of friendship	MZ (24) %	DZss (18) %	DZos (18) %	All (60) %
Enjoy	62.9	42.9	15.8	40.5
Accept	4.3	19.0	10.5	11.3
Unquestioned	4.3	0.00	0.00	1.4
Dislike	9.5	14.3	5.3	9.7
Not applicable	9.5	9.5	31.6	16.9
No comment	9.5	14.3	36.8	20.2

were within a social circle (52.9%) rather than emotional attachments or 'best friends' (0%). As a consequence, sharing friends was not presented as problematic. There seemed to be little cause for conflict. Of those that commented only one pair disliked sharing friends and the others found the experience acceptable or enjoyable.

Researcher: And how do you feel about sharing friends?

Christopher: Fine because when we were in primary school there were only 3 boys when we started off the year — that was me, Daniel and Joe ... because we had a small school so Sara was always with me because we had quite a small school.

Researcher: Do you share any of your friends with Leo?

Rachel: Well some of the boys I do because I am quite close to some of the boys because I knew them when I was 2. We've got this little group called the Badgers.

Researcher: How do you feel about sharing your friends with Leo?

Rachel: I don't mind because when he goes somewhere I can go with him.

Discussion

Friendships play an important role in children's social development. For twins, the process of making and sustaining friendships is somewhat unique. Children who are twins develop their relationships in the presence of a sibling. Moreover, because their status (same-sex vs. opposite-sex, MZ vs. DZ) is so closely allied with similarity of physical appearance and personal characteristics, it affects the degree to which each twin child is able to assert his or her individual identity. The current study asked what effect twinship type has on the size of the friendship pool and the degree to which friendships are shared. It further explored the meaning of friendships and shared friendships by asking the children about their experiences of friends and shared friendships.

Twin Type and Number of Friendships

This study did not have a comparison group of singletons so was unable to make a statement about the impact of twinship on the size of friendship pool per se. The focus of this study was on differences within the twin sample. It found no statistical differences between the twin status groups for number of friends or size of friendship pool for the twin pair. It concurs with a previous study which found no differences in number of playmates nominated by MZ, DZos and DZss twins (Koch, 1966). There were not differences between the groups in the amount they shared structural environment (e.g., school class, participation in social activity). This suggests that different twin types have equal access to a social pool. The major findings relate to the degree to which the friendship pool is shared.

Twin Type and Sharing of Friendships

Perhaps the most unique feature of twins' experience is that they share friends. Our results indicate that the extent to which friendships are shared varies systematically with the status of the twin pair: same-sex twin pairs share more friends than opposite-sex pairs, and MZ twins share more than half of their total friendship pool, which is double that of DZss twins.

In exploring the issue of shared friendship, two methods were used. Firstly the overlap of independently nominated friends from each of a twin pair was counted. Secondly each child was asked to identify from the friends they had nominated which they perceived to be shared with their co-twin. These two methods yielded different results with the main feature distinguishing them being the response of DZss twins. The count of independently nominated friends presented a linear pattern with increasing similarity (same sex, same appearance) being associated with a greater overlap of friendship. This finding concurs with a previous study of friendship selection in adolescent same-sex twins (Rose, 2002). In contrast the identification of perceived shared friends grouped the same-sex pairs (MZ vs. DZss) together with a higher proportion of shared friends than the opposite-sex counterparts. Neither of the methods used are less valid than the other, but rather present a different perspective on the issue of shared friendship. The DZss pairs actually nominated far less shared friends than MZ pairs but their perception is that they share a large proportion of their individual friendship group. It may be that the two different methods used assess different type or quality of friendship. Self-nominated friends are likely to be those with whom the child has a close affiliation while those identified as shared are likely to be those with whom there is shared social interaction. A limitation of this study is that it did not specifically question children about the quality of their friendships and, therefore, only had a subset of data which was derived from interview transcripts. More complete data sets would allow the classification and exploration of the qualities of shared friendship.

Co-Twins and Friendship

Data from the interviews and the ranking of a co-twin in the friendship pool show the DZss group as having potentially more issues in negotiating friendships as twins. Children from DZss pairs had a greater diversity of reaction to their co-twin. Mean scores for the ranking of a co-twin by twin status indicate that the DZss pairs rated their co-twin less favorably on average than either DZos or MZ twins, although this was not statistically significant. In contrast to MZ pairs where the large majority of those providing data define themselves as friends, and DZos where a clearer distinction between friend or not was made, within DZss pairs the distribution was more evenly spread (with 28% only sometimes being friends). Their descriptions of the experience of sharing friends also

suggested some conflict associated with friendship. There were more specific descriptions of the conditions of sharing (*I share sometimes and not others; I share the same friend but we don't play together; we play on different occasions*). Such conditional descriptions were absent from the interview responses of MZ and DZos pairs.

Our sample of 18 DZss twin children (9 pairs), and the contrast with MZ and DZos pairs, provide some insight into the potential difficulties faced by twin children who may be very different and yet placed continuously alongside each other. Larger samples are needed to confirm the patterns suggested in the data presented here. Further, a qualitative investigation of the issues for this group is warranted. Observational work and more detailed interviewing (perhaps with the twins together) might advance our understanding of the social world of twins and particularly of the issues for DZss pairs that are suggested by our data.

Implications for Twin Children's Development and Attainments

In the twin literature, and particularly the literature providing guidance to parents of twins, a key theme is individual identity. Our data suggests that, in the context of friendship formation, the degree to which individual identity is important to the twins themselves varies according to twin status. It is most prominent in the DZss group, and less so in the opposite-sex and MZ pairs. In this respect, our data also provides an important perspective on the experience of MZ twins. Although, within the MZ pairs interviewed, both children in one pair expressed dissatisfaction with their relationship and sharing of friends, the remainder were accepting or positive about this aspect of their lives. Most MZ children expressed greater happiness and contentment with their twin identity. Individual and twin identity sat happily together and may not actually be distinct. Moreover, for opposite-sex pairs, twin status did not appear to challenge individual identity. Twin identity was somewhat separate and did not challenge individual social functioning.

Preedy's (2001) model suggests that children who are twins need to find a balance between their twin identity and individual identity if they are to function well socially and maximize their attainment in the school environment. The data we present here does not challenge this position but rather suggests that for children of different twin status (MZ vs. DZ, same-sex vs. opposite-sex), the task of achieving this balance and the motivation to do so is not equal. Our study indicates that opposite-sex pairs are the least challenged in this respect because they have largely separate social groups. DZss pairs as a group are the most diverse and more likely to experience conflict between their twin and individual identity. In contrast, many MZ pairs do not see the twin experience as

challenging and may not be motivated to seek a separate social world in the way their DZ counterparts do. In the formation of friendships, similarity is an important factor (Rose, 2002), and in a single social pool this means that similar individuals are likely to have a considerable overlap of friends. They are also more likely to be content with each other's company (Koch, 1966). This raises the question as to whether twin children should be encouraged to seek a social world of friends independent of their co-twin. To answer this question and others pertaining to identity and psychopathology would require longitudinal studies which systematically assess the effects of different friendship arrangements on twin children's development and well-being.

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