

'What do they tell their friends?'

Intimacy and self-disclosure in young children's friendships

A thesis submitted for the degree of Doctor of Philosophy

by

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Abstract

The research investigated the development of verbal intimacy in young children's (3.5-6.5 years of age) friendships by measuring their capacity for restrictive self-disclosure (i.e. the greater disclosure of information of highly personal content to friends than other individuals, as opposed to the equal disclosure of information of low personal content to all individuals). Young children's capacity for intimate friendships is ill understood, partly due to limited or unsubstantiated data regarding the types of information that are considered high and low in personal content at this age, as the First Study (N = 110) showed. The Second Study (N = 93) attempted to fill this gap in our knowledge by investigating the sort of information that children consider secret. The results showed that children's ability to differentiate secret and non-secret information increased with age: 4-year-old children could not systematically differentiate secret from non-secret information, 5-year-old children systematically identified information that was not secret but were not consistent in their identification of secret items, while 6-year-old children systematically identified and differentiated secret and non-secret items. However, children of all ages identified as secrets the statements which included a specific cue, such as the word surprise, in their wording. The Third Study (N = 209) investigated whether young children employ the restrictive disclosure-to-friends pattern when revealing the secret pieces of information. Moreover, the study investigated whether specific cues influence young children in applying the restrictive disclosure pattern, and to this effect participants were allocated randomly to either the 'clue condition' group (where they were given a clue that some information might be secret) or the 'no clue condition' group. Children in the 'clue condition' group treated the majority of the statements as secret information and therefore tended to only share it with a friend or with nobody. In contrast, in the 'no clue condition' group statistically significant differences were found only in the secret items, suggesting that, when not influenced by an adult, children have the ability to identify highly personal/secret information and to treat it by accordingly applying the restrictive disclosure-to-friends pattern. Taken together, the findings suggest that young children engage in restrictive self-disclosure to friends in some, but not all, circumstances, and thus display signs of verbal intimacy in their friendships.

(II) REVIEW OF ETHICAL ISSUES

Have you read the documents outlining the ethical guidelines for the relevant discipline(s)? (BPS: Ethical Principles for Conducting Research with Human Participants, 1993; BSA: Statement of Ethical Practice, 1991; ASA: Ethical Guidelines for Good Practice, 1987)

Yes No

Please CIRCLE the relevant response to the questions below. If a circle appears in the RIGHT HAND column, provide an explanatory note in the Ethical Issues section over the page (precautions, permissions obtained etc).

Will participants be informed of the objectives of the study, and their consent obtained? BPS3.1, BSA1b, ASA4a-b

Yes No

Will the research involve any of the following? BPS3.2-3.5, BSA1e, ASA5a

- Animals No Yes
- Persons under the age of 16 years No Yes
- Persons with special needs No Yes
- Persons with mental disorders No Yes
- Detained persons No Yes
- Other persons disadvantaged in any way No Yes

Will some sort of deception be practised? (Withholding information or misleading becomes unacceptable if the participants are likely to object or show unease once debriefed). BPS4.1-4.3

No Yes

Will a debriefing be given to participants, to complete their understanding of the nature of the research or to obtain informed consent where this cannot be obtained in advance? BPS5.1-5.3, ASA4c

Yes No

Will participants be informed of their right to withdraw from the study at any point? BPS6.1-6.2, BSA1bi

Yes No

Will research records remain anonymous, and confidential to the researcher concerned? BPS7.1, BSA1bii, 3, ASA4d, 5a-e

Yes No

Will research involve possible harm or stress, physical or mental, to the participants? BPS8.1-8.4, BSA1a, 1d, ASA2a-b

No Yes

Will research involve undue intrusion or encroach on privacy? BPS8.3, ASA3a-b

No Yes

If observation is employed, without the explicit consent of those observed, is this a public place and would they normally expect to be observed here by strangers? BPS9.1, ASA5a

Yes No

If observation is employed, without the explicit consent of those observed, will the anonymity of participants be safeguarded? BSA2


Yes No

Are there any other matters which might give rise to ethical concern and to which the Department Ethics Committee's attention should be drawn?

No Yes

When researching children under 16 years of age, it is essential that researchers are accompanied. You must ensure that schools obtain parental consent before working (for research purposes) with children.

If appropriate, clarification should be given in relation to the extent to which participants will have access to and be able to comment upon the data, and the degree of consultation and feedback in relation to publications. ASA7a-c

Signature of Proposer: 

Date: 12/3/01

Comments/precautions required by the Departmental Ethics Committee:

Form scrutinised by (Supervisor):

 Date:

Ethical Monitoring Form: Research Student Projects

I) BACKGROUND INFORMATION

Name / Year / Discipline of Proposer: **Lida Anagnostaki, MPhil/Ph.D.**
1st year

Name of Brunel Supervisor: **Dr. Alison Burchier**

Provisional Title of Project:

Intimacy in children's friendships

Brief Summary of Project a) aim(s) of the study / research question b) nature of the participants, if applicable, and how accessed or recruited c) the research method(s)

The aim of the study is to investigate the quality of young children's friendship, and particularly intimacy. My sample will consist of 120 children, aged 3-7 years old. The children will be recruited from their schools, and they will be individually interviewed, and at a later stage videotaped during free play sessions with their friends

Has or will the project be submitted to another Ethical Monitoring body? If so, which?
No

II) SUMMARY OF ETHICAL ISSUES:

(First complete section III over the page; then identify here any issues and say how they will be addressed):

As I intend to work with children under 16 years of age, parental consent will be obtained before working (for research purposes) with them.

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Aim of the Research

The aim of the research was to investigate the development of verbal intimacy in young children's friendships and to connect the findings with the literature at older stages of development. Intimacy is an important friendship quality feature (Berndt, 2004) that is positively related to self-esteem, adjustment and interpersonal competence (Buhrmester, 1990; Bukowski & Hoza, 1989; Hernandez, 2001; Vinograde, 2001). Literature on intimacy, though, has been primarily focused on adulthood and adolescence, and to a lesser extent, middle childhood. Only in the recent years (e.g. Dunn, 2004) have researchers suggested that children might be able to achieve friendship intimacy from a young age, but still considerable research needs to be undertaken to provide a complete understanding of the phenomenon in young children.

The present study intended to clarify the development of verbal intimacy in young children's friendships (3.5 to 6.5 years of age), in order to advance our knowledge in a specific domain of developmental psychology and to enhance our understanding of the phenomenon of friendship in childhood, which provides an essential base for the growth of future social relationships (Newcomb & Bagwell, 1996; Pellegrini & Blatchford, 2000).

More specifically this study intended to address the following questions concerning the development of friendship intimacy in early childhood:

1. Do young children form friendships with their peers characterized by the sharing of intimate personal information?
2. Are there age and gender differences in young children's ability to share intimate information with their friends? What is the developmental pattern?

In the present research project intimacy was characterized as a verbal construct, and as such was equated with the depth of self-disclosure. Particular attention was given to the sharing of secrets which was considered an important index of intimacy and self-disclosure.

Literature Review

1. Overview.

This chapter begins with a brief introduction to the nature of friendship and its significance in childhood. The discussion then focus on the quality of friendship and particularly on the positive friendship feature of intimacy. The attempt to define verbal intimacy highlights the close connection between intimacy and self-disclosure and leads to the discussion of the important parameters that define self-disclosure, namely the breadth and depth of self-disclosure. Next, the existing literature on young children's friendship intimacy and self-disclosure is reviewed. Attention is drawn to the sporadic nature of the existing research and to the unanswered questions regarding important features of young children's friendship intimacy, such as the lack of systematic information relating to the significance of friends as target figures of young children's intimate self-disclosures. Finally, the discussion focuses on young children's sharing of secrets with their peers, as it is argued that sharing of secrets is connected to intimacy. Again, attention is drawn to the scarcity of relevant research.

2. Beyond peer relations: Towards friendship.

'I like playing with Jack, he is my best friend. I like playing with him every day, because he is my best-best friend. And when he plays with me, then that's because he is a friend.'

Luke, 4 $\frac{1}{2}$ years old.

2.1 About friends

Considerable progress has been made in understanding the emergence and consequences of peer acceptance and rejection, as they are considered related to multiple aspects of adjustment, development and psychopathology (Parker & Asher, 1993; Pellegrini & Blatchford, 2000). In effect, it has been shown that children who do not occupy a central place in their peer group are severely disadvantaged by the absence of socialization opportunities, and that leads to poor developmental outcomes (Newcomb & Bagwell, 1996). On the other hand, popular children have lower levels of externalizing or internalizing problems in adolescence and better outcome in all competence and adjustment measures (Morison & Masten, 1991).

Furthermore, a number of peer relation researchers went beyond overall group acceptance to studying friendship processes intensively at the dyadic level (Schneider, Wiener & Murphy, 1994), as research findings indicated that children's relationships with their friends and peers are not always consistently associated (e.g. Stocker & Dunn, 1990), and the importance of studying these relationships separately was highlighted. Therefore, using the valuable knowledge that has accrued from the research about peer relations, researchers granted greater attention to children's ability to form and sustain a close friendship, and it was clearly shown that friends make a substantial and possibly unique contribution to children's development (Asher, Parker & Walker, 1996; Dunn, 2004; Ladd, Kochenderfer & Coleman, 1996),

In child development literature friendship is defined at the level of the dyad and refers to a relationship that is voluntary in nature (i.e. not imposed by one member) and mutually regulated (i.e. controlled and maintained by both partners). Friendship implies the presence of a reciprocated emotional bond between the child and a peer. In research with children the presence of this bond is usually inferred from

the following indicators: the dyad members a) mutually nominate each other as friends, b) frequently interact or seek each other's company, c) display positive affect during interactions, and d) mutually adjust their behaviors to fit their partner (Ladd & Kochenderfer, 1996).

The distinction between the constructs of friendship and peer acceptance/rejection is an important one. The concept of peer group acceptance refers to the quality of a child's peer relations within a group, and is defined as the degree to which a child is liked by members of his/her group. In contrast with friendship, participation in a peer group is not always voluntary (e.g. classroom peer groups) and the relationship is seldom mutually regulated. In fact, a particular child's peer acceptance can be ascertained without any input from the child him/herself, and for this reason peer acceptance is described as a one-way or unilateral construct (Asher, Parker & Walker, 1996). Research has shown that there is some association between a child's level of popularity and the number of friends he/she has (Schneider, Wiener & Murphy, 1994). Popular children tend to have more mutual friends than their less accepted peers (Bukowski & Hoza, 1989); yet it is possible to be generally popular without having any friends (Parker & Asher, 1993). Conversely, even children who are rejected by their peers often have at least one friend and report that they experience as much companionship from this friendship as do their more popular peers (Parker & Asher, 1993).

A second important distinction is that between friendship and acquaintanceship (Hartup, 1989; 1996). Acquaintanceship is also a dyadic construct, but it refers to 'weak' interpersonal ties between children. Acquaintances are defined as peers children 'know', but with whom they have no close ties or regular contact (Ladd & Kochenderfer, 1996). In comparison to acquaintances, friends spend more time in one another's company, talk more with one another and are more likely to share and cooperate with one another. In addition, they engage more in play behaviors that promote proximity and mutual involvement, and display greater affective expression than acquaintances (Newcomb & Bagwell, 1996).

Hartup, studying in depth the differences between pairs of friends and pairs of acquaintances, maintained that friendships and acquaintanceships between children are behaviourally different, both quantitatively and qualitatively (Hartup, 1989), and have different affordances (Hartup, 1996). He described (1996) four domains where interaction between friends and acquaintances differs: a) friends know one another

better than acquaintances, b) friends and acquaintances have different expectations of one another (according to Hartup expectations supporting friendships among children consist mainly of commitment, trust, reciprocity and equality), c) friends provide one another with affective contexts that facilitate problem solving, and d) friends are more motivated than acquaintances to resolve conflicts that arise between them (Hartup, Laursen, Stewart & Eastenson, 1988), to maintain contact and to behave in ways that continue their interaction. Finally, friends are more similar to one another than acquaintances in abilities, attitudes and life-style, with these similarities arising from both friendship selection and the mutual socialization that occurs once two children become friends (Haselager, Hartup, van Lieshout & Riksen-Walraven, 1998).

2.2 Is it important to have friends?

From ancient times (Plato 'Phaedrus') to the post-modern era (Derrida, 1997), philosophers have been studying the phenomenon of friendship arguing on its importance to human beings. Psychologists have taken on this study, commencing with Sullivan (1953), who incorporated a 'necessity view' of friendship in his interpersonal theory of development. He argued that in their interactions with their friends children have the opportunity to acquire a repertoire of effective social behaviors. He considered friendships as collaborative relationships in which individuals are driven by a concern for one another's satisfaction; consequently, validation of personal worth is an indispensable derivative. Finally, friendships provide a context for improving those aspects of a child's well-being that have gone awry in previous developmental periods, and thus have a therapeutic value. Without the experience of a friendship relation, a child's developmental success is restricted.

More recently, other development theorists have underlined the importance of friendship. Friendship is viewed as the essential context for the development of cooperation, respect and interpersonal sensitivity, qualities that later are projected onto other social relationships (Smollar & Youniss, 1982). Hartup and Sancilio (1986) maintained that friendships provide children with a) a context for skill learning and development, b) emotional and cognitive resources and c) models for later relationships.

Studying friendship in a broad context, Hernandez (2001) has argued that friendships provide a shielding effect, which is critical given the numerous changes taking place in the contemporary world (changes in the family structure, increasing

ethnic/cultural diversity etc.). The shielding effect of friendship has also been studied by Hodges, Boivin, Vitaro and Bukowski (1999), but in a specific context. They have highlighted the importance of peer friendships in preventing peer abuse and argued that having one or more friends helps to protect children against victimization.

The 'necessity view' of friendship appears supported by research findings. Howes (1983) argued that many social skills, especially those required for complex social interactions, develop in stable friendship dyads. In order to test her hypothesis, she observed young children in childcare settings, over the course of a school year, examining the changes in their social interactions and play behaviors. The results showed that children who were members of stable friendship dyads displayed greater gains in the complexity of play and social interaction than children who were not members of a friendship dyad. It appears that friends are more responsive to their partners, than to other peers, and therefore initiate and maintain interactions more easily. Furthermore, friends create an interactional context that is mutually facilitative of each other's skills, and as a consequence their skills become increasingly complex (Ladd & Kochenderfer, 1996).

Parker & Gottman (1989) explored the effect of children's friendships by analyzing the conversations of friends. Their results indicated that friends create sophisticated forms of conversation and fantasy play that allow them to explore, communicate and work through their emotions and to defuse frustrations. Moreover, other research (Parker & Asher, 1993) has shown that children without friends are more lonely than children with friends, and this is true regardless of how well accepted they are. Also independently of their peer group status, children with friends in their peer groups score higher in altruism and affective perspective-taking than children without friendships (McGuire & Weisz, 1982, cited in Schneider, Wiener & Murphy, 1994). Ladd (1990) found that children who have stable classroom friendships develop more favorable attitudes toward school than children with no friendships or less stable friendships.

Newcomb and Bagwell (1996) reviewed the existing research on the significance of friendship and used meta-analysis to quantify the extent to which friendship and its outcomes differ from non-friend relations and their outcomes. They found significant differences in three basic domains of peer relations:

a) Positive engagement: Children who are members of friendship dyads engage more in positive interactions (verbal communication exchanges; sharing and

cooperating; smiling, looking, laughing and touching one another). All these positive engagement behaviors may be found in the interactions of acquaintances, but are far more extensive in friends' interactions. According to the investigators, this positive engagement suggests that friendship may serve as a context for social, emotional and cognitive development for children.

b) Conflict management: The meta-analytic results reveal that friends and acquaintances do not differ in the instigation of conflict. Friends are just as likely as acquaintances to argue with one another. However, friends are more likely to engage in strategies of conflict resolution, possibly due to the commitment they have to the relationship. There is a lot at stake in friendship relationships, and children choose not to jeopardize their relations by failing to work through their disagreements. From the developmental point of view, friendships, by promoting the development of the skill of conflict resolution, seem to provide an essential base for the growth of future sustained social relationships.

c) Relationship properties: Similarity and equality, often regarded as hallmarks of children's peer relations in general, are indeed greater between friends than between acquaintances. Children seem to choose friends that are very similar to themselves in demographic and behavioral terms. On the other hand, friends are less likely to exert dominance in their relationship than are acquaintances. Both these findings imply that, when compared to acquaintances, the relationship between friends is more balanced; in fact, it affords a balanced middle ground for emotional exchange. Furthermore, these findings, combined with the evidence that friends share, cooperate and have greater commitment to conflict resolution than acquaintances do, suggest that friendships maintain a relational homeostasis that offers a privileged context for social development.

More recently Pellegrini and Blatchford (2000), looking into pupil friendships in school, summarized the importance of friendships under the following main headings (pg.34):

a) Context for acquisition of social skills: Friendships support cooperation, effective conflict management, reciprocity, intimacy and commitment.

b) Information source: The general context here is the role of friendship interaction in cognitive development. Pellegrini and Blatchford argue that friends are better co-learners and that there are advantages in grouping friends together, especially in difficult or creative academic tasks.

c) Emotional resources: Friends are a resource in times of stress and difficulty. In particular friends can help children in solving everyday problems, buffer stress and provide security when experiencing new things and meeting new people.

d) Help adjustment in school: There appears to be a consensus among the researchers that friendships can improve children's social and academic adjustment to school.

e) Aid subsequent relationships: Friendships between children may lay down the basis for future relationships; they are often regarded as 'templates'. Main features of friendships in childhood and adolescence become translated into later romantic and sexual relationships.

Research results seem to support the 'necessity argument', that is that friendship is a developmental necessity for children vital to the acquisition of skills and competencies. Nevertheless, the potentially negative consequences of specific friendship relationships also require consideration (Newcomb & Bagwell, 1996). Theorists maintain that some friendships may be of little developmental advantage or may even be harmful to participants (Bagwell, 2004). Dunn in her book on children's friendships (2004, pg.3) has illustrated both sides when she answered the question 'why it is important to have friends'.

First it is important [to study friendship] because friends *matter* to children. 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. The pleasures, but also the betrayals, the jealousies and tangled intrigues make friendships key to the quality of children's lives.

In order to explore both the positive and the negative sides and outcomes of friendships, investigators have addressed the issue of friendship quality.

3. Not all friendships are the same.

'Vanessa, you are my best friend and you are good to me. Sometimes we argue but we forgive each other. Let's trust each other so we don't argue with each other. Ok, Vanessa?'

Bethel, 7 years old.

'Ryan, you always help me, you are my friend, you always help me and you don't fight with me, but we play games'

Michael, 6 $\frac{1}{2}$ years old.

Lately developmental psychologists have been increasingly sensitive to the fact that not all friendships are the same. Just as the personality of friends varies, the quality of each friendship differs, and the developmental significance of friendship relations may relate not only to the quantity, but most importantly to the quality of these ties. As Bukowski, Newcomb and Hartup put it (1996), investigators seem now to be aware that friendships are complex and multifaceted, and should be regarded multidimensionally. There is more to friendships, even to young children's friendships, than simply having friends, and different benefits and liabilities may derive from having friends than from who one's friends are.

However, research on friendship quality is still at a relatively early stage. Researchers' main effort seems to be on construct specification and measurement. A large number of relational processes are investigated as possible indicators of children's friendship quality, as there appears to be a lack of a general agreement on what friendship quality is and what features it includes. Investigators agree only moderately on what features should be assessed in order to examine the quality of a particular friendship. It is characteristic that the number of features assessed in the existing friendship quality measures ranges from 5 to 16 (Furman, 1996). Nonetheless, there is an agreement on some basic features that investigators consider as determinants of friendship quality and are included in all questionnaires. Some of

these common features are: companionship, help, conflict and intimacy (also described as self-disclosure, warmth or closeness). In a more general approach (Berndt & Perry, 1986) friendship features have been placed under the broad umbrellas of positive features (including self-disclosure, pro-social behavior and self-esteem support) and negative features (including conflict and rivalry).

Regardless of how friendship quality is assessed, it appears that it is precisely the specific dynamic features of a friendship that create various psychological benefits and costs for the children, that in turn affect their development and adjustment (Ladd, Kochenderfer & Coleman, 1996). Parker and Asher (1993) have shown that poor friendship quality is related to feelings of loneliness and social dissatisfaction in middle childhood. Furthermore, friendship quality appears to be related to participants' self-esteem and social behavior. Berndt and Miller (unpublished manuscript, cited in Berndt, 1996) interviewed 153 seventh-graders about the features of up to three best friendships. Students' reports were significantly correlated with their self-esteem and school adjustment. Students whose friendships had more positive features had higher scores on self-esteem scales and valued their schooling more, while students whose friendships had more negative features had lower scores on self-esteem scales, valued school less and were less involved in it. In a similar study (Berndt & Keefe, 1995) students whose friendships had more negative features, not only had lower self-esteem, but also reported more disruption at school than did students with more positive features. In addition, the results suggested that students who had trouble getting along with their best friends became more troublesome in class as the school year progressed. In view of these findings, Berndt (1996) has argued that students whose friendships have more negative features practice a style of interaction with their friends that is characterized by teasing and arguing. This style affects their interactions with other people, and therefore it is not surprising that they also become disruptive toward their teachers and classmates.

Ladd, Kochenderfer and Coleman (1996) studied the relationship between specific friendship processes and kindergarten children's (mean age = 5.61 years) development and school adjustment. They claim that young children do recognize differences in the quality of their friendships, and that individual differences in perceived friendship quality and friendship satisfaction exist even at this age. The results suggested that specific friendship processes (for example, personal support or

aid) yield emotional or instrumental resources that empower children to cope successfully with the demands of new school environments, and as a consequence children tended to feel happier in school, see their classmates as supportive and develop positive school attitudes.

The results also indicated that some friendship processes, such as conflict, operated as stressors and, therefore, had a negative impact on children's school adjustment. Children who reported higher levels of conflict in their friendships tended to display a range of adjustment difficulties in school, and this relation was stronger for boys than for girls. Perceived conflict in boys' friendships was associated with declining levels of school involvement. Additionally, boys who held this perception tended to report higher levels of loneliness and lower levels of school liking as the school year progressed. Finally, children of both sexes were less likely to have positive affect in school when their friendships were perceived to be conflictual.

These findings are consistent with the hypothesis that friendships are not necessarily advantageous for children, but may have adverse consequences. They suggest that friendships high in negative features tend to contribute to poor adjustment, while friendships high in positive features tend to enhance children's well-being. Based on these results, research on friendship has focused on specific friendship features (positive and negative), studying their origin and development and trying to evaluate their particular role in children's adjustment.

One positive friendship feature that has been investigated and that seems to influence children's adjustment is intimacy. Intimacy is positively related to self-esteem (Bukowski & Hoza, 1989; Hernandez, 2001). Also, intimacy with a best friend is a protection against a decline in a child's perception of his/her social acceptance after peer rejection (Vernberg, 1990). Moreover, friendship intimacy appears related to adjustment and interpersonal competence in adolescence (Buhrmester, 1990). Adolescents who were rated, by self- and friend reports, as compassionate, disclosing and satisfying reported that they are more competent, sociable, less hostile, less anxious or depressed and have higher self-esteem compared to adolescents who had less intimate friendships. Finally, intimacy with close friends seems to be a normative precursor of later romantic relationships (Seiffge-Krenke, 2000).

Strange as it may be, while the effects of friendship intimacy on children's development have been investigated, there are still unanswered questions concerning its origin, development and even its definition (Berndt, 2004).

4. So, what is intimacy?

(Intimacy and its relation to self-disclosure)

'Sometimes I did many, many bad things like don't washing my teeth, not eating many healthy food, as eating sweets, sweets, sweets...'

Amanda, 6 $\frac{1}{2}$ years old, talking to her friend Koralia.

4.1 Intimacy

Intimacy is a positive friendship feature (Berndt, 2004), identified as one of the key expectations that people have of their friendships (Fehr, 2004), and assessed in most friendship quality measures (questionnaires, interviews or observations) (Dunn, 1988; Furman, 1996; Parker & Gottman, 1989). However, not always the same terminology is used (Mashek & Aron, 2004). Intimacy is also described (or operationalized) as closeness, warmth, intimate exchange or self-disclosure. This ambiguity in the terminology apparently reflects the vagueness in the definition of intimacy.

Sullivan, in his classic book on interpersonal relations (1953), provided a broad definition by describing intimacy as the closeness of the positive relationship between friends. Sharabany, Gershoni and Hofman (1981) delineated intimate friendship as a relation with a close peer. Intimate friends are those who mutually nominate each other as such. Their relations are characterized by mutual trust and loyalty. Intimate friends feel free to be sincere, spontaneous and open about themselves. They tend to know each other's feelings, preferences and life facts. This knowledge is obtained either through exchange and discussion of information or through empathic observation. They prefer each other's company and also prefer the relationship to be exclusive; further, they miss the company of their friend. Finally, they help and support each other by giving and sharing emotionally, as well as materially, feeling free to impose on each other. Intimacy has also been described as a very specific way of knowing, loving and 'being close' to another person (Jamieson, 1998) or as closeness to a best friend, as reflected in an individual's self-described

knowledge of that friend's feelings, honesty with the friend, loyalty, willingness to share, enjoyment of companionship, trust and attachment (Jones & Dembo, 1989).

However, most investigators use narrower definitions. Jourard (1971) has equated intimacy with the depth and breadth of self-disclosure (the exchange of personal information), and this without doubt tends to be the most popular definition (Buhrmester, 1990; Buhrmester & Furman, 1987, Brendt & Perry, 1986). Even those theorists who view intimacy and self-disclosure as distinct constructs, agree that they are closely related, even overlapping (e.g. Laurenceau, Rivera, Schaffer & Pietromonaco, 2004), because friends who have an intimate relationship are eager to learn about each other and willing to disclose private information to each other (Berndt & Hanna, 1995).

The inspection of the literature shows that researchers have used plentifully the close link between intimacy and self-disclosure. For instance, Grabill and Kerns (2000) in their research on attachment style and intimacy in friendship have studied three 'intimacy characteristics': 1) self-disclosure, 2) responsiveness to a partner's disclosure and 3) feeling understood, validated and cared for by a partner during conversations. Notably, all three intimacy characteristics are closely connected to self-disclosure; moreover, it can be argued that they are three facets of the self-disclosure process. Another example would be Rizzo (1989) who in his book on friendship development among children in school defined intimacy as 'any action where the intent appears to be to establish a private atmosphere, including self-disclosure' (p.50). Matsushima and Shiomi (2002) in their research on self-disclosure and friendship in high school students emphasized the role of self-disclosure as the most important factor for the development of an intimate relationship.

Studies have shown that the close connection between self-disclosure and intimacy seems to be a common perception not only of researchers, but of lay people as well. Levesque, Steciuk and Ledley (2002) in their study on disclosure patterns found that self-disclosure is strongly associated with perceived intimacy, while Fehr (2004) in her research on the patterns of relating that people believe produce a sense of intimacy in a friendship found that the pattern 'If I need to talk, my friend will listen' was the most frequently listed. The author concluded that self-disclosure is seen as an important contributor to intimacy expectations.

In the present research project intimacy and self-disclosure are viewed as overlapping constructs. More specifically, it is argued that the distinction between

intimacy and self-disclosure reflects the distinction between friendship provisions and friendship processes (Ladd & Kochenderfer, 1996). Self-disclosure is a friendship process that is a type of **observable, measurable**, typically verbal, behavior. Intimacy, on the other hand, is a friendship provision, that is a **presumed** quality or benefit friends derive from their participation in a specific relationship characterized by self-disclosure. It follows that the willingness to disclose personal information is indicative, and one of the most valid ways of examining whether people have that specific quality, that kind of intimate friendship with another person. In other words, measures of self-disclosure actually assess people's perceptions of the intimacy in their friendships (Berndt & Hanna, 1995).

In the following sections self-disclosure and the two important factors that characterize it (depth and breadth of self-disclosure) will be examined thoroughly. The aim is to make more explicit the close connection between intimacy and self-disclosure.

However, before embarking on this analysis an important fact has to be underscored: most researchers measure intimacy as a verbal construct, and as such it is equated with self-disclosure. Physical intimacy is not generally incorporated as a necessary condition for the concept of intimacy in friendship (Timmerman, 1991), possibly because in adult and adolescent literature the construct 'physical intimacy' connotes almost exclusively sexual intimacy (for example, see Wiederman, 2000). The present research aspires to connect and compare the findings of intimacy in children's friendships with intimacy in later developmental stages and, thus, it was decided to focus on the verbal aspect on intimacy, following the paradigm of the analogous adult or adolescent studies.

4.2 Self-disclosure

There is extensive literature on self-disclosure, at least from as long ago as 1948, when Lewin noted differences between Germans and Americans regarding their readiness to confide personal information. The concept of self-disclosure, though, received its first major systematic analysis from Jourard, who summarized his positions in the book 'The Transparent Self' in 1971.

Jourard (1971) stated that 'self-disclosure is the act of making yourself manifest, showing yourself so others can perceive you' (p.19). The ability to self-disclose, in conjunction with the feedback it prompts, was seen as facilitating an

accurate and broad self-knowledge, and as such is a sign of a healthy personality. Cozby (1973), in his well-known review of the self-disclosure literature, defined self-disclosure as 'any information about himself which Person A communicates verbally to Person B'. Although non-verbal channels of communication can undoubtedly convey a great deal of personal information, this definition emphasizes that self-disclosure is verbal. Explicitly or implicitly this emphasis characterizes most definitions of self-disclosure (Erwin, 1993). Researchers limit the analysis of self-disclosure to the verbal exchange of messages, even if only 'to make the task manageable' (Derlega, Metts, Petronio & Margulis, 1993). Cozby's definition is a very basic one, and as such it can encompass a very broad range of phenomena. Most authors have suggested less all-encompassing definitions (Erwin, 1993).

A widely used definition is provided by Allen (1974), who defined self-disclosure as the 'uncoerced exchanging of personal information in a positive relationship'. Disclosure is seen as voluntary, suggesting that much of it is intentional. It is also seen as an integral part of a relationship rather than simply a characteristic of an individual. Further, the emphasis that the term refers only to the exchange of personal information eliminates many technical or purely informational communications (Erwin, 1993). Implicit in this definition is the notion that self-disclosure entails a strong sense of intimacy and privacy on the part of both the discloser and the target. Presumably the target can be trusted with this special affective communication and will treat the self-disclosed information as both intimate and private and, therefore, not for the gossip mill (Howe, Aquan-Assee & Bukowski, 1995)¹.

In Allen's definition self-disclosure is also seen as an exchange, implying some form of reciprocity. Reciprocity has been identified as an important factor facilitating self-disclosure in adults (Chaikin & Derlega, 1974; Jourard, 1971), adolescents and preadolescents (Cohn & Strassberg, 1983). It appears that we tend to disclose to those who disclose to us and that we tend to like more self-disclosure respondents who reciprocate with the same level of intimacy. But below about six to eight years of age the extent to which children perceive friendship as entailing

¹ At this point the connection between self-disclosure and intimacy becomes critical. In the present research this point was given particular attention and purely informational communications were not considered as indicative of an existing intimate relationship. As it will be discussed in the following chapters, other researches studying self-disclosure in childhood (e.g. Peterman, 2003; Howes, Matheson & Wu, 1992) seem to have overlooked this valuable distinction between intimate and purely informational disclosures.

reciprocal demands and obligations seems to be limited (Erwin, 1993), although some signs of reciprocal interactions have been found in young children's communications. For instance, it has been supported that young children's everyday encounters with their siblings provide them with the opportunity and the necessity to respond reciprocally (Brown & Dunn, 1992). In addition, signs of reciprocal communication have been found in toddler's peer relationships: Denham (1986) has argued that reciprocity of prosocial behaviours (e.g. smiling) occurs at the age of 2 and 3 years, while Ross and Lolis (1989) in their study of toddler's interactions found that toddlers show mutual adjustments in the frequencies of their contributions to games and contingent interaction (contingent interaction was coded when children responded to the socially directed actions of their partners), although the adjustments in the initiations of such sequences were sometimes weak or one-sided. Furthermore, with appropriate methods² children as young as about five or six years old were shown to prefer and disclose more to those peers who disclose more to them (Peterman, 2003). However, the idea of a norm of reciprocity in self-disclosure in children much below school age is likely to be rudimentary. Thus, Erwin (1993) suggested that researchers be cautious when applying Allen's definition in younger age groups (such as the sample of this study). He proposed an alternative working definition of self-disclosure, which is sufficiently general to be used in the context of children's friendships across a wide age range: self-disclosure is defined as 'the child's voluntary revelation of personal information in the course of a relationship'. In the present research project this working definition of self-disclosure is employed.

4.3 Breadth and depth of self-disclosure

Jourard (1971) has stated that self-disclosure is a prerequisite for a healthy personality and suggested that the relationship between the two variables is curvilinear. The individual who never discloses may be unable to establish close relationships with others. In contrast, the individual who characteristically discloses a great deal about himself, not just to someone close such as a parent or a close friend, but to anyone, may be perceived by the others as maladjusted and also unable to relate to others because of a preoccupation with his/her own self. It follows, as Cozby

² Peterman (2003) used a methodology which was assigned to allow children to think that they were talking to another child, when they were actually speaking with a researcher trained to talk like a 5-year-old, who either reciprocated or did not reciprocate the children's disclosures.

(1973) argues, that the individual with positive mental health is characterized by high disclosure to a few significant others and medium disclosure to others in the social environment.

Cozby for the first time here mentioned the significance of two key parameters of self-disclosure: the breadth (amount) of information disclosed, and the depth (intimacy) of information disclosed. We can share literally hundred pieces of information about ourselves with other people (from 'I live in London' to 'I was sexually abused'), but as these self-disclosures vary in personal content, researchers have distinguished between disclosures low in intimacy, that is information we would share with people we are not intimate with, and high in intimacy, that is information we would only share with people with whom we have an intimate relationship (Gottman & Mettetal, 1986). Cozby presented some evidence on the interrelationship between the two parameters, the breadth and the depth of self-disclosure, but social penetration theory makes it more explicit.

Social penetration theory, developed by Altman and Taylor (1973), has been one of the most widely accepted descriptions of how disclosure functions in the development of relationships (Derlega, Metts, Petronio & Margulis, 1993). Relationship development is characterized by an increase in both the depth and breadth in self-disclosure. Relationships intensify gradually, paralleling the development in message exchange from superficial to intimate topics and from a narrow to a broad range of topics. Hence, according to the social penetration theory, in the early stages of a relationship we disclose information about ourselves only in a few, superficial areas. As the relationship progresses, we become more intimate and personal in our disclosures. Therefore, by the later stages of relationship development, we will have revealed our deepest thoughts and feelings across a wide range of issues (Fehr, 1996). As Derlega, Metts, Petronio and Margulis (1993) put it characteristically 'people come into a relationship as entities whose inner cores are revealed through successively deeper revelations, much as an onion is unpeeled by layers'.

It follows that individuals allow this 'unpeeling' to happen only with people with whom they have a close, lasting relationship, that is, family members or friends. We would not expect this 'revelation of inner core' to happen with mere acquaintances, with whom individuals might share only superficial information. Rotenberg and Sliz (1988) describe this pattern as 'restrictive disclosure'. Restrictive disclosure comprises a) individuals' greater disclosure of information of highly

personal content to people with whom they have a close relationship (friends or family members) than to people with whom they do not have a close relationship (non-friends) and b) their approximately equal disclosure of information of low personal content to both friends or family members, and non-friends.

This pattern, found in adult and adolescent relationships, shows explicitly why intimacy and self-disclosure are considered overlapping. It is clear that the depth of personal information that one person is willing to disclose to another is an index of the 'closeness' of the relationship, and of the affection, love or trust that prevails between two people (Jourard, 1971, p.13).

Paradoxically, the connection between self-disclosure and intimacy is made even more explicit if we look at the way people use the restrictive disclosure pattern in order to prevent intimacy from developing. Affifi and Guerrero (2000) argue that if someone does not want another person to get too close to him/her, he/she might limit the conversation to superficial topics. To illustrate this point they provide an example from their research on topic avoidance. A teenager wrote:

My mum remarried about a year ago. I don't like my stepdad at all. He is always trying to act like my real dad and boss me around. I resent this. He will never be my dad. I already have a dad. I really hate it when he tries to get all close to me by asking about my life. He'll try to cozy up to me and ask all about my friends and stuff like he is my buddy or something. I make sure I don't tell him anything but he never gets the hint.

DePaulo, Wetzel, Sternglanz and Walker-Wilson (2003) raised the same issue when they wrote that 'talk, and lots of it, can be used as a way of keeping people out'. They argued that this occurs when what people talk about is not their feelings, or their relationship as it is experienced at the moment, but instead they talk about external topics such as movies and sports. According to the authors such talk distances and even shames relationship partners by its implication that movies and sports are more important than they are.

4.4 Intimacy and self-disclosure in young children's friendships

Literature on intimacy and self-disclosure in friendships has focused primarily on adults and adolescents and, to a lesser extent, children in middle childhood. This

review will reveal that there is still considerable research to be undertaken to provide a complete picture of the phenomenon in younger children, despite the fact that in the past two decades attention has begun to be paid to relevant considerations (Erwin, 1993).

The early foundations of research on intimacy in friendships, and particularly the work of Sullivan (1953) were based on the idea that the need for intimacy, and consequently for self-disclosure, emerges as a powerful interpersonal motive in the context of preadolescent friendships, that is, within those same-sex relationships that Sullivan called 'chumships'. For Sullivan, relationships are primary. He has called his approach 'the interpersonal theory of psychiatry' because he believed that psychiatry is (or should be) the study of what goes on between people (pg. 19). In fact, according to him, an individual's personality is 'the relatively enduring pattern of recurrent interpersonal situations which characterize a human life' (pg. 111). During infancy (defined by Sullivan as the period which extends from a few minutes after birth to the appearance of articulate speech) and childhood (which extends from the appearance of the ability to utter articulate sounds to the appearance for the need for playmates), the parents are responsible for the satisfaction of the 'physicochemically conditioned recurrent needs' (pg. 59), i.e. the need for food, water, warmth etc, and for the provision of interpersonal security, i.e. the need to be rid of anxiety, although Sullivan stresses that it is the parental anxiety that induces the infant's anxiety in the first place. While during infancy the infant can do nothing to assure his/her own survival, throughout the period of childhood there is an increasing demand for cooperation by the mother, increasingly the father and perhaps the child's siblings. By the end of the childhood era the child 'attempts to personify playmates very like himself' (pg. 226) outside the family environment, and this ushers in the juvenile era, which extends through most of the elementary-school years to the eruption of a need for an 'intimate relation with another person of comparable status' (pg. 33). Therefore, according to Sullivan, friendships among preschool and elementary school-aged children revolve primarily around playmate activities, whereas only in the next stage in development, preadolescence, friendships become intimate in nature. In fact, achieving emotional intimacy in the relationships with peers is considered one of the key tasks of the periods of preadolescence and adolescence. The capacity for increased intimacy is thought to have important implications for socioemotional functioning ('great inherent psychotherapeutic possibilities', according to Sullivan, pg. 247), a view supported by

several authors in later years (e.g. Buhrmester, 1990; Buhrmester & Furman, 1987; Updegraff, McHale & Crouter, 2002).

Most researches, early and more recent ones, have shown that the intimacy of friendships does increase with age (e.g. Diaz & Berndt, 1982; Skyeck, 1967, cited in Jourard, 1971). One major problem, though, is that they have yielded different ages at which intimate friendships are acquired, ranging from eight to nine years (Furman & Bierman, 1984; Jones & Dembo, 1989) to the period of early adolescence (Diaz & Berndt, 1982), while some found increases only during adolescence (Sharabaly, Gershoni & Hoffman, 1981). On the other hand, Buhrmester and Furman (1987) assessing the desire for intimacy in children from second through eighth grade did not find age differences in the desire for intimacy, while a study examining friendship intimacy in adolescents from 7th through 11th grade (Shulman, Laursen, Kalman and Karpovsky, 1997) found no age differences in emotional closeness and self-disclosure.

Lately there has been growing evidence that some forms of friendship intimacy and self-disclosure are shown by children in friendships at an early age. It appears that close friendships do not emerge suddenly in middle childhood or adolescence, but rather the intimacy of children's friendships increases gradually, starting out in earlier years (Berndt, 2004). It is postulated that young children form internal representations of peer and friendship relations and have the ability to create intimate, affectionate dyadic relationships with peers (Dunn, 2004, pg. 58; Dunn, 1993; Howes, 1996).

Gottman (1983) found that reciprocal self-disclosure significantly contributes to young children's success ('hitting it off') in peer friendships. The analysis of the data from audiotaped play conversations of 18 dyads of unacquainted children, aged 3 to 9 years, during three consecutive play sessions showed that self-disclosure and exploration of similarities and differences predicted progress toward friendship in the second and third session.

Parker and Gottman (1989) found evidence of self-disclosure and intimacy within the context of social pretend play in young children. They developed two conversation coding systems, which can be used to assess dyadic interpersonal processes, and used these coding systems to assess friendship processes in children through their social pretend play. They argued that self-disclosure, though relatively infrequent in younger children (compared to older children and adolescents) is

nevertheless an important feature of young children's peer relations. They provided an example of two four-year-old best friends at play: When Eric (the skeleton in the play) expresses concern that others don't like him, Naomi (the dinosaur) is reassuring ('I am your friend'). And when Eric confesses that it is he –and not the skeleton- that children think is dumb, Naomi skillfully alters the fantasy role to allow Eric to feel competent ('He is a good skeleton').

Howes, Matheson and Wu (1992) extended Parker and Gottman's argument adding that an important function of social pretend play, once children have become expert players, is the exploration of trust and intimacy. They argued that social pretend play can be a form of self-disclosure and a way to achieve intimacy, as through play the child reveals his/her central fears and concerns to the partner, and tests the partner's reactions to them. Howes, Matheson and Wu further suggested that social pretend play between friends is qualitatively different from the social pretend play between non-friends because friends use self-disclosure to a larger extent than non-friends. In order to test this hypothesis they observed the social pretend play of 48 four-year-old children divided into dyads. Using the Park and Waters (1989) Q-Set for dyadic relationships they found that preschool friends are more likely to engage in self-disclosure within social pretend play than non-friends.

In Howes, Matheson and Wu's study, however, self-disclosure was defined as sharing any kind of personal information. By using this very broad definition, the researchers seem to have overlooked the valuable distinction of the depth of self-disclosure which demarcates intimate from non-intimate relationships. In fact, Howes, Matheson and Wu acknowledged that the level of self-disclosure in which the children engaged with their friends was not particularly intimate (e.g. 'When I go home my mommy is going to take me bike riding'), and admitted that self-disclosure could have been defined in more subtle ways (e.g. fears expressed in the themes or scripts of the social pretend play) but they stated that their limited knowledge of the children's lives precluded such an analysis. Therefore, Howes, Matheson and Wu's findings cannot be regarded as conclusive relating to the existence of intimate friendships in early childhood, as these friendships are characterized by self-disclosures high in personal content. Rather, their findings are an indication that some forms of self-disclosure exist in young children's peer relations.

Dunn (2004) also highlighted the importance of shared pretend play in the development of intimacy³. She suggested that the beginning of intimacy, or to put it in her characteristic words 'the first glimmerings of intimacy', are evident in the sharing of children's imaginative worlds which takes place during pretend play (pg. 2). Dunn argued that children of three or four explore the issues that make them feel afraid or excited, when they are playing pretend with their close friends (pg. 28). Dunn provided an example (pg. 29) from one of her studies, where Kitty, a four-year-old girl, suggested to her partner, May, to play 'that our Mommies have gone away and left us, and we're afraid'. When May demurred by saying that only babies do that, the link between the two girls was lost. When Kitty suggested a similar game to another partner, Shelley, a few days later and Shelley agreed, their play took off and the two girls shared their fears and their invented adventures ended with excitement and not terror. However, Dunn notes that 'the evidence that particular emotions lead to certain pretend games (that the emotion is the cause, steering the imagination) is by no means systematic' (pg. 29), apparently implying that more empirical work is needed in order to strengthen the link between young children's pretend play and friendship intimacy or, more generally, to clarify the picture of young children's ability to form intimate friendships.

Dunn has also explored the development of young children's ability for verbal intimacy and self-disclosure outside the context of pretend play. In an older study (1988) investigating the development of narratives (i.e. telling stories, relating episodes) Dunn provided evidence that very young children engage in self-disclosure. She argued that in the third year, when the powers of narrative begin to emerge, the child develops a new sense of intimacy with others, as he/she can share experiences with them and communicate what particularly interests him/her. Dunn gave examples of self-disclosures provided by children as young as three years of age. She portrayed one 36-month-old boy who with great delight told the observer how he tramped all over the house with his dirty boots on, which was clearly a forbidden act. In her book on children's friendships Dunn (2004) maintained that the 'scattered gossipy remarks' one could hear when eavesdropping on three- and four-year-old friends' conversations, 'usually brief comments about things 'we' don't like about X', often

³ The close link between pretend play and intimacy has also been stressed by researchers not investigating the development of friendship intimacy. For instance, Turnbull and Jenvey (2005) showed that intimacy is one of the criteria children and adults use to differentiate between pretend and activity play forms.

lead to the earliest instances of self-disclosure (pg. 35). According to the author, in these brief exchanges one can see the beginnings of what can be the core of many friendships later: self-disclosure and intimate sharing of feelings.

In all studies reported Dunn has underlined the fact that self-disclosure is rare and less explicit in the young ages than it will be later. It is sustained that children of three or four rarely have elaborate conversations about what they feel or fear (2004, pg. 28), however,

by five, six or seven years sharing thoughts and feelings becomes far more explicit, as children are better able to understand what their friends are thinking. There is a striking increase in children's talking about their feelings, memories and beliefs with their friends [...] With adolescence the capacity for intimacy takes a quantum leap upward in frequency, but even among nine- and ten-year-olds, it can be central to some friendships (pg. 40-41).

As discussed before, that intimacy in friendships increases with age is a generally accepted postulation. What is less clearly delineated is the development of friendship intimacy before children reach middle childhood. Dunn has indicated that young children, either by engaging in pretend play or by using the newly acquired powers of narrative, are able to engage in some forms of self-disclosure with their friends. However, the extent of this ability and the developmental pattern characterizing it has not been systematically investigated. Furthermore, like Howes, Matheson and Wu (1992), Dunn seemed not to have specifically explored the level of intimacy of children's disclosures addressed to friends. Therefore, while Dunn has shown that young children are able to engage in some forms of self-disclosure with their peers, their capacity to form intimate friendships characterized by the sharing of highly intimate pieces of information has not been clearly demonstrated.

Similar research limitations are also evident in Peterman's (2003) research, which provided a somewhat different picture of young children's ability to form intimate friendships. Peterman in her research on kindergarten-aged children's self-disclosure provided evidence that some forms of self-disclosure exist in young children's everyday conversations, but more toward unfamiliar peers and adults, and less toward familiar peers. Peterman reported that, in the experiment condition where five-year-old children were paired with an unfamiliar adult, an unfamiliar peer, or a

familiar peer partner, children self-disclosed 'at least twice as often with an unfamiliar as with a familiar play partner [...] and there was no difference in self-disclosing behaviour for children paired with an unfamiliar adult or an unfamiliar peer'. Based on these findings, Peterman concluded that children use self-disclosure in early conversations with unfamiliar partners to gauge the desirability of future interactions.

This remark, however, combined with the fact that guidelines on what was considered 'self-disclosure' in this particular research were not provided suggests that in Peterman's study, as in the previous studies reviewed here, the distinction between highly personal disclosures and informational exchanges might have been overlooked. For example, it is not clear whether purely informational disclosures, such as 'I go to school everyday', were included in the definition of self-disclosure. Therefore, these findings, although indicative of the existence of self-disclosure in young children's conversations, cannot be regarded as conclusive for the existence, or non-existence, of intimate friendships in early childhood.

Following a different vein in their study of toddlers' friendship, Whaley and Rubinstein (1994) found that five friendship dimensions, namely helping, loyalty, sharing, similarity and intimacy, were present in the friendships of toddler peers, and that these dimensions were most often exhibited in non-verbal ways. Specifically, intimacy was coded when friend dyads attempted to separate themselves from others in the environment, when they displayed a behavior named 'companionable silence' (friends were lying very close to each other, doing the same action, but not interacting verbally), and when children physically moved themselves into a more intimate position with their friend. The researchers provided examples of children hugging or having their arms around their friends. It is argued that through these non-verbal interactions toddlers socially construct their friendship knowledge, and that these are the basis for building close and lasting relationships.

Whaley and Rubinstein's data are purely observational, and as Howes (1996) argues, investigators are generally reluctant to make inferences on the nature of relationships based only on observational data. Nonetheless, it is probable that friendship intimacy can be displayed in non-verbal ways, especially in the case of very young children who might not have fully developed the cognitive and linguistic sophistication to communicate personal information during intimate talks. Another example of non-verbal ways of expressing intimacy could be instances of young boys' rough and tumble play (Reed & Brown, 2001). However, as discussed before, the

present research project aimed to tap the development of young children's ability for verbal (not physical) intimacy⁴. This ability which, as the researches presented here have suggested, might develop earlier than it is generally thought has been examined directly and systematically by Rotenberg and Sliz (1988).

In a detailed study measuring self-disclosure as a facet of intimate friendship, Rotenberg and Sliz (1988) investigated children's restrictive disclosure to friends. They utilized tape recordings which kindergarten (16 children, mean age = 5 years 7 months), second grade (16 children, mean age = 7 years 7 months) and fourth grade children (16 children, mean age = 9 years 5 months) made to their friends and non-friends (i.e. classmates not selected by the children as their friends). They then coded these recordings on topics varying in personal content, from low intimate (description of environment, description of people and activities) to highly intimate (personal preferences, positive personal and negative personal). (For the discussion of the selection and scaling of the topics please see section 4.7.)

Rotenberg and Sliz (1988) found that children from each of the three grades showed restrictive disclosure to friends by disclosing more highly personal, but not more low personal, information to friends than to non-friends. It is noteworthy that even kindergarten children displayed the restrictive disclosure pattern and that the only developmental difference that was found was a decrease in the disclosure of positive personal information to non-friends from second to fourth grade, due perhaps to the acquisition of social modesty at this age. The authors argued that at a broad level the findings may be taken to suggest that the exchange of personal information is important for friendship even at kindergarten age⁵. They claimed that this early development may have been observed in this study, as opposed to other studies which trace the emergence of friendship intimacy and self-disclosure at a much later age (e.g. Diaz & Berndt, 1982; Furman & Bierman, 1984; Jones & Dembo, 1989), for two reasons. First, the task of restrictive disclosure to a friend in Rotenberg and Sliz

⁴ For a more detailed discussion of this decision and the rationale behind it please see section I.2.1. in the First Study.

⁵ Similar results were found in a later study (Rotenberg, 1995b) measuring kindergarten (16 children, mean age = 5 years 4 months), second grade (16 children, mean age = 7 years 6 months) and fourth grade (15 children, mean age = 9 years 3 months) children's moral development. Rotenberg, postulating that children's disclosures of moral behaviour would be a measure of their moral development, compared children's disclosures in three domains (moral behaviour, physical appearance and physical ability) towards friends, non-friends and adults. Children at each of the three ages reported a greater willingness to disclose positive and negative personal information to friends than to non-friends in the three domains of disclosure investigated.

(1988) was concrete. The children could show us their intimate friendship rather than requiring us to speculate about their concepts or expectations of friendship. Second, even though evidence of disclosure was required of young children, the measures were designed to minimize the effects of children's sophistication in their language and self-concept. Based on these findings, Rotenberg and Sliz put forward the proposition that even younger children, such as preschoolers, can show restrictive disclosure to friends.

In a later study Rotenberg (1995a) tested the hypothesis that restrictive disclosure to friends develops across the preschool period. In this research preschool children were divided in two age groups on the basis of a mean age split, younger preschool (36 children, ranging from 2 years 8 months to 4 years) and older preschool (24 children, ranging from 4 years 1 months to 5 years 10 months). These two groups of children were engaged in direct conversations with same-sex friends and non-friends on the low intimate and highly intimate topics described above. The results showed that older preschool children displayed the restrictive disclosure-to-friends pattern; they provided more highly personal disclosures in conversations with friends than with non-friends, while not differentially providing low personal disclosures in conversations with the two types of peers. Younger preschool children, though, (2 to 3 years old) did not display this pattern. In fact, they displayed the opposite pattern: they provided more low personal disclosures in conversations with friends than with non-friends, while not differentially providing highly personal disclosures in conversations with the two types of peers.

These two studies suggested that restrictive self-disclosure and friendship intimacy might be achieved at an early age. Yet, the findings did not provide a complete and satisfying picture of the development of the phenomenon of friendship intimacy in early childhood. The first study (Rotenberg & Sliz, 1988) showed that children at kindergarten age already have the capacity for restrictive self-disclosure, but it did not provide any indication as to when this capacity is achieved. The second study (Rotenberg, 1995a) indicated that older preschool children have the capacity for restrictive self-disclosure, but the contrary pattern displayed by younger preschool children perplexes the interpretation of the findings. Rotenberg argued that younger children are in the process of developing intimate friendships but that does not explain why they displayed exactly the opposite pattern when disclosure to friends is

concerned. Does the capacity for restrictive self-disclosure suddenly emerge at a certain age reversing children's reactions? And when (or why) does this happen?

This conclusion cannot be reached with certainty based on Rotenberg's (1995a) study because the sample is small, and the age range in each age group is large (1 year and 8 months in the second age group). Furthermore, the difference in the number of participants in each age group (36 in the first age group and 24 in the second), combined with the information that the age groups were divided on the basis of a mean age split, suggests that most of the children that participated in the second age group (the older preschool children) were at the high end of the age range. Thus, it seems probable that there is an age gap between the two age groups; a gap, which had it been studied would have possibly provided us with a more complete picture of the phenomenon of restrictive self-disclosure in young children.

A further remark that has to be made is that Rotenberg's two studies (Rotenberg, 1995a; Rotenberg & Sliz, 1988) did not examine two apparently important factors relating to children's self-disclosure to friends. First, they did not measure children's self-disclosure to other important figures in their environment, such as parents or siblings, in order to make a comparison with their disclosure to friends. (The importance of this factor in the study of children's disclosure to friends is discussed in section 4.5).

Second, the two studies only measured one facet of self-disclosure, actual self-disclosure, that is what children actually told their friends. On the contrary, most adolescent and adult research focuses on reported self-disclosure, that is what subjects report they tell their friends [for example, see Buhrmester's Friendship Intimacy Questionnaire (1990) a widely used instrument in the research on adolescents' friendship intimacy]. This dissimilarity impedes the connection of the findings on children's disclosure to friends with the relevant findings in adolescent and adult literature, a connection which would be helpful in the effort to delineate a general developmental pattern of individuals' self-disclosure. (For a discussion on the differences of the findings from studies using reported measures of self-disclosure and studies using actual measures of self-disclosure, please see section I.2.1 in the First Study.)

Implicit in the studies reviewed here is the notion that intimacy and self-disclosure is the result of an internal motivational principle in young children. In contrast with the 'frequency' hypothesis –children's personal knowledge of their

friends is correlated with frequency of contact (Diaz & Berndt, 1982)-, implicit in most of the studies measuring intimacy in young children is the idea that children's intimacy with their friends is the result of children's desire for the disclosure of personal information to friends which functions above and beyond the effects of the frequency of interaction per se (Rotenberg & Sliz, 1988). Friendship intimacy is studied as such in the present research project.

It is likely that friendship intimacy and self-disclosure serve different functions at different ages and that they become particularly important at later stages, especially in preadolescence and adolescence, when the young person confronts a variety of unique stressors (e.g. bodily changes, sexuality), many of which cannot be discussed with parents (Hernandez, 2001; Buhrmester & Furman, 1987). Adolescents, in contrast with school-aged children, typically disclose even highly sensitive issues, such as cases of sexual abuse, to their friends and not to their parents or other members of the immediate family (London, Bruck, Ceci & Shuman, 2005; Paine & Hansen, 2002). Friendship intimacy grows to be so significant in adolescence, that it becomes related to well-being independently from the adversity or the closeness of the parent-child relationship, as opposed to the developmental period of childhood, where friendship intimacy seems to be related to well-being but apparently only under conditions of low-adversity and low parent-child closeness (Sesma, 2001). Besides, in adolescence self-disclosure achieves the paradoxical status of becoming an important topic of self-disclosure in its own right, as adolescents discuss the intimacy, possibilities and obligations of their relationships (Buhrmester & Furman, 1987). Still, it seems probable that the seeds of self-disclosure and intimate peer relationships are laid in early childhood, and, as it was shown, there is indication that children might be able to achieve intimacy and engage in self-disclosure from this young age.

4.5 Recipients of self-disclosure

Early studies on self-disclosure (e.g. Pedersen & Higbee, 1969) have shown that the amount a person is willing to disclose to another person is related to the attributes of the person to whom he/she is disclosing (i.e. how trustworthy the recipient is considered), and to the nature of the relationship between them (i.e. how intimate the relationship is considered). Studies measuring the development of intimacy in middle childhood (e.g. Buhrmester & Furman, 1987) and adolescence (e.g. Updegraff, McHale & Crouter, 2002) have systematically collected information

relating to the older children's or adolescents' targets of self-disclosure (usually friends and family members), thus providing a picture of older children's and adolescents' trusting and intimate relationships.

In middle childhood, self-disclosure to parents seems to be greater than that to peers, with the mother being the most important recipient (Erwin, 1993). There is a robust increase with age in disclosure to peers, with suggestive evidence of a decrease in disclosure to parents during early and middle adolescence (Buhrmester & Prager, 1995). This decrease in communication may be fairly dramatic in dysfunctional families, yet subtle in most families. Most explanations of this phenomenon revolve around the concept of identity formation, as adolescents in search of a unique identity distance themselves from their parents and begin developing closer bonds with friends (Guerrero & Afifi, 1995). This process seems to start in middle childhood as it appears that by seven years children's friendships are relatively private and mothers may not have a close access to the quality of these relationships (Stocker & Dunn, 1990).

But what happens in early childhood? Presumably, young children learn to disclose within the context of their immediate family, as this is the primary socializing agent (Howe, Aquan-Assee & Bukowski, 1995), and it has been shown that from around 20 months children use emotion-descriptive terms in daily interaction with family members (Dunn, Brown & Beardsall, 1991). Therefore, it would be expected that young children address their disclosures to a large extent to the members of their immediate family; however, as it has been demonstrated, there is increasing evidence that young children engage in self-disclosure with their peers as well.

Brown, Donelan-McCall and Dunn (1996) have examined and compared mental state talk in young children's conversations with family members (mother and siblings) and friends. They observed 38 children, all 47 months old at the time of the observation, interacting with their older siblings and mothers for one hour in the first observation session, and with their best friends for 45 minutes in the second observation session one week later. The researchers examined several aspects of children's talk: a) the terms used, b) their functional meaning, c) the use of contrastives and, d) the reference to joint or 'shared' mental states. The aspect examined that is most relevant to the present research project's scope is 'mental reference', which in Brown's Donelan-McCall's and Dunn's research was broadly defined. It included all turns in which the speaker referred to his/her own or another's.

thoughts, beliefs, memories, or imagining, or the act of thinking, imagining etc. References to not knowing, not believing etc. were also included. Examples included: 'I changed my mind about being a girl. Now I'm a boy'; 'You don't remember where you put it, do you'. The phrase 'I don't know' without a predicate complement was also coded as a mental reference.

The findings suggested that children used mental state terms more frequently in conversations with their friends and siblings than with their mothers. This was true whether the frequency was expressed per hour or as a proportion of total conversational turns. Moreover, it was found that children referred to mental states more often in conversations with friends than siblings when the frequency was measured per hour, although the difference measured as a frequency per total turns was not significant. To sum up, the research provided indication that friends can be important recipients of young children's disclosures, even when compared with other potential disclosure targets in their environment. However, it seems that once more the depth of the children's disclosures, the distinction between highly and low intimate disclosures, was not looked into. In fact, considering the definition of 'mental reference' given in Brown's, Donelan-McCall's and Dunn's research, and the description of the terms used in children's conversations it can be assumed that the mental state references that children made were not particularly intimate. Thus, it is reported that terms of knowing, thinking, pretend and memory dominated the four speakers' mental state discourse: of the total mental state turns made by all speakers 47% were variants of the term know, 14% of the term think, 14% of the term pretend and 7% of the terms remember or forget. Therefore, these findings, although highlighting the importance of social interaction between equals (friends) in young children's developing capacity to communicate about mental experience, as Brown, Donelan-McCall and Dunn underlined, cannot be regarded as conclusive relating to the preferred recipients of young children's intimate self-disclosures. The authors have noted a relevant limitation: they acknowledged that mothers' interactions with children extend across much longer time periods than those observed in their study, and are likely to include conversational exchanges which occur with low frequency but are particularly salient for the children's mental state knowledge. This could be true for highly personal disclosures as well: highly personal disclosures occur with low frequency (as opposed to low personal disclosures) and it is possible that they are directed to the person with whom young children spend more time, i.e. the mother.

Lecce and Hughes (2005) have reported results which are incongruent with Brown's, Donelan-McCall's and Dunn's findings. In a study with 44 children (24 boys and 20 girls, mean age = 4.4 years), whose transcripts of conversations with (older) siblings and friends were coded for the frequency of both cognitive and emotional/desire state terms, the researchers found that children showed significantly more inner state talk with siblings than with friends. They stressed that more talk about desires was especially characteristic of conversations with siblings. Furthermore, Lecce and Hughes found no significant correlations across relationships for the talk about the child's inner state, results which according to the authors suggest that there is no stability across relationships as far as the talk about own inner states is concerned. In this study no examples of what was coded as 'cognitive or emotional/desire state terms' were provided, and consequently no inferences on the depth of the children's disclosures shared with siblings or friends can be made.

Is the contradiction between the findings of the two studies investigating children's disclosures toward siblings and friends associated in any way to a potential difference in the depth of the disclosures coded as mental talk in the two researches? This question cannot be answered due to the lack of relevant information, but it seems to bring forward once more the question of children's capacity for restrictive disclosure, namely whether children make disclosures of different levels of personal content to different recipients.

None of the studies reviewed investigated young children's disclosures that are directed to family and friends (i.e. all possible targets in the children's environment) and comparing them with disclosures directed to unfamiliar persons or acquaintances. Most researches studying young children's disclosures to friends (e.g. Peterman, 2003; Rotenberg, 1995a; 1995b; Rotenberg & Sliz, 1988) have compared the disclosures young children made toward friends and those made toward unfamiliar persons, not including in their research family members as possible recipients of disclosures. For instance, Rotenberg (1995b), in his research on children's moral development, investigated the disclosures children made toward friends, non-friends and adults (the class of adults in general, not parents, or other familiar adults), while Peterman (2003) investigated the disclosures children made toward a familiar play partner and compared them with disclosures made toward an unfamiliar adult and an unfamiliar peer. These disclosures were not compared with disclosures made toward parents or siblings, although it seems reasonable that in order to state whether

disclosure to friends is indeed an important factor in young children's socializing process, it is important to compare the amount and the content of disclosures addressed to peers, with that addressed to other important figures in young children's lives, such as family members. To illustrate this point let us make the assumption that the results of a study show that young children, even as young as 3.5 years old, display the restrictive disclosure pattern and they provide more highly personal disclosures in conversations with friends than with non-friends, while not differentially providing low personal disclosures in conversations with the two types of peers. What would the significance of this finding be, and how could one interpret or use this finding, if in real life young children made only a small percentage (for instance 10%) of disclosures to peers (friends and non-friends), while the rest of the disclosures (the rest 90%) were made to parents or other family members?

The investigation of the amount and the depth of disclosures addressed to friends as opposed to other disclosure targets could be considered as the first step towards the clarification of young children's ability for intimate peer relationships: the investigation of the amount and depth of the disclosures addressed to friends could give a measure of the significance of self-disclosure to friends in early childhood. However, it appears that in developmental literature there are no researches conducting a similar comparison between the potential recipients of young children's disclosures.

4.6 Gender differences in intimacy and self-disclosure

Gender differences in intimacy and self-disclosure have been thoroughly studied in the context of older children's and adolescents' friendships. As Erwin (1993) stated, the available evidence suggests that there is a genuine gender difference in self-disclosure: most studies of adolescents and preadolescents report greater self-disclosure by girls, but a similar pattern is not always apparent in most of the relevant research in childhood.

Buhrmester and Prager (1995) in their review of the self-disclosure literature noted that there is consistent evidence of gender differences in self-disclosure to same-sex friends, but the difference becomes robust in the older age periods. Comparisons for children in the six- to eight-year age period revealed no gender differences, whereas 59% of the comparisons in the nine- to 11-year age period showed greater disclosure by girls than boys. For the age periods between 12 and 20

years, 89% of the comparisons indicated more self-disclosure by females than males. Furthermore, research findings have indicated that in adolescence, gender differences appear not only in the amount of self-disclosure, but also in the depth of it. Kiraly (2000) in her study of 14- to 15-year-old adolescents' disclosure to friends found a significant relationship between gender and emotional self-disclosure, with the female adolescents being more willing to discuss their feelings with their friends. The findings suggested that the strongest differences emerged for the negatively toned emotions of anxiety, apathy, depression and fear. Male adolescents were rarely disclosing any of those feelings in their friendship relations. A similar pattern is evident in preadolescents' self-disclosure. Cohn and Strassberg (1983) found that preadolescent girls not only provide more disclosures than do preadolescent boys in conversations with peers, but they distinctly provide more highly personal disclosures than do boys. Dunn (2004, pg. 112) maintained that greater intimacy in girls' friendships has been documented from age six onwards. She stressed that this gender difference increases over time, and by adolescence girls have had more experience of taking part in supportive conversations. In sum, most researchers agree that from late childhood onwards girls' friendships become more closed and exclusive than boys' (Underwood, 2004). In the context of these very close friendships between girls the exchange of highly intimate information takes place. Paradoxically, this makes the friendships between girls more fragile than the friendships between boys (Dunn, 2004, pg.113), as, by exposing personal and 'potentially damaging confidential' information in these very intimate friendships, girls become vulnerable to emotional harm if the information is divulged to an outsider (Benenson & Christakos, 2003).

Research on opposite-sex friendships has also indicated the existence of a gender-by-age pattern. Fifth- and seventh-grade boys and girls did not differ in the amount of self-disclosures they provided in opposite-sex friendships, whereas girls in the 9th and 11th grades reported higher amount of self-disclosures in their opposite-sex friendships than did boys (Sharabany, Gershoni & Hofman, 1981). As regards the depth of self-disclosure in opposite-sex friendships, Kiraly (2000) reported that adolescent boys seldom discuss any negatively toned emotions both in their same-sex and opposite-sex friendships.

The finding of a gender difference in self-disclosure and intimacy in friendships from late childhood onwards appears robust, and researchers have been investigating the possible explanations (Hussong, 2000). Many and diverse

explanations have been offered: lack of parental models for friendship, emotional restraint, homonegativity and homophobia, masculine self-identity, competitive strivings and role conflicts are some of them (Bank & Hansford, 2000; Khorammi, 2002). However, for the developmental periods of childhood and adolescence the gender differentiated experience in the peer culture seems to be the most largely accepted explanation (Zarbatany, McDougall & Hymel, 2000). This explanation appears to be based on the 'Two Cultures Theory', a theory which has arisen in the 1980s from the work of researchers investigating children's discourses, ethnographers and developmental psychologists (Underwood, 2004). According to the 'Two Cultures Theory' boys' and girls' peer groups in middle childhood can be contrasted on several broad dimensions: play styles and activity preferences, discourse, group strength and power, and friendships. These differences 'manifest themselves in the distinctive cultures that develop within boys' and girls' groups as the children grow older' (Maccoby, 1998, pg. 78), and have important developmental consequences. One is that because gender segregation is so dramatic, girls and boys lack opportunities to interact with the members of the other-gender group which might contribute to the strengthening of gender stereotypes, while another important consequence is that boys and girls might develop different goals and values (Underwood, 2004). Furthermore, gender differences increase significantly in adolescence when a combination of biological, psychological and social forces increases the salience of gender role conformity (Basel & Lamb, 2006). It appears that Tannen (1990, pg. 249) accurately summarized the basic argument of the 'Two Cultures Theory' when she argued that when one compares the interactions of boys and girls of the same age one has the feeling of looking at 'two different species'.

It has to be noted that the tenets of the 'Two Cultures Theory' have been challenged by recent theorists and researchers who have suggested that gender differences are more complex than the theory of the two separate gender cultures proposes (see Underwood, 2004, for a review). Dunn (2004, pg. 106) argues that, although there can be an average difference between the gender groups, there is a huge overlap between boys and girls, and suggests to move beyond thinking in terms of 'simple contrasts of boys versus girls'. Underwood (2004) sustains that the caution in concluding that girls' and boys' friendships differ in dramatic ways, expressed by Berndt (1982) more than two decades ago, is still well taken today.

Indeed, in younger ages girls' and boys' friendships do not appear to differ in dramatic ways. Few consistent gender differences are reported in young children's friendships, since (as discussed above) researches indicate the existence of a gender-by-age pattern which only becomes manifest in later years. According to Dunn (2004, pg.113) many of the 'expected' differences between boys' and girls' friendships are 'simply not evident' in younger ages. Watson and Valtin (1997) investigating children's disclosure of a highly personal piece of information (a secret) to a friend found that there was no significant gender difference for the younger children, although there was a considerable difference between ten- and 12-year-old boys and girls: nineteen girls but only four boys out of the ten- and 12-year-olds indicated they would tell a friend.

On the other hand, in Rotenberg's (1995a) study on young children's restrictive disclosure some gender differences in preschool children's disclosure were found. The girls in both age groups (younger preschool and older preschool children) provided more disclosures than did the boys, both to the friends and to the non-friends. However, no gender differences were found regarding the depth of self-disclosure. Similar findings are reported by Dunn (2004, pg. 111) who in her studies in Pennsylvania and London, found that young girls talked with their friends more frequently than boys about feelings and inner states, and that such talk between girls was more likely to be about shared referents.

In the present research project the question of the existence of gender differences in young children's disclosures is addressed, aiming to provide a clearer picture.

4.7 Depth of self-disclosure revisited: Young children's intimate disclosures

The intimacy of adolescents' and adults' disclosures has been thoroughly researched in the past decades (e.g. Strassberg & Anchor, 1975). Although it seems unlikely that children's highly personal disclosures are the same as the highly personal disclosures of adolescents and adults (Rotenberg, 1995a), due to the differences in the developmental periods, the life situations and experiences, there seems not to be much literature on the rating of the intimacy of children's disclosures.

As mentioned before, Rotenberg and Sliz (1988) presented a list of five topics, which they postulated elicit increasing degrees of personal disclosure in children in middle childhood. The first two topics, description of the environment

(operationalized as ‘something about where you live or what your house looks like’) and description of people and activities (operationalized as ‘things such as how you go to school and about whether you have brothers and sisters’), were considered low intimate topics. The last three topics, personal preferences (operationalized as ‘some of the things you like and don’t like, such as foods, games you like and don’t like’), positive personal (operationalized as ‘things that are good about you or things you can do well’) and negative personal (operationalized as ‘things that are bad about you or something that you did and was bad’) were considered highly intimate topics.

Rotenberg and Sliz pointed that these topics were similar to the highly and low intimate topics employed by Diaz and Berndt (1982) in their research on fourth- and eighth-grade students’ knowledge of a best friend. It has to be noted, however, that Diaz and Berndt thought of their research as exploratory and stated that ‘conclusions about the nature of intimate knowledge must be stated cautiously’ and that ‘a more focused investigation is needed’.

Diaz and Berndt (1982) divided their ‘Interview on Knowledge of a Best Friend’ in three parts: a) External characteristics, which includes questions about the environment (e.g. ‘Can you tell me the name of the street where your friend lives?’), and questions about people and activities (e.g. ‘Can you tell me the first names of your friend’s siblings?’ or ‘What clubs or teams does your friend belong to?’), b) Preferences, which includes questions about personal preferences (e.g. ‘What are the foods that your friend really hates?’) and c) Personality characteristics, which includes positive personal items (e.g. ‘What things make your friend really proud of him/herself?’) and negative personal items (e.g. ‘How does your friend react when he/she is teased?’). The design of this interview was based on the description by Selman and Jaquette (unpublished manuscript, cited in Diaz and Berndt, 1982) of the sequence of developmental changes in the information children regard as important to know about a close friend. According to Selman and Jaquette, preschoolers mention non-intimate information, such as where the friend lives, as important things to know about a best friend; in middle childhood there is an increasing emphasis on knowledge of a friend’s preferences, such as the friend’s favourite people, games and activities, while adolescents stress the importance of knowledge about a friend’s internal attributes or personality characteristics. This description of the age changes seems to assume that children are initially concerned about observable and external characteristics of the friend and that they gradually develop an interest in the friend’s

psychological world. The first aim of Diaz's and Berndt's research was to put to test this assumption.

The factor analysis that Diaz and Berndt conducted extracted seven factors with eigenvalue greater than 1.0. The first factor seemed to reflect knowledge of external characteristics (five out of the six 'external characteristics' items loaded on it). However, the remaining item for external characteristics (i.e. the item that referred to the clubs or teams the friend belongs to) and the items for preferences and personality characteristics loaded on six different factors, and consequently Diaz and Berndt stated that the loadings could not be interpreted clearly and that they did not suggest any meaningful subtypes of intimate knowledge. Further statistical analysis showed that there was a moderate but significant correlation between knowledge of external and internal information, indicating that they are not totally independent. The authors concluded that knowledge of external characteristics is separate from knowledge of the other more intimate information and that knowledge of preferences and of personality characteristics are not distinct dimensions, but they also stressed the need for further refinement and development of the research measure and for clarification of the relations of intimate and non-intimate knowledge.

Rotenberg and Sliz (1988) followed Diaz's and Berndt's classification (external characteristics as low intimate topics vs. preferences and personality characteristics as highly intimate topics) when they presented their list of low intimate and high intimate topics. They explained, nonetheless, that there is one primary exception in the similarity between Diaz and Berndt's items and their own topics: the positive and negative personal topics were designed to be age-fair measures of highly personal content. The children could provide descriptions of any physical, psychological or behavioural attributes, as long as these were, according to the subjects, good or bad aspects of themselves, because 'requiring the children to provide descriptions of a given attribute, such as psychological characteristics, might well have led to age differences due to development of children's sophistication in their self-concept' (Rotenberg & Sliz, 1988).

One, though, has to wonder whether this is the only adjustment that has to be made when using these topics with much younger children [three- to six- years old in Rotenberg's (1995a) study]. Do these topics reflect the same level of intimacy at a young age as they do at a much older age? This question seems of particular importance since the basic assumption of Selman's and Jaquette's description of the

developments of children's knowledge of a close friend was the existence of profound developmental differences. Diaz and Berndt (1982) and consecutively Rotenberg and Sliz (1988) and Rotenberg (1995a) based their measures on this assumption. A statistical analysis, such as a factor analysis, in Rotenberg's results, could have answered this question empirically, verifying in this way the validity of the research. Still, such analysis was not performed and the question whether these topics reflect the same level of intimacy in early childhood as they do at later stages was left open.

Rotenberg justified the use of the same hierarchy of topics in his research with preschool children by referring to the literature on young children's self-concept. He argued that the order of the topics reflected the principle that the personal content of children's disclosure varies as a function of the relevance of the disclosed information for their self-concept (Rotenberg, 1995a). It has to be noted that this principle is evident in adults' definition of highly intimate disclosures: it seems that adults define personal information as private because it reflects issues that matter deeply to them and is important to their conceptions of themselves (Petronio, 2000).

Rotenberg argued that the topics employed in his study are consistent with the research on preschool children's self-concept. In particular, Rotenberg reported that research has indicated that preschool children (two to five years of age) base their self-concept on their physical or social competence and, to some extent, on the quality of their appearance (Keller, Ford & Meacham, 1978). In effect, Rotenberg concluded, when children talk about what is good or bad about their looks, or what are the good or bad things they have done, they are providing disclosures that are highly relevant to their self-concept, and therefore these disclosures are high personal disclosures. Thus, from the self-concept literature it is inferred which disclosures are low personal and which highly personal for young children.

A closer inspection of the research on young children's self-concept, however, provides a much more ambiguous picture. It appears that most self-concept researchers are hesitant to give an account of the factors on which young children's self-concept is based, or to attest to young children's capacity to have a general concept of self-worth.

Differences in individuals' self-concept are observed across the age range in numerous dimensions including complexity, differentiation, coherence and stability (Harter, 1996). In fact, it has been asserted that age influences on child and adolescent self-concept should be primary rather than incidental concerns among investigators

(Crain, 1996). There is considerable evidence that young children only have self-concepts that are undifferentiated, inaccurate and situation-specific (Marsh & Hattie, 1996; Novick, Cauce & Grove, 1996). It is only with increasing age, apparently beginning in middle childhood, that self-concept becomes increasingly differentiated and integrated into a multifaceted, hierarchical construct (Harter, 1996).

Researchers have frequently noted the need to examine further young children's self-concept (Crain, 1996; Marsh, Ellis & Craven, 2002), however, the evidence from the self-concept literature so far indicates that young children's ability to sustain stable, coherent and differentiated self-evaluations is questionable and therefore does not seem to fully back Rotenberg's decision to use, without further statistical testing, the topics used with older children in a research with a much younger sample.

On the other hand, there is a form of verbal communication which relevant research (e.g. Wegner & Lane, 1995) and common sense would regard as a highly intimate disclosure that has not been studied in Rotenberg's research. The sharing of secrets, which is a plausible indication of the existence of an intimate relationship (e.g. Kelly, Klusas, Weiss and Kenny, 2001; Vrij, Nunkoosing, Paterson, Oosterwegel & Soukara, 2002), has not been explored in any study on young children's sharing of highly personal pieces of information. Let us examine secrets and their relationship to intimacy in the following sections.

5. Tell me your secret.

'I like broccoli and my secret is, I don't know if you know...'

Heather, 5 ½ years old, talking to her friend Rachel.

As myths reveal, secrets have always occupied human thought: secrets arousing longing, fear, and anger, bringing benefit or misery. The myth of Pandora unfolds interweaving layers of secrecy and revelation. It is one of the many tales of calamities befalling those who uncover what is concealed. Other myths tell of secrets that are destructive only so long as they remain concealed. Not until someone penetrates them can their evil power be defeated. The myth of the riddle of the Sphinx, solved by Oedipus, concerns such a secret. Still other tales, such as the legend of Faust, concern secrets which are necessary in order to preserve something precious, and are endowed with the power to transform those who approach (Bok, 1984, pg. 4).

Awareness of the allure of secrets that these and so many other stories convey is central to human experience. What is more, researches have shown that keeping secrets is a common, probably universal, experience (Frijns, Finkenauer, Vermulst & Engels, 2005). In a research with 373 undergraduate students, only 29 reported keeping no secrets at the time of the research from anyone close to them (Caughlin, Afifi, Carpenter-Theune & Miller, 2005). Perhaps this allure of secrets is what has raised problems in finding a generally accepted definition of secrecy (Margulis, 2003). Yet, as Bok (1984, pg. 9) has pointed out, in research we must retain a neutral definition of secrets, rather than one that assumes from the outset that secrets are guilty or threatening, or on the contrary, awesome and worthy of respect.

Such a neutral definition has already been offered as early as in 1765 in the French *Encyclopedie* (cited in Bok, 1984, pg. 8): 'Secret is everything that we have confided to someone, or that someone has confided to us, with the intention that it not to be revealed.' This definition pinpoints two important characteristics of secrets. First, that secrets involve deliberately hiding information from other people (Kelly & Carter, 2001). Concealment, or hiding, is the defining trait of secrecy (Bok, 1984, pg. 6). Second, that secrets always have a social context and are only meaningful in relation to the people from whom they are kept (Kelly, 2002; Kelly & Carter, 2001).

The *Oxford English Dictionary* (1989) defines 'secret' by means of exactly these two characteristics: 'kept from knowledge or observation, hidden, concealed [...] kept from public knowledge, or from the knowledge of persons specified; not allowed to be known, or only by selected persons' (pg. 839).

Recent research has made a distinction between private information and secrets (e.g. DePaulo, Wetzel, Sternglanz, & Walker-Wilson, 2003; Derlega, Metts, Petronio & Margulis, 1993, pg. 74). The distinction rests on the degree of access others have to our personal information. Private information refers to material that others do not normally know about us (e.g. opinions, beliefs, feelings) but that we might be willing to disclose based on others' need to know, while secrets refer to content that we actively withhold and conceal from others and we might only disclose under special conditions⁶.

5.1 Young children's capacity for secrecy

Bok (1984, pg. 19) argued that to have no capacity for secrecy is to be out of control over how others see one. But do children, and in particular young children, have this capacity? Piaget (1959, pg. 38-39), for instance, saw young children as unable to keep a single thought secret:

Reflection in the child does not admit of privacy. Apart from thinking by images or autistic symbols which cannot be directly communicated, the child up to an age, as yet undetermined but probably somewhere about seven, is incapable of keeping to himself the thoughts which enter his mind. He says everything. He has no verbal continence [...] simply because he does not know what is to keep a thing to himself. Although he talks almost incessantly to his neighbours, he rarely places himself to their point of view. He speaks to them for the most part as if he were alone, and as if he were thinking aloud.

According to Piaget this verbal incontinence in the 'preoperational period' (between two and seven or eight years of age) is a result of the 'lack of differentiation between the child's own point of view and that of others [...] This lack of perspective

⁶ The distinction between secrets and private information in relation to the scopes of the present research project is extensively discussed in the General Discussion Chapter.

affects the logic of relations as well as the awareness of self' (Piaget & Inhelder, 1969, pg. 129).

Studies, however, have shown that Piaget has underestimated young children's cognitive abilities and the complexity of early childhood experience. Not only can most four-year-olds participate in games of hiding (which would be incomprehensible if one does not have some capacity to consider the point of view of others), but they can also advise another child on where to go in a test situation where it is important to hide from a number of policemen, and where intersecting walls provide different hiding places (Boden, 1980, pg. 56-60). Such studies on children's theory of mind contradict Piaget's claim that young children are unable to assume the point of view of others, the claim meant to support the argument that children are incapable of secrecy (Bok, 1984, pg. 31), and attest to young children's ability to 'hold to beliefs about beliefs' (Chandler, Fritz & Hala, 1989)

As early as 1971, Borke has showed that three-year-old children display an awareness of other people's feelings (happiness, sadness, fear, anger) and can identify the specific situations that evoke different kinds of affective responses. In the last two decades there has been a great surge of research on children's understanding of other minds, which has provided a quite clear picture of when, how and what children understand about other people's beliefs, thoughts, feelings, and intentions, (Dunn, 2004, pg. 53): it is now fairly well established that by the age of four years normal children have already acquired the most important principles of theory of mind, based on which children predict and explain other people's actions (Astington & Jenkins, 1995; Bartsch & Wellman, 1989; Slomkowski & Dunn, 1996; Sodian & Frith, 1991).

Direct support, however, for young children's ability to have and keep secrets comes from Peskin's (Peskin & Ardino, 2003; Peskin, 1992) researches on children's ability to conceal information. Her studies reported a marked development between the ages of three and five years in children's ability to conceal information. In her first study (1992) three- to five-year-old children were asked to choose the sticker they wanted. In order to take and keep this sticker they had to misinform or to withhold information from a competitor who always took the sticker for which they themselves had previously stated a preference. The findings showed that 29% of three-year-olds, 58% of four-year-olds, and 88% of five-year-olds successfully concealed information from the competitor, that is successfully kept as a secret which sticker they liked when asked by the competitor. In a more recent research Peskin and Ardino (2003)

examined children's ability to keep a secret about a surprise. Children were instructed not to say to the experimenter about a birthday cake kept in a fridge, because, as it was clearly stated, 'it is a secret for her birthday'. The results were similar to those of the older study: few three-year-olds (33%), most four-year-olds (67%) but almost all five-year-olds (89%) could successfully keep a secret. Both studies indicated that, differing from Piaget's predictions regarding age norms, children are able to keep a secret well before the age of seven, a conviction currently shared by most researchers.

Now most researchers of children's relationships admit to young children's ability of secrecy. In fact, the ability of young children to keep secrets, as well as the factors that affect their disclosure have emerged as subjects for research (for example see Clare, Powell, Raju & Romeo, 2004; Hartwig & Wilson, 2002). Dunn (2004, pg. 112), based on her observations on children's interactions, has stated that sharing secrets is common among girls by six years. Watson and Valtin (1997) have investigated the understanding of secrecy in middle childhood and their youngest group included five-year-old children (mean age of the youngest group = 5 years, 8 months). Young children's understanding of secrets has also been explored in relation to children's ability to testify in a court of law (Bottoms, Goodman, Schwartz-Kenney & Thomas, 2002; Pipe & Goodman, 1991; Pipe & Wilson, 1994).

Moreover, 'sharing secrets' has been used as an index of young children's quality of relationships. 'Sharing secrets' is an item in Parker and Waters' Dyadic Relationships Q-Set (1989), a measure designed for assessing the behaviour of dyads of children. This measure has been broadly used in the research of preschoolers' friendships (e.g. Kerns, 1994; Park, Lay & Ramsay, 1993; Park & Waters, 1989). Finally, Betts and Rotenberg (2004) in their research on the relations among young children's (mean age = 5 years, 9 months) trust beliefs and adjustment to school have shown that children's peer trust beliefs about secret keeping (among other things) positively predicted changes in adjustment to school across time.

Thus, it appears that young children have some understanding of secrets and secret keeping. There are theorists who go further and suggest that mastering the art of secrecy is a part of normal development (Frijns, Finkenauer, Vermulst & Engels, 2005) and that secrets are essential for young children, the main reason for that being the experience of selfhood they offer. Imber-Black (1998) postulates that making and keeping secrets helps young children become aware that they are separate persons

with unique thoughts and feelings⁷. As children discover 'psychological hiding places' they also discover an autonomous self. Additionally it is sustained that through secrets children gain an early understanding of boundaries in relationships, of predicaments involving loyalties to others, and of the complexities of lying and honesty (Imber-Black, 1998). It is exactly this point that Meares and Orlay (1988) put to test in a small scale, psychoanalytically informed study. They investigated three- to five- year olds developing capacity for secrecy and lying as an indication of the existence a 'boundary' between an inner world of 'self' and an outer world of 'non-self'. Interestingly, Piaget also maintained that the 'knowledge that certain things are known to a person alone strengthens the consciousness of self' (Piaget, 1929, pg. 155), but, as discussed, he assumed that this knowledge is attained later than recent research has shown.

Although (as it was shown) some attention has been recently paid to young children's ability of secrecy, the literature on secrets in early childhood is still limited. In order to examine issues that are of particular interest to the present study, such as the recipients of young children's secrets, we have to review to some extent the relevant literature on older children and adults and, where appropriate, make inferences about secrets in early childhood.

5.2 Recipients of secrets: The 'appropriate confidant'

Considerable attention has been given to the recipients of secrets in adult literature. The importance of assessing the appropriateness of the confidant has been stressed by theorists who have suggested that people should not reveal personal secrets if they lack an appropriately nonjudgmental and trustworthy confidant (Caughlin, Afifi, Carpenter-Theune & Miller, 2005; Kelly & McKillop, 1996). Thus, following the notion that 'the key to make a wise decision to reveal one's personal secrets is finding an appropriate confidant' (Kelly & Carter, 2001; Kelly, 1999), researchers have tried to establish who individuals view as the 'appropriate' person to share their secrets with. It appears that in adulthood friends are the most frequently nominated 'appropriate confidants'.

In a study conducted by Kelly, Klusas, Weiss and Kenny (2001) with a sample of 133 undergraduate students 70 indicated they would share their personal secret

⁷ For a detailed analysis of the importance of secrecy and its relation to the separation-individuation process please see the Discussion section in the Second Study.

with a 'same-sex friend', 26 indicated 'girlfriend/boyfriend', 13 indicated 'mother', 12 indicated 'opposite-sex friend', three indicated 'stranger', two indicated 'father' and the remaining five participants indicated five other types of confidants. Similarly, Vrij, Nunkoosing, Paterson, Oosterwegel, and Soukara (2002) in their research on the characteristics of secrecy found that those secret-holders who informed others mainly informed friends, but also partners and family members were frequently informed. Colleagues, acquaintances and therapists were the least often informed. The same pattern appears when the likelihood of sharing another's secret is examined. Adult participants seem more likely to tell someone else's secret to their best friend than to a stranger (Petronio & Bantz, 1991).

Children in middle childhood display a similar pattern. In a research conducted by Rotenberg (1986) fourth-grade children reported more frequent/higher secrets shared among friendship pairs, than among non-friends. In addition, children reported a higher proportion of secrets kept among friendship pairs, than among non-friends. Rotenberg has not collected data relating to other possible confidants of children's secrets, such as parents or siblings, so as to compare the frequency of the secrets shared with them with the frequency of secrets shared with friends.

Watson and Valtin (1997) in their research on 5.5- to 12-year-old children's understanding of the nature of four kinds of secrets (the guilty secret, the innocent secret, the dangerous secret and the embarrassing secret) have collected data relating to the disclosure of these secrets to mother. For each kind of secret a simple story about one child telling the secret to another was presented to the interviewee. This was followed by questions. The guilty secret concerned something forbidden, that is stealing money from mother's purse, the innocent secret concerned the child telling a friend that he/she had painted a picture to give to mother for her birthday, while in the case of the dangerous secret the story involved one child telling another that he/she had lit a fire in an empty garage. All these stories led to questions about whether the child would tell mother. The embarrassing secret, which involved a story of a child wetting his/her pants at school, led to questions about whether the child would tell the mother and about whether the child would tell a friend.

The results showed that most 5.5- and 6.5-year-old children would tell mother the guilty and the dangerous secret, but not the innocent secret which they would keep from mother because 'it is a surprise'. On the contrary, most ten- and 12-year-old children would keep all three kinds of secrets from mother. In the case of the

embarrassing secret the majority of children (73%) of all ages would tell their mother, although the reasons they gave changed with age. Younger children tended to give pragmatic reasons for telling mother (e.g. she would help clean up), while older children tended to give relationship reasons (e.g. she understands and can be trusted to know).

Surprisingly, Watson and Valtin did not report the findings related to the percentage of children who would tell a friend the embarrassing secret. They reported, however, the findings gathered from the group of questions about secrets in general where children were asked whether they would tell a secret (had they had one) to a friend. They stated that although ‘virtually all’ the eight-, ten- and 12-year-old children would tell a friend, about half of the younger children would not, and that this difference was highly significant.

Our knowledge about the ‘appropriate confidant’ is more limited when it comes to early childhood. Dunn (2004, pg. 41), when describing the research she and her colleagues had carried out (Brown, Donelan-Mc Call & Dunn, 1996) on young children’s talk about mental states, wrote that ‘by 47 months old, the children in our study were talking about ‘inner states’ -including feelings- much more with their friends than with family members. [...] And if you ask children who are a little older who they confide in about secrets or troubles, it is friends and mothers who come out top of the list’. It seems that this is a (probably correct) speculation based on Dunn’s considerable research experience with young children; however the aforementioned research did not address the issue of young children’s sharing of secrets.

To our knowledge, there is a lack of research concerning the recipients of young children’s secrets, as, even though their ability to have secrets has been recognized, researchers have not systematically addressed the issue of who young children would view as the ‘appropriate confidant’.

5.3 Secrets and intimacy

Not only does common sense regard the sharing of secrets as a highly intimate disclosure, but also the review of the literature on the recipients of secrets draws attention to the close connection between intimacy and secrets. In fact, secrecy researchers seem to share the common assumption that secret-holders confide information to those who they feel emotionally close (Bok, 1984; Rotenberg, 1986; Vrij, Nunkoosing, Paterson, Oosterwegel & Soukara, 2002; Yovetich & Drigotas,

1999). 'Appropriate confidants' are the persons the disclosers have a close relationship with, and in this way the transmission of secrets is likened to self-disclosure and intimacy (Yovetich & Drigotas, 1999).

Support for the close connection between secrets and intimacy is provided by Vangelisti's, Caughlin's and Timmerman's (2001) research that examined the criteria under which family members reveal family secrets. The results showed that the criteria participants reported using in determining whether to tell the secret were related to the quality of relationship with the potential confidant. More specifically, feeling psychologically close to the target was associated with several of the criteria.

Vangelisti in an earlier paper (1994) had suggested that secrets serve several functions in the family context, and the first one is to create intimacy. According to her, secrecy is used to increase or maintain a sense of closeness, and the development of intimacy, on at least some level, requires secrecy between the intimates and privacy from less intimate others. 'Secrets, Vangelisti concluded, are one piece of evidence family members may use to confirm the uniqueness and closeness of their family relationships'. It is suggested that this postulation can be extended to relationships outside the family milieu.

A similar postulation was put forward by Rotenberg (1986) who noted the close connection between secrets and intimacy in his research on secrets in middle childhood. He stated that an intimate relationship is one where there is trust, the sharing of secrets and the keeping of those secrets. He called trust, secret sharing and secret keeping the intimacy beliefs/behaviours and he argued that this conceptualization of intimacy provides a partial resolution to the problem of defining and measuring intimate relationships.

Other researchers, measuring intimacy in children and adolescents, have included 'sharing secrets' in their definition of intimacy. An 'intimate disclosure item' in Buhrmester's Friendship Intimacy Questionnaire (1990) reads: 'How often do you share secrets and private feelings with this person?' Similarly, Furman and Bierman (1984) included 'sharing secrets' in the 'behavioural intimacy' category of their list of friendship expectations. Finally, as mentioned before, Park and Waters (1989) included a 'sharing secrets' item in the self-disclosure cluster of their Dyadic Relationships Q-Set, which assesses the relationships of young children.

In conclusion, the literature review shows that 'sharing secrets' is closely related to intimacy and self-disclosure. Moreover, many researchers view the sharing

of secrets as an indication of the existence of an intimate relationship and this connection has been taken into account even in the research of young children. It is by no means accidental that Dunn (2004, pg. 40) opens the chapter on the growth of intimacy with a phrase taken from a six-year-old participant in one of her researches: 'Friends tell you their secrets, and you tell them yours'.

6. Conclusions/Research hypotheses.

Intimacy is an important friendship feature which influences children's adjustment. Based on existing research, it is argued that verbal intimacy can be equated with restrictive disclosure of highly personal pieces of information. Literature on intimacy and self-disclosure, though, with few exceptions, has been limited to adults and adolescents. The review shows that there is increasing support for the hypothesis that children can achieve intimacy and engage in self-disclosure with their friends from a relatively young age. Research, however, has been sporadic, not reaching a final conclusion as to the age where intimate disclosure towards friends starts. Furthermore, several facets of the young children's ability to form intimate friendships, such as the comparison of self-disclosure towards friends and other important figures in children's early years, have been largely untested.

Young children's (3.5 to 6.5 years of age) ability to form intimate friendships characterized by the restrictive sharing of highly personal information is explored in the present research project. The following general hypotheses will be tested:

H1: Young children (3.5 to 6.5 years of age) display the restrictive disclosure-to-friends pattern, as they disclose a greater number of highly personal information to friends than to non-friends, and an approximately equal number of low personal information to both friends and non-friends.

H2: There are age differences in young children's (3.5 to 6.5 years of age) restrictive disclosure to friends, as restrictive disclosure increases with age.

H3: There are gender differences in young children's (3.5 to 6.5 years of age) restrictive disclosure to friends.

I. The First Study: Do young children have intimate friendships?

I.1. Overview.

The purpose of the First Study was to investigate young children's disclosure of presumed low and highly intimate information towards friends and other figures in their environment. Two important methodological issues were encountered: the distinction between verbal and physical intimacy, and the distinction between reported and actual self-disclosure. It was decided that the study should focus on verbal intimacy and that both reported and actual disclosure would be measured. New measures were therefore developed both for reported and actual disclosure and their utility was tested by means of a Pilot Study, conducted in a school in the London area. The chapter continues by giving a detailed account of the methodology used in the Main Study. It presents the two tasks of the study: a) the Tape-Recording Task, which measured actual self-disclosure to friends and non-friends and, b) the Personal and Zinc Interviews, which measured reported self-disclosure and aimed to identify the preferred recipients of young children's disclosures. The chapter concludes by presenting the results for each of these tasks separately and their discussion.

I.2. Designing the tasks.

I.2.1 Two methodological issues

In the design of an experiment measuring intimacy as a feature of young children's friendships two important methodological issues needed clarification.

First, it had to be decided whether intimacy would be measured as a verbal construct (i.e. self-disclosure), or whether the physical aspect of it would also be taken into consideration. As it was shown in the Literature Review, the majority of researchers equate intimacy with self-disclosure, as the willingness to disclose personal information to another person is indicative that one has an intimate relationship with that person (Berndt & Hanna, 1985). Still, Whaley and Rubinstein (1994) postulated that in the case of children, especially very young children who are not verbally fluent, things might be different and that friendship qualities can also be exhibited in non-verbal ways. Extending this line of thinking, Reed and Brown (2001) videotaped seven boys (six to nine years of age) while engaging in their favourite rough and tumble play. The results showed that rough and tumble play is a means by which boys express care and intimacy for one another.

It is possible that physical intimacy could be an indicator of the quality of a particular friendship, especially in the case of very young children. However, the focus of the present study was decided to be on the verbal aspect of intimacy for two reasons:

1. The aim of this research was to study the development of friendship intimacy, and to connect the findings with the existing adult and adolescent literature. The need to investigate features of young children's friendships in ways similar to research on older children and adolescents has recently been brought forward by researchers, as this would 'ultimately help explain the positive and negative influences early friendships have on development' (Seban, 2003). Thus, friendship intimacy was measured the way it is typically conceptualized and operationalized in adult and adolescent literature, i.e. as a verbal construct.

2. The sample of the present research consisted of children old enough to have achieved a degree of verbal fluency. As Dunn (1988) would put it, the participating children were at an age where 'the powers of narrative' had already emerged: children by 36 months are considered able to talk about past and future emotions and discuss

the antecedents and consequences of emotional states (Dunn, Brown & Beardsall, 1991). The present study intended to determine at what age and to what extent the children use these recently acquired powers to share intimate pieces of information with their friends.

The second methodological issue concerned the distinction between actual and reported self-disclosure. As demonstrated in the Literature Review, the vast majority of the existing researches on young children's friendship intimacy measure actual self-disclosure, that is researchers observe and analyze what children actually tell their friends. In contrast, adolescent and adult research focuses on what subjects report they share with their friends. As stated, one of the aims of this research was to connect the findings with the adult and adolescent literature. Of course, it was equally important to connect the findings with the existing research on young children's intimacy. Hence, it was decided to include in the research both facets of self-disclosure, actual and reported, and to compare the relative findings.

The decision to include both reported and actual measures of friendship intimacy and to compare them was also dictated by the finding that in studies using both self-report and observational measures of self-disclosure, only modest correlations between the two sources of assessment were found for children's self-disclosure (Hobart, 1987, cited in Simpkins & Parke, 2001). It seems that the correspondence between children's behaviour with a friend and perceptions of that friendship is still a relatively unresearched area (Simpkins & Parke, 2001). Nevertheless, the modest correlations between these two types of data might suggest that the two approaches may tap different aspects of the studied friendship feature, and, as Simpkins and Parke (2001) state, underscore the need to utilize different methods to provide a more complete picture of a friendship. This need is maintained by other friendship theorists as well (Rose, 2002), who propose that actual measures in combination with self-reports provide a more objective assessment of the phenomenon under study. Following this direction, in the present study both methods were used to capture a complete picture of young children's intimate friendships.

I.2.2 Designing the tasks¹

A) Measuring reported self-disclosure.

In order to measure reported self-disclosure an interview appropriate for young children, in length, content and wording had to be developed. Although researchers are sometimes reluctant to use self-report measures with young samples, Ladd, Kochenderfer and Coleman (1996) showed that young kindergarten children can reliably respond to an interview on the quality of their friendship relationships. Therefore, it was likely that young children would be capable of completing an age-appropriate interview on self-disclosure within their friendship relationships.

As stated previously, besides their capacity for restrictive disclosure of highly personal pieces of information to friends, another important factor in young children's self-disclosure had to be assessed through the interview, namely if friends are important recipients of disclosure, or if their role, as recipients of self-disclosure, is overshadowed by other people in the child's environment. In order to address this issue it was important to compare the amount and the depth of disclosures addressed to friends with that addressed to other important figures in young children's lives (e.g. family members or teachers). Thus, the idea of the interview was to present children with statements varying in personal content and to ask them to whom they would choose to disclose these statements.

Two potential difficulties appeared. First, it might be difficult to get valid answers from young children about a hypothetical situation. Young children might not successfully put themselves in a situation that is not true for themselves. For instance, it might not be easy for a young child to indicate to whom he/she would tell that he/she is afraid of the dark, if in reality he/she is not afraid of it.

Second, not all children have the same people in their environment. For example, some children may have siblings or grandparents, and others may not. It was not clear whether that would pose a problem in the attempt to tap the recipients of young children's self-disclosure.

In order to test if these difficulties are indeed a significant hindrance in the study of young children's self-disclosure (and in order to minimize these difficulties, if that was really the case), a second interview was developed in parallel. Both interviews were administered to all the children individually.

¹ Please note that this section refers to the designing of the tasks. For the exact wording and details about the administration please see the 'Procedure' sections in the Pilot and Main Study.

In the first interview, named 'Personal Interview', each child was presented with a series of statements varying in personal content and was asked to indicate to whom he/she personally would disclose this information. In the second interview, labeled 'Zinc Interview', a scenario about a puppet named 'Zinc' was presented to the child². The name 'Zinc' was used because it is unfamiliar and it would be unlikely that children know someone with this name. Thus, it was assumed that children would not be influenced by the name in the selection of the target of self-disclosure. At the beginning of the interview each child was introduced to Zinc and to the people-puppets in his/her environment: four adults and four children. Then the child was presented with a series of statements about Zinc's life (the same statements used in Personal Interview) and was asked to indicate to whom Zinc would disclose this information.

The topics of the statements used in both Interviews (except one statement concerning 'sharing secrets') derived from Rotenberg and Sliz's (1988) studies on young children's self-disclosure. As illustrated in the Literature Review chapter, the topics (Description of the environment, Description of people and activities, Personal preferences, Positive personal and Negative personal items) are considered to reflect increasing degrees of personal disclosure, with the two first being topics of low personal and the latter three of highly personal disclosures.

In Personal and Zinc Interviews, four statements derived from each topic, a total of twenty statements. The statements themselves derived from the examples Rotenberg and Sliz gave as clarifications on their topics. For instance, the examples Rotenberg and Sliz gave for the topic 'Positive personal' were: 'things that are good about you or things that you can do well'. The interview statements in the 'Positive personal' topic were: a) Sometimes people tell me that I am clever and can do many things well, b) I can run faster than most children in my class, c) People sometimes

² Puppets are often used in interviews by researchers in order to involve the young children and to minimize processing demands (Denham, 1986). Denham has argued that these researches have been successful in tapping phenomena not detectable through the use of other measures laden with cognitive processing demands; for instance, when such measures are used, children as young as two years old can demonstrate understanding of another's point of view. Furthermore, interviews with puppets have recently been reported as 'a way of getting honest responses from children' (Illingsworth, 2004), and have been used in a variety of researches with preschool children with diverse topics ranging from children's narrative competence (Ibanez & Pierrehumbert, 2005) to self-perception (Cugmas, 2005).

say that I am very good and d) I can draw really well. Furthermore, the examination of the literature on older children's and adolescents' self-disclosure provided useful ideas, and some of the statements used in the interviews are indeed similar to the ones used by researchers of older children's self-disclosure (for example, see Diaz & Berndt, 1982; Jourard, 1971, pg. 201-202). Still, some important alterations had to be made because of the age (3.5-6.5) and the diversity of the target group of the interviews. First, the interview had to be as short as possible, for the obvious reason that young children have a short attention span. Second, children of the age studied have diverse experiences, for example, they don't all have the uniform experience of everyday schooling, as some attend playgroups part-time. So, the interviews had to include statements general enough to apply to all the children interviewed and specific enough to capture differences in self-disclosure. Another important factor in choosing the statements was that statements which were explicitly or implicitly related to a specific activity children do with a particular person (e.g. parents or teacher) had to be avoided, as that would probably influence their answers concerning the target of self-disclosure.

The statements used in the interviews were the following (for reasons of clarity is also stated here from which topic each statement derived):

Description of the environment:

- 1) My home is close to the school/nursery/playgroup.
- 2) There is a playground in my school/nursery/playgroup.
- 3) My room has a window.
- 4) There is a big tree outside my school/nursery/playgroup.

Description of people or activities:

- 5) I drink a glass of milk every morning.
- 6) My cousin has short hair.
- 7) Most people are taller than me.
- 8) I read a book at school/nursery/playgroup.

Personal preferences:

- 9) I like watching television.
- 10) I don't like the colour yellow.
- 11) I don't like broccoli.
- 12) I like dogs.

Personal positive:

- 13) Sometimes people tell me that I am clever and can do many things well.
- 14) I can run faster than most children in my class.
- 15) People sometimes say that I am very good.
- 16) I can draw really well.

Personal negative:

- 17) Some children called me names, and I felt sad.
- 18) I am afraid of the dark.
- 19) One day a neighbour shouted at me, because I did something naughty.
- 20) Sometimes people get cross because I don't always listen to them.

In addition to these statements derived from Rotenberg and Sliz's conceptualization of young children's self-disclosure, another statement concerning the recipients of children's secrets was used. As the literature review demonstrated, sharing of secrets is closely connected to intimacy and self-disclosure. The relevant interview statement read: 'Let's say you have a secret. Who are you going to tell your secret?', or in the case of the Zinc interview: 'Let's say Zinc has a secret. Who is he/she going to tell his/her secret?'

B) Measuring actual self-disclosure.

In order to measure children's actual disclosure to friends, Rotenberg and Sliz (1988) asked children (six-nine years old) to make a tape-recording to a friend and to a non-friend on the aforementioned topics varying on personal content. The authors stated that they used the method of tape-recordings because it permitted the direct comparison of children's disclosures to friend and non-friend under identical conditions, but did not permit children to perceive interpersonal cues (such as grimaces or verbal comments) that could affect disclosure differentially to friends and non-friends.

The same methodology was used in the present study, although the participants were younger than the participants in Rotenberg's and Sliz's study. However, it seemed very likely that even children as young as 3.5 years old would understand the nature of making a tape-recording, as nowadays most children have experience with similar equipment at home and at school. Furthermore, using the same methodology would facilitate the connection and the comparison between self-disclosure in early and middle childhood.

Two alterations were made in Rotenberg and Sliz's methodology. In their study the topics were presented in form of examples. More specifically, each child was asked to talk about the following topics: 1) the description of the environment, for example: 'Things such as something about where you live or what your house looks like', 2) the description of people or activities, for example 'Things such as how you go to school or things about your brothers and sisters, 3) personal preferences, for example 'Some of the things you like and don't like, such as foods and games you like and foods and games you don't like', 4) positive personal, for example 'Things that are good about you or things you can do well' and 5) negative personal, for example 'Things that are bad about you or something that you did that was bad'.

In the present study the topics were also presented in the form of examples but due to the younger age of the participants, the examples had to be presented in a simpler way. While Rotenberg and Sliz gave two examples for each topic, in the present study only one example was provided, and a simpler way of phrasing the examples was used.

Furthermore, Rotenberg and Sliz asked the participants to talk about 'new' information, such as 'things the other child hasn't heard before', although they believed that 'requesting new information would likely reduce children's disclosure to friends and would be evident for both high and low personal topics.' In the present study it was decided not to request new information, because it was believed that even the repetition of old information would give a sense of what the child is willing to share with his/her peers.

Due to ethical constraints, children were not asked to talk about their secrets in the Tape-Recording Task.

C) An important point for both actual and reported self-disclosure in young children's friendships: Cross-gender friendships.

As discussed in the Literature Review chapter, gender differences in friendship intimacy have been largely studied. Still, the picture regarding gender differences in young children's ability to form intimate friendships is not yet clear.

One of the points that seems to differentiate early friendships from friendships at later developmental stages is young children's readiness to form friendships with children of either sex. While separation of boys and girls in group settings grows during the first school years, or to put it in the expressive words of Judy Dunn (2004, pg. 114), while 'everything associated with girls is a source of public disgust and

denigration' to boys during the first few years at school, toddlers and preschoolers form close relationships equally often with children of the same or the opposite gender (Dunn, 2004, pg.114). Although these cross-gender friendships might dissolve at a later age (Gottman, 1986b), early friendships seem not to be linked to the gender of the other child (Howes, 1988).

Therefore in the present study, which focuses on early friendships, it was decided to collect data from both same- and cross-gender friendships. If a friendship pair met the criteria set in the Sociometric Interview (described in the Procedure section), it was included in the research sample, regardless of it being a cross- or a same-gender pair. For the same reason, it was decided to counterbalance the gender of the puppet Zinc's friend in the Zinc Interview, i.e. to randomly allocate the gender of the puppet's friend at each interview, regardless of the gender of the interviewee.

In order to see if and how the interviews designed and the other tasks worked, a Pilot Study with slightly older children was conducted in a primary school in the London area.

I.3. The First Study: The Pilot.

I.3.1 Participants

The sample consisted of 23 children (12 boys and 11 girls) from a school in the Central London area. The mean age of the children was 6.81 years. Most pupils of the school came from working class families, with more than 50% of them being eligible for free school meals. The ethnic/racial composition of the sample was 43.4% White/Caucasian and 56.6% Black. All children interviewed had provided informed parental consent. The children were interviewed on two occasions completing two measures on the first day of the experiment and the other two measures two days later.

I.3.2 Materials

For the administration of the Sociometric Interview five identical boxes with different labels ('don't like a lot', 'don't like a little', 'they are ok', 'like a little' and 'like a lot') were used. A picture of one of the boxes is presented in Appendix A.

For the administration of the Zinc Interview 14 puppets were used in total, in order to allow all possible gender combinations. There were seven 'children' puppets and seven 'adult' puppets. Pictures of the puppets are presented in Appendix A.

For the administration of the Tape-Recording Task, two identical, plastic 'children's' tape-recorders were used. Each tape recorder had a microphone to which the children spoke. During the administration of the Tape-Recording Task one of the tape-recorders was labeled by the name of the interviewee's friend and the other was labeled by the name of his/her non-friend. For pictures of the tape-recorders please see Appendix A.

I.3.3 Procedure

A) Identification of friends and non-friends: The Sociometric Interview.

On the first day of the experiment, the friendship relations of the children were assessed, by means of a Sociometric Interview. The Sociometric Interview was administered individually and was divided in two parts.

At the beginning of the Interview, each child was asked if he/she knew what a 'friend' and a 'best friend' is. Then these definitions were provided: 'A friend is a child you know well, that you spend a lot of time with, and you like to play with' and 'A best friend is a child you know the most and you most like to play with'. In order

to ensure comparability between children, even if some children provided appropriate definitions, they were told: 'That's right' and then they were given the aforementioned definitions. Next each child was shown the pictures of all his/her classmates³ and was asked to point to the pictures of his/her best friends. He/she was asked to name no more than five 'best friends' (Berndt & Perry, 1986) probed by the question: 'Anyone else?'

In the second part of the Sociometric Interview the interviewee was asked to indicate how much he/she liked each child in his/her classroom by putting the picture of each child in one of five boxes. The five boxes were labeled respectively: 'don't like a lot', 'don't like a little', 'they are ok', 'like a little' and 'like a lot'. This was modeled on a five-point scale (Bukowski & Hoza, 1989) with a correspondence of 'don't like a lot' = 1 to 'like a lot' = 5. The order of the boxes –left, right- and the order of their introduction were counterbalanced. At the end of this part of the interview, the pictures which were placed in the 'like a lot' and 'like a little' boxes, were spread out in front of the child and he/she was asked who is the child that he/she 'like the most'. If the interviewee picked more than one child, he/she was asked to pick just one child.

The 'best friend' nominations and the ratings of liking were used in combination to identify each child's friends and non-friends. Pairs of children were considered best friends if both of them named the other as a best friend (Ladd, Kochenderfer & Coleman, 1996) and if both of them gave each other ratings of either '4' or '5' (Bukowski & Hoza, 1989). If for one interviewee these criteria were met for more than one child, the child whose name was used in the Tape-Recording Task was the one that the interviewee stated he/she liked the most.

Pairs were considered non-friends if neither of them named the other as a best friend and their ratings averaged between '2' and '3'. Children were not considered non-friends if they disliked each other (i.e. one or both of them gave each other a rating of 1) (Berndt & Perry, 1986). If for one interviewee these criteria were met for more than one child, the non-friend used in the Tape-Recording Task was chosen randomly.

After the Sociometric Interview with the children, teachers were asked to evaluate the pairings. They were given a list of all the pairs ('friend' and 'non-friend'

³ Three days before the experiment, the interviewer had visited the school and had taken pictures of all the children in both classes.

dyads), and were asked to indicate whether these children were friends or not. Each pairing was considered valid only if the teachers agreed with it and, in the case of 'best friend' pairings if they reported that the relationship existed for at least one month. It was considered important to include in the friendship pairings a criterion relating to the length of the relationship, as there is evidence that 'contemporary' friends disclose less than children who have been friends for a long period of time (Brown, Donelan-McCall & Dunn, 1996; Howes, Matheson & Wu, 1992). In both the Pilot and the Main Study the period of one month was selected as the 'minimum length of friendship', because some children were interviewed at the beginning of October, that is a little more than a month after the school year had started.

B) Identifying the recipients of self-disclosure: The administration of the 'Personal' and 'Zinc' Interviews.

Both Interviews (Personal and Zinc) were individually administered. They were counterbalanced for order and presented to the children on separate days. One Interview was administered the first day before or after the Sociometric Interview (counterbalanced for order) and the other was administered the second day before or after the Tape-Recording Task (counterbalanced for order).

At the beginning of the Zinc Interview, each child was introduced to Zinc (same-age and same-gender as the child) and to the people-puppets in his/her environment: four adults (mother, father, grandparent, teacher), and four children (sibling, best friend and two classmates, a boy and a girl). The puppets (grandparent, teacher, sibling and best friends) were counterbalanced for gender. Then the child was presented with the series of statements described in the 'Designing the interview' section in random order, and was asked to indicate to whom Zinc would disclose this information.

The following wording was used (the wording in the parentheses was used if the child had already completed the Personal Interview): ('Do you remember what we did a few days ago? Well,) This is Zinc [the interviewer pointed to the puppet]. He/she is ...years old, just like you. These are [each time the interviewer pointed to the appropriate puppet] Zinc's mother, father, grandfather/grandmother, brother/sister, Zinc's best friend, and these are a boy and a girl from Zinc's class, who are not Zinc's friends, but Zinc thinks they are ok. (This time) I am going to tell you some things about Zinc, and what I'd like you to do is to decide which of these people here [the interviewer pointed to the dolls] Zinc would tell about these things. Some of the

things Zinc might not tell anybody. If he/she wouldn't tell anybody just tell me so. So the first thing is [the interviewer read a statement chosen randomly, e.g.] 'my home is close to the school'. Who would Zinc tell that his/her home is close to the school?

Once the child answered, he/she was asked to whom else Zinc would disclose this information, probed with the question: 'Anyone else?' For each statement the child was asked to indicate up to three people. The child could also say that Zinc would not disclose the information to anyone: 'nobody' was considered a valid response. He/she was not probed to name more people if his/her answer was 'nobody'.

In the Personal Interview the child was asked to indicate to whom he/she personally would disclose the interview statements, again presented in random order. The following wording was used (the wording in the parentheses was used if the child had already completed the Zinc Interview): '(Do you remember what we did with Zinc a few days ago? This time) I will tell you some things and I'd like you to decide to which person you would tell about these things. You might tell these things to anyone you want. Some of the things you might not tell anybody. If you wouldn't tell anybody, just tell me so. So the first thing is [the interviewer read a statement chosen randomly, e.g.] 'my home is close to the school'. Who would you tell that your home is close to the school?'

Once the child answered, he/she was asked to whom else he/she would disclose this information, probed with the question: 'Anyone else?' For each statement the child was asked to indicate up to three people. 'Nobody' was considered a valid response.

C) Detection of children's self-disclosure to friends: The Tape-Recording Task.

All the children were tested individually. The Tape-Recording Task was administered on the second day of the experiment, due to the fact that the results of the Sociometric Interview had to be analyzed in order to proceed with this part of the study. Nevertheless, the Interview (Zinc or Personal) administered on the second day of the experiment and the Tape-Recording Task were counterbalanced for order

A tape-recorder with a blank label was presented to the participant. The use of it was explained and shown. The child then made a tape to the experimenter in order to become familiar with the tape-recorder operation. The following wording was used: 'Look what I have here. This is a tape-recorder and you know what you can do? (Small pause) You can make some tapes. You can talk here (the experimenter showed

the microphone to the child and then gave it to him/her) and your voice will be recorded on this tape (the experimenter pointed to the tape). And then you or somebody else can listen to what you had just said. Do you want to try? You can make a tape to me, say anything you want to say, and then we can listen to what you said'.

Once the child made the tape to the experimenter and listened to it, he/she was asked to make a tape to his/her friend (by name, as identified with the Sociometric interview), or non-friend (by name, again as identified with the Sociometric interview). Children's recordings to the friend and to the non-friend were counterbalanced for order.

The following wording was used: 'Now, I want you to make a tape to (target child's name). See, I put here a label with (target child's name) name. (The experimenter put a label with the target child's name on the tape recorder and read it to the child). I want you talk to (target child's name) about some things. I am going to listen to the tape later but I promise I won't tell anyone what you said (small pause). Now, I want you to tell (target child's name) things about your school/playgroup/nursery, how it looks like or what you do at school/playgroup/nursery (small pause), tell him/her things about your brothers or sisters (small pause), tell him/her things you like and things you don't like, such as games you like and games you don't like (small pause), tell him/her things you do well (small pause) and tell him/her things you did that were bad. You can talk to (target child's name) as much as you like.'

The examples were presented to the children in random order. If during the recording the child asked what he/she was supposed to say, or if he/she seemed reluctant to talk, the experimenter reminded him/her once by repeating the examples.

After the first tape-recording, the interviewee was shown the second tape-recorder and was asked to make a tape-recording to the other target child (friend or non-friend, depending on who the target child of the first tape-recording was). The following wording was used: 'Look at this tape-recorder (the experimenter showed to the child the second tape-recorder with a blank label). It is exactly the same as the other one (the experimenter pointed to the first tape-recorder), and it works in exactly the same way. Now, with this tape recorder I want you to make a tape to (target child's name). See, I put here a label with (target child's name) name.' The experimenter put a label with the target child's name on the tape-recorder and read it

to the child. The experimenter then presented to the child the topic examples. The wording used was exactly the same as in the first tape-recording and the examples were presented in the same order.

I.3.4 Results, discussion and conclusions

As discussed, the aim of the Pilot Study was to test the use of the instruments and procedures, and the statistical results were therefore not analysed. Overall, the children responded well to the tasks. Nevertheless, there were some points that needed modification. This section presents the weaknesses and difficulties encountered in the Pilot Study and the decisions that were taken in order to eliminate them in the Main Study.

First, the interviews needed to be shortened. The Sociometric, the Personal and the Zinc Interviews were taking more time than expected (approximately 30-35 minutes each) and as a result children were losing their concentration. In some cases the experiment could not be completed in two sessions and the children had to be called out of their classrooms for a third session.

The Sociometric Interview, which in this study was just a tool to help in the analysis of the results of the other measures, was taking more time than necessary. Furthermore, some teachers felt uncomfortable with the second part of the Sociometric Interview. They felt it was unethical to ask the children to put some of their classmates in the 'don't like' boxes, although it was made perfectly clear to both teachers and children that they did not have to put any child in the 'don't like boxes' if they did not wish so.

The analysis of the results of the Sociometric Interview showed that most necessary information could be obtained from the first part of the Interview (the 'best friend' nominations). The children's best friends were all classmates they stated they 'liked' or 'liked a lot', so it appeared that the criterion of mutual 'best friend' nomination was sufficient for the 'best friend' pairings. On the other hand, the second part of the Sociometric Interview (putting the children's pictures in the boxes) provided some useful information as far as the 'non-friend' pairings were concerned. Specifically, with the information from the second part of the Interview the pairing up of children who actively disliked each other as non-friends could be avoided. Still, in most cases not nominating each other as a best friend was a valid indicator, as very few children actually said that they disliked a classmate.

Therefore, since shortening the procedure was essential, it was decided not to use the second part of the Sociometric Interview in the main study. Yet, it was decided to include in the first part of the Interview the question about the peer the interviewee likes the most, because this distinction was found to be helpful in the best-friends pairings. This modification of the Sociometric Interview is in congruence with methodologies used by other researchers who tend to obtain only positive nominations (asking whom children like or with whom they are friends), and not negative nominations (Berndt & Burgy, 1996).

The Pilot Study showed that the Personal and Zinc Interviews were also more lengthy than necessary. Besides, children sometimes complained because they had to respond to the same statements in the Personal and Zinc interviews.

As described previously, the two interviews consisted of 21 statements each. Four statements derived from each of Rotenberg and Sliz's (1988) topics (20 statements in total), and one statement concerned the 'sharing of secrets'. In order to keep the interviews short in the Main Study and to make them more interesting, it was decided to present in each Interview ten statements (two from each topic) relating to Rotenberg's and Sliz's topics, selected randomly. The remaining ten statements (two statements remaining from each topic) would be presented to the child in the next Interview. As all the four statements deriving from each topic are considered to reflect the same degree of personal content, this splitting up of the statements should not pose any methodological problem. The 'secret-sharing' item, the only item not deriving from Rotenberg's and Sliz's topics, was decided to be presented in both interviews. Thus, in the Main Study each Interview consisted of 11 items, ten statements deriving from Rotenberg and Sliz's topics, and the 'secret-sharing' item.

A second difficulty encountered in the administration of the Personal Interview was that some children protested about the content of some, albeit very few, statements. Apparently they did not regard the statements as hypothetical scenarios, and they tended to 'correct' the interviewer when the statements were not true for themselves (for example, they said that they **do** like the colour yellow, when they were asked to choose a person to whom they would say that they do not like the colour yellow). It was interesting that the protests concerned only two of the 'Personal preferences' statements, and one of the 'Description of people and activities'. More specifically, children protested about the following statements: 'My cousin has short hair', 'I don't like the colour yellow' and 'I don't like broccoli'. Interestingly, none of

the children protested about the other 'Personal preferences' statements (presumably all children like watching television and all of them like dogs) or about any other statements. Thus, it seems that most of the statements selected reflected 'universal' facts or feelings of the children or at least facts or feelings they could easily relate to.

In order to prevent these protests in the Main Study, it was decided to ask the children a few questions before presenting the specific statements investigating whether they had a cousin with short hair, and whether they liked the colour yellow or broccoli, and then, if necessary, the statement would be minimally altered. For a detailed account of the questions asked please see the Methodology section in the Main Study.

Finally, another issue that was explored in the Pilot Study was the use of the tape-recorder and whether young children could successfully complete the Tape-Recording Task. The Pilot Study showed that children understood the use of the tape recorder and had experience with similar equipment (some of them even said they had the same tape-recorder at home). As a result children were capable of carrying out this part of the experiment, and moreover they seemed to enjoy it.

I.4. The First Study: Methodology.

I.4.1 Participants

The sample consisted of 110 children (57 boys and 53 girls) divided in three age groups: 1) 3.5-4.5-year-old children, referred to as the 'younger group', (30 children, 15 boys and 15 girls, mean age = 48.5 months, range = 38-53 months), 2) 4.5-5.5-year-old children, referred to as the 'middle group', (33 children, 18 boys and 15 girls, mean age = 57,1 months, range = 54-62 months) and 3) 5.5-6.5-year-old children, referred to as the 'older group', (47 children, 25 boys and 22 girls, mean age = 74 months, range = 69-80 months).

The children were recruited from three schools and a playgroup in the Greater London area. As the schools' Inspection Reports showed, most pupils of these schools come from middle and upper middle class families. The percentage of the pupils of these schools eligible for free school meals was below the national average.

The vast majority of the children participating in the study were White/Caucasian, two of them were Black and eight were Asian. All the children interviewed had provided informed parental consent. Each child was interviewed on two occasions, completing two measures the first day of the experiment and the other two measures two days later⁴. Ten children failed to complete all of the four measures, and in most of the cases this was due to their absence on the second day of the experiment.

I.4.2 Materials

The puppets and the tape-recorders described in the Materials section in the Pilot Study were also used in the Main Study.

I.4.3 Procedure

A) Identification of friends and non-friends: The Sociometric Interview.

The Sociometric Interview was administered individually on the first day of the experiment. Only the first part of the Sociometric Interview employed in the Pilot Study was used, and its administration was slightly modified.

⁴ After each interview session the experimenter gave the children a sticker in order to thank them for their participation and to motivate them to talk to her again on the second day of the experiment.

At the beginning of the Interview, each child was asked if he/she knew what a 'friend' and a 'best friend' is. Then the definitions used in the Pilot Study were provided. Next each child was shown the pictures of all his/her classmates⁵. Each child was asked to point to the pictures of his/her best friends: 'These are the pictures of all the children in your class. Please show me who your best friends are'. He/she was asked to name no more than five 'best friends' (Berndt & Perry, 1986) probed by the question: 'Anyone else?'

At the end of the Interview, the pictures of the children named as best friends were spread out in front of the child and he/she was asked: 'These are the children that you said are your best friends. Of those children which is the one that is your best-best friend?' If the interviewee picked more than one child, he/she was asked to pick just one child.

The best friend nominations were used to identify each child's friends and non-friends. Pairs of children were considered best friends if both of them named the other as a best friend (Ladd, Kochenderfer & Coleman, 1996). If for one interviewee these criteria were met for more than one child, the child whose name was used in the Tape-Recording Task was the one that was nominated as a best-best friend. Pairs were considered non-friends if neither of them named the other as a best friend. If for one interviewee these criteria were met for more than one child, the non-friend used in the Tape-Recording Task was chosen randomly.

After the Sociometric Interview with the children, teachers were asked to evaluate the pairings. They were given a list of all the pairs ('friend' and 'non-friend' dyads), and were asked to indicate whether these children are friends or not. Each pairing was considered valid only if the teachers agreed with it and, in the case of 'best friend' pairings if they reported that the relationship existed for at least one month.

B) Identifying the recipients of self-disclosure: The administration of the Personal and Zinc Interviews.

⁵ In the case of one school the teachers let the interviewer use the individual pictures of the children the teachers had taken in the beginning of the school year. In the other cases the experimenter had visited the school a few days before the experiment and had taken pictures of all the children that had parental consent. The vast majority of the children had parental consent to participate in the research, and therefore their picture was taken. Of course, it was possible that a child's best friend had not been photographed, because he/she did not have parental consent. However, no child protested that they could not find their friend's picture.

The Personal and Zinc Interviews were counterbalanced for order and presented to the children on separate days. One was administered the first day of the experiment before or after the Sociometric Interview (counterbalanced for order) and the other the second day before or after the Tape-Recording Task (counterbalanced for order). The same methodology as in the Pilot Study was used in the administration of the Personal and Zinc interviews, with two exceptions:

First, in each Interview the child was presented with 11 statements instead of 21. More specifically, in each Interview the child was presented with the 'secret-sharing' item, and with ten out of the 20 statements deriving from Rotenberg and Sliz's topics. In the first Interview administered to a child, ten statements (two from each topic) were selected randomly. The remaining ten statements were used in the second Interview. In each Interview the 11 items were presented in random order.

Second, in order to prevent the protests encountered in the administration of the Personal Interview in the Pilot Study, before presenting the specific statements that caused the protests (i.e. 'My cousin has short hair', 'I don't like the colour yellow' and 'I don't like broccoli'), the interviewer asked the children a few questions, investigating whether they had a cousin with short hair, and whether they liked the colour yellow or broccoli, and then, if necessary, minimally altered the statement. Specifically, each child was asked: 'Do you have a cousin?' If he/she answered positively, he/she was asked if the cousin had short hair. If again the answer was positive, the child was asked to whom he/she would tell that his/her cousin had short hair. If the child said that his/her cousin had long hair, he/she was asked to whom he/she would tell that the cousin had long hair. If the child did not have a cousin, he/she was asked if he/she had an uncle or an aunt and then he/she was asked about their hair. As far as the other two statements are concerned, each child was asked beforehand if he/she liked the colour yellow or broccoli, and then the statements were changed accordingly. For example, the child was asked: 'Do you like broccoli?' If he/she answered positively, he/she was asked to whom he/she would tell that he/she liked broccoli.

C) Detection of children's self-disclosure to friends: The Tape-Recording Task.

The Tape-Recording Task was administered on the second day of the experiment, as the results of the Sociometric Interview had to be analyzed before proceeding to this part of the experiment. The methodology used in the administration of this task is the same as in this Pilot Study.

I.5. The First Study: Results.

I.5.1 Research hypotheses of the First Study

The research project intended to investigate the development of children's restrictive disclosure towards their peers (see main hypotheses at the end of the Literature Review chapter), and to use that as an index of the intimacy of their friendships. The aim of the First Study was to measure young children's disclosure of information of presumed low and highly personal content (as described by Rotenberg, 1995a) and secrets towards friends and other figures in their environment.

The following specific hypotheses are tested in the First Study:

HS1. Young children (3.5 to 6.5 years of age) make a differential number of high versus low personal content disclosures to friends and non-friends (restrictive disclosure).

HS2. Young children's (3.5 to 6.5 years of age) restrictive disclosure to friends increases with age.

HS3. Young children's (3.5 to 6.5 years of age) restrictive disclosure to friends varies with gender.

1.5.2 Results of the Tape-Recording Task

A) The coding of the tape-recordings.

The children's tape-recordings to friends and non-friends were transcribed. Following Rotenberg and Sliz's (1988) method, each child's disclosures about the five topics were scored by identifying the number of disclosure utterances, defined as phrases or complete thoughts. Examples are: 'I like playing with my friends', 'I have a younger brother' and 'I am good at counting'. The definition of a disclosure utterance provided clear guidelines for scoring. However, to ensure reliability, a detailed account of scoring guidelines was devised. Each disclosure utterance was classified according to its content into one of five categories: (For a complete account of the scoring guidelines please see Appendix B.)

- 1) Category a includes descriptions of inanimate objects and animals (e.g. The cat is black).

- 2) Category b includes descriptions of other people and activities (e.g. My brother is tall) and descriptions of self and personal activities with neutral emotional charge (e.g. I went for a walk).
- 3) Category c includes all the phrases that describe personal likes and dislikes (e.g. I like broccoli, I don't like art).
- 4) Category d includes descriptions of self, personal feelings and activities with positive emotional charge (e.g. I am good at playing football).
- 5) Category e includes description of self, personal feelings and activities with negative emotional charge (e.g. I am not good at counting).

Two raters naive to the purpose of the study coded a randomly selected 30% of the protocols, based on the guidelines that were given to them. The interrater agreement for the two coders was 96% (kappa = .92).

B) Analysis of the data.

Following Rotenberg's and Sliz's (1988) example, the number of children's disclosures was summed across the highly personal topics and across the low personal topics to create four broad categories:

- A) low personal toward friends, composed of the disclosures toward friends on the topics of description of the environment and description of people and activities,
- B) low personal toward non-friends, composed of the disclosures toward non-friends on the topics of description of the environment and description of people and activities,
- C) highly personal toward friends, composed of the disclosures toward friends on the topics of personal preferences, positive personal and negative personal, and
- D) highly personal toward non-friends, composed of the disclosures toward non-friends on the topics of personal preferences, positive personal and negative personal.

The initial analysis indicated heterogeneity of variance. As group sizes were discrepant the violation of the assumption of homogeneity could lead to increased Type I error and an inflated alpha level (Tabachnik & Fidell, 2001, p.46). Therefore, to achieve homogeneity the data were subjected to an inverse transformation (1/x) (Tabachnik & Fidell, 1996, p.82). In addition, to dispose of the 0 values the data were subjected to a + 1 transformation.

Next, following Rotenberg and Sliz's (1988) example again, the number of disclosures was subjected to a 2 (Gender of Subject) X 3 (Age Group) X 2 (Target Audience) X 2 (Level of Personal Content) analysis of variance (ANOVA), with the two latter measures as repeated measures. The results of the ANOVA in relation of the experimental hypotheses were as follows.

HS1) Children did not make a greater proportion of highly personal disclosures to friends than to non-friends. The interaction between Type of Peer and Level of Personal Content failed to reach statistical significance, $F(1, 68) = 3.31, p > .05$. It appears that the young children did not provide more highly personal disclosures to friends than to non-friends; in other words, they did not display the restrictive disclosure-to-friends pattern. This result thus does not confirm the hypothesis HS1 of the First Study, namely that restrictive disclosure towards friends occurs from a young age. It is also incongruent with previous researches' findings (Rotenberg & Sliz, 1988; Rotenberg, 1995a), according to which even pre-school children provide more highly personal disclosures in conversations with friends than with non-friends, while not differentially providing low personal disclosures in conversations with the two types of peers.

HS2) Older and younger children do differ in disclosure of material of highly and low personal content. A significant interaction was found between Age and Level of Personal Content, $F(2, 68) = 4.29, p < .05$. Although children generally provided equal number of low intimate and highly intimate disclosures (see main effect below), this was not true for all age groups. As Figure 1 shows, younger children provided more low personal ($M = 2.47, S.E. = 1.55$) than highly personal disclosures ($M = 1.43, S.E. = 1.08$).

The main effect of Age (below) and the interaction between Age and Level of Personal Content indicate that the disclosure pattern to peers generally changes with age, with children disclosing more information and of higher personal content to their peers (both friends and non-friends) as they grow older. There was no evidence, however, for the development of the restrictive disclosure to friends, since the interaction (Age Group) x (Type of Peer) x (Level of Personal Content) was non-significant. Therefore, the hypothesis HS2 that restrictive disclosure to friends increases with age cannot be confirmed based on these results.

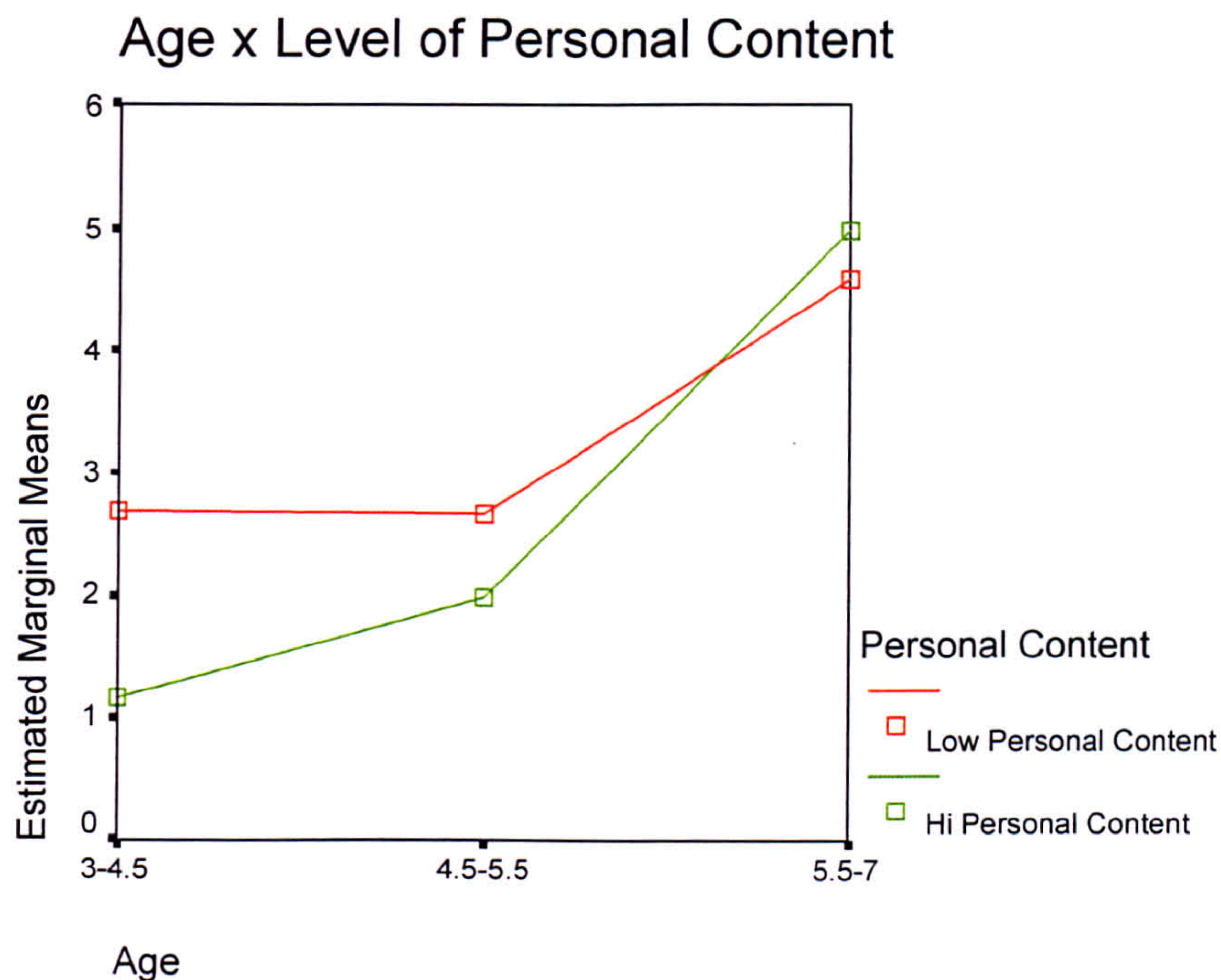


Figure 1: Interaction between Age and Level of Personal Content

HS3) Male and female children differed in their pattern of disclosure to friends and non-friends. ANOVA yielded a Target Audience X Gender interaction, $F(1, 68) = 6.10, p < .05$. It appears that, while boys and girls did not generally differ in the amount of disclosures they made (see main effects below), girls ($M = 3.79, S.E. = .85$) made a greater number of disclosures to friends (of both highly and low personal content) than boys did ($M = 2.82, S.E. = .67$). Furthermore, girls ($M = 2.22, S.E. = .75$) made fewer disclosures to non-friends (of both highly and low personal content) than boys did ($M = 3.13, S.E. = .59$). Figure 2, below, shows this interaction between Type of Peer and Gender. This finding suggests that there is a gender difference in children's pattern of disclosure to peers at this young age. However, there was no significant 3-way interaction between (Gender) x (Type of Peer) x (Level of Personal Content). The data does not provide evidence for gender differences in children's restrictive disclosure of highly personal information to friends. Therefore, the hypothesis HS3 about the existence of gender differences in young children's restrictive disclosure to friends cannot be confirmed.

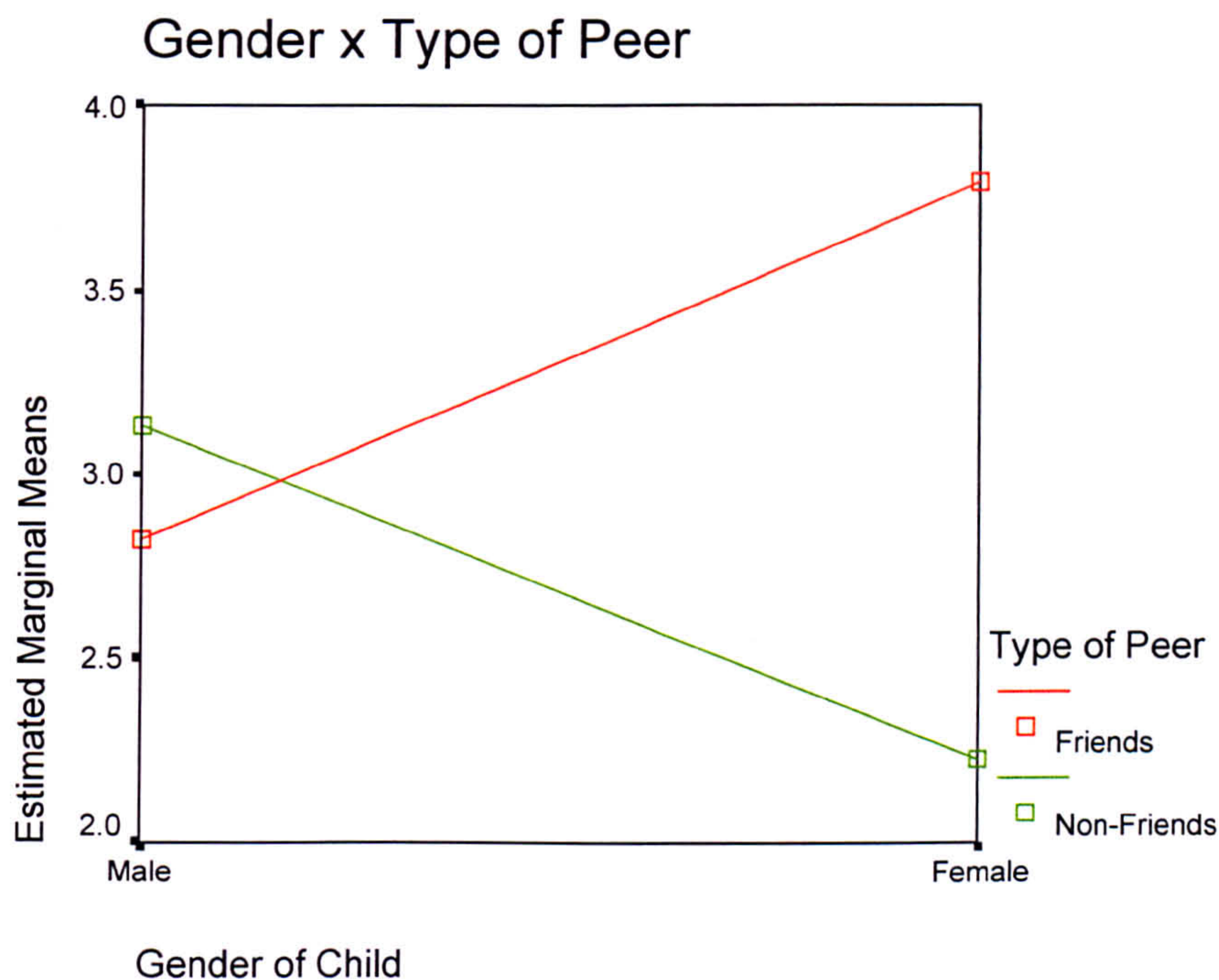


Figure 2: Interaction between Gender and Type of Peer

For the sake of completeness, analysis of the main effects of ANOVA will now be reported.

1) Children made a different number of disclosures to friends and to non-friends. The ANOVA yielded a significant main effect of Target Audience, $F(1, 68) = 4.47, p < .05$, indicating that the children made a greater number of disclosures to their friends ($M = 3.31, S.E. = .54$) than to non-friends ($M = 2.68, S.E. = .48$).

2) Children did not make a different overall number of highly and low personal disclosures. The analysis yielded no main effect of Level of Personal Content, $F(1, 68) = 2.52, p > .05$. This finding indicates that children provided equal number of low intimate ($M = 3.29, S.E. = .76$) and highly intimate disclosures ($M = 2.70, S.E. = .53$).

3) Older children made a different number of disclosures than younger children. The analysis yielded a main effect of Age, $F(2, 68) = 14.74, p < .001$. This result has to be interpreted at a more conservative alpha level of 1%, because the assumption of equality of error variances was violated (the Levene test of equality of error variances was significant) (Howell, 2002, pg.342). Nevertheless, the analysis

showed that the number of disclosures increased with age [$M = 1.95$, $S.E. = .91$ for the 'younger age group' (3.5-4.5 -year-old children), $M = 2.14$, $S.E. = .81$ for the 'middle group' (4.5-5.5 -year-old children) and $M = 4.88$, $S.E. = .56$ for the 'older group' (5.5-6.5 -year-old children)]. By employing the Dunnett's T3 post-hoc test, significant differences were found between the 'older group' and the 'younger group' ($p < .001$) and between the 'older group' and the 'middle group' ($p < .001$). These results indicate that older children made more disclosures to their peers than each of the two other age groups.

4) Male and female children did not differ in number of disclosures. There was no main effect of Gender, $F(1, 68) = 0.39$, $p > .05$. This finding indicates that boys ($M = 2.98$, $S.E. = .55$) and girls ($M = 3.01$, $S.E. = .70$) provided equal number of disclosures.

C) Exploration of the validity of the topics used in the Tape-Recording Task.

Before drawing conclusions regarding young children's capacity for restrictive self-disclosure, an important factor relating to young children's disclosure has yet to be examined, namely whether the topics used in the tape interviews do indeed reflect increasing degrees of personal disclosure in young children, as they do in children in middle childhood (Diaz & Berndt, 1982; Rotenberg & Sliz, 1988). As the Literature Review showed, these topics have been used in the research of young children's disclosure (Rotenberg, 1995a), but the hypothesis that they reflect the same level of personal content at a young age as they do at a much older age has not been tested. To put it more simply, there is no evidence that personal preferences, positive personal items and negative personal items are highly personal topics for young children, and that they form a distinct dimension from the low personal topics of description of people and of description of the environment.

To test the validity of these topics as topics which reflect increasing degrees of personal disclosures in young children, an exploratory principal component analysis (PCA) with varimax rotation was conducted. It was expected that topics of assumed highly and low personal content would load on different factors.

The initial sample size of the study ($N=110$) was satisfactory for the employment of this technique. However, the sample that could participate in the principal component analysis was poor (10 children were absent when the Tape-Recording Task was administered and 15 children refused to complete the Task). Thus, in order to increase the sample of the principal component analysis, the missing

values were replaced with the mean ratio. Estimation is in order if cases are missing values in a nonrandom pattern or if sample sizes become too small (Tabachnik & Fidell, 2001, pg. 588). Mean substitution is a popular way to estimate missing values and part of the attraction of this method is that it is conservative; the mean for the distribution does not change (Tabachnik & Fidell, 2001, pg. 62). Principal component analysis could be employed in the analysis of the present data, although some variables were skewed, because PCA is robust to assumptions of normality. It has to be noted, though, that when the variables are normally distributed, the factor solution is enhanced (Tabachnik & Fidell, 1996, pg. 640).

As far as the factorability of the correlation matrix was concerned, the inspection showed that several correlations exceeded .30. The inspection of the anti-image correlation matrices showed that two variables ('Description of the environment to friend', and 'Description of environment to non-friend') had measures of sampling adequacy (MSA) with values marginally lower than the acceptable levels of .5. To address this issue two principal component analyses were conducted; the first one included those variables, while the second excluded them. The two analyses produced similar results. The results of the second PCA which excluded the variables 'Description of the environment to friend' and 'Description of the environment to non-friend' are reported in Appendix C. Also, the Kaiser-Meyer-Olkin measure was .538 (< .6). However, the Bartlett test of sphericity was significant ($\chi^2 = 52.24$, $df = 6$, $p < .001$) and factorability was assumed. The other PCA assumptions were satisfied. As shown in Figure 3, the first PCA that was conducted (which included all variables) extracted three factors with eigenvalue >1. The three factors cumulatively interpreted 59.5% of variance. The first factor interpreted 26.1% of variance, the second 18.7%, while the third interpreted 14.7% of variance. Information on the percentage of variance explained by the principal factors is presented in Table 1.

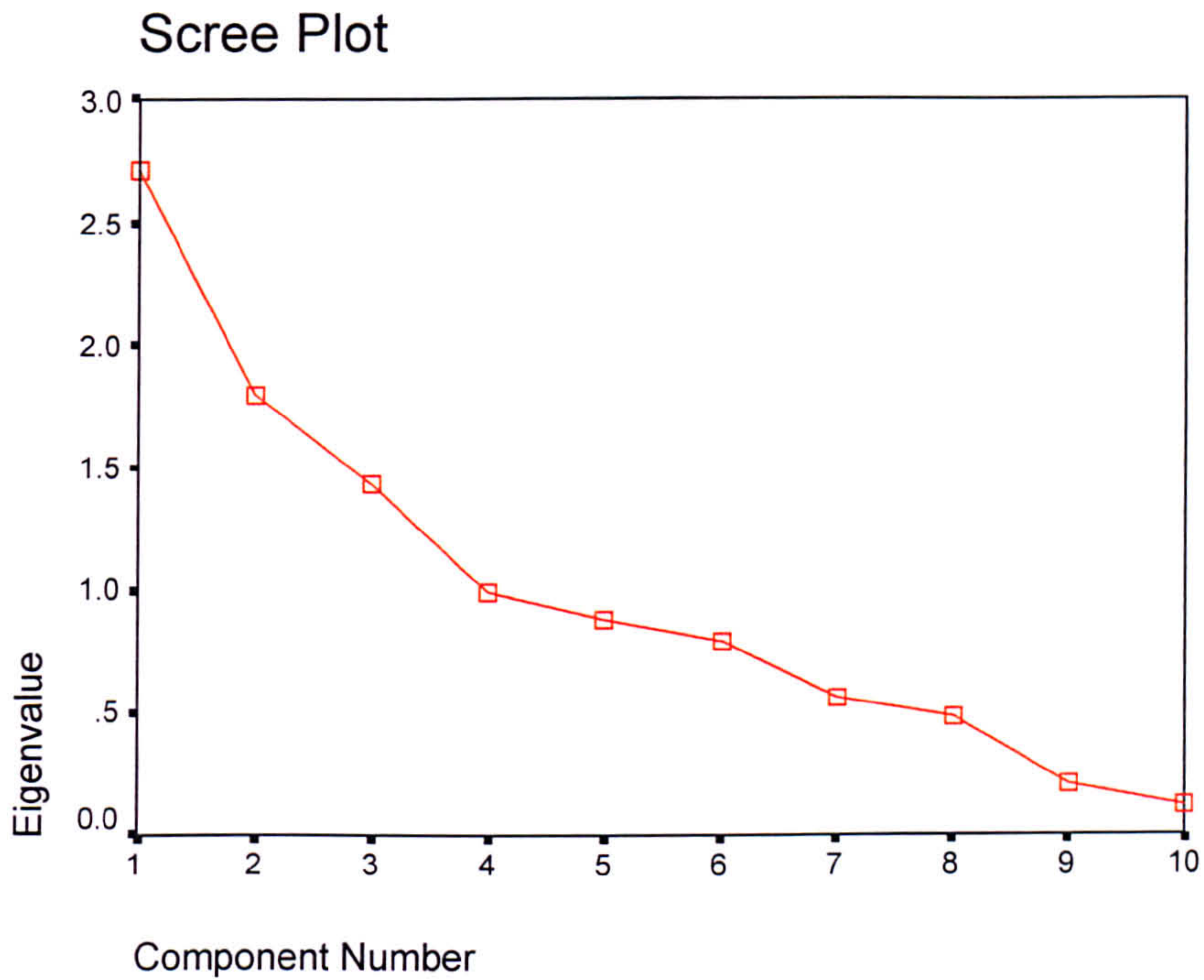


Figure 3: Graph of the Eigenvalue of the Components Extracted by the PCA on the Personal Content of the Tape-Recording Task

Table 1: Percentage of Variance Explained by the Components Extracted by the PCA on the Personal Content of the Tape-Recording Task

Components	Eigenvalue	% of Variance	Cumulative %
1	2.6	26.1	26.1
2	1.9	18.7	44.8
3	1.5	14.7	59.5

Variables were well defined by this factor solution. With a cut of .50 for inclusion of a variable in interpretation of a factor, only one (‘Positive personal items to non-friend’) of the 10 variables did not load on any factor. Loadings of the other variables on factors are shown in Table 2 (variables are ordered and grouped by size of loading to facilitate interpretation). However, the reliability testing of this factor

solution showed that the reliability score was low for two factors ($\alpha = .58$ for Factor 1, and $.56$ for Factor 3), although it was high for Factor 2 ($\alpha = .90$).

Table 2: Rotated Component Matrix of the PCA on the Personal Content of the Tape-Recording Task

Variables	Component		
	1	2	3
Description of people and activities – Friend	.89		
Description of people and activities – Non-Friend	.75		
Positive Personal Items – Friend	.68		
Negative Personal Items – Friend	.66		
Negative Personal Items – Non-Friend	.57		
Description of the environment – Non-Friend		.95	
Description of the environment – Friend		.93	
Personal preferences – Friend			.83
Personal preferences – Non-Friend			.76

As Table 3 shows, highly personal and low personal topics did not form distinct categories. In fact, variables which are considered highly personal (e.g. ‘Negative personal items’) and variables which are considered low personal (e.g. ‘Description of people and activities’) loaded on the same factor.

On the other hand, it was interesting that ‘Personal preferences’ and ‘Description of the environment’ formed distinct categories, ‘independent’ from all the other variables. Does this distinction reflect a difference in the level of personal content of those two variables, with ‘Personal preferences’ being a highly personal topic for young children, while ‘Description of the environment’ being a low personal one, as suggested by Rotenberg (1995a)?

However, another interesting finding was that factors were extracted based on the topic of disclosure and not on the target of the disclosure. The disclosures on a particular topic addressed to friend and to non-friend loaded on the same factor (with the exception of ‘Positive personal items to non-friend’ which did not load on any

factor). It can be argued that this is an indication that the topics used in the Tape-Recording Task did not elicit disclosures of highly personal content, and therefore the children did not differentiate according to the target of self-disclosure, as low personal disclosures can be shared with any type of target.

The PCA method, the default method for exploratory factor analysis in SPSS, can under some circumstances produce inflated variance estimates, even though for most datasets PCA and other extraction methods lead to similar substantive conclusions (Wilkinson, Blank & Cruber, 1996). Also, two of the three factors extracted were supported by only two items, whereas a minimum of three items is desirable to establish the stability of a factor (Costello & Osborne, 2005). Furthermore, the reliability score of two of the factors extracted was lower than the generally accepted threshold of .70 (Nunally, 1978), although lower thresholds are sometimes used in literature (Santos, 1999), so the factor analysis may not have been optimal. Nevertheless, although the factor loadings were high and the factor solution was interpretable, it failed to separate the highly and low personal items.

In sum, the validity of the topics used in the Tape-Recording Task, as topics which reflect increasing degrees of personal disclosure in young children, was not confirmed. When describing the methodology of the First Study, it was noted that children's ability to recognize and treat certain pieces of information as highly personal disclosures would be tested using the topics described in the literature of presumed highly and low personal content for young children (Rotenberg, 1995a), and the topic of secrets. As the validity of Rotenberg's topics was not confirmed, young children's ability to recognize and treat items as highly personal disclosures will be examined based primarily on the topic of secrets. The results of the Personal and Zinc Interviews seem to strengthen the decision to focus on young children's sharing of secrets.

It seems that the analysis of the data of the Tape-Recording Task produced many questions relating to young children's ability for restrictive self-disclosure and the capacity for measuring it. It was hoped that the analysis of the data of the Personal and Zinc Interviews would provide answers to some of these questions.

I.5.3 Results of the Personal and Zinc Interviews

A) The coding of the data.

The same statistical methods were employed in the analysis of both Personal and Zinc Interviews, as both instruments were used towards the same aim: to tap young children's reported self-disclosure. When coding the data of the Zinc interview, however, one difficulty became apparent: in the case of children who had indicated Zinc's friend as the first recipient of disclosure, the second and third choice could have been biased. As the results of the Sociometric Interview clearly showed, children usually have more than one friend. Therefore, when they were asked to indicate the three recipients of disclosure in the Personal Interview, they would often give the names of three of their friends. In the case of the Zinc Interview things were different. Zinc had only one friend. Thus, in the case where children selected Zinc's friend as the first recipient of a particular disclosure, they then had to find another possible target of disclosure, even though in reality they would prefer to disclose this particular information only to their friends. To address this difficulty, it was decided to analyze only the first choice of the target of disclosure both in the Zinc and in the Personal Interview.

Children's responses in the Personal Interview were coded into the following six categories: 1) nobody, 2) immediate family (parents and siblings), 3) extended family (including grandparents and cousins), 4) friends (including best-best friend, best friends -as identified by the Sociometric Interview-, and 'friends outside class' that is children specifically described by the interviewee as 'friends that are not in his/her classroom'), 5) non-friends (children identified as non-friends by the Sociometric Interview), and 6) others (including teachers and other people that did not fit in the aforementioned categories, e.g. the dinner ladies).

Children's responses in the Zinc Interview were also coded into six categories, that mirror the categories used in the coding of the Personal Interview: 1) nobody, 2) family (including Zinc's parents and sibling) 3) extended family (Zinc's grandparents), 4) friend (Zinc's friend), 5) non-friends (child that is in Zinc's class but is not Zinc's friend), and 6) teacher.

B) Analysis of the data.

In view of the findings of the Tape-Recording Task, the following hypotheses were tested using the Personal and Zinc interview data:

HS1p. In Personal Interview data, the proportion of secrets, relative to non-secrets differs according to whether the target is a friend or non-friend.

HS1z. In Zinc Interview data, the proportion of secrets, relative to non-secrets differs according to whether the target is a friend or non-friend.

B1. Descriptive analysis of data.

Frequencies of all the disclosures addressed to each target in the Personal and the Zinc Interviews were first examined. In each interview the four statements deriving from the same topic were grouped together. The frequencies for the 'secret-sharing' item of each interview were examined separately.

The frequencies and the percentage of disclosures addressed to each target in the Personal Interview are presented in Table 3. Please note that the inequality of the totals, observed between the 'secret-sharing' item (total of answers = 106) and the other topics (total of answers for the other topics ranging from 210 to 215), is due to the fact that the interviewees were asked to answer only one 'secret-sharing' question, while they were asked to answer two questions regarding each of the other topics.

The frequencies and the percentage of disclosures addressed to each target in the Zinc Interview are presented in Table 4. Again, the inequality of the totals between the 'secret-sharing' item (total of answers = 105) and the other items (total of answers for the other topics ranging from 204 to 210) is due to the fact that the interviewees were asked to answer only one 'secret-sharing' question, while they were asked to answer two questions regarding each of the other topics.

As Table 3 shows the most likely recipients of children's disclosures on all five topics proposed by Rotenberg and Sliz were family members (mother, father and siblings) with percentages ranging from 31.6% to 41%. Friends were the second most frequent recipients of young children's disclosures, with percentages ranging from 25.9% to 34%. Things were different in the 'secret-sharing' item. Children were more likely to share their secrets with their friends (41.5%) than with members of their family (34.9%).

A considerable proportion of children would choose not to disclose personal information to any person in their environment: 'nobody' responses ranged from 7.1% to 13.2% and reached a peak (20.8%) in the 'Negative personal' topic. The extended family members received a small proportion of young children's disclosures. The percentage of disclosures addressed to them ranged from 2.8% to 5.2%. Finally, rarely children said that they would disclose information to other people that did not fall into

the aforementioned categories (family, friends, non-friends). The percentage of disclosures addressed to 'others' (teachers were also included in this category) ranged from 2.7% to 7%.

Table 3: Frequencies and Percentages of Disclosures per Topic Addressed to each Target in the Personal Interview

Target	Description Environment		Description People & Activities		Personal Preferences		Positive Personal		Negative Personal		Secret	
	'n'	%	'n'	%	'n'	%	'n'	%	'n'	%	'n'	%
Nobody	28	13.1	26	12.3	15	7.1	19	8.8	44	20.8	14	13.2
Family	69	32.4	67	31.6	86	41.0	78	36.3	72	34.0	37	34.9
Extended Family	11	5.2	11	5.2	8	3.8	7	3.3	7	3.3	3	2.8
Friends	67	31.5	62	29.2	70	33.3	73	34.0	55	25.9	44	41.5
Non-Friends	23	10.8	30	14.2	22	10.5	23	10.7	20	9.4	5	4.7
Others	15	7.0	16	7.5	9	4.3	15	7.0	14	6.6	3	2.8
Total	213	100	212	100	210	100	215	100	212	100	106	100

As Table 4 below shows, the Zinc Interview yielded slightly different results, but it seems that the basic tendencies were common. Again, the most likely recipients of Zinc's disclosures on the five topics proposed by Rotenberg and Sliz were his/her family members (mother, father and siblings), with percentages ranging from 36.8% to 41%. This was also true for the 'secret-sharing' item, where 41% of the children said that Zinc would share his/her secret with his/her family. However, as seen in the Personal Interview, friends became particularly important when it came to Zinc's sharing of secrets. The percentage of children who said Zinc would disclose his/her

secret to his/her friend was 34.3%, when the percentage of disclosures made to friends in all the other topics did not reach 20% (range 18% -18.7%).

Table 4: Frequencies and Percentages of Disclosures per Topic Addressed to each Target in the Zinc Interview

Target	Description Environment		Description People & Activities		Personal Preferences		Positive Personal		Negative Personal		Secret	
	'n'	%	'n'	%	'n'	%	'n'	%	'n'	%	'n'	%
Nobody	10	4.9	6	2.9	9	4.3	3	1.4	9	4.3	5	4.8
Family	75	36.8	76	37.1	79	37.6	83	39.7	86	41.0	43	41.0
Extended Family	12	5.9	21	10.2	21	10.0	14	6.7	26	12.4	6	5.7
Friends	38	18.6	37	18.0	39	18.6	39	18.7	30	14.3	36	34.3
Non-Friends	21	10.3	25	12.2	25	11.9	16	7.7	17	8.1	3	2.9
Others	48	23.5	40	19.5	37	17.6	54	25.8	42	20.0	12	11.4
Total	204	100	205	100	210	100	209	100	210	100	105	100

An important difference between the Personal and the Zinc Interview was the proportion of disclosures addressed to the teacher. In the Personal Interview (which was an open interview) the teacher was rarely indicated as a disclosure target. In the Zinc Interview the proportion of disclosures addressed to the teacher was high, ranging from 17.6% to 25.8% (though, in the 'secret-sharing' item only 11.4% of the answers indicated the teacher as the recipient of Zinc's secret).

The results of both the Personal and Zinc Interviews indicate that friends are important disclosure targets for young children. Notably, they become increasingly important as disclosure targets in the sharing of secrets.

As far as the main research hypothesis is concerned, that is children's capacity for restrictive disclosure to friends, the inspection of the frequencies of the Zinc and the Personal Interviews shows that children's responses, as in the Tape-Recording Task, were not differentiated according to the assumed personal content of the topics proposed by Rotenberg and Sliz. The percentage of the disclosures made to the targets 'friend' and 'non-friend' did not seem to differ among these topics which theoretically reflect different levels of intimacy. For instance, in the Personal Interview 10.8% of the 'Description of the environment' disclosures were addressed to non-friends and almost the same proportion (10.5%) of 'Personal preferences' disclosures were also addressed to non-friends. The same pattern was evident in the Zinc Interview with 10.3% of the 'Description of the environment' disclosures being addressed to non-friends and 11.9% of 'Personal preferences' disclosures also being addressed to non-friends. Once more, things seem to be different in the 'secret-sharing' items. Children systematically refrained from disclosing their secrets to non-friends.

B2. Test of hypotheses.

In both Personal and Zinc Interviews secrets were the things least likely to be shared with non-friends: only 4.7% of the children in the Personal Interview said that they would disclose their secret to a non-friend while the percentage of disclosure to non-friend in the other topics ranged from 9.4% to 14.2%, and only 2.9% of children in the Zinc Interview said that Zinc would disclose his/her secret to a non-friend while the percentage in the other topics ranged from 7.7% to 12.2%. On the other hand, friends were considered important recipients of secrets in both Personal and Zinc Interviews with percentages as high as 41.5% in the Personal Interview and 34.3% in the Zinc Interview. As shown in Table 5 below, these differences were found to be statistically significant (in these chi-square analyses all other targets of disclosure, except 'friend' and 'non-friend', were treated as missing data).

Table 5: Results of the Chi-Square Analysis between Secrets Addressed to Friend and Non-Friend in the Personal and Zinc Interviews

	Addressed to Friend		Addressed to Non-Friend		Chi-square	df
	'n'	%	'n'	%		
Secrets in the Personal Interview	44	41.5	5	4.7	31.04**	1
Secrets in the Zinc Interview	36	34.3	3	2.9	27.92**	1

** : Significant at the .01 level

The results reported here confirm hypotheses HS1p and HS1z stated above. Most importantly, the results reported here provide an answer to the main hypothesis of the research project. It seems that signs of young children's capacity for restrictive disclosure to friends can be found in the sharing of secrets. Indeed, children refrained from sharing secrets with peers with whom they do not have a close relationship, while friends appeared to be important recipients of secrets.

Since 'secret-sharing' was the only topic where young children seemed to display signs of the restrictive disclosure pattern, it was decided to investigate it further: the effects of age and gender (HS2 and HS3) were also explored. Hierarchical log-linear analysis with stepwise backwards elimination was performed in the data of the Personal and Zinc Interviews separately to explore whether the disclosure of secrets is influenced by gender and/or age. The variables analyzed were: (a) age group, (b) gender of participants and (c) 'secret-sharing'. The variable 'secret-sharing' was coded into the 3 categories that mostly interested the research: 1) family, 2) friends and 3) non-friends. The answers that did not fit in these categories were treated as missing data. In this way the limitation of the log-linear analysis concerning the ratio of cases to variables was satisfied (Tabachnick & Fidell, 2001).

In the case of the Personal Interview, 86 participants provided usable data for the log-linear analysis. The inspection of the expected cell-frequencies showed that in the case of 2 associations the expected cell-frequency was less than one, and that in more than 20% of the associations the expected cell-frequency was less than five.

However, Tabachnik and Fidell (2001) argue that inadequate expected frequencies do not lead to increased Type I error, although the power of the analysis might be reduced. After the model was selected, none of the cells was notably discrepant, so it seemed to be an acceptable model. The final model had a likelihood ratio $\chi^2(9) = 1.77, p = .99$, indicating an excellent fit between observed and expected frequencies generated by the model.

The results of the log-linear analysis of the Personal Interview showed that ‘secret-sharing’ is associated with age but not with gender. The inspection of the observed frequencies showed that for the older boys and girls (5.5-6.5 years of age) their friends were the preferred recipients of secrets. On the contrary, for the younger children (belonging to the other two age groups: 3.5-4.5 and 4.5-5.5 years of age) the preferred targets of disclosure of secrets were the members of their immediate family. It is noteworthy that ‘non-friends’ were the least likely recipients of secrets in all age groups. It seems that children of all age groups systematically refrained from sharing their secrets with ‘non-friends’. The frequencies and the percentage per age group of the secrets addressed to each target in the Personal interview are presented in Table 6.

Table 6: Frequencies and Percentages per Age Group of Secrets Addressed to each Target in the Personal Interview

Age group	Family		Friends		Non-Friends	
	‘n’	%	‘n’	%	‘n’	%
3.5- 4.4 years	11	55.0	7	35.0	2	10.0
4.5- 5.4 years	14	58.3	10	41.7	0	0
5.5-6.5 years	12	28.6	27	64.3	3	7.1

The hierarchical log-linear analysis of ‘secret-sharing’ in the Zinc Interview produced similar results. Eighty two participants provided usable data for this analysis. Again, the inspection of the expected cell-frequencies indicated inadequate expected frequencies, so the possible reduced power of the analysis has to be taken into consideration. Still, after the model was selected, none of the cells was notably discrepant, so it seemed to be an acceptable model. The final model had a likelihood

ratio $\chi^2 (9) = 6.11, p = .72$, indicating a good fit between observed and expected frequencies generated by the model.

The final model of the log-linear analysis indicated that in the Zinc Interview (as well as in the Personal Interview) ‘secret-sharing’ is associated with age, but not with gender. The inspection of the observed frequencies of the ‘secret sharing’ in the Zinc Interview produces the same picture as the Personal Interview. For the older boys and girls (5.5-6.5 years of age) their friends were the preferred recipients of secrets. In contrast, the younger children indicated as their preferred targets of disclosure of secrets the members of their immediate family. As well as in the Personal Interview, in the Zinc Interview non-friends were the least likely recipients of secrets in all age groups. The frequencies and the percentage per age group of the secrets addressed to each target in the Zinc Interview are presented in Table 7 below:

Table 7: Frequencies and Percentages per Age Group of Secrets Addressed to each Target in the Zinc Interview

Age group	Family		Friends		Non-Friends	
	‘n’	%	‘n’	%	‘n’	%
3.5- 4.4 years	16	76.2	4	19.0	1	4.8
4.5- 5.4 years	13	61.9	7	33.3	1	4.8
5.5-6.5 years	14	35.0	25	62.5	1	2.5

The results from the log-linear analysis of the ‘secret-sharing’ item in both Interviews provide support for the hypothesis that restrictive self-disclosure to friends increases with age (HS2). They do not provide support for the hypothesis that gender differences in self-disclosure are evident at this young age (HS3).

I.6. The First Study: Discussion.

I.6.1 Discussion of the Tape-Recording Task

Brown, Donelan-McCann and Dunn (1996) in their article on the significance of children's conversations with friends, siblings and mothers raised objections to the Piagetian tradition which portrays the developing child as a socially isolated thinker and highlighted the role of social interaction between friends in children's developing ability to communicate about mental experiences. The present study, although focusing on a different and presumably specialized aspect of children's ability to communicate with other children (ability for restrictive self-disclosure to friends and non-friends), had a similar objective: to examine young children's growing abilities of interactions in a social world. In order to examine these abilities, valid methods of assessment were required and since restrictive disclosure to friends is a relatively underresearched area for young children, the validity of the existing methods of assessment had to be tested in the First Study.

The statistical analyses conducted to test the validity of the tape interviews as a means of assessing children's ability for restrictive self-disclosure did not testify to the validity of the difference in the personal content of the topics used. The reservation for the validity of these specific topics was already expressed in the Literature Review chapter, when the question was posed whether the specific topics which had been used in the research of friendship knowledge and disclosure of older children (Diaz & Berndt, 1982; Rotenberg & Sliz, 1988) could be used in the research of restrictive self-disclosure with much younger children, as it was done in Rotenberg's study (1995a). Although in the present study Rotenberg's methodology was used (Rotenberg's study being the first research which addressed the issue of young children's self-disclosure to friends), the reservation for the validity of the topics was held in mind and put to test when the data were gathered.

The principal component analyses, which were conducted in order to test the hypothesis that the topics used in the tape interviews do indeed reflect increasing degrees of personal disclosure in young children, did not confirm the assumption. Topics described as highly personal and topics described as low personal did not form distinct categories, but on the contrary loaded on the same factor. The only topic that

seemed to have a distinctive behaviour, by loading on a separate factor independent from the other topics in the PCAs conducted, was the topic of 'Personal preferences'. The question emerges whether personal preferences are a highly personal topic for young children, or whether there is another reason for their loading on a distinct factor.

As discussed in the Literature Review chapter, Rotenberg when explaining the reasons for using the specific topics in his research argued that the personal content of children's disclosures varies as a function of the relevance of the disclosed information for the children's self-concept. According to him, personal preferences are a highly personal topic for young children, because when children talk about what they prefer, they are providing disclosures highly relevant to their self-concept. This does not explain, though, why the other topics which, according to Rotenberg, are also highly relevant to children's self-concept, such as 'Positive personal' and 'Negative personal' items, loaded on the same factor with topics presumably not relevant to children's self-concept, such as the 'Description of people and the environment'. Thus, the question why 'Personal preferences' were treated differently from the other topics remains open for examination in the following studies.

Coates (1993, p. 115) when talking about men's and women's choice of conversational topics argued that the fact that certain topics are seen as 'serious', while others are labeled 'trivial', might be a reflection of social values which define what a specific group of people talks about as important, and conversely what another group talks about as less important. In the present study there was no attempt from the part of the researcher to label topics as important or less important for young children. The attempt was to explore how young children themselves estimate the level of personal content of the topics used, but the Tape-Recording Task did not provide a clear and valid picture.

Therefore, since no clear picture of the personal content of the topics was provided, the result that the interaction between the disclosure target (friend or non-friend) and the assumed level of personal content of the topics failed to reach statistical significance, in other words the result that in these specific topics children did not display the restrictive disclosure-to-friends pattern, does not lead to the conclusion that young children do not generally have the ability for restrictive disclosure to friends. It is possible that this result merely mirrors the lack of difference

in the personal content of the topics discussed; it could just be a reflection of the lack of validity of the method of assessment.

However, although the tape interviews did not provide a valid picture of the difference in personal content between the topics, they provided a picture of young children's conversations with their peers. These findings will be discussed next, without taking into consideration the presumed personal content of each topic.

The results showed that, in general, children made a greater number of disclosures to their friends than to non-friends. Other researches have reported similar findings, which underscore the importance of friends as recipients of disclosures at this young age. Furthermore, it has also been reported that the more time a child spends with his/her friend, the more important recipient the friend becomes. In Brown's, Donelan-McCall's and Dunn's (1996) study, with a sample of 38 47-month old children, the length of the friendship and the frequency with which the friends saw each other was positively correlated with all three child-friend discourse variables studied, that is mental reference (turns in which the speaker referred to her own or another's thoughts), modulation of assertion (mental state terms employed to weaken or strengthen an assertion) and directing the interaction (turns in which the speaker introduced her own activity or suggested a joint activity).

It is postulated here that these findings might depict the first, possibly immature, step towards restrictive self-disclosure. Although we have no evidence on the level of personal content of the disclosures addressed to the friend and to the non-friend, it seems that children, even at this age, choose the person they want to disclose things to: they choose to disclose more things to their friend (the peer with whom they choose to spend more time at school/nursery/playgroup) than to a non-friend. And even if in their minds the distinction between low and highly personal disclosures has not yet been made and they simply reduce the number of disclosures (any disclosures –highly personal or low personal) they make to people they do not know well, it is suggested that telling more things to people you know well than people you do not know well might be the first, yet essential, prerequisite for the development of the capacity for restrictive self-disclosure.

Next, the results indicated that the number of disclosures increased with age, as it was evident from the means of the three age groups. This finding is not surprising, as between these ages there are striking changes in children's linguistic abilities and communicative skills. Although there is still considerable disagreement

about the exact timing of these changes, there is general consensus that by the fifth and sixth years, major developments are evident in children's understanding and communication with the others (Dunn, Creps & Brown, 1996). Dunn (2004, pg. 40) argues that by this age sharing thoughts and feelings becomes much more explicit and as a consequence there is a remarkable increase in children's talking with their friends. Therefore the presents study's results seem to be in line with the generally accepted fact that children talk more to their peers the older they grow. However, the main question remains unanswered: What do they talk more about? Do they talk more about personal information? And do they make a distinction, as far as personal information is concerned, between friends and non-friends?

The analysis of the data of the Tape-Recording Task provided one clue relating to the topics the younger children talk about without providing, however, any indication regarding the restrictive disclosure of these topics. As illustrated in the Results section, children generally made equal number of low intimate and highly intimate disclosures; still, a significant interaction was found between age and level of personal content in the case of the 'younger' age group (3.5- to 4.5-year-old children). The statistical analysis indicated that the younger children provided more low personal than highly personal disclosures. Going back to the rationale behind the design of Rotenberg's (Rotenberg & Sliz, 1988; Rotenberg, 1995a) researches, which were largely based on Selman's and Jaquette's (unpublished manuscript, cited in Diaz & Berdt, 1982) postulations, it is reminded that Selman and Jaquette when describing the sequence of developmental changes in the information children regard as important to know about a close friend argued that preschoolers mention non-intimate information, such as where the friend lives, as important things to know about a best friend. Only in later developmental stages (middle childhood and adolescence) do children place an emphasis on knowledge of a friend's preferences, internal attributes or personality characteristics. As stated in the literature review, this description of the age changes seems to assume that children are initially concerned about observable and external characteristics of the friend, and that they gradually develop an interest in the friend's psychological world. The interaction found between age and level of personal content in the case of the 'younger' age group in the present study suggests that indeed younger children, as opposed to the older children (4.5- to 6.5-year-olds) participating in the research, talked more about observable and external characteristics and less about personal preferences or psychological attributes both with their friends

and non-friends. This result seems congruent with Dunn's, Creps' and Brown's (1996) postulations presented above that by five and six years of age major changes and developments are evident in children's understanding and communication with the others, and that after this age the sharing of thoughts and feelings becomes much more elaborated. However, the fact that these disclosures were made equally towards friends and non-friends does not allow the extraction of conclusions regarding the main research question of the present research, namely children's ability for restrictive disclosure of these presumably more intimate pieces of information.

Gender differences were also studied. The first interesting finding was that girls and boys were equally talkative in general. Discussing women's verbosity, Coates (1993, p.153) has argued that there is an age-old belief, part of the folk culture, that women talk too much, although research findings contradict this. She has stated that research on conversational dominance establishes that it is men who talk more, both in terms of number of turns taken and the number of words uttered, and they do so from an early age: the analysis of the amount of speech produced by girls and boys aged four, eight, and 12 in mixed-sex pairs showed that boys used longer utterances than girls (Haas, 1978, unpublished paper, cited in Coates, 1993). In the present study not girls (as would be expected according to the folk tradition), nor boys (as would be predicted according to the conversational dominance researches) talked more. This results seem to be in accordance with Dunn's postulates (2004, p.106) that when we are looking at friendships in boys and girls we have to be sensitive to complexities and recognize that dualisms don't usually stand up to careful scrutiny: 'if all we knew about a child was his or her gender, we would have very little power to predict how aggressive or talkative he or she would be'.

However, as Dunn continues, there can be average differences between the gender groups and in the present study such a difference was found: girls talked more to friends and less to non-friends than boys. As stated previously, the study provided no indication of the personal content of the topics discussed, therefore it cannot be concluded that girls at this age are more intimate with their friends than boys; it can only be concluded that they talk more with them, on all subjects, than boys do.

It was discussed above that both girls and boys share more things with their friends than with their non-friends and the postulation was put forward that this could depict the first step towards restrictive self-disclosure. Following this argument, it can be postulated that girls' talking more to friends and less to non-friends than boys

might be the first sign of the 'genuine gender difference' (Erwin, 1993) in self-disclosure, which becomes far more prevalent at later ages, where greater intimacy in girls' friendships has been documented (Buhrmester & Prager, 1995; Kiraly, 2000; Tannen, 1990). Of course, the gender difference found here can hardly justify the view that girls and boys grow up in essentially different cultures and have basic differences in their conversational styles (Tannen, 1990, p. 18). However, the possibility of gender differences in young children's restrictive disclosure-to-friends remains open and will be examined in the next studies.

As discussed in the Methodology section, the Tape-Recording Task, as a method of assessment of the children's actual self-disclosure, had certain limitations. Therefore, when designing the First Study the use of self-report interviews in parallel with the use of measures of actual self-disclosure was decided. After the limitations and the questions regarding the capacity of the Tape-Recording Task to measure children's ability for restrictive self-disclosure emerged in the present research, it was hoped that the self-report tasks (the Personal and Zinc Interviews) could provide more answers to the question of young children's self-disclosure in friendships.

I.6.2 Discussion of the Personal and Zinc Interviews

It seems that the inclusion of the 'secret-sharing' item in the Personal and Zinc Interviews was the key in providing some answers regarding young children's capacity for restrictive self-disclosure. Comparing the results from the Tape-Recording Task and the Personal and Zinc Interviews (i.e. comparing the actual and reported methods of assessment of self-disclosure), it appears that young children reacted in similar ways to the common topics presented to them in the Tape and the Personal and Zinc Interviews, the only difference being the topic not included in the Tape-Recording Task, that is 'secret-sharing'.

The inspection of the frequencies in the Personal and Zinc Interviews reveals that children's responses were not differentiated according to the personal content of the topics, as proposed by Rotenberg (1995a), possibly indicating, once more, the non-validity of the specific topics. The only topic where children reacted differently (with higher percentages of reported disclosure to friend and the lowest percentages of disclosure to non-friends) was 'secret-sharing'. Maybe this is one reason why self-report measures are necessary in evaluating self-disclosure, as Simpkins and Parke

(2001) argue. Secrets are highly personal; sharing them and keeping them is what seems to make or break a friendship (Tannen, 1990, p. 80). Measuring the sharing of secrets seems quite unachievable when using observational measures, as most probably children would not want to reveal a secret when talking to, or in the case of the Tape-Recording Task in front of, a researcher. Therefore, given that the study of the sharing of secrets is a way of approaching restrictive disclosure, as indicated in the present study, the use of self-report measures, even at this young age, appears essential. (For a more detailed discussion of this point please see the General Discussion chapter.)

Taking things from the beginning, though, the results of the Personal and Zinc Interviews were in general, given the young age of the children, not surprising. The immediate family (parents and siblings) were in almost all circumstances the main recipients of young children's disclosures (with the notable exception of the 'secret-sharing' item). The decision to group together all the disclosures directed to members of the immediate family was taken because the focus of the present study was friendship disclosure; however, the researches which have examined the development and the differences in the relationships of the young children with the various members of their immediate families were taken into consideration and, in fact, their findings are employed to gain an understanding of when and under which conditions young children disclose to members of their family or choose to disclose pieces of information to their friends.

Researches have shown that family members differ in the social contexts in which they refer to emotions (Brown & Dunn, 1992). These differences have been thoroughly studied, especially regarding the child-mother and the child-sibling talks (Brown, Donelan-McCall & Dunn, 1996; Brown & Dunn, 1992; Dunn, Creps & Brown, 1996; Youngblade & Dunn, 1995). As mentioned previously, an important finding is that children from the age between three to seven years show over time notable increases in the proportion of reflective commentary in their interactions with their mothers and siblings (Dunn, Creps & Brown, 1996). The researchers have coded under the category of reflective commentary (among other things) the reflective commenting on events, behaviour or inner states of people or characters in books or pictures, i.e. disclosures that could be relevant to children's self-concept (especially when commenting on their own inner state) and thus, of highly personal value. Therefore, from the ages of three to seven years children appear increasingly capable

of sharing personal information with members of their immediate family, who become important recipients of disclosures. The fact that in the present study the members of the immediate family were the main recipients of children's disclosures in almost all circumstances underscores this finding.

As far as the difference between parent-child and sibling-child talk is concerned, there seems to be an increase in young children's interactions with their siblings and decrease in interactions with their mothers between three and five years, but this is not followed by a further change over the next two years. As Dunn, Creps and Brown (1996) argued one of the possible explanations for this pattern is that the three to five year change may be linked to the development in children's understanding of others, documented in the research on theory of mind, for which the particular period is of particular significance. These developments in understanding of mind possibly lead to a major shift in children's companionability for their siblings. Dunn and her colleagues maintained that a further increase in between five and seven years of age in interactions between the siblings was unlikely, possibly due to the older siblings' increasing age (in Dunn's Creps' and Brown's research the subjects were secondborn children, with a mean age gap from their older siblings of 43 months, range 16-93 months), who become increasingly engaged to the world of peers outside the family.

A similar suggestion was made in a research studying sibling relationships from the preschool period through middle childhood and early adolescence (Dunn, Slomkowski & Beardsall, 1994), where new friendships were frequently cited by the children and their mothers as the cause of deteriorating relationships between the siblings. Changes in sibling relationships were often attributed to the ties that firstborns formed with a peer group outside the family. Older children were frequently described as losing interest in their younger sibling, and this impact of the wider world outside the family on family relationships increased as children reached adolescence. Projecting this at an earlier age, Dunn, Creps and Brown (1996) suggested that this might be the case for children at the age between five and seven years, as well; in other words, it was proposed that five- to seven-year-old children's engagement with friends at school might be linked to a decrease in sibling interaction.

It is maintained that an important feature of friendship is its key role in children's increasing independence from the immediate family (Dunn, 2004, pg. 7). If disclosing information to friends and not to members of the family is a sign of

independence, the question that emerges is at what age children start looking for this independence. Does it happen when children reach adolescence or are there signs of it at a much younger age?

As mentioned before, the present study's findings showed that children chose the members of their immediate family as the principal recipients of disclosures, with one important exception: friends were the principal recipients of disclosures in the case of 'secret-sharing' in the Personal interview (with a percentage of 41.5%). The log-linear analysis performed showed that it was the older children (5.5- to 6.5-year-old children) who indicated their friends as the preferred targets of disclosure of secrets. Younger children indicated as their preferred targets of disclosures of secrets the members of their immediate family. Similarly, in the case of the Zinc interview, although the general frequencies showed that the family members were the preferred recipients of secrets, the log-linear analysis indicated that again for the older children (5.5- to 6.5-year-old children) the preferred recipients of secrets were their friends. These results seem to substantiate Dunn's and her colleagues' suggestions that from a young age (presumably around six years of age) children seem to seek some independence from their family, and thus confide pieces of personal information to their peers.

An important point in this development is that children seem to select the outside-the-family people, the peers, they open up to. It seems that they do not just turn away from their family; they turn to friends. It is their friends who are the recipients of their intimate disclosures; it is their friends they trust with them. This is a big step and is not risk-free, as when confidential information has been exchanged in a relationship, the discloser is vulnerable to emotional harm (Dunn, 2004. pg. 113). The confidant may use this information to manipulate or hurt the discloser (Seban, 2003). Taking this potential risk, children form friendships where sharing of secrets appears to take place.

It noteworthy that secret sharing does not take place in the relationship with all peers; the secrets are clearly not revealed to 'other peers', they are revealed specifically to friends. Secrets were the least likely topic to be shared with non-friends in both Personal and Zinc Interviews, at all ages. What is more, the differences between the percentage of children sharing secrets with friends and non-friends in both the Personal and Zinc Interviews were statistically significant. It appears without doubt that non-friends are excluded from this intimate exchange. Following

Rotenberg's and Sliz's (1988) definition, this seems to be a sign of restrictive disclosure to friends, as children disclosed more highly personal information (secrets) to friends than to non-friends.

It is interesting that no gender differences were found in the way three- to six-year-old children treated and shared secrets. As discussed, gender differences have been documented in studies of older children and adolescents, while things are not so clear at these early ages. Regarding the sharing of secrets, Dunn (2004, pg. 112) sustained that by six years this is common among girls, but is less frequent among boy-boy friends. This conclusion seems to be inferred from personal observations of young girls' and boys' friendships, and it has to be noted that apparently the author only refers to same-gender friendships. In the present research same- and cross-gender friendships were studied, but the findings did not point to the existence of gender differences. It appears that Dunn herself might have been aware that this gender difference is not well-substantiated, as she promptly added that individual differences (rather than gender differences) are marked among both boys and girls, and she presented a dialogue she had with six-year-old Ben about his best friends (pg.112):

Judy Dunn: Have you got a best friend, Ben?

Ben: Zack and Carlo are my best friends.

Judy Dunn: Do you ever tell them secret things -talk about secrets?

Ben: (firmly) Yes. Because I trust them.

The difference in children's disclosures towards members of the immediate family, friends, and non-friends was the main point of interest in the Personal and Zinc Interviews. However, the inspection of the percentages of disclosures addressed to the other possible targets of disclosures ('extended family', and 'others', including the teacher) provides a picture also worthy of note, especially as regards the difference in the percentages of disclosures addressed to these targets between the Personal and Zinc Interviews. In general, in the Personal Interview few disclosures were addressed to these targets: the proportion of disclosures addressed to the 'extended family' ranged from 2.8% to 5.2% and the proportion of disclosures addressed to 'others' ranged from 2.8% to 7.5%. In contrast, a higher percentage of disclosures was addressed to these targets in the Zinc interview: the proportion of

disclosures addressed to the 'extended family' ranged from 5.7% to 12.4% and the proportion of disclosures addressed to 'others' ranged from 11.4% to 25.8% (remarkably, in all cases, both in Personal and Zinc Interviews, the lowest percentages of disclosures towards these targets were found in the 'secret-sharing' item).

Based on these results it can be argued that few children would indicate the grandparents or the teacher as recipients of personal disclosures 'spontaneously', i.e. if it is not suggested to them. It is possible that in the case of the Zinc interview children's responses were influenced by the presence of the grandparents and the teacher as possible targets of self-disclosure. On the other hand, presenting these possible recipients of self-disclosure could have been a useful reminder to the children of all the possibilities they have, of all the possible targets of disclosure that exist in their environment. In 'real life' disclosure might also depend on the availability of the possible disclosure targets, or children's memory of the possible disclosure targets. Thus, it is possible that the Zinc interview provides a facilitating framework for children, where memory constraints are lessened, and this could be considered as an advantage of the Zinc over the Personal Interview.

This line of thinking can be extended to explain, at least partially, yet another observation: In the Zinc Interview a lower proportion of disclosures was not addressed to anyone ('nobody' range = 1.4%- 4.9%), than in the Personal Interview ('nobody' range = 7.1%- 20.8%). Maybe the fact that the possible targets of disclosure were presented to the children in the Zinc Interview influenced their responses, and as a result children refrained from saying that Zinc would not share information with anyone. On the other hand, as argued before, the presence of other targets of disclosure in the Zinc Interview might have helped the children in reminding them of all the possibilities they have, and therefore fewer children indicated that Zinc would share personal information with nobody.

Still, it cannot be ignored that in the Personal Interview there was a high proportion of disclosures not addressed to anyone. Specifically in the case of 'Negative personal' items the percentage of disclosures not addressed to anyone reached a peak of 20.8%. The question here emerges whether young children choose to keep certain things to themselves, especially things that relate to negative personal information and are, according to Rotenberg (1995a), highly personal items. As noted before, the results of the Zinc Interview do not back up this suggestion, as in the case of 'Negative personal items' in the Zinc Interview only 4.3% of the disclosures were

not addressed to anyone. However the question remains open to be researched in the following studies, as it is suggested that keeping things to oneself is closely connected to restrictive disclosure. People refrain from sharing information with others when the specific pieces of information are highly personal and they are concerned that by disclosing them they expose themselves and could become vulnerable (Dunn, 2004, pg. 113). It is suggested that this very decision to keep the highly personal information to oneself is connected to restrictive disclosure, as it incorporates one of the prerequisites for the achievement of restrictive self-disclosure, namely distinguishing low personal from highly personal information.

In the present Discussion section the findings from the tasks of the First Study were examined in detail. It has been postulated that some findings could indicate that children from the age of 3.5 to 6.5 years have conquered (or are in the process of doing so) the prerequisites for restrictive disclosure to friends. It has to be noted, however, that the only point where concrete signs of the restrictive disclosure capacity were found was in the case of the 'secret-sharing' item. Is this difference a definite sign of restrictive self-disclosure to friends?

Several important questions emerge: Why are secrets treated differently than other (supposedly highly intimate) topics? What is so special about the disclosure of secrets that it seems to follow a different developmental pattern? However, before addressing these issues (or, in fact, in order to elucidate these issues) a more basic question should be addressed first; namely, what is the content of young children's secrets?

All these questions seem particularly relevant to the investigation of young children's capacity for friendship intimacy and self-disclosure, and thus it was decided to examine them further in the Second Study which focuses on the content of children's secrets in the attempt to investigate why those pieces of information were treated in a different way than all other pieces of information in the Tape-Recording Task and the Personal and Zinc Interviews.

II. The Second Study: What is a secret to a young child?

II.1. Overview.

The findings of the First Study, namely that young children's disclosure of secrets follows a pattern where signs of the restrictive self-disclosure to friends are evident, gave the impetus for the Second Study. The present chapter explains the rationale behind its design. It begins with a brief literature review on the content of children's secrets. To my knowledge there is very limited research on the content of young children's secrets, therefore, inferences are made from the existing literature on older age groups. Then two hypotheses regarding the reason why young children in the First Study treated secrets differently than the other topics are presented. The chapter continues with the discussion on the design of the research. Details of the small Pilot Study and the useful conclusions drawn from it are presented and analysed. Next, a detailed account of the methodology followed in the administration of the Second Study is given. Finally, the results of the Second Study are presented and the chapter concludes with the discussion on the significance of these results and the possible association between them and the findings of the First Study.

II.2 What is a secret to a young child?

The research project set off to investigate the general research hypotheses (stated in the Literature Review chapter) concerning the development of young children's (3.5 to 6.5 years of age) ability for restrictive self-disclosure to friends. The results of the First Study indicated that young showed signs of the restrictive disclosure-to-friends pattern only when the sharing of secrets was examined. But why was that the case? What is it about secrets that it is different?

It is believed that these questions cannot be answered unless a more basic question is addressed first: what is the content of young children's secrets? The Second Study investigated the sort of information that young children consider secret thereby identifying information of the type that would be expected to be subject to restrictive self-disclosure at this age.

II.2.1 The content of secrets

As the Literature Review showed, young children have a capacity for secrecy. It is unclear, though, what is the content of their secrets. Literature on the content of secrets in the case of young children is limited. In this chapter, the general literature on the content of secrets is examined and, where appropriate, inferences about secrets in early childhood are made.

From a theoretical/psychotherapeutic point of view, Imber-Black in her book 'The Secret Life of Families' (1998) proposed that secrets can be differentiated in four categories:

1) Sweet secrets.

These are time-limited and made for the purpose of fun and surprise, such as gifts, parties, or unexpected visits. Sweet secrets can shift relationships temporarily and create new bonds. Imber-Black provided an example of a young child's sweet secret: a little girl is brought into a sweet secret with her father to surprise her mother with a new kitten, and momentarily she feels quite adult (p.13).

2) Essential secrets.

In contrast to sweet secrets, which are temporary and are created to benefit another person, essential secrets are long lasting and, through their very telling, can

enhance the development of relationships and communities, with the sense that 'this is between us'. Examples of essential secrets are secrets regarding one's fears and insecurities, which once shared with another person, create a sense of closeness and connection. Children keep essential secrets because they fear that disclosure could promote conflict, lead to anger or might disappoint their parents. Imber-Black provided an example of a seven-year-old girl who accidentally sprayed paint on the side of the house and did not tell her parents, as her father was 'furious and ready to beat the perpetrator' (p.220).

3) Toxic secrets.

Toxic secrets have chronic negative effects on a person's emotional well-being. Even though no one is in immediate physical or emotional danger, toxic secrets sap energy, promote anxiety, burden those who know and mystify those who do not know. Since the keeping of toxic secrets does not often create acute crises, such secrets tend to linger, promoting a sense of confusion regarding who, when, or whether to tell. An adoption, which has never been openly discussed, might be an example of a toxic secret.

4) Dangerous secrets.

These are secrets that put people in immediate physical jeopardy or such severe emotional turmoil that their capacity to function is threatened. Examples are physical or sexual abuse of children, wife battering, incapacitating alcoholism or drug abuse and plans to commit suicide or harm another person. In contrast to toxic secrets, which allow time to carefully consider the impact of continued secrecy or openness, dangerous secrets often require immediate action to safeguard life.

Following a different vein, Wegner and Lane (1995) on a data-driven article presented an analysis of the kinds of thoughts that adults keep secret. By applying factor analysis to the answers of 237 college students who were asked to rate the degree to which they tried to keep secret their thoughts on each one of the 50 topics presented to them, the researchers found that four factors can be understood to represent distinct categories of secret thoughts: offenses, worries, sorrows and sins. The category of offenses includes primarily acts of violence and taboo sexual practices (e.g. 'hitting someone' or 'being a homosexual'). Worries represent thoughts about things that could happen and would victimize oneself (e.g. 'getting mugged'). Sorrows involve a potential for failure or sadness. They concern the kinds of things one would want to keep from others as a means of protecting one's self-esteem or

avoiding depressive emotion (e.g. 'being lonely', 'someone I am jealous of' or 'someone I have a crush on'). Finally, sins are thoughts that center on personal moral weaknesses. This category includes activities that are socially disapproved but do not hurt others in any immediate way (e.g. 'using marijuana'). Averaging over topics within each category, Wegner and Lane found that secrecy was greatest for sorrows, less for offenses, even less for sins and least for worries.

Vangelisti (1994) in her research on family secrets with a sample of 801 undergraduate students clustered the secret topics in three categories: taboo topics, i.e. activities or events that are stigmatized or condemned by society, rule violations, i.e. breaking rules that are common to many people, and conventional secrets, i.e. information that is not necessarily 'wrong', but is often considered inappropriate for discussion. The majority of secrets (75%) seem to focus on taboo topics (Vangelisti & Caughlin, 1997).

However, Vangelisti's categorization of the secret topics seems not to be validated by subsequent research findings. First, the link between these secret topics and the tendency to reveal secrets was found unreliable, although there was an association between family members' perceptions of topic intimacy and their tendency to reveal secrets (Vangelisti & Caughlin, 1997). Furthermore, Vrij, Nunkoosing, Paterson, Oosterwegel and Soukara (2002), who used Vangelisti's categorization in their research on the characteristics of secrets, stated that categorizing the topics under study in taboos, rule violations and conventional secrets was not an easy or straightforward task, and that disagreements between the coders occurred. They concluded that more extensive instructions are needed.

It seems unlikely that young children's secret thoughts are the same as the secrets of adults, due to the significant differences in experiences, needs and expectations of the developmental periods of adulthood and childhood. However, it is possible that some of children's secrets fall into the categories described by adult secrets' researchers. Similarly, some inference on what might be a secret for young children can be provided from the researches which addressed related issues in adolescents, preadolescents and children in middle childhood. These researches are discussed below.

Guerrero and Afifi (1995) studied the development of topic avoidance in parent-child relationships with participants from three age groups: preadolescents (30 participants, average age= 10.9 years), adolescents (30 participants, average age= 16.3

years) and young adults (30 participants, average age= 22.8 years). From the onset, the researchers made clear that the distinction between topic avoidance and secrets is an important one, as secrets imply the hiding of information from others, whereas avoided topics may be fully known by others. However, they argued, secrets may be conceptualized as a subcategory of avoided topics, as ‘avoided topics include, but are not limited to secrets’.

The topics used to assess the degree of topic avoidance on the pre-teen participants were the following: 1) failures, such as doing poorly on a test, and negative experiences, such as embarrassing moments, 2) feelings about friends and activities with friends, such as things the participant does when he is out with friends, 3) romantic interests, such as girl or boys the participant likes or has a ‘crush’ on, 4) dangerous or irresponsible behaviour, such as drinking, smoking or skipping classes, and 5) relational feelings, such as telling mother or father how the participant feels about them. The results showed that the topic preadolescents mostly avoided talking to their parents about was ‘dangerous and irresponsible behaviour’. ‘Negative experiences’ and ‘romantic interests’ were the second and the third most avoided topics respectively, while avoidance of the topics ‘feeling about friends and activities with friends’ and ‘relational feelings’ occurred seldom, rather than often.

Another study from where information on children’s secrets may derive, albeit indirectly, is Reynolds’, Brewin’s and Saxton’s (2000) research on emotional disclosure in school children. In this study children aged 8-13 years were asked to write in a diary their ‘deepest thoughts and emotions about things [they] have found stressful or sad or made [them] feel angry and upset’. Children were told that diaries are ‘designed to contain very private thoughts and feelings, which [they] may have not shared with anyone else’.

The content of the scripts the children produced varied. The most common themes were friendships, family, school, teachers, unfair situations, boy/girls, illness, exams and school work. A lot of children, particularly girls, wrote about falling out with friends and uncertainties about loyalty: ‘There is this girl all her friends dumped her and they told me to dump her as well, so I did. [...] I done it because I was worried I was going to lose all my other friends. [...] I feel very ashamed’. Bullying and teasing at school was a common theme for boys and girls: ‘They all started laughing at me and I really took that to heart and I just felt like I wanted to burst into tears and didn’t want to tell any of the teachers as I thought the other children would

start laughing at me and call me a grass'. Some children wrote about boyfriends/girlfriends and relationship problems: 'I've fancied this boy for about four months now. [...] Now he is going out with S. I thought it was so pathetic so I am trying to get him out of my mind'.

It is noteworthy that the themes described in the diaries were in line with the topics preadolescents seemed to avoid talking to their parents about (Guerrero & Affifi, 1995): failures, negative experiences, romantic interests. Therefore it can be hypothesized that these are themes that preadolescents would regard as 'secrets'.

However, in the accordance between the two studies there is one exception: 'dangerous or irresponsible behaviour' which seems to be the topic mostly avoided in conversations with parents was not one of the common diary themes. The reason for that might be that the children participating in the research knew these diaries would be read by the researchers. One might argue that the children chose not to disclose their 'deepest' secrets to the researchers like they choose not to disclose them to their parents. This seems to reflect the hypothesis that there are different degrees of privacy in secrets and people can rate how private a secret is to them (Kelly, Klusas, Weiss & Kenny, 2001). The more private a secret, the fewer people it is shared with. Therefore it is possible that preadolescents chose not to write in the diaries about any 'dangerous or irresponsible behaviour', as this is regarded as a more private secret than 'romantic interests'. This might also imply that there may be other topics researchers have not accessed for similar reasons (i.e. they are considered very private). This possibility mirrors the difficulty of the research on secrets: people's private thoughts are difficult to measure or pinpoint, exactly because they are private.

Another possible explanation for preadolescents not reporting in the diaries any 'dangerous or irresponsible behaviour' could be that the specific behaviours involve more shame and guilt than the other themes described in the diaries. Finkenauer and Rime (1998) in their research on shared and non-shared emotional experiences concluded that, although non-shared emotional events are not more emotionally intense and negative than shared events, they involve more shame, guilt and personal responsibility than shared events. Therefore this could be the reason why preadolescents avoided writing about 'dangerous or irresponsible behaviour', and possibly this is one of the reasons why these behaviours were held from the parents, as well. In line with this argument is the finding that people hold secrets to avoid disapproval (Vrij, Nunkoosing, Paterson, Oosterwegel & Soukara, 2002). Again this

seems as plausible explanation why 8-13 year old children chose not to write about dangerous or irresponsible behaviours, which most probably would be disapproved by adults, in diaries which were going to be read by the adults interviewers.

The content of secrets in middle childhood has been examined more directly by Last and Aharoni-Etzioni (1995) and Watson and Valtin (1997). Last and Aharoni-Etzioni (1995), in a psychoanalytically informed article, presented the results of their research on secrets and reasons for secrecy among school-aged children. The participants were 180 children in three grade levels: third, fifth and seventh grades (60 in every group, half of them boys and half girls) recruited from summer camps in the vicinity of Jerusalem. After a group discussion on secrets, which took place in small groups of children (five to seven children) of the same level and the same gender, the children were requested to write a short composition titled 'This is my secret'. They were instructed to report a very important and significant secret that they were trying to withhold to prevent its disclosure or revelation to others.

The obtained narratives were coded by consensus by two coders. Five main categories of secrets were obtained and a sixth residual category was formed to account for all other specific topic categories with fewer than three cases. The six topic categories were as follows: 1) heterosexual involvement, 2) moral transgression (including causing damage to property, verbal or physical violence, lying and disobeying), 3) possession (including possession of objects, pets, places, or accessibility to places and territories), 4) familial issues (including marital problems, death of a family member, ailments or disabilities of family member, shameful deed of family member), 5) social problems (including conflict with peers, social shyness) and 6) residual.

The results suggested a developmental trend for the first three topics. Heterosexual development and moral transgression were more frequently disclosed in secrets as the age of children increased. On the other hand, Topic 3 (possession) was mentioned only rarely in disclosed secrets of the seventh graders, whereas it was mentioned frequently by the younger children. For the other topic categories no age differences were found. The results also suggested some gender differences. Topic 2 (moral transgression) and Topic 3 (possession) were contents of secrets disclosed more frequently by boys than by girls. An opposite trend was evident in regard to Topic 4 (familial affairs): only one boy disclosed a secret on familial affairs, in

contrast with 13 girls who chose to write a relevant secret. For all the other topic categories there were no evident gender differences.

It can be argued that the topics the children wrote about (heterosexual involvement, moral transgression, familial issues, social problems) are similar to the secret or avoided topics described in the previous researches, with one important exception: Possession, which was a subject presented as secret by the younger age groups¹, did not come up as a secret topic in the other researches. Furthermore, possessions (e.g. 'I have a cat') are not generally considered a secret topic. Do children in middle childhood, in contrast with older children, preadolescents and adults consider possessions a secret topic? Moreover, do they consider possessions a 'very important and significant secret that they were trying to withhold to prevent its disclosure or revelation to others', as this is the topic they were instructed to write about in the composition? The authors argue that this result indicates a shift from secrets about possessions to secrets about interpersonal relationships. This shift, they continue, may be conceived of as a shift from being concerned about having or owning to being concerned about relating and complying with social demands with all the accompanying psychological ramifications from the standpoint of self-development. However, the authors point out that the fragility of their method of investigation, which relied on voluntary disclosed secrets, has to be taken into account: 'the reported secret may at times be no more than an invented instant narrative created to satisfy the examiner or to get rid of a task that entails an unwelcome invasion of the private mental space of the child'. One cannot help but wonder if that was one of the reasons why a number of children reported that an apparently non-secret topic, possessions, was actually a secret. This question is posed more compellingly if, as the researchers stated, 'the possible capriciousness in readiness to share secrets with strangers are serious impediments in our ability to treat and regard our data as solid psychological facts'.

Watson and Valtin (1997) in their research on secrecy in middle childhood investigated children's understanding of the nature of secrets as an expression of their knowledge of the intentions of others. The impetus for this research came from a small-scale pilot study (Flitner & Valtin, 1987) on the understanding of secrets among five- to 12-year-old children, which suggested a developmental change during middle

¹ It has to be noted that the coding for the youngest age group does not appear all-inclusive: out of the 50 topics wrote about by the third graders, 20 were coded as residuals.

childhood, from a preoccupation with violation of adult rules to a concern to preserve the trust of a friend. In this small study only one kind of secret was investigated referring to a hidden, prohibited action: smoking of a cigarette.

Watson and Valtin 'after considering a range of secrets children are likely to tell and keep', about which unfortunately they provide no information, decided to study four kinds of secrets: the guilty secret, the innocent secret, the dangerous secret, and the embarrassing secret. The results of Watson's and Valtin's research are beyond the scope of the present chapter², however, the choice of secrets they studied is relevant to my investigation of what may be considered secret at early childhood. The guilty secret concerned something forbidden, i.e. stealing money from mother's purse. The innocent secret concerned the child telling a friend that he/she had painted a picture to give to mother for her birthday. In the dangerous secret the story involved one child telling another that he/she had lit a fire in an empty garage, while the embarrassing secret involved a story of a child wetting his/her pants at school.

The researches presented here provided useful indication of what the content of young children's secrets might be, as to my knowledge there is no systematic research investigating this topic. The only study which seems to have addressed this issue, to some extent, is Meares' and Orlay's (1988) exploratory research on young children's concept of secrecy as a self-boundary. The authors have reported some examples of four- and five-year-old children's secrets. However, the content of some of those secrets, which were revealed in the course of a 'semi-structured interview, in the manner of Piaget', was surprising: the authors reported that one example of a child's secret involved an 'illegitimate pregnancy' and there were three examples which involved sexuality of sexual identity (for instance, 'Boy George is a poofster'). Besides these examples, there were six responses which involved birthday surprises and gifts, one response that involved a child's being unable to swim, one response about dad's money, one about a new house and one about the possession of chocolates which was associated, according to the authors, with the notion of exchange and the formation of alliances.

Based on the information provided by the relevant studies with children, adolescents and adults, hypotheses on what may constitute secret information for young children were made and put to test in the Second Study.

² The results of Watson's and Valtin's (1997) research are discussed in detail in the General Discussion chapter.

II.2.2 What is it about secrets that it is different?/Aim of the Second Study

The main aim of the Second Study is to investigate the content of young children's (3.5 to 6.5 years of age) secrets. As the results of the First Study showed, young children's disclosure of secrets followed a different pattern than the disclosure of the other topics: it was only there that seeds of the restrictive disclosure-to-friends pattern were found. For that reason it was thought that the study of young children's capacity for self-disclosure and intimacy in friendships would benefit from a research investigating the content of young children's secrets. This exploration would answer the very basic question of what is a secret for young children, i.e. what kind of information young children seem to treat differently.

At the same time, another important question needs to be explored: why do children treat secrets differently than the other topics? Two apparently conflicting hypotheses can be proposed:

1) There are certain kinds of feelings, thoughts or facts that young children systematically regard as secrets. These feelings, thoughts or facts are treated differently because they are inherently different. They are considered private and their transmission follows certain rules known by children even at a young age. These secrets are different from the 'highly personal' disclosures used in the First Study, that is why their disclosure followed a different pattern.

2) The alternative hypothesis is that specific pieces of information are treated differently by young children just because they are labeled as secrets. It is possible that when children are told that a specific piece of information is 'a secret', they treat it in a different way than other information not characterized as secret, because they have learnt that secrets should not be revealed but to people with whom one has a very close relation with. For instance, it is possible that in the Personal and the Zinc Interviews, where children were specifically asked about a distinct 'secret-sharing' item, they treated this piece of information differently because it was presented to them as such. Had this not been the case, young children might have not been able to judge for themselves which information should be treated in a way that pertains to private information. Even adults tend to treat information characterized as 'secret' in a distinct way. This is the reason why, when adults wish to regulate the subsequent telling of a private piece of information they share, they often use a 'prior restraint phrase', such as 'don't tell anyone', which denotes the specific piece of information

as private and minimizes the ramification of disclosure (Petronio & Bantz, 1991)³. Bellman (1981) has argued that there is a set of instructions an adult revealer gives to the confidant just prior to revealing a secret, which serve to inform the confidant that the secret must not be repeated. But adults, as well as preadolescents and adolescents, also have the capacity to judge (even if they are not told anything) whether a specific piece of information is a highly intimate one and treat it accordingly, applying the restrictive disclosure pattern. According to the second hypothesis young children do not have this capacity. They need to be told in a concrete way that certain information is secret and only then (even if the specific information is not generally considered a secret) they treat it differently. This seems to be suggested by Pipe's and Wilson's (1994) findings that the majority of five- to six- year-old children were not likely to reveal information about a small 'accident' they had been asked to keep secret. In that study children interacted with an unfamiliar adult 'magician' who accidentally split ink on a pair of gloves the child was wearing. Only 25% of the five- to six-year-olds spontaneously mentioned the accidental ink spill or the stained white gloves that they had been asked to conceal and even when questioned a significant number of the young children (40% at the first interview held two weeks after the interaction, and 32% at the second interview held two months after the first interview) denied that they knew anything about them. In contrast, the majority of the group of the ten-year-old children (84%) reported the accident when asked directly about it. A more recent study (Wilson, Powell, Raju & Romeo, 2004) replicated these findings as it showed that five- to six- year old children were significantly less likely than seven- to eight-year- olds to report a piece of information (that a spray used in a puppet-making task has been taken from Disneyland) they were told to keep secret, even when they were specifically interviewed about the puppet-making process.

The Second Study aims to shed light on the reasons why secrets are treated differently by young children (as the results of the First Study indicated), by exploring the validity of these two hypotheses. It is argued that this exploration would help clarify the general research questions of the research project. Specifically, if the research shows that the content of young children's secrets follows a consistent pattern, in other words if most children systematically identify specific facts, feelings

³ In a study with nine- and ten-year-old children the subsequent telling of the information disclosed was regulated by the use of a 'secrecy pact', which apparently have acted as a 'prior restraint phrase' (Nysse-Carris, 2003).

or thoughts as secrets, then it can be concluded that the first hypothesis is valid: young children have the capacity to form their own opinion concerning the personal content of information. In that case, young children's capacity for restrictive self-disclosure to friends can be further explored based on the solid assumption that young children systematically recognize secrets, and that these are the pieces of information they choose to share with their closest friends and not other peers.

Conversely, if research shows that the content of young children's secrets does not follow a consistent pattern, then it might be concluded that the second hypothesis is valid: children might only have a rudimentary capacity for restrictive self-disclosure which depends, to a large extent, on the external identification of a piece of information as personal or intimate.

II.3. Exploring the content of young children's secrets: The design⁴ of the Second Study.

In order to investigate the content of young children's secrets a list of thoughts, feeling or facts that might be considered secret by young children had to be devised, as, to my knowledge, there was no systematic information on what might constitute a secret for children at a young age.

The examination of the literature on adults' and older children's secrets provided useful ideas. As the researchers investigating secrets or related issues have come up with different but compatible⁵ categorizations of secrets, it was decided to include in the 'List of Young Children's Secrets' age-appropriate examples (involving young children's experiences at school/nursery or at home) relating to the categories into which researchers have argued that secrets can be classified.

However, the study of secrets, especially when individuals are asked to reveal specific information that is secret to them, can be a sensitive subject (Finkenauer & Rime, 1998) and ethical issues had to be taken into consideration. Due to ethical constraints it was decided not to include in the 'List of Young Children's Secrets' examples of 'toxic' or 'dangerous' secrets, as defined by Imber-Black (1998), or implied in researches investigating the negative consequences of secrecy (for example, see Finkenauer, Engels & Meeus, 2002).

The only 'secret category' described by previous researches not represented in the 'List of Young Children's Secrets' is the 'Possession' topic (possession of things or of accessibility to places) presented by Last and Aharoni-Etzioni (1995). The reason for this is that first, as pointed out before, the specific topic is not mentioned in other researches. Second, in the *First Study* there were items referring to possessions (e.g. 'Zinc's room has a window' or 'My home is close to school') and these items, as

⁴ Please note that this section refers to the designing of the Second Study. For the exact wording and details about the administration please see the Procedure section.

⁵ For instance, compare Wagner's and Lane's (1995) offences, Vangelisti's (1994) rule violations, Guerrero's and Affifi's (1995) dangerous or irresponsible behaviours, Last's and Aharoni-Etzioni's (1995) moral transgression and Watson's and Valtin's (1997) guilty secret. Or Last's and Aharoni-Etzioni's (1995) heterosexual involvement, Guerrero's and Affifi's (1995) romantic interests, Reynolds's, Brewin's and Saxton's (2000) boy/girl relationships, and even Meares' and Orlay's (1988) secrets about sexuality or sexual identity. For a more detailed discussion of this point please see the General Discussion chapter.

suggested by the First Study's findings, were not considered as secrets by the young children (i.e. they were not treated in a different way than the other items).

Fiction books for young children also provided useful ideas on what might be a secret at an early age. Things that children dream about or are afraid of and adults 'cannot see' or 'do not know about', for example fairies or monsters, might be regarded as secrets at a young age. Therefore, it was decided to include two such examples in the 'List of Young Children's Secrets'.

The 'List of Young Children's Secrets' is presented below. It has to be noted that in order to keep the interview from being intrusive and also to prevent the difficulties that occurred in the administration of the Personal interview (where children protested when the content of the statements did not apply to themselves) it was decided to use the puppet 'Zinc' in the Second Study. Besides, as the results from the First Study showed, the general tendencies were common in the two interviews (Personal and Zinc Interviews); in other words the use of the puppet did not seem to influence the results. Thus, the statements on the 'List of Young Children's Secrets' are presented in the third person as they refer to Zinc.

1. There is going to be a surprise party for Zinc's father's birthday.
2. Zinc's parents are going to give a surprise present to his/her granddad next week.
3. Zinc is afraid of big dogs.
4. Zinc is not good at counting.
5. Zinc hit a child at school.
6. Zinc took something that wasn't his/hers.
7. Zinc worries that he/she will lose his/her friends.
8. Zinc worries about getting lost.
9. Sometimes Zinc is jealous of his/her brother.
10. Sometimes Zinc is sad when he/she is away from home.
11. Zinc doesn't always tell the truth.
12. Zinc doesn't always do what his/her parents tell him/her
13. Zinc ran across the road without looking.
14. Sometimes Zinc does dangerous things like climbing up big trees.
15. Zinc fancies a boy/girl in his/her class.
16. Zinc kissed a boy/girl.
17. Some children laughed at Zinc.

18. Zinc wet him/herself once.
19. Zinc came last in a race at school.
20. Zinc couldn't answer the teacher's question.
21. Zinc saw fairies in the garden.
22. A monster hides under Zinc's bed at night.

As stated previously, one of the aims of the Second Study was to examine whether children have the ability to systematically differentiate between secrets and other pieces of information. To investigate this it was decided to present the children not only with the 'List of Secrets', but also with statements which are typically regarded as non-secrets. Hence it was decided to present to the children the 'List of Secrets' together with the statements used in the Personal/Zinc Interviews⁶. The results of the First Study showed that children treated the statements of the Personal and Zinc Interviews in a different way than they treated the 'secret-sharing' item, and therefore it can be assumed that those statements are not regarded as secrets by children at that age. Furthermore, most of the statements used in the Personal and Zinc Interviews would not fit in the categories into which researchers classified secrets, with one exception. The statements that derived from the 'Negative Personal' topic ('Some children called me names and I felt sad', 'I am afraid of the dark', 'One day a neighbour shouted at me because I did something naughty', and 'Sometimes grown-ups get cross because I don't always listen to them') have common elements with statements that are categorized as secrets. However, children in the Personal and Zinc Interviews did not treat them as secrets. Maybe statements of such content are not regarded as secret at this young age, or then again it is possible that young children do not have the ability to judge for themselves which information is secret. It was hoped that the results of the Second Study would clarify this issue.

In order to assess whether the 'List of Young Children's Secrets' is a valid tool for exploring young children's ability to differentiate between secret and non-secret pieces of information, it was decided to use it in a small Pilot Study, that is in interviews with a limited number of young adults, as adults apparently have the ability to differentiate between secrets and non-secrets (Wegner & Lane, 1995). It was

⁶ A small modification was made to the statements of the Personal/Zinc Interview. As an item on the 'List of secrets' read 'Zinc is afraid of big dogs', it was decided to change the item on the Personal/Zinc Interview from 'Zinc likes dogs' to 'Zinc likes cats'.

expected that adults would systematically identify some items on the list as 'secrets', while others as 'non-secrets'. Furthermore, it was also expected that the results of the Pilot Study could be used as a base for comparison with the results of the Main Study as regards gender differences.

II.4. The Second Study: The Pilot.

II.4.1 Designing the Pilot Study

The 'List of Secrets' presented to adults in the Pilot Study was slightly modified, as the items had to be age-appropriate, i.e. relating to young adults' experiences. It has to be noted that it seemed problematic to find age-appropriate statements for the items 21 ('Zinc saw fairies in the garden') and 22 ('A monster hides under Zinc's bed at night'), i.e. for the category of secrets that 'adults cannot see' or 'do not know about'. Hence it was decided to use these statements in the interviews with the young adults, but to be cautious in the interpretation of the findings.

The modified list is presented below (the items or words that were modified are highlighted here). Again, the statements on the 'List' are presented in the third person as they refer to Zinc.

1. There is going to be a surprise party for Zinc's father's birthday.
2. Zinc's parents are going to give a surprise present to his/her granddad next week.
3. Zinc is afraid of big dogs.
4. Zinc is not good at **spelling**
5. Zinc hit someone at **work**.
6. Zinc took something that wasn't his/her.
7. Zinc worries that he/she will lose his friends.
8. Zinc worries about getting lost.
9. Sometimes Zinc is jealous of his/her brother.
10. Sometimes Zinc is sad when he/she is away from home
11. Zinc doesn't always tell the truth.
12. Zinc doesn't always do what his/her **employers** tell him/her.
13. Zinc ran across the road without looking.
14. Sometimes Zinc does dangerous things like **taking drugs**.
15. Zinc fancies someone **at work**.
16. Zinc **snogged** someone.
17. Some people laughed at Zinc.
18. Zinc wet him/herself once
19. Zinc **did badly in a project at work**.

20. Zinc couldn't answer his/her **employer's** question.
21. Zinc saw fairies in the garden.
22. A monster hides under Zinc's bed at night.

The non-secret statements that were presented together with the 'List of Secrets', namely the statements used in the Personal/Zinc interviews, also had to be slightly modified in order to be age-appropriate. The modified statements are presented below (again the items or words that were modified are highlighted):

23. Zinc's home is close to **work**.
24. There is a **car park at work**.
25. Zinc's room has a window.
26. There is a big tree outside Zinc's **work**.
27. Zinc drinks a glass of milk every morning.
28. Zinc's cousin has short hair.
29. Most people are taller than Zinc.
30. Zinc read a **report at work**.
31. Zinc likes watching TV.
32. Zinc doesn't like the colour yellow.
33. Zinc doesn't like broccoli.
34. Zinc likes cats⁷.
35. Sometimes people tell Zinc that he/she is clever and can do many things well.
36. Zinc can do **projects** better than most of his/her **colleagues**.
37. People sometimes say that Zinc is very good.
38. Zinc can draw really well.
39. Some people called Zinc names and he/she felt sad.
40. Zinc is afraid of the dark.
41. One day a neighbour shouted at Zinc, because he/she did something to **upset him**.
42. Sometimes people get cross because Zinc doesn't listen to them.

⁷ See footnote 5

II.4.2 Participants

The sample consisted of 30 young adults (15 men and 15 women) with a mean age of 24.50 years (range 18-32). Mean age for women was 24.40 years (range 18-30), and for men 24.60 years (range 19-32).

The participants were obtained from Brunel University and the majority of them were postgraduate students. Of participants 23 were White/Caucasian and seven were Asian.

II.4.3 Materials

The two 'Zinc' puppets used in the administration of the Zinc Interview in the First Study were also used in this Pilot Study.⁸

II.4.4 Procedure

The interview was administered individually. At the beginning of the interview, each participant was 'warned' that some questions might sound a little 'silly': 'I know that this might sound a little silly, but I am doing this with children. I would like to see how adults' responses compare.'

Next the participant was asked if he/she knew what a 'secret' is. Then this definition was provided: 'A secret is something that you don't want many people to know'. This definition is based on the definitions used in Rotenberg's (1986) and Watson's and Valtin's (1997) researches on secrecy and secret sharing in childhood. Rotenberg's definition, 'Secrets are things that [a child] doesn't want other people to know', comprises the two essential characteristics of secrets that were described in the literature review, namely hiding of the secrets and the social context in which the secrets and their concealment becomes meaningful. Watson's and Valtin's definition, 'A secret is defined as knowledge intentionally concealed but which may be shared with a restricted audience', although stressing the intentional concealment of the secret, also implies that secrets are usually shared with the 'appropriate confidants', as total secrecy is rare (Vrij, Nunkoosing, Paterson, Oosterwegel & Soukara, 2002). To ensure comparability between participants, even if they provided appropriate definitions, they were told: 'That's right' and then they were given the aforementioned definition.

⁸ For a description and a picture of the puppets please see the Materials section in the Pilot of the First Study.

Then each participant was introduced to Zinc (same gender as the participant). The following wording was used: ‘This is Zinc. He is a young adult, just like you. I think he might have some secrets, but he cannot talk because he is a puppet. Maybe you can help me. I will say to you some things about Zinc and I want you to tell me which of these things are his/her secrets. Some of the things might be big secrets and some might be small secrets (counterbalanced for order). Or maybe none of the things are secret. So, I am going to tell you one thing at a time and I want you to tell me if this thing is a secret or not. If it is a secret, I want you to tell me if it is a big or a small secret’ (counterbalanced for order).

Next, the items from the ‘List of Secrets’ and the Personal/Zinc Interview (modified for adults) were presented to the participant, one item at a time, in random order. After each item was read, the participant was asked: ‘Is this a secret?’ If the participant answered positively, he/she was asked if it is a small or a big secret (counterbalanced for order).

II.4.5 Results/Conclusions

As discussed previously the main aim of the Pilot Study was the assessment of the validity of the ‘List of Secrets’; it was expected that adults would systematically identify some items on the List as ‘secrets’, while others as ‘non-secrets’. This section presents the findings of the Pilot Study. Further analysis of the results and the discussion on the possible association between the findings of the Pilot Study and the findings of the Main Study are presented in the Discussion section.

All of the adults participants stated that they knew ‘what a secret is’. Their responses were classified in the following categories: (For a detailed account please see Appendix D.)

1. Full comprehension of the meaning of secrets.
2. Poor/Inadequate comprehension of the meaning of secrets.
3. Erroneous/Irrelevant answers/ ‘Don’t know’.

The answers of 29 of the adults participants (96.7%) were classified in the first category (Full comprehension of the meaning of secrets), while the answer of one participant (3.3%) was classified in the second category (Poor/Inadequate comprehension of the meaning of secrets).

The adults participants responded well to the questionnaire (in fact, they seemed to enjoy it). The only items that appeared to trouble most of the participants were the items on the category ‘Things adults cannot see/do not know about’ (‘Zinc saw fairies in the garden’, ‘A monster hides under Zinc’s bed at night’). Most participants reacted with laughter and were not certain of their decision to identify these items as secrets or non-secrets. Thus, the decision to interpret the results from these statements cautiously (a decision taken when it appeared problematic to find age-appropriate statements for this category of secrets) was reinforced. In contrast, the majority of participants were positive in their responses to the other statements of the interview.

The results of the Pilot Study showed that the participants systematically differentiated between items that were secrets, and items that were not secrets. In 12 cases the answers were unanimous, that is, all 30 participants agreed whether these twelve items were secrets or not. More specifically, in the case of the three items presented in Table 8, all 30 participants stated that the specific items were secrets. In the case of the nine items presented in Table 9, all participants agreed that the specific items were not secrets.

Table 8: The Items Unanimously Identified by the Adults Participants as Secrets

Items	Secret		Non-Secret	
	‘n’	%	‘n’	%
1. Surprise party	30	100.0	0	0
6. Took sth was not own	30	100.0	0	0
14.Dangerous things/drugs	30	100.0	0	0

Table 9: The Items Unanimously Identified by the Adults Participants as Non-Secrets

Items	Secret		Non-Secret	
	'n'	%	'n'	%
23.Home close to work	0	0	30	100.0
24.Car park at work	0	0	30	100.0
25.Room has window	0	0	30	100.0
26.Tree outside work	0	0	30	100.0
27.Drinks milk everyday	0	0	30	100.0
28.Cousin has short hair	0	0	30	100.0
30.Read a report	0	0	30	100.0
32.Doesn't like yellow	0	0	30	100.0
33.Doesn't like broccoli	0	0	30	100.0

The hypothesis that adults systematically make a distinction between items that are secrets and items that are not secrets is further supported by the fact that statistically significant differences were found in other 16 items. These items are presented below in Table 10 in order of decreasing agreement, with the numbering they had in the interview:

Table 10: Results of the Chi-Square Analysis of the Pilot Study: The Items Identified as Secrets or Non-Secrets by Adults Participants

Items	Secret		Non-Secret		Chi-square	Df
	'n'	%	'n'	%		
11.Not tell the truth	29	96.7	1	3.3	26.13**	1
2. Surprise present	27	90.0	3	10.0	19.20**	1
15.Fancies someone	27	90.0	3	10.0	19.20**	1
18.Wet him/herself	27	90.0	3	10.0	19.20**	1
22.Monster under bed	23	76.7	7	23.3	8.53**	1
7. Be lonely	22	73.3	8	26.7	6.53**	1

9. Jealous of brother	22	73.3	8	26.7	6.53**	1
29. Most people taller	1	3.3	29	96.7	26.13**	1
31. Likes TV	1	3.3	29	96.7	26.13**	1
37. He/she is very good	1	3.3	29	96.7	26.13**	1
38. Can draw well	1	3.3	29	96.7	26.13**	1
34. Likes cats	2	6.7	28	93.3	22.53**	1
36. Do projects well	3	10.0	27	90.0	19.20**	1
35. He/she is clever	4	13.3	26	86.7	16.13**	1
39. Was called names	7	23.3	23	76.7	8.53**	1
42. People get cross	8	26.7	22	73.3	6.53**	1

** : Significant at the .01 level

As the analysis of the results of the Pilot Study shows, only 14 of the 42 items that were presented to the adults participants were not systematically categorized by the participants as either secret or non-secret information. These items were:

3. Zinc is afraid of big dogs.
4. Zinc is not good at spelling.
5. Zinc hit someone at work.
8. Zinc worries about getting lost.
10. Sometimes Zinc is sad when he/she is away from home.
12. Zinc doesn't always do what his/her employers tell him.
13. Zinc ran across the road without looking.
16. Zinc snogged someone.
17. Some people laughed at Zinc.
19. Zinc did badly in a project at work.
20. Zinc couldn't answer his/her employer's question.
21. Zinc saw fairies in the garden.
40. Zinc is afraid of the dark.
41. One day a neighbour shouted at Zinc, because he/she did something to upset him.

Remarkably, 12 of those 14 statements not systematically identified as secrets or non-secrets derived from the 'List of Secrets', and only two derived from the list of non-secrets (the items from the Personal/Zinc Interview). This difference can be

partly explained by the fact that it was difficult to find age appropriate 'secret' items for adults, while trying to alter as little as possible the statements of the 'List of Secrets' which was devised with young children as its primary target group. However, the Pilot Study was successful in identifying certain items from the 'List of Secrets' that the adults interviewees systematically characterized as secrets, and for three of these items the 'decision' was unanimous.

It was interesting that the adults participants seemed very positive about which type of information one would **not** consider or keep as a secret: all of the items that referred to description of the environment, description of people or activities, personal preferences or positive personal items were identified as 'non-secrets'. In most of these cases the 'decision' was unanimous.

Next, as part of the second aim of the Pilot Study (namely to use its results as a base for comparison with the results of the Main Study) gender differences in the adult sample were explored. Gender differences were only found in three items, with significantly more men than women rating those items as 'secrets'. Specifically, significantly more men than women considered that 'not being good at spelling' ($x^2 = 4.82$ $df = 1$, $p < .05$), 'being worried about getting lost' ($x^2 = 5.40$ $df = 1$, $p < .05$), and 'being told that he/she is clever and can do many things well' ($x^2 = 4.61$ $df = 1$, $p < .05$) constitutes secret information.

Overall, the Pilot Study confirmed the main hypothesis of the Pilot Study that adults would systematically identify certain items of the questionnaire as 'secrets', while others as 'non-secrets'. Thus, having drawn the information needed from the Pilot Study, it was decided to embark on the Main Study.

II.5. The Second Study: Methodology.

II.5.1 Participants

The sample consisted of 93 children (47 boys and 46 girls) divided in three age groups: 1) 3.5-4.5-year-old children, referred to as the 'younger group', (30 children, 15 boys and 15 girls, mean age = 48.5 months, range = 43-53), 2) 4.5-5.5-year-old children, referred to as the 'middle group' (30 children, 15 boys and 15 girls, mean age = 60 months, range = 54-65 months) and 3) 5.5-6.5-year-old children, referred to as the 'older group' (33 children, 17 boys and 16 girls, mean age = 72 months, range = 68-78 months).

The children were recruited from an Infant and Nursery school in the Greater London area. According to the school's Inspection Report, most pupils of the school come from middle class and upper middle class families. The percentage of pupils eligible for free school meals was below the national average.

The vast majority of the children participating in the Second Study were White/Caucasian, six of them were Asian and one was Black. All the children interviewed had provided informed parental consent.

II.5.2 Materials

The two 'Zinc' puppets used in the Pilot Study were also used in the Main Study⁹.

II.5.3 Procedure

The wording used in the administration of the interview was the same as in the Pilot Study, with two minor modifications. First, the interviewer did not use the preamble 'I know that this might sound a little silly...'. The interview started with the question to the child if he/she knew 'what is a secret'. Second, the interviewer presented the puppet Zinc as being the same age as the child. The exact wording was: 'This is Zinc. He is ...years old, just like you'. For a detailed account of the wording used in the administration of the interview, please see the Procedure section in the Pilot Study.

⁹ For a description and a picture of the puppets please see the Materials section in the Pilot of the First Study.

Several changes were made in the questionnaire administered, following the results of the Pilot Study. As discussed, the Pilot Study confirmed the hypothesis that adults can systematically identify certain pieces of information as ‘secrets’, while others as ‘non-secrets’. It was hypothesized, however, that this task (i.e. the task to differentiate between secrets and non-secrets), although apparently easy for adults, would be more difficult for young children. Therefore, in order to make things clearer for young children, it was decided to use in the Main Study only the items about which adults participants had a very strong agreement (≥ 90) that they were either secret or non-secret pieces of information. Also, in this way the interview would be shortened, and young children would be able to keep their concentration throughout the interview.

Twenty two items were included in the questionnaire administered in the Main Study, seven of which were classified as ‘secrets’ by the adults participants in the Pilot Study and 15 as ‘non-secrets’. The items are presented in Tables 11 and 12 below: (To facilitate comparisons the items are presented with the numbering they had in the Pilot Study.)

Table 11: The Seven Secret Items (as Classified by the Adults Participants in the Pilot Study with a ≥ 90 Agreement) Included in the Questionnaire of the Second Study

1. There is going to be a surprise party for Zinc’s father’s birthday.
2. Zinc’s parents are going to give a surprise present to his/her granddad next week.
6. Zinc took something that wasn’t his/hers.
11. Zinc doesn’t always tell the truth.
14. Sometimes Zinc does dangerous things like climbing up big trees.
15. Zinc fancies a boy/girl in his/her class.
18. Zinc wet him/herself once.

Table 12: The 15 Non-Secret Items (as Classified by the Adults Participants in the Pilot Study with a ≥ 90 Agreement) Included in the Questionnaire of the Second Study

23. Zinc's home is close to school/nursery/playgroup.
24. There is a playground in Zinc's school/nursery/playgroup.
25. Zinc's room has a window.
26. There is a big tree outside Zinc's school/nursery/playgroup.
27. Zinc drinks a glass of milk every morning.
28. Zinc's cousin has short hair.
29. Most people are taller than Zinc.
30. Zinc read a book at school/nursery/playgroup.
31. Zinc likes watching TV.
32. Zinc doesn't like the colour yellow.
33. Zinc doesn't like broccoli.
34. Zinc likes cats.
36. Zinc can run faster than most children in his/her class.
37. People sometimes say that Zinc is very good.
38. Zinc can draw really well.

II.6. The Second Study: Results.

II.6.1 Research hypotheses of the Second Study

The Second Study addressed issues, such as the content of young children's secrets and their ability to systematically identify secret pieces of information, in the attempt to clarify the general research hypotheses of the research project regarding young children's ability for restrictive disclosure to friends. The first hypothesis specific to the Second Study concerns the content of young children's secrets, a subject on which there is little information.

HS1: Young children's secrets (3.5 to 6.5 years of age) fall into the categories of secrets described by researchers of secrets at later developmental stages.

Regarding young children's ability to identify secret pieces of information, due to the novelty of the research question, it was not possible to form one specific hypothesis. Two apparently conflicting hypotheses were formed and tested:

HS2a: Young children (3.5 to 6.5 years of age) systematically distinguish between secrets and non-secrets.

HS2b: Young children (3.5 to 6.5 years of age) distinguish between secrets and non-secrets only when specific clues are given.

Based on the information provided by the limited number of researches exploring secrets at childhood, two more hypotheses specific to the Second Study were formed and tested:

HS3: Young children (3.5 to 6.5 years of age) differ in their ability to identify secrets, as a function of age.

HS4: There are gender differences in young children's (3.5 to 6.5 years of age) ability to identify secret pieces of information.

II.6.2 Results of the children's definitions of secrets

In order to test young children's ability to identify secrets pieces of information (HS2), and to investigate age and gender differences in this ability (HS3 and HS4), children's definitions of secrets were coded and analysed.

A) The coding of the participants' definitions of secrets.

Participants' responses to the question 'what is a secret?' were classified according to their content into three categories: (For a detailed account of scoring guidelines please see Appendix D.)

1) The first category included answers that indicated that the participant understands fully the meaning of secrets. More specifically, it included answers that defined secrets as information that one withholds from others or chooses to disclose only to people he/she has a close relationship with.

2) The second category included answers that were not incorrect, but indicated a poor/inadequate understanding of the meaning of secrets.

3) The third category included erroneous/irrelevant answers. Under this category were also grouped the cases where the interviewee stated that he/she did not know what a secret is.

To ensure reliability two raters naïve to the purpose of the study marked a randomly selected 40% of the protocols based on the guidelines that were given to them. The interrater agreement for the two coders was 88.5% (kappa= .81)

B) Analysis of the children's definitions of secrets.

There were four cases of missing data, where for various reasons the question 'what is a secret' was not asked or the child's answer was incomprehensible. Consequently, the responses of 89 children were classified into the three aforementioned categories. The frequencies (the counts and the percentages for each category) are presented in Table 13.

The results indicate that the majority (61.8%) of young children did not provide a correct definition of secrets. However, young children's inability to define secrets does not necessarily imply that they do not understand the concept of secrecy or that they are unable to identify secrets. (For a detailed discussion of this point please see the Discussion section.)

Table 13: Counts and Percentages of Answers to the Question 'What is a Secret' per Category of Definitions of Secrets

Full comprehension		Poor/inadequate comprehension		Erroneous answers/'don't know'	
'n'	%	'n'	%	'n'	%
19	21.3	15	16.9	55	61.8

The frequencies in relation to children's age and gender (the counts and the percentages) are presented in Table 14:

Table 14: Counts and Percentages of Answers to the Question 'What is a Secret' per Category of Definition of Secrets, Gender and Age Group

Age group	Gender	Children's definitions of secrets					
		Full comprehension		Poor/inadequate comprehension		Erroneous answers/'don't know'	
		'n'	%	'n'	%	'n'	%
4 yrs old	Boys	1	2.3	2	4.5	11	25.0
	Girls	3	6.7	2	4.4	9	20.0
5 yrs old	Boys	0	0	3	6.8	7	15.9
	Girls	5	11.1	2	4.4	8	17.8
6 yrs old	Boys	5	11.4	4	9.1	7	15.9
	Girls	5	11.1	2	4.4	9	20.0

Analysis indicated that there was a weak association between age and definition of secrets. The child's response to the question 'what is a secret' was correlated weakly to the age group he/she belonged ($\rho = .195, p < .10$). The inspection of frequencies revealed that more children from the 'older age group' provided definitions that indicated a full comprehension of the meaning of secrets. The hypothesis that there are age differences in children's ability to identify secrets seems to be supported by this finding. Children's ability to define secrets, though, may not be connected to their ability to identify them.

No correlation was found between gender and definition of secrets. The hypothesis that there are gender differences in children's ability to identify secrets seems not to be supported. However, the reservation expressed about the connection between the ability to define and the ability to identify secret pieces of information appears relevant in this case, as well.

II.6.3 Analysis of the data from the children's interviews

The chi-square analysis revealed statistically significant differences in only three of the 22 items which were included in the questionnaire administered to the participants. The items in which significant differences were found are presented in Table 15. (The items are presented in order of decreasing agreement and with the numbering they had in the interview.)

Table 15: Results of the Chi-Square Analysis of the Children's Interviews: The Items Identified as Secrets by Young Children

Items	Secret		Non-Secret		Chi-square	Df
	'n'	%	'n'	%		
1. There is going to be a surprise party for Zinc's father's birthday.	68	72.0	25	28.0	19.88**	1
2. Zinc's parents are going to give a surprise present to his/her granddad next week.	65	70.7	27	29.3	15.70**	1
15. Zinc fancies a boy/girl in his/her class.	57	38.7	36	61.3	4.74*	1

** : Significant at the .01 level

* : Significant at the .05 level

As Table 15 shows, Item 1 ('There is going to be a surprise party for Zinc's father's birthday'), Item 2 ('Zinc's parents are going to give a surprise present to his/her granddad next week') and Item 15 ('Zinc fancies a boy/girl in his/her class') were classified as 'secrets' by the young participants. It is noteworthy that statistically significant differences were found only in items that were categorized as 'secret' information by adults. Specifically, from the seven items that adults characterized as 'secrets', three were also characterized as 'secrets' by the young children, providing some indication that children's secrets fall into the same categories as those of adults (see HS1). In contrast, not one out of the 15 items characterized by the adults in the Pilot Study as 'non-secrets' was systematically classified as a 'non-secret' by the young children.

Why was this the case? Are young children more able to identify secret than non-secret information? Or was this phenomenon item related, in the sense that children were influenced by particular characteristics of specific items and as a consequence identified those items as ‘secrets’? One such characteristic could have been the word ‘surprise’ which was included in the wording of Items 1 and 2, both of which were identified as ‘secrets’ by young children at the significance level of .01. It seems possible that the word ‘surprise’ worked as a clue for young children in the task to differentiate secrets from non-secrets (see HS2b). To clarify this issue, to detect age and gender differences, and to analyze underlying processes in children’s ability to differentiate between secret and non-secret information further statistical analysis was undertaken.

First, a principal components analysis with varimax rotation was conducted. The analysis applied to the three levels of the children’s answers (non-secret/small secret/big secret). The sample size of the study was satisfactory for the employment of the technique and all PCA assumptions were satisfied.

As shown in Figure 4, the PCA extracted three factors with eigenvalue >1. The three factors cumulatively interpreted 60.0% of variance. The first factor interpreted 31.8% of variance, the second 18.8%, and the third interpreted 9.4% of variance. Information on the percentage of variance explained by the principal factors is presented in Table 16 below:

Table 16: Percentage of Variance Explained by the Components Extracted by the PCA of the Children’s Interviews Investigating Young Children’s Classification of Secrets and Non-Secrets

Components	Eigenvalue	% of Variance	Cumulative %
1	9.5	31.8	31.8
2	2.3	18.8	50.6
3	1.4	9.4	60.0

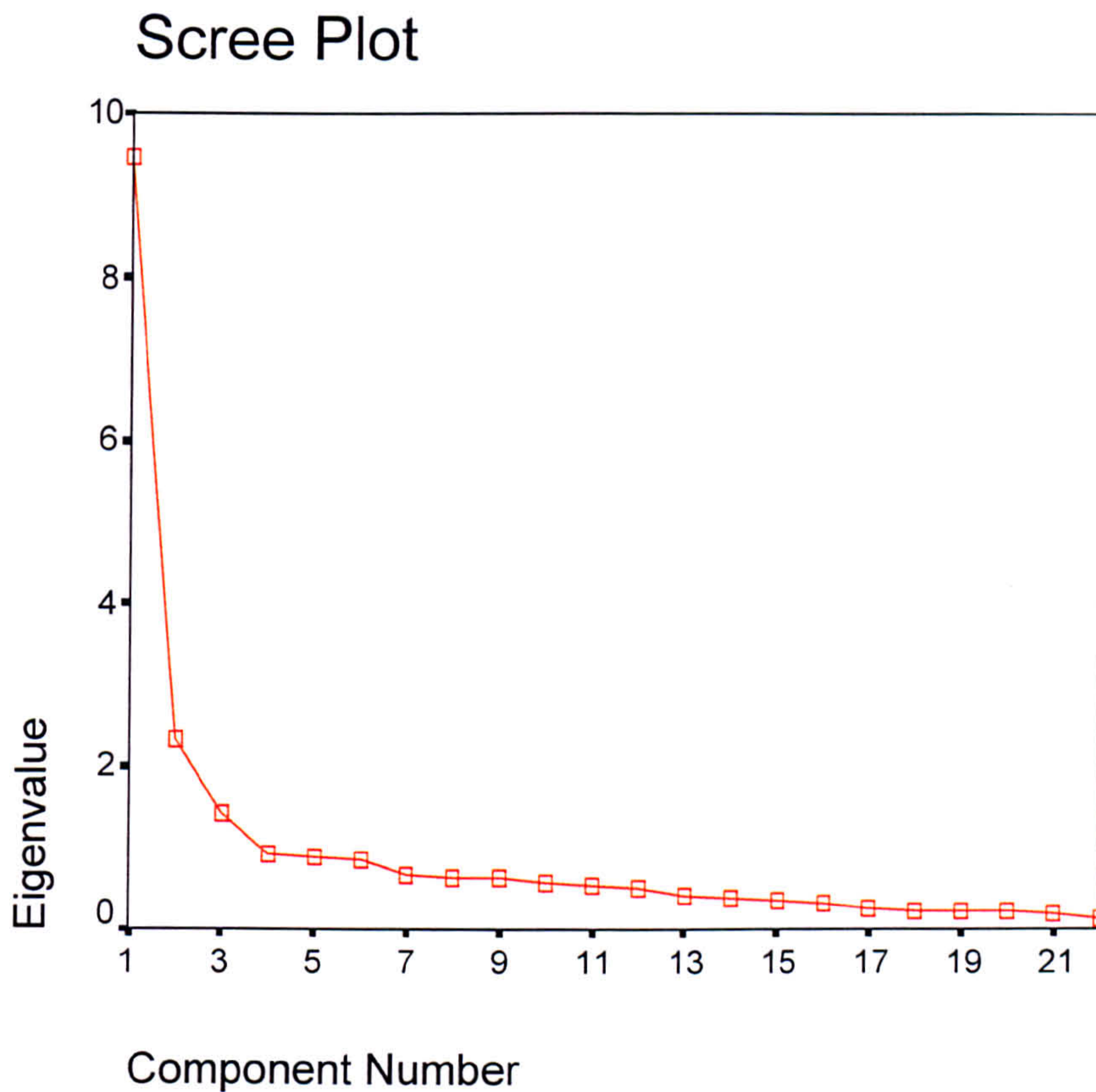


Figure 4: Graph of the Eigenvalue of the Components Extracted by the PCA of the Children’s Interviews Investigating Young Children’s Classification of Secrets and Non-Secrets

With a cut of .50 for inclusion of a variable in the interpretation of a factor, all variables but one loaded on a single factor. Item 29 (‘Most people are taller than Zinc’) loaded on two factors: it loaded on Factor 1 with a loading of .62 and with a marginal loading of .50 it loaded on Factor 2. Loadings of variables on factors are shown in Table 17. Variables are ordered and grouped by size of loading to facilitate interpretation. (Again, the items are presented with the numbering they had in the interview.)

Table 17: Rotated Component Matrix of the PCA of the Children's Interviews Investigating Young Children's Classification of Secrets and Non-Secrets

Variables	Component		
	1	2	3
30.Zinc read a book at school.	.83		
24.There is a playground in Zinc's school.	.81		
38.Zinc can draw really well.	.74		
31.Zinc likes watching TV.	.73		
25.Zinc's room has a window.	.72		
28.Zinc's cousin has short hair.	.72		
26.There is a big tree outside Zinc's school.	.71		
34.Zinc likes cats.	.70		
27.Zinc drinks a glass of milk every morning.	.69		
23.Zinc's home is close to school.	.65		
29.Most people are taller than Zinc.	.62	.50	
36.Zinc can run faster than most children in his/her class.	.62		
37.People sometimes say that Zinc is very good.	.61		
18.Zinc wet him/herself once.		.77	
6. Zinc took something that was not his/hers.		.77	
33.Zinc doesn't like broccoli.		.74	
14.Sometimes Zinc does dangerous things like climbing up big trees.		.67	
11.Zinc doesn't always tell the truth.		.62	
15.Zinc fancies a boy/girl in his/her class.		.58	
32.Zinc doesn't like the colour yellow.		.55	
2. Zinc's parents are going to give a surprise present to his/her granddad next week.			.85
1. There is going to be a surprise party for Zinc's father's birthday.			.76

To test the reliability of this factor solution, the reliability of each factor was calculated. The reliability coefficients for each factor were high, ranging from .78 to .94 (Alpha = .94 for Factor 1, Alpha = .85 for Factor 2, Alpha = .78 for Factor 3).

As commented in the First Study's Results section, although principal components analysis is the most commonly used factor extraction technique in social sciences (Costello & Osborne, 2004; 2005), in the past years there has been a debate among statistical theorists about its use, as principal components analysis, in contrast with other factor extraction methods, does not discriminate between shared and unique variance and as a result, when the factors are uncorrelated and communalities are moderate, it can produce inflated values accounted for by the components (Costello & Osborne, 2005). To address this issue in the present study (since the specific statistical analysis is of key importance here) it was decided to conduct a second factor analysis, using principal axis factoring with varimax rotation as extraction method. The principal axis factoring produced similar results to the PCA, yet even clearer, as there were no double loadings (Item 29 loaded only on Factor 1).

Again, three factors were extracted with eigenvalue >1. The three factors cumulatively interpreted 54.1% of variance. The first factor interpreted 29.6% of variance, the second 16.9%, and the third interpreted 7.6% of variance.

With a cut of .50 for inclusion of a variable in interpretation of a factor, all variables loaded on a factor. Exactly as in the PCA solution, Items¹⁰ 30, 24, 38, 31, 25, 28, 26, 27, 34, 23, 29, 36, and 37 loaded on Factor 1, Items 18, 6, 33, 14, 11, 15, and 32, loaded on Factor 2, and Items 2 and 1 loaded on Factor 3. (For a detailed report of the results of the principal axis factoring analysis please see Appendix E.)

The results of the principal components analysis indicated that secrets (that is, items that have been categorized as 'secrets' by adults in the Pilot Study) and non-secrets (items that have been categorized as 'non-secrets' by adults in the Pilot Study) formed distinct categories.

It seems that Factor 1 (on which loaded the items: 'Zinc read a book at school', 'There is a playground in Zinc's school/nursery/playgroup', 'Zinc can draw really well', 'Zinc likes watching TV', 'Zinc's room has a window', 'Zinc's cousin has short hair', 'There is a big tree outside Zinc's school', 'Zinc likes cats', 'Zinc drinks a glass of milk every morning', 'Zinc's home is close to school', 'Most people

¹⁰ Items are grouped and presented by size of loading to facilitate comparisons.

are taller than Zinc', 'Zinc can run faster than most children in his/her class' and 'People sometimes say that Zinc is really good') is defined by non-secret items. It is noteworthy that 13 out of the 15 'non-secret' items (identified as such by the adults participants in the Pilot Study) loaded on the first factor, while none of the 'secret' items did.

On the other hand, it seems that Factor 2 is mostly defined by secrets. Five out of the seven items that loaded on this factor ('Zinc wet him/herself once', 'Zinc took something that was not his/hers', 'Sometimes Zinc does dangerous things like climbing up big trees', 'Zinc doesn't always tell the truth', and 'Zinc fancies a boy/girl in his/her class') are items that were categorized as 'secrets' in the Pilot Study. Moreover, as the chi-square analysis showed, Item 15 ('Zinc fancies a boy/girl in his/her class') was classified as 'secret' by the young children as well. However, it is striking that two items, Item 32 ('Zinc doesn't like the colour yellow') and Item 33 ('Zinc doesn't like broccoli'), which were categorized as 'non-secrets' by the adults participants in the Pilot Study, also loaded on Factor 2 (although Item 32 also had a high loading of .44 on Factor 1, the non-secret factor). It is noteworthy that both these items, the only items about which there seems to be a disagreement between adults' and children's classification, refer to negative personal preferences. This issue will be addressed in the Discussion section.

An interesting finding of the PCA was that Items 1 ('There is going to be a surprise party for Zinc's father's birthday') and 2 ('Zinc's parents are going to give a surprise present to his/her granddad next week') formed a distinct category. They both loaded on Factor 3, separately from all the other items of the interview. By comparing the results of the chi-square analysis (where both these items were identified as 'secrets' by young children at the significance level of .01), it can be argued that Factor 3 is defined by secret items. However, the fact that Items 1 and 2, which both included the word 'surprise' in their wording, loaded on a distinct factor brings forth again the question whether children were influenced by particular clues in the wording of the items when they were asked to differentiate between secret and non-secret pieces of information.

The results of the PCA provide direct support for the hypothesis that young children's secrets fall into the categories of secrets described by researchers at later developmental stages. Remarkably, young children classified the majority of the items

(secrets and non-secrets) presented to them as adults have, with only two exceptions: the two items concerning negative personal preferences.

Regarding young children's ability to identify secret pieces of information, the results of the PCA do not seem to provide a straightforward answer that is an answer confirming one of the two alternative hypotheses (HS2a or HS2b). On the one hand the results showed that children systematically identified specific items as secrets and others as non-secrets (therefore supporting hypothesis HS2a), while on the other hand the results indicated that young children were probably influenced by a clue (the word 'surprise'), that is the external identification of a specific item as a secret (therefore supporting hypothesis HS2b). This mixed picture will be discussed in the Discussion section and will be further examined in the Third Study.

Next, gender and age differences were explored. To investigate age and gender differences, factor scores were estimated using the Anderson-Rubin approach¹¹. The factor scores for each factor separately were subjected to a 2 (Gender of Subject) X 3 (Age Group) analysis of variance (ANOVA).

The ANOVA for Factor 1 (the non-secret factor) yielded a main effect of age, $F(2, 79) = 7.11, p < .01$. By employing the Bonferroni post-hoc test, significant differences were found between the 'younger age group' (3.5-4.5-year-old children) and the 'older age group' (5.5-6.5-year-old children) ($p < .01$). It appears that the younger children reported that the items that loaded on this factor were 'secrets' ($M = .48$), while the older children, just like adults, identified these items as 'non-secrets' ($M = -.43$). It seems that children who belong in the 'middle group' (4.5-5.5-year-old children) were 'halfway' in the process of recognizing these items as 'non-secrets' ($M = -.01$). No main effects of gender or significant interactions were found.

The ANOVA for Factor 2 (the secret factor) also yielded a main effect of age, $F(2, 79) = 3.18, p < .05$. The Bonferroni post-hoc test revealed a statistical difference at the level of .10 between the 'middle group' and the 'older group' ($p = .075$). The inspection of the mean scores shows that the older children classified the items that loaded on this factor as 'secrets' ($M = .30$), while children of the 'middle age group' classified them as 'non-secrets' ($M = -.29$), and so did the younger children ($M = -.09$). Again no main effects of gender or significant interactions were found.

¹¹ The Anderson-Rubin approach is considered the most efficient approach to produce factor scores that are uncorrelated with each other, even if factors are correlated. Factor scores have mean 0 and standard deviation 1 (Tabachnick & Fidell, 2001, pg. 627)

Finally, the ANOVA for Factor 3 (the 'surprise' factor) yielded no main effects of age, gender or any significant interactions. It appears that the participants in this study, independently from their gender and age, responded to these items in the same way. Considering the results of the chi-square analysis, it can be assumed that boys and girls of all age groups classified Items 1 and 2, which loaded on this factor, as 'secrets'.

These results confirm the hypothesis that there are age differences in young children's ability to identify secret pieces of information. Once more, though, things become more complicated when external clues are offered to the children: children of all age groups seem to react the same way when a clue, such as the word 'surprise' is offered them.

On the other hand, the results do not support the hypothesis that there are gender differences in young children's ability to identify secret pieces of information.

II.7. The Second Study: Discussion.

II.7.1 Discussion of the children's definitions of secrets

The categories into which children's (in the Main Study) and adults' (in the Pilot Study) definitions of secrets were coded reflect the types of word definitions, as described by speech development theorists (Nippold, 1995). The most formal type of word definition, the 'Aristotelian' or 'dictionary' definition, a formula containing two essential elements, the genus and the differentiae (which helps to distinguish one thing from another), is reflected in the first category of the definitions of secrets, labeled 'Full comprehension of the meaning of secrets'. An example of an 'Aristotelian' definition of a secret would be: 'Secrets are personal events that only you know or very intimate people'. The second category, 'Poor/Inadequate comprehension of the meaning of secrets' which included answers that are not incorrect but are poor or inadequate definitions, reflects types of definitions which are more functional and naturalistic, and include negations, comparisons or examples. An example would be: 'A secret is like when I hid....'. Finally, the third category included erroneous, irrelevant answers or cases where the interviewee said that he/she did not know what a secret is.

Studies have shown that word definition improves gradually with age, both quantitatively and qualitatively, and that it is modeled in school settings (Nippold, 1995). As early as nursery school, children are exposed to 'Aristotelian' definitions during classroom discussions with teachers (Watson, 1985). However, the ability to define words in an 'Aristotelian' way develops much later. When preschool children define a noun, they usually do so by giving a functional response, e.g. 'A chair is to sit on' (McGhee-Bidlack, 1991). In a classic study Al-Issa (1969) examined word definition in five- to ten-year old children. Each child was asked to define 30 words, mostly nouns that represented common objects and were familiar to children of that age range (e.g. dog). Children's answers were classified as functional (e.g. 'It barks'), descriptive (e.g. 'Has a tail'), and categorical (e.g. 'It's an animal'). The results showed that at age five, 72% of the children's responses were functional, 21% were descriptive, and only 7% were categorical. By age ten things have changed: 28% of the responses were functional, 11% were descriptive and 61% were categorical, indicating a shift toward 'Aristotelian-like' definitions. This shift seems to be

reinforced in the following years, as the frequency of accurate definitions increases gradually during adolescence and into adulthood (Nippold, 1995).

Based on those findings, it is not surprising that all adults in the pilot study stated that they knew what a secret is and that all, but one, provided definitions that were classified in the category 'Full comprehension of the meaning of secrets', while a much lower percentage of children (21.3%) provided definitions which were classified in this category. It is also not surprising that a child's ability to provide an accurate definition for 'secret' was correlated, albeit weakly, to the age group he/she belonged ($\rho = .195$, $p < .10$). The inspection of frequencies revealed that more 5.5- to 6.5-year-old children provided definitions that indicated a full comprehension of the meaning of secrets. Therefore, the age differences observed in this part of the Second Study might be related to the gradual improvement of children's word definition capacity, and to have no relation to children's ability to identify secrets.

Still, what seems surprising is the high percentage (61.8%) of children's responses which were classified in the third category ('Erroneous/ irrelevant answers/don't know'). It seems that most young children did not/could not provide any definition of secrets, be it a poor/inadequate or functional one.

It is postulated that the reason for that is that 'secret' is an abstract noun, and recent research has shown that abstract nouns are more difficult to define than concrete ones (McGhee-Bidlack, 1991; Nippold, 1995;). In a study on the development of definitions of concrete nouns (nouns that denote tangible objects) and abstract nouns (nouns that have no tangible objects in their extension) McGhee-Bidlack (1991) asked 10-, 14- and 18- year olds to define eight concrete nouns (e.g. flower, book, car) and eight abstract nouns (e.g. freedom, courage, wisdom). All words were familiar to the participants and were presented in random order. Results indicated that concrete nouns were easier to define than abstract nouns for all three age groups. Furthermore, the results indicated that the development of abstract noun definitions lags behind the development of concrete noun definitions: it was not until the age of 18 that abstract nouns were given a full definition.

The task to define an abstract noun, such as the noun 'secret', might have been difficult for the young children, and as a result the majority of them could not provide a definition; however, this does not imply that young children did not know what a secret is. The dictum 'comprehension preceded production' (Donaldson, 1978, pg. 33) seems to apply here. As relevant research shows, children often know more about the

words they are asked to define than their definitions might indicate (Nippold, 1995). Watson (1985) asked five-, seven- and ten-year old children to define eight common nouns (e.g. horse, cat, flower). After the children had defined the words, they were asked a series of 'yes or no' questions that tapped their knowledge of the categories to which the word belonged (e.g. 'Is a horse an animal?'). Results of the comprehension probe indicated that children of all ages knew the categories of the words, although their definitions of those words often did not mention the categories. Other researches have pointed to the same direction. In a study examining four- and five-year-old children's understanding of the word 'handicapped' (Cohen & Lopato, 1995) 15 children were asked the meaning of the word. Five children claimed to know the meaning of 'handicapped', but none could provide a factual definition. Sommerville and Whisel (1994) studied the acquisition of connotative and denotative meaning among 90 children from Grades 2, 4 and 6. The participants were examined for ability to define and for ability to rate the same words for pleasantness and activation. Results suggested that knowledge about the pleasantness of words is high and begins earlier in comparison to definitional knowledge. Dunn (2004, pg. 26) also supports that children know more than they actually say: 'Children of four cannot usually tell you in a coherent way why they like being with their friend; they cannot give you a disquisition on the nature of friendship. [...] We do children a great disservice by assuming that because they cannot tell us what the friendship means to them, that it is a relatively trivial matter to them'.

In the present study, by paraphrasing Dunn's words, we could say that we would do children a great disservice by assuming that because they cannot define what a secret is, that it is an unknown matter to them. The results of the Second Study, which are discussed below, demonstrate that 'secret' is a known matter to young children.

II.7.2 Discussion of the results of the children's interview

Young children's ability to identify secrets, and hence to withhold them and disclose them restrictively, is the issue under investigation in the present study. If young children are able to identify and hold secrets, then they too take part in a phenomenon that is described as universal. Kelly (2002, pg. 9) has stated that secrecy is 'such common, that virtually all adults of normal intellectual and psychological functioning keep personal secrets at one time or another'. She offers anecdotal

evidence for this suggestion from her laboratory research on secrecy, as she has discovered that no prescreening is required when recruiting participants for studies on secrecy. She underscores that ‘virtually all the students that came in the laboratory without such a prescreening could generate a personal and private secret that they had told no one or very few people’. Similarly, Vangelisti (1994) found that 99% of her sample of undergraduate students reported that they were keeping a secret from at least one of their family members.

Last and Aharoni-Etzioni (1995) investigating the subject of secrecy with a sample of school-aged children discussed its significant function within the frameworks of individuation, competence and relatedness. It follows that, if children at a younger age (such as the sample of present research) are capable of identifying and having personal secrets (as the present study suggests), then the important function of secrecy would apply to them as well.

1. Secrecy and Individuation.

As discussed briefly in the Literature Review chapter, from a developmental perspective having secrets and keeping them is implicated in the developmental line of separation-individuation (Finkenauer, Engels & Meeus, 2002, Imber-Black, 1998; Last & Aharoni-Etzioni, 1995; Meares & Orly, 1988), which entails distancing and disengagement from primary caretakers and the creation of a separate self-identity (Mahler, Pine, & Bergman, 1975). The relationship between the formation and the experience of a separate self-identity on the one hand, and the attainment of the concept of secrecy and the possession of actual secrets on the other seems dynamic: it is suggested that to a large extent the psychological and psychosocial meaning of apartness involves a person’s having thoughts and feelings that others possess no (or considerably less) knowledge about, i.e. secret thoughts and feelings (Margolis, 1966).

Indeed, it has been supported that up to a certain age children may feel that they have a ‘transparent body’ (Van Manen & Levering, 1996, pg. 78), in the sense that somehow mother or father can see right through them. Children gradually come to the realization that one can keep certain things inside, and that parents do not have a privileged access to their inner life. Watson and Valtin (1997) in their study on secrecy in middle childhood supported the view that secrecy is implicated in the separation-individuation process of the children and stated that this association starts early on. They emphasized that only a small group of their youngest participants (5.5-

6.5-year-old children) did not seem to distinguish their own intentions from mother's (i.e. they believed that if they knew, she knew). In contrast, the majority of these young children showed that mother's knowledge was separate from their own and that they could keep certain things from her. As the separation-individuation process is assumed to develop between three and five years of age (Mahler, Pine & Bergman, 1975), which is the age of the participants in the present research project, it can be postulated that even at this young age children might use secrets as means to establish the sense of their emerging individuality. It is of course probable that later on, as the children become more aware of their capability, right and need to possess and guard private thoughts, secrets contribute further to the consolidation of their separate identity (Last & Aharoni-Etzioni, 1995).

2. Secrecy and Competence.

Possessing a secret means owning an exclusive piece of information that is not accessible to others. Last and Aharoni-Etzioni (1995) stated that possessing such a resource allows one to experience a powerful advantage over others because one may reveal or withhold, at will, this piece of information. At the same time, this kind of decision (to reveal or to withhold), based on both knowledge and self-control (Finkenauer, Engels & Meeus, 2002), might be one important predecessor of the generalized choice and decision-making abilities, which are two major components of competence.

3. Secrecy and Relatedness

The traditional view of secrecy regards it as problematic and secret keeping as having only negative effects on secret-holders (e.g. Bouman, 2003; Wegner & Lane, 1995). Having and guarding secrets may cause a person to feel lonely, isolated and even desperate because of the need to conceal that which is regarded as secret (Last & Aharoni-Etzioni, 1995)¹². However, a number of recent studies challenge the view that keeping secrets is detrimental to the individual's mental health and propose a revision of the existing view that can account for both aversive and beneficial consequences of secrecy (Finkenauer, Engels & Meeus, 2002; Gessel, 1999; Vrij Nunkoosing, Paterson, Oosterwegel & Soukara, 2002). The aversive or beneficial quality of the consequences of secrecy seems to depend primarily on the type of information kept secret, with serious (toxic) secrets being the ones with negative

¹² For a detailed discussion of the potential negative outcomes of secrecy please see the General Discussion chapter.

effects (Finkenauer, Engels & Meeus, 2002; Vangelisti, 1994). Vangelisti and Caughlin (1997) postulate that the secrets that were traditionally studied typically involved negative, if not traumatic, life experiences, and thus the notion that secrecy requires constant monitoring and that it can result in feelings of stress was not unreasonable. It is important to note however, Vangelisti and Caughlin continue, that not all secrets are negative or 'dark' and, as a consequence, not all serve negative functions.

Thus, although secrecy was considered at first antithetic to affiliation and relatedness, lately its affiliative function is also being pointed out. To share secrets could contribute to bonding among people and disclosing seems to play a key role in the mutual formation of intimate interpersonal and love relations. The mutual disclosure of secrets is typical of friendship and is both a significant factor in the growth of relationships and a vital indicator of relationships status (Last & Aharoni-Etzioni, 1995). Secrets through their telling can enhance closeness and connection (Imber-Black, 1998). Tannen (1990) suggested that not only is telling secrets evidence of friendship; 'telling secrets creates a friendship' (pg. 98). She claimed that this is true not only for adults, but for young girls as well: telling secrets is 'the essence of their friendships' (pg. 97). Meares and Orlay (1988) also supported that young children are aware of the significance of the exchange of secrets in establishing relationships. The findings of the First Study pointed to a similar direction: young children's friends were shown to be important recipients of their secrets, in contrast with non-friends, who were the least preferred recipients of secrets (the difference between friends and non-friends as disclosure targets was statistically significant).

The Second Study explored the sort of information that young children consider 'secret', which, based on the First Study's findings, would be expected to be subject to restrictive disclosure. Following the postulates on the significance of secrecy within the frameworks of individuation, competence and relatedness presented above, it is argued that young children's capacity to identify, withhold and restrictively share secrets can be viewed as a factor contributing to children's development, especially when, as in the case of the present study, the research focuses on non-toxic, harmless secrets.

The chi-square analysis of the children's interviews examined young children's ability to distinguish between secret and non-secret pieces of information (see HS2). Statistically significant differences were found in only three out of the 22

statements that were included in the questionnaire. The items 'There is going to be a surprise party for Zinc's father's birthday', 'Zinc's parents are going to give a present to his/her granddad next week', and 'Zinc fancies a boy/girl in his/her class' were identified as 'secrets' by the young children¹³.

The question why significant differences were found in these specific statements of all statements was raised even in the Results section. It was asked whether young children are more able to identify 'secret' than 'non-secret' pieces of information. It was also asked whether these results were item related, in the sense that children could have been influenced by particular characteristics of the specific items, so as to characterize them as 'secrets'. This remark (regarding the particular characteristics of the specific items) was not so much directed to the topics from which the items derived. It is postulated that the topic is mostly important for the third statement ('Zinc fancies a boy/girl in his/her class'), which was classified as 'secret' at the significance level of .05. This particular statement derived from a topic that was common in most categorizations of secrets [for instance, see Last's and Aharoni-Etzioni's (1995) heterosexual involvement, Guerrero's and Affifi's (1995) romantic interests and Reynolds', Brewin's and Saxton's (2000) boy/girl relationships], and therefore it can be assumed that it is a common secret topic at most ages, possibly recognized as such even by young children.

The remark regarding particular characteristics of the statements was primarily directed to a specific clue, i.e. the word 'surprise', included in the wording of the two items identified as 'secrets' by the young children at the significance level of .01 ('There is going to be a **surprise** party for Zinc's father's birthday', and 'Zinc's parents are going to give a **surprise** present to his/her granddad next week'). It was suggested that the word 'surprise' might have worked as a 'hint' for young children in the task to differentiate secrets from non-secrets. This is not a novel suggestion. It is consistent with the hypothesis put forward in the introduction of the present chapter that specific pieces of information might be treated differently by young children just because they are labeled as 'secrets' and that children do not have the capacity to judge for themselves whether a piece of information is secret, unless given a hint about its secret status.

¹³ It is remarkable, however, that these three statements were also identified as 'secrets' by adults in the Pilot Study, thus, providing support for the hypothesis HSI that young children's secrets fall into the categories of secrets described by researchers of secrecy at later developmental periods.

Notably, a number of young children used the word surprise when asked to give a definition of a secret. But this is not the only connection between ‘secrets’ and ‘surprises’. Research has shown that surprises are well kept secrets for young children. As it has been discussed, Watson and Valtin (1997) in their research on secrecy in middle childhood indicated that while most six-year-old children would share with their mother the guilty, the embarrassing and the dangerous secret, 82% of them would not tell her about a surprise present. When asked for a reason, the majority said that to tell would spoil the surprise. The researchers quote one 6-year-old: ‘Surprises are things you are not allowed to tell people about’.

So, when this apparently close connection in children’s minds between secrets and surprises is coupled with an explicit statement, a direct hint that a specific piece of information is a surprise (as was the case in the two items included in the questionnaire) and given the considerable power that leading questions and cues have on young children (Hernandez-Blasi, Roebbers & Suco, 2005; Pipe & Wilson, 1994; Wilson, Powell, Raju & Roemo, 2004), then perhaps the fact that the particular statements were classified as secrets by the young children should not be regarded as a ...surprise.

The statistical analyses conducted next provided more information regarding the effect the specific clue had on young children, and illuminated the underlying processes in children’s ability to differentiate between secret and non-secret pieces of information.

The two factor analyses (using PCA and principal axis factoring) provided clear results and indicated that secrets and non-secrets formed distinct categories. Specifically, Factor 1 was loaded **only** by non-secret items, i.e. items that have been characterized as ‘non-secrets’ by the adults in the Pilot Study. The double loading that was noted in Item 29 (‘Most people are taller than Zinc’) in the PCA seems rather unimportant, first because the specific item loaded marginally on Factor 2 (with a size of loading at the cut-off point of .50), and second because the double loading was not duplicated in the principal axis factoring.

In contrast with Factor 1, it seems that Factor 2 was loaded by secret items: five out of the seven items that loaded on this factor were items characterized as ‘secrets’ by the adults participants. Furthermore, on this factor loaded Item 15 (‘Zinc fancies a boy/girl in his/her class’), the only item that provided no ‘clue’ on its secrecy status and still, as the chi-square analysis showed, was positively

characterized as 'secret' by the young children. However, together with those secret items, on Factor 2 also loaded two items that from an adult point of view are not secrets: 'Zinc doesn't like broccoli' and 'Zinc doesn't like the colour yellow'. The question that emerges is why these two presumably non-secret items loaded on an apparently secret factor.

One explanation could be that both items refer to personal preferences, and specifically negative personal preferences, i.e. they describe things that one **does not** like. As discussed in the literature review, personal preferences are considered highly relevant to young children's self-concept and, therefore, were regarded as highly personal disclosures (Rotenberg, 1995a). The PCA of the Tape Interviews in the First Study showed that 'Personal preferences' loaded on a distinct factor, independent from the other variables (i.e. 'Description of the environment', 'Description of people and activities', 'Personal positive' and 'Personal negative items'). On account of the results of the present factor analysis, the postulation that was then put forward (that personal preferences might be a highly personal topic for young children) can now be more specific: It seems possible that **negative** personal preferences are highly personal/secret topics for young children. However, as noted in the Results section, Item 32 ('Zinc doesn't like the colour yellow') also loaded highly (.44) on Factor 1, the non-secret factor, possibly indicating that this item is 'halfway' between the non-secret and the secret factor. The behaviour of these 'negative personal preferences' items is worthy of note and it will be further explored and analysed in the Third Study.

The Second Study's results showed that secret and non-secret items were clearly divided in the two factors, Factor 1 and Factor 2. In this 'division' an important observation can be made, which attests to the validity of the first hypothesis (HS1): young children's classification of secrets and non-secrets is similar to the corresponding classification of adults. Indeed, the only difference found so far between young children and adults is in the two items referring to negative personal preferences, which adults viewed as 'non-secrets', while young children seem to have viewed as 'secrets'. Those two items left aside, young children's and adults' classifications of secrets and non-secrets are matching. These results imply that children may be able from a young age to identify secrets and non-secrets, or at least to know –to a certain degree- the unwritten rules of what is a secret. These unwritten rules seem to be common and firmly established: they are probably the reason why in

all the not so systematic (in the sense that the classification of secrets was not the main aim of the researches) classifications of secrets at different ages, reviewed in the introduction of the Second Study, similar trends were found. It seems that regardless of the age or the developmental stage certain thoughts/facts/feelings are regarded and kept as secrets. The results of the factor analyses of the Second Study suggest that these thoughts/facts/feelings might be differentiated from non-secrets and be regarded as secrets already from a young age.

However, the question about the susceptibility of young children to external clues remains, and it is possibly accentuated by the fact that the two items that included in their wording an explicit hint regarding their secrecy status (**surprise party, surprise present**) loaded separately from all other items on Factor 3 in both factor analyses. Pipe and Wilson (1994) in their study on cues' influences on children's reports have concluded that young children may be influenced by social factors in addition to those relating to their cognitive abilities, 'in particular, compliance or acquiescence to an authoritative interviewer'. It is not implied here that the interviewers that administered the Second Study were authoritative; in fact the whole study was designed to be fun and stress free for the young participants. Still, it is possible that young children viewed the 'surprise' clue as an external influence that could not be disregarded, especially when it came from an unknown adult who, albeit his/her friendly manners, was possibly perceived as an authority whose 'hints' could not be ignored. Therefore, it appears likely that the two 'surprise' items were grouped together in a distinct factor/category as the 'imposed' secrets, the ones that children 'were lead' to admit to their secret status.

It has to be noted that the adults in the Pilot Study also admitted to the secret status of the 'surprise' items –apparently, another similarity across ages. What seems to be different in the case of young children is the clear separation of these items from the other items, secrets and non-secrets, and possibly the reason, the external influences, that brought about this separation.

In the present study two alternative hypotheses, concerning the reason why in the First Study the 'secret-sharing' item was the only item treated by the young children in a way that pertains to high intimate disclosures, were put forward. According to the first hypothesis (HS2a), certain kinds of feelings, thoughts or facts are systematically regarded as secrets by young children. These pieces of information are considered private, and inherently different from other pieces of (non-secret)

information, and, thus, are treated differently. According to the second hypothesis (HS2b), young children do not have the capacity to judge whether a specific piece of information is a personal/intimate one. They rely on external cues, and only when these are provided, they consider and treat a specific piece of information as secret. The Second Study aimed to explore the validity of these two hypotheses. It was postulated that if the research showed that the content of young children's secrets followed a consistent pattern, in other words if most children systematically identified specific facts, feelings or thoughts as secrets, then the first hypothesis (HS2a) would be valid. Conversely, if the research showed that the content of young children's secrets did not follow a consistent pattern, then it would be concluded that the second hypothesis (HS2b) is valid.

The question was clearly stated; the answer, however, is not so straightforward. The results suggested that both hypotheses are partly correct. Children seem to have the capacity to systematically identify certain facts/feelings/thoughts as secrets and to differentiate them from non-secrets. In fact, it appears that, with very few exceptions, the items that young children regard as secrets are comparable to the items adults regard as secrets, indicating that secret topics are common across the various developmental periods. On the other hand, children seem to be markedly influenced by external clues, when considering the secret status of a fact, feeling or thought. The external cues seem to play an important role in their decision to classify a piece of information as secret, and it appears likely that under the influence of external clues or hints they might disregard their own judgment concerning the secret status of a specific piece of information.

The answer regarding the validity of the hypotheses (HS2a and HS2b) becomes more complex when the age differences are taken into consideration. The results of the Second Study suggest that there are important developmental changes in children's ability to identify secret and non-secret pieces of information; in fact, this ability seems to follow a specific developmental pattern, supporting the hypothesis (HS3) regarding age differences. However, the role of external clues seems not to follow a similar developmental change. The role of external clues appears important from very early on (apparently even 3.5-year-old children were able to recognize the 'hints' provided to them regarding the secret status of an item) and continues to be important in all three age groups studied.

More specifically, the younger children did not seem able to identify non-secret or secret pieces of information, unless given a clue regarding the secret status of a specific item. Children in the middle age group appeared able to systematically pinpoint non-secret information, but they were still not able to identify which piece of information is secret. Of course, they too were able to identify a specific item as secret if a clue was provided to them. It is interesting that the ability to identify non-secret pieces of information precedes that of identifying secret pieces of information. Presumably non-secrets are easier to pinpoint than secrets, as this was also evident in the case of the Pilot Study where more non-secret items (15 items) than secret items (seven items) were identified with a strong agreement by the adults participants. Finally, children in the older group, just like adults, seemed able to systematically identify and differentiate secret and non-secret information, even when no clue was provided.

The results of the Second Study provided evidence that children can identify secrets and non-secrets from a younger age than other studies have suggested. Pipe and Goodman (1991) in their research on the implications of secrecy for children's testimonies in court found that from stories told to them six-year-old children could identify a lie, a 'good' secret (a birthday surprise) and a funny story. However, the majority of the six-year-old children did not identify a 'bad' secret (an accidental breakage) as a secret. In contrast with Pipe's and Goodman's findings, the present study's results suggest that even 3.5-year-old children can identify 'good' secrets when a clue, such as the word surprise, is given to them and that six-year-old children are able to identify 'good' and 'bad' secrets with or without clues.

According to the Second Study's results, there were **no** gender differences in children's ability to classify secret and non-secret information; hypothesis HS4 was not supported. Girls and boys seemed to follow the same developmental pattern as far as the identification of secrets and non-secrets is concerned. These results appear to be in line with researches on secrecy in older children where no (Watson & Valtin, 1997) or very limited (Last & Aharoni-Etzioni, 1995) gender differences were found. Also, these results are in line with the results of the First Study, where 'secret sharing' was associated with the age, but not with the gender of the participants. However, these results are not congruent with the results of the Pilot Study where gender differences were found in some, albeit few, items. In the Pilot Study men participants were found to be more 'secretive' than women (significantly more men than women rated three

items as secrets), while in the Main Study girls and boys reacted to all the items in a similar way. The issue of gender differences will be picked up in the Third Study, as it appears multi-faceted and intriguing.

The aim of the Second Study concerned the investigation of the content of children's secrets and their ability to systematically identify and classify particular pieces of information as secrets. The impetus came from the findings of the First Study where young children showed signs of the restrictive disclosure-to-friends pattern only in the case of the 'secret-sharing' item. It was expected that, once the content of children's secrets was investigated, the picture of young children's ability for restrictive self-disclosure would be further clarified. Indeed, the Second Study answered certain important questions relating to the content of young children's secrets and their ability to systematically identify and differentiate them from non-secrets. However, a critical question regarding young children's behaviour towards their friends and non-friends remains unanswered: do young children use their ability to differentiate secrets from non-secrets when **actually** talking to their peers, i.e. do they **actually** treat the secret pieces of information in a way that pertains to highly intimate disclosures?

As reminded before, the First Study's findings suggested that children are capable of applying the restrictive disclosure-to-friends pattern when asked about the sharing of their secrets. But there the word 'secret' was included in the wording of the item and it is possible that it has functioned as a clue. But, what if no clue regarding the secret status of an item is provided to the children? Would young children still apply the restrictive disclosure-to-friends pattern? And are clues and external influences really all that important not only when verbally classifying pieces of information as secrets or non-secrets, but also when it comes to actually sharing them?

All these questions appeared particularly significant for the study of children's ability for intimacy and self-disclosure in friendships. To capture the complete picture of young children's ability for restrictive disclosure to friends the Third Study was designed which aimed to provide answers to these questions.

III. The Third Study: So, do young children tell their secrets to their friends?

III.1. Overview.

The findings of the Second Study specified what constitutes secret and non-secret information for young children. Based on these findings, the Third Study explored the question whether young children treat the pieces of information identified (by them) as secrets in a way that pertains to highly personal disclosures, that is restrictively sharing them with their friends as opposed to non-friends, and non-secrets in a way that pertains to low personal disclosures, that is equally sharing them with friends and non-friends. The chapter begins by presenting the aim of the Third Study and continues with the discussion on the design of the research. The details and the results of the two Pilot Studies that were conducted are then presented and analysed. Next, a detailed account of the methodology of the Main Study is given. The chapter concludes by presenting the results of the Main Study and their discussion.

III.2. Exploring whether young children tell their secrets to their friends: The design of the Third Study.

III.2.1 Aim of the Third Study

The aim of the Third Study was to investigate whether young children (4.5 to 6.5 years of age) employ the restrictive disclosure-to-friends pattern when revealing secret and non-secret pieces of information. In other words, the Third Study aimed to explore whether young children share their secrets with their friends, as opposed to non-friends, while sharing non-secrets with both friends and non-friends. Not sharing a secret, i.e. keeping it to oneself, is of course a possible choice a secret-holder, even a very young secret-holder, might opt for. However, research has shown that most secret holders inform at least one other person about their secret (Finkenauer & Rime, 1998; Vrij, Nunkoosing, Paterson, Oosterweiger & Soukara, 2002). Based on this, the Third Study aimed to explore whether this ‘other’ person young children inform about their secrets would be a friend, rather than a non-friend.

In addition, the present study aimed to look more closely into the tendency that was outlined in the First and Second Study, namely that specific cues might influence young children in viewing a specific piece of information as secret. The present study aspired to connect this tendency with the restrictive disclosure pattern. It aimed to investigate whether specific cues influence young children in applying the restrictive disclosure pattern.

III.2.2 Designing the Third Study¹

The results of the First Study suggested that secrets are treated in a distinct way by young children, since ‘secret-sharing’ was the only item where seeds of restrictive disclosure to friends were found: in both the Personal and Zinc Interviews a high percentage of children identified friends as disclosure targets of the ‘secret-sharing’ item, while non-friends were the least likely recipients of the ‘secret-sharing’ item in both interviews (and this difference was statistically significant). The Second Study, which investigated the content of young children’s secrets, provided a useful list of

¹ Please note that this section refers to the designing of the third study. For the exact wording and details about the administration please see the Procedure section

statements that young children consider secret and non-secret. Also, the results of the Second Study supported the hypothesis, already discussed as a possibility in view of the findings of the First Study, that children might be influenced by external cues when considering the 'degree of secrecy' of a specific piece of information.

The Third Study aimed to combine the information provided by the two previous studies in order to explore in depth the restrictive disclosure-to-friends pattern in early childhood. Being aware that seeds of restrictive disclosure may be found in the sharing of secrets, and having on hand a list of statements that are considered secret by young children, the Third Study was designed and executed.

The basic idea was simple: to ask children who is their preferred disclosure target for the secret and the non-secret information, a friend or a non-friend. In this way the association between the level of secrecy of a piece of information and children's choice of disclosure target could be explored. As in the Second Study, in order to keep the interview from being intrusive and to prevent the difficulties that occurred in the administration of the First Study (where a few children protested when the content of some statements did not apply to themselves), it was decided to use puppets in the administration of the Third Study, as well.

However, the possibility of young children's influence by external clues had to be taken into consideration. It was hypothesized that cues could prompt young children to apply the restrictive disclosure pattern when sharing information. The Third Study aimed to test the hypothesis that when young children are told (or are given a hint) that an information is secret, they tend to apply the restrictive disclosure pattern when sharing it, just because they have learnt that secrets should only be revealed to people with whom one has a very close relation.

To test this hypothesis it was decided to create different experiment conditions. In one condition the participants would not be given any clue relating to the 'level of secrecy' of the statements, while in the other condition(s) the participants would be hinted that some statements might be secrets. To find the appropriate wording for this 'prompting' to happen, two Pilot Studies were performed, the details of which are given below.

An important decision that was taken when designing the Third Study was to limit the sample of this final Study to the two older age groups. It was decided to administer the Third Study only to five-year-old (4.5- to 5.5-year-old) and six-year-old (5.5- to 6.5-year-old) children, as in both previous studies the members of the 'younger

age group' (3.5- to 4.5-year-old children) did not show signs of the capacity for restrictive self-disclosure to friends. Specifically, in the First Study the younger children indicated as their preferred targets of disclosure of secrets the members of their immediate family. While this might be a valid form of restrictive self-disclosure (parents and siblings are probably the most intimate persons for four-year-old children), its study is beyond the scope of the present research which aims to investigate children's disclosure to friends. Moreover, in the Second Study the members of the 'younger age group' did not seem able to identify either 'secret' or 'non-secret' information, unless given a clue. Finally, the Tape-Recording Task's findings (where children of the 'younger age group' provided significantly more low personal than highly personal disclosures) seem to confirm Selman's and Jaquette's (unpublished manuscript, cited in Diaz and Berndt, 1982) postulations that children at the age of the 'younger age group' are primarily concerned about observable and external characteristics and less about psychological attributes. As the Third Study focused primarily on psychological attributes (secret thoughts and feelings), it was thought that the particular research would be beyond what interests the particular age group. In view of these findings, it was decided to exclude the 'younger age group' from the Third Study, deducing that the restrictive disclosure-to-friends pattern emerges as an internal motivational principle at a later age.

III.3. The Third Study: Pilot I.

III.3.1 Designing Pilot I

Two Pilot Studies were administered in order to find the appropriate wording for the experiment conditions of the Third Study. In the first Pilot Study three experiment conditions were designed. In the first experiment condition no clue relating to the level of secrecy of each statement was given, in the second one a direct clue was given, while in the third one a more ambiguous hint was presented to the participants to test whether the direct clue is too leading.

III.3.2 Participants

The sample consisted of 30 children, of which 18 were boys and 12 girls (mean age = 73 months, range = 66-78 months). The participants were divided in three groups: 1) the 'no clue condition' group (10 children, 6 boys and 4 girls), 2) the 'clue 1 condition' group (10 children, 6 boys and 4 girls, and 3) the 'clue 2 condition' group (10 children, 6 boys and 4 girls).

The children were recruited from a British Infant and Nursery private school in Athens, Greece. Of the 31 children participating in this Pilot Study, 26 were White/Caucasian, three were Black, one was Asian and one was of Arabic origin. All the children interviewed had provided informed parental consent. The interviews were carried out in English.

III.3.3 Materials

The puppets used in the administration of the Zinc Interview in the First Study were also used in this Pilot Study. More specifically, the two 'Zinc' puppets were used as the protagonists, while the other 'children' puppets were used as the 'friend' and the 'non-friend' of the protagonist².

III.3.4 Procedure

The participants were interviewed individually at a quiet area in their school. As mentioned previously all interviewees were divided in three groups. The wording used in the introduction of the interview was common for all three groups:

² For a picture of the puppets please see Appendix A.

First, the puppet Zinc (same gender as the participant) was introduced to the participant and the following wording was used: ‘This is Zinc. He/she is ...years old, just like you are’. Then the participant was introduced to the other two puppets, friend and non-friend (counterbalanced for order of introduction and gender): ‘Zinc has a friend in his/her class. In Zinc’s class there is also another child who is not Zinc’s friend, but he/she is ok (each time the interviewer pointed to the appropriate puppet). So, this is Zinc, this is Zinc’s friend and this is the other child who is not his/her friend (the interviewer pointed to the puppets)’.

Then the task of the interview was presented to the participants: ‘Now, I will tell you some things about Zinc and I want you to tell me (the following statements were counterbalanced for order of presentation) which of these things he/she would tell his/her friend (point to the puppet), which of these things he/she would tell the other child (point to the puppet), which of these things he/she would tell both (point to the puppets) and which of these things he/she would tell neither (emphasized with appropriate gesture)’.

Next, the 21 items used in the Second Study³ were presented to the interviewee, one at a time, in random order. As regards the presentation of the items, there was variation according to the group each participant belonged to:

1) The ‘no clue condition’ group. The statements were presented without any addition or remark. After each item was read, the participant was asked: ‘Will Zinc tell his/her friend? Will Zinc tell the other child?’ (counterbalanced for order).

2) The ‘clue 1 condition’ group. After each item was read, the interviewer added: ‘Some children think that this is a secret’. Then the participant was asked: ‘Will Zinc tell his/her friend? Will Zinc tell the other child?’ (counterbalanced for order).

3) The ‘clue 2 condition’ group. After each item was read, the interviewer added: ‘Some children think that this is a secret and some children don’t think this is a secret’ (counterbalanced for order). Then the participant was asked: ‘Will Zinc tell his/her friend? Will Zinc tell the other child?’ (counterbalanced for order).

After the end of this interview, the participant was asked which of these statements he/she thought were Zinc’s secrets. That is, the interview administered in the Second Study was administered to the participants of this study, as well. The same wording was used: ‘Now, I will tell you some things about Zinc and I want you to tell

³ For an account of the 21 statements please see the Procedure section in the Second Study.

me which of these things are his/her secrets. Some of the things might be big secrets and some might be small secrets (counterbalanced for order). Or maybe none of the things are secret. So, I am going to tell you one thing at a time and I want you to tell me if this thing is a secret or not. If it is a secret, I want you to tell me if it is a big or a small secret (counterbalanced for order)'.

Next, the 21 items were presented to the participant, one item at a time, in random order. After each item was read, the participant was asked: 'Is this a secret?' If the participant answered positively, he/she was asked if it is a small or a big secret (counterbalanced for order).

III.3.5 Conclusions

As discussed, the aim of the Pilot Study was to test the experiment conditions and to find the appropriate wording to be used in the Main Study. This section presents the weaknesses and difficulties encountered in the first Pilot Study and the modifications that were made which were in turn tested in the second Pilot Study.

Children responded with no difficulty in the 'no clue condition', where the items were presented without any addition or remark: they seemed to enjoy the task and were able to concentrate throughout the administration of the interview.

Things were somewhat different in the other two experiment conditions, where remarks regarding the level of secrecy of the items were repeated after each item was read. The interviews were taking more time than expected and children were getting bored and were losing their concentration. Furthermore, it seemed that some children were progressively losing their confidence in their ability to answer 'correctly', since the same remarks were made to them over and over again. It seemed that some children modified their answers 'to please' the interviewer (e.g. a few children asked to go back and change some of their answers).

On the other hand, the results of the 'clue 1 condition' group and the 'clue 2 condition' group were similar. It appeared that the clue 'some children think that this is a secret', provided in the 'clue 1 condition' was not too leading (or as leading as the clue in the 'clue 2 condition') and the addition 'some children don't think this is a secret' provided in the 'clue 2 condition' seemed unnecessary.

Hence it was decided to simplify the 'clue conditions'. It was decided to merge the two 'clue conditions' and to give the hint 'some items might be secrets' once in the beginning of the interview.

III.4. The Third Study: Pilot II.

III.4.1 Designing Pilot II

In the first Pilot Study certain methodological difficulties were located. The modifications made to eliminate them were tested in the second Pilot Study. In the second Pilot two experiment conditions were designed. In the first experiment condition no clue relating to the level of secrecy of the statements was given, while in the second one a clue was given once in the beginning of the interview.

III.4.2 Participants

The sample consisted of 20 children, of which nine were boys and 11 girls (mean age= 76 months, range= 67-89 months). The participants were divided in two groups: 1) the 'no clue condition' group (9 children, 5 boys and 4 girls), and 2) the 'clue condition' group (11 children, 5 boys and 6 girls).

The children were recruited from a British Infant and Nursery private school in Athens, Greece. All of the 20 children participating in the second Pilot Study were White/Caucasian. All the children interviewed had provided informed parental consent. The interviews were carried out in English.

III.4.3 Materials

The puppets used in the first Pilot Study were also used in the second Pilot Study.

III.4.4. Procedure

The methodology used in the administration of the first Pilot Study was used in the present Pilot Study with the following modifications: The participants were divided in two groups. No clue relating to the level of secrecy of each statement was given to the participants of the first group, while a direct 'hint' was presented to the participants of the second group. The 'hint' was given once in the introduction of the task, after a short conversation on the meaning of the word 'secret'.

Thus, the wording differed according to the 'experiment condition'. The following wording was used:

1) In the 'no clue condition': 'This is Zinc (same gender as the participant). He/she is ...years old, just like you are. Zinc has a friend in his/her class. In Zinc's class there is also another child who is not Zinc's friend, but he/she is ok (the puppets were counterbalance for order of introduction and gender, and each time the interviewer pointed to the appropriate puppet). So, this is Zinc, this is Zinc's friend and this is the other child who is not his/her friend (the interviewer pointed to the puppets). Now, I will tell you some things about Zinc and I want you to tell me (the following statements were counterbalanced for order of presentation) which of these things he/she would tell his/her friend (the interviewer pointed to the puppet), which of these things he/she would tell the other child (the interviewer pointed to the puppet), which of these things he/she would tell both (the interviewer pointed to the puppets) and which of these things he/she would tell neither (emphasized with appropriate gesture)'. Next, the 21 statements, one at a time, in random order, were presented to the participant and he/she was asked: 'Will Zinc tell his/her friend? Will Zinc tell the other child?' (counterbalanced for order).

2) In the 'clue condition': 'This is Zinc (same gender as the participant). He/she is ...years old, just like you are. Zinc has a friend in his/her class. In Zinc's class there is also another child who is not Zinc's friend, but he/she is ok (the puppets were counterbalance for order of introduction and gender, and each time the interviewer pointed to the appropriate puppet). So, this is Zinc, this is Zinc's friend and this is the other child who is not his/her friend (the interviewer pointed to the puppets)'. There was a small pause and then the participant was asked if he/she knew 'what is a secret'. Next, the definition of secrets used in the Second Study was provided: 'A secret is something that you don't want many people to know'. To ensure comparability between participants, even if they provided appropriate definitions, they were told: 'That's right' and then they were given the aforementioned definition. Then the task of the interview was presented to the children: 'Now, I will tell you some things about Zinc and some of these things might be his/her secrets. I want you to tell me (the following statements were counterbalanced for order of presentation) which of these things he/she would tell his/her friend (the interviewer pointed to the puppet), which of these things he/she would tell the other child (the interviewer pointed to the puppet), which of these things he/she would tell both (the interviewer pointed to the puppets) and which of these things he/she would tell neither (emphasized with appropriate gesture)'. Next, the 21 statements, one at a time, in random order, were presented to the

participant and he/she was asked: 'Will Zinc tell his/her friend? Will Zinc tell the other child?' (counterbalanced for order).

At the end of this interview, the interview investigating which pieces of information young children regard as secrets was administered. The methodology used was the same as in the first Pilot Study with the slight modification that in the beginning of the interview the aforementioned definition of secrets was provided to the participants of the 'no clue condition' group.

III.4.5 Conclusions

The second Pilot Study showed that the modifications which were made to the administration and the wording of the interview were satisfactory.

As in the first Pilot, children responded with no difficulty in the 'no clue condition' where the items were presented without any addition or remark.

As far as the 'clue condition' is concerned, the children seemed able to bear in mind throughout the interview the clue 'some of these things might be Zinc's secrets' that was presented to them once in the beginning of the interview. After all, a small conversation had taken place around secrets before the actual clue was given with the interviewer asking the child and providing the definition, so it was easier for the child to keep in mind the specific hint. An indication of children's ability to bear in mind the hint that was given to them was that, as expected, children in the 'clue condition' group treated more items as 'secrets' than children in the 'no clue condition' group.

As a result of the modifications made the interview administered to the 'clue condition' group was shortened and the participants seemed able to concentrate throughout the interview. Therefore, it was decided to use the same methodology and wording in the Main Study.

III.5. The Third Study: Methodology.

III.5.1 Participants

The sample consisted of 209 children (104 boys and 105 girls) divided in two age groups: 1) 99 4.5-5.5-year-old children (50 boys and 49 girls, mean age = 62 months, range = 56-67 months) and 2) 110 5.5-6.5-year-old children (54 boys and 56 girls, mean age = 74 months, range = 68-80 months). Each participant was further allocated randomly to one of the two groups according to the experiment condition in which he/she participated. The two groups that were formed were: 1) the 'clue condition' group which comprised of 101 children (50 4.5-5.5-year old children, of which 26 boys and 24 girls, and 51 5.5-6.5-year-old children, of which 24 boys and 30 girls) and 2) the 'no clue condition' group which comprised of 108 children (49 4.5-5.5-year-old children, of which 24 boys and 25 girls, and 59 5.5-6.5-year old children, of which 30 boys and 29 girls).

The children were recruited from three Infant and Nursery schools in the Greater London area. As the schools' Inspection Report showed most pupils of these schools come from middle and upper middle class families. The percentage of pupils eligible for free school meals was below the national average.

The vast majority of the children participating in the second study were White/Caucasian (188 children, 90%) while 21 children (10%) were Asian. All children interviewed had provided informed parental consent.

III.5.2 Materials

The puppets used in the Pilot Studies were also used in the Main Study.

III.5.3 Procedure

The methodology used in the second Pilot Study was also used in the administration of the Main Study.

III.6. The Third Study: Results.

III.6.1 Research hypotheses of the Third Study

The general hypotheses of the research project (stated in the Literature Review chapter) were revised based on the findings from the First and Second Studies, and they are tested in the Third Study. The hypothesis H1 (young children display the restrictive disclosure-to-friends pattern, as they disclose a greater number of secrets to their friends than to non-friends, and an approximately equal number of non-secrets to both friends and non-friends) was modified and, based on the findings from the previous studies, two specific hypotheses were formed to clarify it:

- HS1a. When young children (4.5 to 6.5 years of age) are not given any clue relating to the ‘secrecy status’ of an item, they apply the restrictive disclosure-to-friends pattern.
- HS1b. When young children (4.5 to 6.5 years of age) are given a clue that a specific piece of information is secret, they treat it as a secret, by sharing it only with their friends, while refraining from sharing it with non-friends.

HS2. There are age differences in young children’s (4.5 to 6.5 years of age) restrictive disclosure to friends, as the capacity for restrictive disclosure increases with age.

HS3. There are gender differences in young children’s (4.5 to 6.5 years of age) restrictive disclosure to friends.

Finally, one hypothesis relating to the reliability of the findings of the Second Study was formed and tested.

HS4. The results of the Second Study (that young children differentiate secret from non-secrets) are reliable, and can be replicated with this study’s older sample (4.5- to 6.5-year-old children).

III.6.2 Clarification and reliability testing of the Second Study’s results

As discussed in the introduction of the present chapter, it was decided to limit the sample of the Third Study to the two older age groups, as the findings of the two previous studies indicated that the members of the ‘younger age group’ (3.5- to 4.5-year-old children) did not display signs of the capacity for restrictive disclosure to

friends. However, the factor analyses conducted in the Second Study, which showed that young children are able to make the distinction between secret and non-secret pieces of information, were conducted with a sample which included the members of the ‘younger age group’. The question emerged regarding the reliability of the Second Study’s results: would they be replicated if the statistical analyses were conducted including only the two older age groups? It was not possible to rerun the factor analyses of the Second Study including only the two older age groups because the sample size (63 children) would have been very poor for the employment of the particular statistical technique (Tabachnick & Fidell, 2001, pg. 588).

Therefore, to test the hypothesis that the results of the Second Study will be replicated with an older sample (HS4), the files of the two studies were merged (excluding the ‘younger age group’ of the Second Study) and a principal components analysis with varimax rotation was conducted.

The principal components analysis had a sample of 272 children (63 children from the Second and 209 children from the Third study). The analysis applied to the three levels of the children’s answers to the question ‘Is this a secret?’ (non-secret/small secret/big secret). The sample size was satisfactory for the employment of the technique and all PCA assumptions were satisfied.

As shown in Figure 5, the PCA extracted three factors with eigenvalue >1. The three factors cumulatively interpreted 52.0% of variance. The first factor interpreted 28.6% of variance, the second 15.4% and the third interpreted 8.0% of variance. Information on the percentage of variance explained by the principal factors is presented in Table 18.

Table 18: Percentage of Variance Explained by the Components Extracted by the PCA Testing the Reliability of the Results of the Second Study

Components	Eigenvalue	% of Variance	Cumulative %
1	7.9	28.6	28.6
2	2.2	15.4	44.0
3	1.4	8.0	52.0

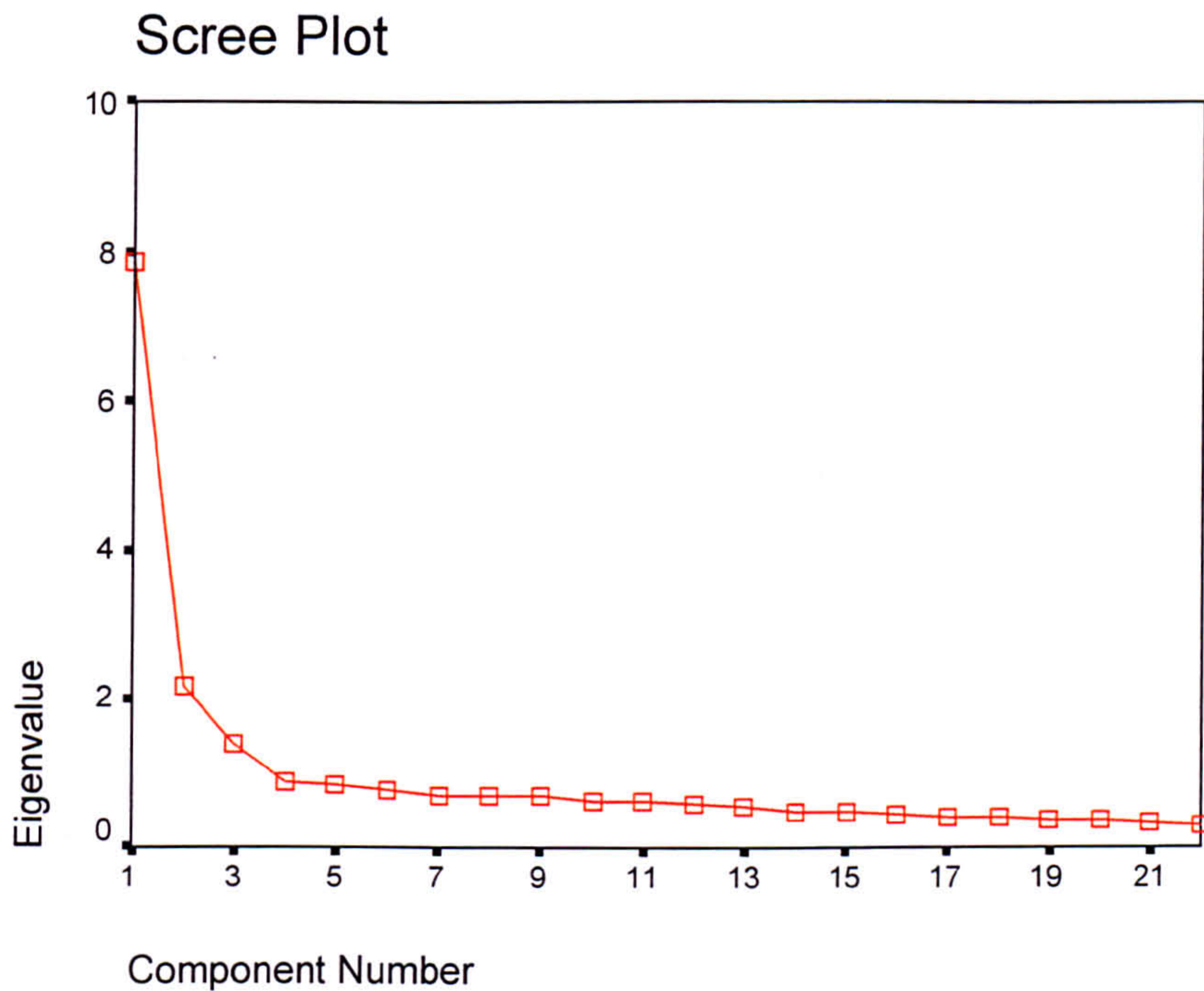


Figure 5: Graph of the Eigenvalue of the Components Extracted by the PCA Testing the Reliability of the Results of the Second Study

With a cut of .50 for inclusion of a variable in the interpretation of a factor, only two variables, Item 23 (‘Zinc’s home is close to his/her school’) and Item 32 (‘Zinc doesn’t like the colour yellow’), did not load on a factor. Loadings of variables on factors are shown in Table 19. Variables are ordered and grouped by size of loading to facilitate interpretation. To facilitate comparisons the items are presented with the numbering they had in the Second Study.

To test the reliability of this factor solution, the reliability of each factor was calculated. The reliability coefficients for each factor were high, ranging from .73 to .91 (Alpha = .91 for Factor 1, Alpha = .80 for Factor 2, Alpha = .73 for Factor 3).

Table 19: Rotated Component Matrix of the PCA Testing the Reliability of the Results of the Second Study

Variables	Component		
	1	2	3
24. There is a playground in Zinc's school.	.76		
30. Zinc read a book at school.	.74		
31. Zinc likes watching TV.	.73		
27. Zinc drinks a glass of milk every morning.	.72		
25. Zinc's room has a window.	.71		
38. Zinc can draw really well.	.69		
26. There is a big tree outside Zinc's school.	.66		
34. Zinc likes cats.	.64		
29. Most people are taller than Zinc.	.62		
36. Zinc can run faster than most children in his/her class.	.61		
28. Zinc's cousin has short hair.	.61		
37. People sometimes say that Zinc is very good.	.57		
6. Zinc took something that was not his/hers.		.77	
18. Zinc wet him/herself once.		.73	
7. Zinc doesn't always tell the truth.		.73	
14. Sometimes Zinc does dangerous things, like climbing up big trees.		.73	
33. Zinc doesn't like broccoli.		.53	
15. Zinc fancies a boy/girl in his/her class.		.51	
2. Zinc's parents are going to give a surprise present to his/her granddad next week.			.85
1. There is going to be a surprise party for Zinc's father's birthday.			.82

The results of the present principal components analysis replicated the results of the principal component analysis conducted in the Second Study, the only difference being the two items that failed to load on any factor. All other interview items loaded

on one of the three factors which, just like in the Second Study, seem to represent distinct categories. More specifically, as in the Second Study, Factor 1 (on which loaded the items: 'Zinc read a book at school', 'There is a playground in Zinc's school', 'Zinc can draw really well', 'Zinc likes watching TV', 'Zinc's room has a window', 'Zinc's cousin has short hair', 'There is a big tree outside Zinc's school', 'Zinc likes cats', 'Zinc drinks a glass of milk every morning', 'Most people are taller than Zinc', 'Zinc can run faster than most children in his/her class' and 'People sometimes say that Zinc is really good') seems to be defined by non-secret items, while Factor 2 (on which loaded the items: 'Zinc wet him/herself once', 'Zinc took something that was not his/hers', 'Sometimes Zinc does dangerous things, like climbing up big trees', 'Zinc doesn't always tell the truth', 'Zinc fancies a boy/girl in his/her class' and 'Zinc doesn't like broccoli') seems to be mostly defined by secrets. Furthermore, the results of the present analysis replicated the finding that the items which include the word 'surprise' in their wording ('There is going to be a surprise party for Zinc's father's birthday' and 'Zinc's parents are going to give a surprise present to his/her granddad next week') form a distinct category (a 'surprise' category?), as once more they loaded on Factor 3, separately from all the other items of the interview.

As noted before, the main difference between the Second Study's PCA and the present analysis is the fact that two items failed to load on any factor. One of the two items that failed to load on a factor was Item 32 ('Zinc doesn't like the colour yellow'), which denotes a negative personal preference. It is noteworthy that the specific item, although did not load on a factor with a loading higher than the cut-off point of .50, loaded with a high loading on 2 factors: it loaded on Factor 1 (the non-secret factor) with a loading of .49, and on Factor 2 (the secret factor) with a loading of .43. Additionally, it is interesting that the other item that denotes a negative personal preference, Item 33 ('Zinc doesn't like broccoli') which loaded on the secret factor with a loading of .53, also had a high loading of .43 on the non-secret factor. Based on these findings, it can be suggested that in the present PCA the two 'Negative personal preferences' items appear 'halfway' between the non-secret and the secret factor.

Support for the suggestion that the 'Negative personal preferences' items are 'halfway' between the secret and non-secret factors is provided by the findings of the principal components analyses conducted using only the data deriving from the Third Study (not using the merged file). The results of these PCAs (which are presented in Appendix F) replicated the finding that five- and six-year old children classify in

distinct categories non-secrets, secrets and items that include in their wording the word 'surprise'. In these analyses the two items referring to negative personal preferences, Item 32 and Item 33, loaded on apparently non-secret factors, but also had high loadings on the secret factors.

Overall, the results reported here support hypothesis HS4. The findings of the Second Study, that young children differentiate secrets from non-secrets, are replicated with this study's older sample.

III.6.3 Analysis of the Third Study's data

In order to explore the two specific hypotheses, HS1a and HS1b, which clarify H1 by taking into consideration young children's influence by external clues, the statistical analysis focused on the two different 'experiment condition' groups.

First, chi-square analyses were conducted separately for each 'experiment condition' group. These chi-square analyses were performed in order to explore whether children share significantly less secret information with non-friends, than with friends. It seems unlikely that there are pieces of information that would only be shared with non-friends. It seems likely that when children decide that a certain piece of information can be shared with a non-friend, they probably share it with a friend as well, i.e. they tell 'both'. Therefore it was decided to merge the target categories 'non-friend' and 'both'. It was also decided to merge the target categories 'friend' and 'nobody', as the aim of the specific analyses was to explore whether children recognize that certain items should not be revealed to children with whom they do not have a close relationship.

In the chi-square analysis for the 'clue condition' group statistically significant differences were found in 18 (out of the 22) items. The inspection of the frequencies indicated that a significantly higher percentage of children would share these items with a friend or keep them to oneself, than share them with a non-friend or with both a friend and non-friend. The items in which statistical significant differences were found are presented in Table 20. (To facilitate comparisons, the items are presented with the numbering they had in the Second Study.)

Table 20: Results of the Chi-Square Analysis between Disclosure Target Categories Friend/Nobody and Non-Friend/Both for the 'Clue Condition' Group

Items	Friend and Nobody		Non-friend and Both		Chi-square	Df
	'n'	%	'n'	%		
1.Surprise party	69	68.3	32	31.7	13.55**	1
2.Surprise present	70	69.3	31	30.7	15.06**	1
6.Zinc took something	77	76.2	24	23.8	27.81**	1
7.Doesn't tell the truth	78	78.0	22	22.0	31.36**	1
14.Dangerous things	78	77.2	23	22.8	29.95**	1
15.Fancies a boy/girl	75	74.3	26	25.7	23.77**	1
18.Wet him/herself	80	79.2	21	20.8	34.46**	1
23.Home close school	72	72.0	28	28.0	19.36**	1
26.Room has window	61	60.4	40	39.6	4.36*	1
27.Drinks milk	71	71.0	29	29.0	17.64**	1
28.Cousin/short hair	66	66.0	34	34.0	10.24**	1
29.People taller	71	71.0	29	29.0	17.64**	1
30.Read a book	60	60.0	40	40.0	4.00*	1
32.Not like yellow	77	76.2	24	23.8	27.81**	1
33.Not like broccoli	72	71.3	29	28.7	18.31**	1
36.Runs faster	73	72.3	28	27.7	20.05**	1
37.Zinc is very good	67	66.3	34	33.7	10.78**	1
38.Can draw well	63	62.3	38	37.7	16.64**	1

** : Significant at the .01 level

* : Significant at the .05 level

The four items in which statistical significant differences were not found were: Item 24 ('There is a playground in Zinc's school'), Item 25 ('Zinc's room has a window'), Item 31 ('Zinc likes watching TV'), and Item 34 ('Zinc likes cats'), all of which have consistently loaded on the non-secret factors in all the PCAs conducted.

Nonetheless, the results of the present chi-square analysis support hypothesis HS1b. The fact that the majority of the items were treated as information which is not to be revealed but to close friends suggest that when children are given a hint that some

pieces of information might be secrets, they are influenced and tend to treat most information as secret, even information that in other circumstances would be regarded as non-secret.

This conclusion is further supported by the findings of the chi-square analysis for the 'no clue condition' group. In the chi-square analysis for the 'no clue condition' group statistically significant differences were found only in seven (out of the 22) items, with a significantly higher percentage of children sharing these seven items with a friend or keeping them to oneself than sharing them with a non-friend or with both a friend and non-friend. The items in which significant differences were found are presented in Table 21. (Once more, the items are presented with the numbering they had in the Second Study.)

Table 21: Results of the Chi-Square Analysis between Disclosure Target Categories Friend/Nobody and Non-Friend/Both for the 'No Clue Condition' Group

Items	Friend and Nobody		Non-friend and Both		Chi-square	Df
	'n'	%	'n'	%		
6.Zinc took something	71	65.7	37	34.3	10.70**	1
7.Doesn't tell the truth	74	69.8	32	30.2	16.64**	1
14.Dangerous things	68	63.0	40	37.0	7.26**	1
15.Fancies a boy/girl	74	69.1	33	30.9	15.71**	1
18.Wet him/herself	74	69.1	33	30.9	15.71**	1
28.Cousin/short hair	68	63.0	40	37.0	7.26**	1
33.Not like broccoli	68	63.5	39	36.5	7.86**	1

** : Significant at the .01 level

It is noteworthy that six out of the seven items in which statistically significant differences were found had loaded on the secret factor in the Second Study's PCA. That is, in all the items that had loaded on the secret factor ('Zinc took something that was not his/hers', 'Zinc doesn't always tell the truth', 'Sometimes Zinc does dangerous things, like climbing up big trees', 'Zinc fancies a boy/girl in his/her class', 'Zinc wet

him/herself once’, and ‘Zinc doesn’t like broccoli’) statistically significant differences were found. In other words, most children, when they were not given any clue, chose to disclose the secret pieces of information only to a close friend or keep them to themselves, than share them with children they do not have a close relationship with. Therefore, it could be argued that in this case young children showed signs of the restrictive disclosure pattern, and this finding supports hypothesis HS1a.

It is interesting that a statistically significant difference was found in Item 33, the ‘Negative personal preference’ item that had loaded on the ‘secret’ factor in the aforementioned PCA. The present finding brings forth again the question whether ‘Negative personal preference’ items are ‘halfway’ between secrets and non-secrets.

Table 21 shows that a statistically significant difference was also found in an item classified by adults and children as non-secret: a significantly higher percentage of young children would choose to disclose the item ‘Zinc’s cousin has short hair’ only to a friend or keep this information to oneself. It is difficult to explain why young children reacted this way when it came to this particular piece of information. One explanation could be that this is a piece of information does not refer to Zinc directly, as opposed to all other items, but concerns another person in Zinc’s environment. Nonetheless, as the following analyses suggest, this result was not consistent.

In the previous analyses two ‘disclosure target’ categories were formed and contrasted: friend/nobody vs. non-friend/both. The merging of the two disclosure target categories ‘friend’ and ‘nobody’ did not allow the clarification of a main aspect of the restrictive disclosure-to-friends pattern, namely whether friends are important disclosure targets for secret pieces of information. The findings so far have shown that young children can discriminate between types of information, and, when not influenced by external clues, they choose not to disclose their secrets to peers they do not have a close relationship with, thus, displaying signs of the restrictive disclosure-to-friends pattern. It is unclear, however, whether they share their secrets with their friends or if they keep them to themselves.

To address this issue it was decided to look more closely into the ‘no clue condition’ group, as it seemed that children were highly influenced by the clue that was given to them, and therefore the results of the ‘clue condition’ group were largely biased. First, the frequencies and the percentages of disclosures in the sample of the ‘no clue condition’ group (N = 108) addressed to each target (friend, non-friend, both and

nobody) were examined. The frequencies and the percentages are presented in Table 22.

As Table 22 shows, the target categories with the highest percentages were the category 'friend' and the category 'both', with respective percentages ranging from 28.7% to 42.6% and from 19.6% to 46.3%. Non-friends were the least preferred recipients of children's disclosures with percentages ranging from 4.6% to 13.0%. It appears that friends are important recipients of young children's disclosures. Even when young children share a piece of information with a non-friend, they tend to share it with a friend as well. This seems to be the case when children choose to make a disclosure, but apparently there are pieces of information they choose to keep to themselves.

Table 22 shows that the 'nobody' responses had a very wide range: from 9.3% to 40.6%. However, the percentage of the 'nobody' responses in the items that had loaded on the secret factor, the secret pieces of information, was markedly high. The percentage of the 'nobody' responses in the five items that had been characterized by children and adults alike as 'secrets' ('Zinc took something that was not his/hers', 'Zinc doesn't always tell the truth', 'Sometimes Zinc does dangerous things, like climbing up big trees', 'Zinc fancies a boy/girl in his/her class', and 'Zinc wet him/herself once') ranged from 33.3% to 40.6%, while for all the other items the percentage ranged from 9.3% to 23.1%.

With a percentage of 25.9% of 'nobody' responses, the 'Negative personal preference' Item 33 ('Zinc doesn't like broccoli'), seems, once more, to be 'halfway' between the secret items and the other items. The percentage of the 'nobody' responses for the other 'Negative personal preference' item ('Zinc doesn't like the colour yellow') is lower (21.3%), placing though the specific item, as far as the 'nobody' responses are concerned, at the top end of the rest items.

Table 22: Frequencies and Percentages of Disclosures Addressed to each Target (Friend, Non-Friend, Nobody and Both) in the 'No Clue Condition' Group

Item	Friend		Non-friend		Nobody		Both	
	'n'	%	'n'	%	'n'	%	'n'	%
1.Surprise party	40	37.0	5	4.6	18	16.7	45	41.7
2.Surprise present	38	35.5	6	5.6	20	18.7	43	40.2
6.Zinc took something	31	28.7	12	11.1	40	37.0	25	23.1
7.Doesn't tell the truth	31	29.2	11	10.4	43	40.6	21	19.8
14. Dangerous things	32	29.6	13	12.0	36	33.3	27	25.0
15.Fancies a girl/boy	37	34.6	8	7.5	37	34.6	25	23.4
18.Wet him/herself	31	29.0	12	11.2	43	40.2	21	19.6
23.Home/close to school	38	35.2	8	7.4	18	16.7	44	40.7
24.Playground in school	36	33.6	10	9.3	16	15.0	45	42.1
25.Room has a window	37	34.6	6	5.6	23	21.5	41	38.3
26.Big tree in school	39	36.1	8	7.4	23	21.3	38	35.2
27.Drinks a glass of milk	36	33.3	7	6.5	25	23.1	40	37.0
28.Cousin has short hair	46	42.6	9	8.3	22	20.4	31	28.7
29.Most people taller	39	36.1	10	9.3	24	22.2	35	32.4

30. Zinc read a book	37	34.3	6	5.6	17	15.7	48	44.4
31. Zinc likes watching TV	37	34.3	11	10.2	16	14.8	44	40.7
32. Doesn't like yellow	37	34.3	14	13.0	23	21.3	34	31.5
33. Doesn't like broccoli	40	37.0	6	5.6	28	25.9	33	30.6
34. Zinc likes cats	39	36.1	9	8.3	10	9.3	50	46.3
36. Runs faster than most	38	35.2	8	7.4	12	11.1	50	46.3
37. Zinc is very good	41	38.0	6	5.6	13	12.0	48	44.4
38. Zinc can draw well	40	37.2	7	6.5	18	16.7	43	39.8

The frequencies presented on Table 22 suggest that a considerable proportion of young children, even when they are not given a clue about the possible secret status of a piece of information, might choose to withhold the more personal ones from other children, even from their close friends. The question that is raised is whether young children's friends are important recipients of young children's secrets, not only as opposed to non-friends, but as opposed to keeping these pieces of information to oneself.

To address this question a chi-square analysis was performed between the three disclosure target categories: 'friend', 'nobody' and 'non-friend/both'. The chi-square analysis showed that statistical significant differences were found in all items but the six items that had loaded on the secret factor. The items in which statistical significant differences were found are presented in Table 23 below:

Table 23: Results of the Chi-Square Analysis between Three Disclosure Target Categories (Friend, Nobody and Non-Friend/Both) for the ‘No Clue Condition’ Group

Items	Chi-square	Df
1.Surprise party	14.89**	2
2.Surprise present	12.02**	2
23.Home is close to school	16.22**	2
24.Playground in Zinc’s school	21.33**	2
25.Zinc’s room has a window	8.15**	2
26.Big tree outside the school	7.72*	2
27.Drinks milk	6.72*	2
28.Zin’s cousin has short hair	8.67**	2
29.People taller	6.50*	2
30.Read a book	19.06**	2
31.Zinc likes watching TV	21.17**	2
32.Does not like yellow	8.72**	2
34.Zinc likes cats	33.72**	2
36.Zinc can run faster	29.56**	2
37.People say Zinc is very good	24.39**	2
38.Zinc can draw really well	14.89**	2

** : Significant at the .01 level

* : Significant at the .05 level

The inspection of the frequencies reveals that in all the items where statistically significant differences were found the percentage of ‘nobody’ responses was lower than the expected and therefore a significant difference was observed. The most interesting finding of the present analysis, though, was that no statistically significant difference was found in the six items that had loaded on the secret factor (that is, the five items consistently classified as ‘secret’ by adults and children alike, and the ‘Negative personal preference’ Item 33): ‘Zinc took something that was not his/hers’, ‘Zinc doesn’t always tell the truth’, ‘Sometimes Zinc does dangerous things like climbing up

big trees', 'Zinc fancies a boy/girl in his/her class', 'Zinc wet him/herself once', and 'Zinc doesn't like broccoli'.

This finding indicates that for one third of the young children their friends are important recipients of their intimate disclosures, since they choose to share their secrets **only** with them. The other third of young children choose not to share their secrets with anyone in their peer group, which suggests that although these children do identify these pieces of information as intimate, or exactly because of that, they choose to keep this information to themselves. Finally, the last third of children would share these pieces of information with both non-friends and friends, a finding which might suggest either that these children have not yet acquired the capacity for restrictive disclosure, or that they did not view the specific items as intimate. To investigate the second possibility, i.e. to explore whether the children who shared the specific pieces of information with both non-friends and friends did so because they did not view the specific items as intimate, and therefore treated them as non-secret items, a direct discriminant function analysis was performed. The discriminant analysis used the classifications by the children of the specific items (non-secret, small secret, big secret) as predictors of the target of disclosure. The findings suggested that there was not a significant association between the classification of the specific items as non-secrets, and the disclosure of the particular items to both friends and non-friends. Therefore, it might be concluded that at this age (4.5 to 6.5 years of age) there is a considerable proportion of children (1/3 of the children) who apparently share their secrets with both friends and non-friends indiscriminately. However, it deserves to be stressed once more that even these children, who presumably have not yet acquired the restrictive disclosure-to-friends capacity, do not choose to share their secrets (or any piece of information, for that matter) **only** with non-friends. As noted before, non-friends were the least preferred recipients of children's disclosures.

These results partially corroborate H1. It seems that young children (4.5 to 6.5 years of age) display signs of the restrictive disclosure-to-friends pattern, as they discriminate between secrets and non-secrets, and they refrain from sharing the secret pieces of information with peers with whom they do not have a close relationship, although they share with them the non-secret pieces of information. However, only one third of young children seem to have fully acquired the capacity for restrictive disclosure to friends, purposefully sharing the secret pieces of information only with their friends.

Next, age and gender differences were explored (see HS2 and HS3). Age and gender differences were investigated in the context of the ‘no clue condition’ group since, as discussed previously, children appeared highly influenced by the clue that was given to them in the ‘clue condition’ group and, as a consequence, the results of the ‘clue condition’ group were largely biased.

As far as age differences were concerned, chi-square analyses were performed separately for the two age groups that were included in the Third Study: the ‘middle group’ (4.5- to 5.5-year-old children) and the ‘older group’ (5.5- to 6.5-year-old children). The chi-square analyses were performed between the two ‘basic’ disclosure target categories: ‘friend/nobody’ and ‘non-friend/both’, as the sample size was not satisfactory for the employment of the technique with three target categories.

The items in which statistical significant differences were found for the ‘middle age group’ are presented in Table 24:

Table 24: Results of the Chi-Square Analysis for the ‘Middle Age Group’ between Disclosure Target Categories Friend/Nobody and Non-Friend/Both in the ‘No Clue Condition’ Group

Items	Friend and Nobody		Non-friend and Both		Chi-square	Df
	‘n’	%	‘n’	%		
6.Zinc took something	32	65.3	17	34.7	4.59*	1
7.Doesn’t tell the truth	33	70.2	14	29.8	7.68**	1
15.Fancies a boy/girl	33	67.3	16	32.7	5.90**	1
18.Wet him/herself	35	72.9	13	27.1	10.08**	1
33.Not like broccoli	34	69.4	15	30.6	7.37**	1

** : Significant at the .01 level

* : Significant at the .05 level

As the Table 24 shows, in the case of the ‘middle group’ statistically significant differences were found in five items: ‘Zinc took something that was not his/hers’, ‘Zinc doesn’t always tell the truth’, ‘Zinc fancies a boy/girl in his/her class’, ‘Zinc wet him/herself once’, and ‘Zinc doesn’t like broccoli’. It is striking that all five items in which significant differences were found are secret items, i.e. items that had loaded on

the secret factor in the PCAs reported. In the case of the sixth secret item (Item 14: ‘Sometimes Zinc does dangerous things like climbing up big trees’) a statistically significant difference was found at the .10 level ($p = .063$). It seems that children of this age group treated secrets in a different way than other topics and that they refrained from sharing them with non-friends. Table 24 also shows that children of this age group considered the ‘Negative personal preference’ item ‘Zinc doesn’t like broccoli’ a secret, and tended to treat it accordingly, while the other ‘Negative personal preference’ item ‘Zinc doesn’t like the colour yellow’ was not treated as secret information.

Table 25 presents the items in which statistical significant differences were found for the ‘older age group’ (5.5- to 6.5-year-old children).

Table 26: Results of the Chi-Square Analysis for the ‘Older Age Group’ between Disclosure Target Categories Friend/Nobody and Non-Friend/Both in the ‘No Clue Condition’ Group

Items	Friend and Nobody		Non-friend and Both		Chi-square	Df
	‘n’	%	‘n’	%		
6.Zinc took something	39	66.1	20	33.9	6.12**	1
7.Doesn’t tell the truth	41	69.5	18	30.5	8.97**	1
14.Dangerous things	37	62.7	22	37.3	3.81*	1
15.Fancies a boy/girl	41	70.7	17	29.3	9.93**	1
18.Wet him/herself	39	66.1	20	33.9	6.12**	1
28.Cousin/short hair	38	64.4	21	35.6	4.99*	1

** : Significant at the .01 level

* : Significant at the .05 level

Table 25 shows that, in the case of the older children, statistically significant differences were found in six items: the five items consistently classified as ‘secret’ by adults and children alike (‘Zinc took something that was not his/hers’, ‘Zinc doesn’t always tell the truth’, ‘Sometimes Zinc does dangerous things like climbing up big trees’, ‘Zinc fancies a boy/girl in his/her class’, and ‘Zinc wet him/herself once’), and one item (Item 28: ‘Zinc’s cousin has short hair’) which has been classified as ‘non-secret’ by both adults and children in the PCAs conducted.

The hypotheses that there are age differences in children's restrictive disclosure to friends was not supported by these results, as in both age groups the secret items were treated differently than the other items, with a significantly higher percentage of children in both age groups choosing to disclose the specific items only to a friend or to keep these pieces of information to oneself. Only two differences were found between the two age groups.

In the 'older group' no statistically significant difference was found in the 'Negative personal preference' Item 33 ('Zinc doesn't like broccoli'). As discussed before, the 'Negative personal preferences' items were the only items where differences were found between adult and children participants in the Second Study. In the PCAs conducted for the Third Study (where the youngest children were excluded) the specific items appeared 'halfway' between secret and non-secret items. In view of the present difference between the two age groups the question is posed, whether older children's classification of secret and non-secret pieces of information approaches more closely that of adults'.

Also, in the case of the 'older age group' a statistically significant difference was found in the 'non-secret' Item 28 ('Zinc's cousin has short hair'). A similar finding was reported in the chi-square analysis between the 'friend/nobody' and 'non-friend/both' target categories which was conducted for the 'no clue condition' group (see Table 21). It was then proposed that a reason for this result could be that it was the only item that did not refer to Zinc personally: it can be speculated that older children viewed this piece of information as gossip and therefore, in contrast with children in the 'middle age group', refused to pass it on to people they do not know well.

Next, gender differences were explored. Chi-square analyses were performed separately for boys and girls between the two disclosure target categories: 'friend/nobody' and 'non-friend/both', as the sample size was not satisfactory for the employment of the technique with three target categories.

The items in which statistical significant differences were found for boys are presented in Table 26.

Table 26: Results of the Chi-Square Analysis for Boys between Disclosure Target Categories Friend/Nobody and Non-Friend/Both in the 'No Clue Condition' Group

Items	Friend and Nobody		Non-friend and Both		Chi-square	Df
	'n'	%	'n'	%		
6.Zinc took something	35	64.8	19	35.2	4.74*	1
7.Doesn't tell the truth	36	69.2	16	30.8	7.69**	1
14.Dangerous things	36	66.7	18	33.3	6.00**	1
15.Fancies a boy/girl	39	73.6	14	26.4	11.79**	1
18.Wet him/herself	36	66.7	18	33.3	6.00**	1
28.Cousin/short hair	35	64.8	19	35.2	4.74*	1
33.Not like broccoli	35	64.8	19	35.2	4.74*	1

** : Significant at the .01 level

* : Significant at the .05 level

Table 26 shows that significant differences were found in seven items. More precisely, statistically significant differences were found in the five items consistently classified as 'secrets' by adults and children ('Zinc took something that was not his/hers', 'Zinc doesn't always tell the truth', 'Sometimes Zinc does dangerous things like climbing up big trees', 'Zinc fancies a boy/girl in his/her class', and 'Zinc wet him/herself once'), in the 'Negative personal preference' Item 33 ('Zinc doesn't like broccoli'), as in the case of the 'middle age group', and in Item 28 ('Zinc's cousin has short hair'), as in the case of the 'older age group'.

In Table 27, below, the items in which statistical significant differences were found for girls are presented in order to be compared with the corresponding results for boys.

Table 27: Results of the Chi-Square Analysis for Girls between Disclosure Target Categories Friend/Nobody and Non-Friend/Both in the 'No Clue Condition' Group

Items	Friend and Nobody		Non-friend and Both		Chi-square	Df
	'n'	%	'n'	%		
6.Zinc took something	36	66.7	18	33.3	6.00**	1
7.Doesn't tell the truth	38	70.4	16	29.6	8.96**	1
15.Fancies a boy/girl	35	64.8	19	35.2	4.74*	1
18.Wet him/herself	38	71.7	15	28.3	9.98**	1

** : Significant at the .01 level

* : Significant at the .05 level

In the case of girls statistically significant differences were found in four items: 'Zinc took something that was not his/hers', 'Zinc doesn't always tell the truth', 'Zinc fancies a boy/girl in his/her class', and 'Zinc wet him/herself' once. These four items were consistently classified as 'secrets' by adults and children alike in all PCAs. Girls appeared less 'secretive' than boys, in the sense that significant differences were found in four items, whereas in the corresponding analysis for boys statistically significant differences were found in seven items. In other words, a significantly higher percentage of girls would choose to disclose four items (out of the total 22) only to a friend or keep to oneself, while boys would apply this restrictive disclosure rule to seven items. This gender difference supports hypothesis HS3.

III.7. The Third Study: Discussion.

The two previous studies prepared the ground for the Third Study by attesting to children's ability to differentiate between secret and non-secret pieces of information and by providing a list of the statements young children consider secret, thereby identifying information of the type that was expected to be subject to restrictive disclosure to friends. The Third Study put to test this expectation. It explored directly the question whether young children treat secret information in a way that pertains to highly personal disclosures (that is, greater disclosure to friends than to non-friends), while treating the other, the non-secret pieces of information, in a way that pertains to low personal disclosures (equal disclosure to both friends and non-friends).

The Third Study's results showed that the answer to this question is not straightforward: the findings suggested that young children engage in restrictive self-disclosure under some, but not all, conditions. For instance, young children seem to follow the restrictive disclosure pattern only when not influenced by adults' hints. It cannot be ignored, however, that the seeds of restrictive self-disclosure were evident in five-year-old children (age range of the five-year-old group: 4.5 to 5.5 years of age).

Interestingly, there were not marked age differences from this age till the age of 6.5 (age range of the present study's sample: 4.5 to 6.5 years), thus failing to support hypothesis HS2 regarding age differences. Considering the findings of the previous studies, though, there is indication that age differences exist at younger ages.

In the Third Study, five- and six-year-old children were interviewed in two experiment conditions. In the first one, no clue was given relating to the level of secrecy of the statements, while in the second a hint ('Some of these things might be Zinc's secrets') was presented. Children's answers appeared highly influenced by the adult's 'input' in the 'clue condition' group. In the chi-square analysis of the 'clue condition' group statistically significant differences were found in 18 out of the 22 items presented to the children, suggesting that a significant higher percentage of children would share these 18 items (which in the PCAs conducted had loaded on all factors, the secret, the non-secret and the 'surprise' factor) with a friend or keep them to themselves rather than share them with a non-friend or both a friend and a non-friend. This finding supports the hypothesis (HS1b) regarding young children's influence by external clues.

In contrast, in the chi-square analysis of the 'no clue condition' group, statistically significant differences were found only in seven items, suggesting that young children, when left to their own devices, would treat only seven out of the 22 items (the items classified as 'secrets') in a way that pertains to highly intimate disclosures.

The fact that young children are suggestible to adults' cues (even unfamiliar adults') was not surprising. The findings of First and Second Study pointed to this direction, and they were congruent with researches on children's court testimonies (Bottoms, Goodman, Schwartz-Kenney & Thomas, 2002; Bruck & Ceci, 1997; Pipe & Goodman, 1991; Pipe & Wilson, 1994) where young children's 'great influence' by adults' cues is described as 'a matter of some concern' (Pipe & Goodman, 1991)¹. Due to this evidently great influence by the adult input, the data from the 'clue condition' group were not subjected to further statistical analysis and are not discussed in detail in the present section, as they are considered biased.

The findings of the 'no clue condition' group suggested that children already from the age of five, on the condition that they are not influenced by adults, are able to treat pieces of information according to their level of personal content: while they disclose the low intimate/non-secret pieces of information to both friends and non-friends, they tend to share the highly personal/secret pieces of information only with friends or keep them to themselves, thus displaying signs of the restrictive disclosure-to-friends pattern.

To my knowledge, there is no other research exploring systematically the restrictive disclosure of personal information to friends and non-friends at this young age. Two studies, Rotenberg's (1995a) and Watson's and Valtin's (1997), investigated relevant issues but apparently in a not so systematic way. Rotenberg (1995a) in his study on the development of restrictive disclosure investigated young children's disclosure of assumed low and highly personal topics in their conversations with friends and non-friends. As discussed thoroughly elsewhere, an important weakness of this research was that the level of intimacy (low or high) that the topics under study appeared to reflect had not been tested, and when these topics were used in the First Study their ability to reflect low and high levels of intimacy was not validated. On the other hand, Watson and Valtin (1997), as part of their research on secrecy in middle

¹ For a detailed discussion of this point please see the General Discussion chapter.

childhood, posed the question whether children would tell a secret to a friend. Their youngest age group (40 children, mean age = 68 months) was in the age range of the 'older age group' of the present research. However, Watson and Valtin examined children's disclosure of only one secret to a friend: in their study a story about a child wetting his/her pants at school led to questions about whether the child would tell a friend and whether the child would tell mother. Children's disclosure to non-friends, or children's disclosure of non-secret pieces of information to friends and non-friends was not investigated.

Taking things from the beginning, though, the Third Study's results' analysis set off with a need to test whether the results of the Second Study would be replicated with an 'older sample' (members of the 'middle' and the 'older age group' only). The PCAs conducted showed that, as in the Second Study, non-secret, secret and 'surprise' items (items including the word 'surprise' in their wording) loaded on different factors. Once more, the similarity between children's classification of secret and non-secret items and the corresponding classification made by adults was striking. Even more so, as the two 'Negative personal preferences' items ('Zinc doesn't like the colour yellow', and 'Zinc doesn't like broccoli'), which were the only items where differences were found between adult and children participants in the Second Study (adults classified them as 'non-secrets', while children classified them as 'secrets'), appeared now to be 'halfway' between the secret and non-secret factor, and thus the main difference between children's and adult's classifications seemed lessened.

The hypothesis that there is an age effect and that older children's classification of secret and non-secret items might follow more closely the corresponding classification of adults was put forward. This hypothesis seems to be supported by the findings of the chi-square analyses between the target categories of friend/nobody and non-friend/both performed separately for the two age groups taking part in the Third Study. The results indicated that children in the 'middle age group' would treat the 'Negative personal preference' item 'Zinc doesn't like broccoli' in a way that pertains to a highly personal piece of information (sharing it only with friends or keeping it to themselves, while refrain from sharing it with non-friends). On the other hand, children in the 'older age group' would not treat any of the 'Negative personal preferences' items as a highly personal piece of information.

The distinctive behaviour of the 'Personal preference' items was noted from the beginning of the research project and has been a matter of special attention throughout

the research. Going back to the Literature Review chapter (where it was reported that Rotenberg (1995a) regarded personal preferences as highly personal disclosures for two- to six- year-old children) and the First Study (where the principal component analysis of the Tape-Recording Task showed that disclosures on personal preferences loaded on a distinct factor, separately from all the other variables), the question whether personal preferences are highly intimate disclosures for young children was considered open for investigation. In the Second Study it was pinpointed that it was the ‘Negative personal preferences’ items (i.e. the items that describe things that one does not like) which were classified by the children as ‘secrets’, and thus the suggestion that only negative personal preferences are highly personal/secret topics for young children was put forward. Still, it was clearly stated that the behaviour of the particular items needs further investigation, as in the PCA conducted the ‘Negative personal preference’ item ‘Zinc doesn’t like the colour yellow’ loaded with a high loading on both the secret and the non-secret factor, indicating that the classification of the ‘Negative personal preference’ items is still indeterminate. Based on the findings of the Third Study, the special attention given throughout the research to the ‘Personal preferences items’, and especially the ‘Negative personal preferences’ items, can be explained: these were the items where changes were marked and age differences were apparent.

In summary, the Third Study’s results supported hypothesis HS4. The Second Study’s findings were replicated with the older sample (4.5- to 6.5-year-old children). Consequently the Third Study could move on to the exploration of the main research question: the examination of the disclosure targets of young children’s non-secret and secret pieces of information.

The chi-square analysis of the ‘no clue condition’ group performed in order to explore this point indicated that a significantly higher percentage of children would choose to disclose the secret pieces of information only to a close friend or keep them to themselves, than share them with children they do not have a close relationship with. This finding was replicated in the chi-square analyses conducted for each age group and each gender separately: in every case they were specific items, and they all were all items that had loaded on the secret factor in the PCAs conducted (with only one exception, the item ‘Zinc’s cousin has short hair’) that a significantly higher percentage of children would refrain from disclosing to children with whom they were not friends.

These results are considered an indication of young children’s growing capacity for restrictive disclosure. It appears that children from the age of 4.5 years

(when not influenced by adults) display the first steps towards the adoption of the restrictive disclosure pattern. These findings are incongruent with the Piagetian view that children younger than seven years are incapable of keeping their thoughts to themselves (Piaget, 1959, pg. 38-39). They underscore the finding that children achieve 'verbal continence' at an earlier age than Piaget postulated, as it has been supported by researchers studying the development of the theory of mind and children's ability to withhold information and deceive others (e.g. Peskin, 1992; Sodian & Frith, 1992; Sodian, 1991; Chandler, Fritz & Hala, 1989).

The consistency appears striking: it seems that there is a 'core' of secret items (four items: 'Zinc took something that wasn't his/hers', 'Zinc doesn't always tell the truth', 'Zinc fancies a boy/girl in his/her class', and 'Zinc wet him/herself once') which have loaded on the secret factor in all PCAs conducted, were classified as 'secrets' by adults and children alike and were recognized as pieces of information that should not be revealed to non-intimate people in all chi-square analyses performed. It was surprising that in two chi-square analyses (the chi-square analysis for the 'middle age group' and the chi-square analysis for girls) no statistically significant differences were found for the fifth secret item, 'Zinc sometimes does dangerous things like climbing up big trees', which has consistently loaded on the secret factor in all PCAs, and has been classified as 'secret' by children and adults alike. In the case of the chi-square analysis for the 'middle age group' a statistically significant difference was found at the level of .10 ($p = .063$). However, it seems that the girls did not consider dangerous behaviour (or at least the specific dangerous behaviour, climbing up big trees) as a piece of information that should be treated in a way that pertains to highly personal disclosures.

Generally, girls appeared less 'secretive' than boys, in the sense that in the chi-square analysis for girls significant differences were found in only four items (the 'core' secret items), while in the corresponding statistical analysis for boys significant differences were found in seven items. In addition to the 'Dangerous behaviour' item (which boys treated as a highly personal disclosure, while girls did not), girls did not treat as secret any 'Negative personal preference' item (boys treated as a secret the 'Negative personal preference' item 'Zinc doesn't like broccoli'). Finally, girls did not treat as a highly personal disclosure the item referring to Zinc's cousin ('Zinc's cousin has short hair'), the only item that had loaded on the non-secret factor, but was treated as a highly personal piece of information by the boys.

The finding that girls were less 'secretive' than boys, a finding which supports hypothesis HS3, could be connected to gender differences in communication reported by theorists. Coates, investigating gender differences, has used the term 'communicative competence' (1993, pg. 107). She has argued that it is important to incorporate social and cultural factors into linguistic description, as the acquisition of language is not only about the internalisation of a set of grammatical rules; it is also about a sense of appropriateness: 'It is not sufficient for the child to be linguistically competent; in order to function in the real world, s/he must also have learned when to speak, when to remain silent, what to talk about –and how to talk about it –in different circumstances'. Coates reported gender differences in the communicative competence and appropriateness: she suggested that women and men, as well as girls and boys, tend to discuss different topics (pg. 115). According to her, women often share a great deal of information about themselves and talk about their feelings and their relationships. Men on the other hand rarely talk about themselves, but compete to prove themselves better informed about current affairs, travel, sport, etc. For men, the discussion of personal issues is not a normal component of conversation.

According to Tannen, the difference in communication competence for girls and boys is marked, even in very young ages (1990, pg. 80). The center of a little girl's social life is her peers, with whom she engages in conversations. In contrast, boys' peer relationships are characterized by greater involvement in physical activities that do not require the verbal exchange of personal information (Benenson & Christakos, 2003). To put it in simpler words, boys, as opposed to girls, are not used to talking; they prefer to 'do things' than sit and talk.

In a research project exploring how same sex pairs talk to each other at grade levels ranging from second grade to university (Tannen, 1990), remarkable differences were found between males and females. The participants were instructed to sit together in a room and 'consult with each other and find something serious to talk about'. It is reported that the second-grade boys moved so incessantly that it seemed that the chairs they were sitting on could not contain them. The picture the second-grade girls presented seemed to be 'of another world' (pg. 248). They were sitting very still and looked directly into each other's faces, telling each other stories about things that have happened to them and other people. They seemed satisfied that were talking to each other. Tannen concludes by confessing the feeling she had when comparing the boys

and girls of the same age: she felt that she was looking at 'two different species' (pg. 248).

While the 'Two Cultures Theory', as discussed in the Literature Review chapter, has been challenged by recent theorists (e.g. Underwood, 2004), the vignettes illustrated by Tannen seem to prove her point that the request to talk to each other about something serious seemed to make sense to the girls, as they were asked to do something they often do by choice, that is, sit together and talk. However, the same request was a different one for boys, who are far less likely to sit together and talk to each other in the course of their play.

The boys and girls observed by Tannen and her colleagues are older than the children participating in the present study. However, the results of the chi-square analyses performed separately for each gender suggested that, although there were items (the 'core' secret items) that were treated as highly intimate topics by both girls and boys, five- to six-year-old boys, like the older boys in Tannen's research, would talk about fewer things with friends and non-friends, and would choose to keep more items to themselves or share them only with a close friend than girls. Following Tannen's line of thinking, this similarity across ages was expected, as 'they are important similarities that link the females, on one hand, and the males on the other, across the vast expanse of age' (pg. 245).

It is noteworthy, however, that in the Second Study, where the list of the items young children consider secret or non-secret was put together, no gender differences were found. In view of these findings, it could be postulated that young girls and boys share a common perception on the level of intimacy of a particular item. Nevertheless, when it comes to actually sharing specific items boys seem to act differently than girls. A similar postulation about adults was put forward by Reis, Senchak and Solomon (1985): they found that women and men had similar perceptions on the level of intimacy that was portrayed in a set of recorded conversations; however, when interacting with a same-sex friend men chose not to engage in intimate self-disclosure. Based on this result, the researchers concluded that women and men agree on the path to intimacy, but men choose not to follow it. It could be postulated that 'the important similarities across the vast expanse of age' are at work here as well, and as a result young boys and girls display the same behaviours as grown men and women -agreeing on the path to intimacy but acting in different ways. On the other hand, it could also be argued that this discrepancy between the results of the Second and Third regarding

gender differences mirrors the hazy picture surrounding gender differences in young ages, where few consistent differences in observational measures are reported and findings are often conflicting (Dunn, 2004, pg.118).

Yet it seems that following Tannen's and Coates' arguments as regards the existence of gender differences from a very young age, certain gender differences in the present study could be explained. One item where a difference was noted between girls and boys in the present research was the item 'Zinc cousin has short hair': girls treated it as a non-secret item, while boys treated it in a way that pertains to secret disclosures. According to Tannen, girls talk more freely about more issues to their peers than boys. It appears that girls, contrary to boys but just like older women, are used to talking about themselves and other people, 'telling each other what they are thinking and feeling, what happened that day: who was at the bus stop, who called, what they said' (Tannen, 1990, pg.80). Presumably boys, like older men, disparage an interest in the details' of people's lives as 'gossip' (Tannen, 1990, pg. 97), and choose not to talk about them. It could be argued that boys perceived the item 'Zinc's cousin has short hair' which does not refer to Zinc directly but to another person in Zinc's environment, as 'gossip' and it is possible that they, just like older men, looked critically on talking about the details of people's lives. Looking at this gender difference, it is interesting to note that recent researches, while pinpointing some negative outcomes of gossip, such as lower peer acceptance, have also supported that gossip may fulfil a normative function in female social development by serving to create and maintain the intimate dyads that are the hallmark of girls' social interaction (Christina, 2001).

A consistent result in all Third Study's statistical analyses was that the 'surprise' items (the two items which included the word 'surprise' in their wording) were treated as non-secret items. It seems that young children would openly discuss those 'surprises' with both friends and non-friends. This finding was unexpected: The chi-square analysis of the Second Study showed that these items were identified as secrets by the young children at the significance level of .01. Furthermore, in all PCAs conducted both in the Second and the Third Study those items loaded on a distinct factor separately from the other items, suggesting that they were classified as a distinct kind of disclosure. Yet, the findings of the Third Study indicated that, when it came to disclosing them, the 'surprise' items were not treated in a distinct way by the children, in contrast with the items that loaded on the secret factor.

This seeming discrepancy between the findings of the Second and Third Study could be explained when the differences in the context and research aims of the two studies are examined. In the Second Study children were asked which of the items presented to them were secrets, without specifying from whom they should be kept secret. In the Third Study children were asked if the puppet Zinc would disclose a specific piece of information to his/her friends or to other peers. However, the two 'surprise' items presented to the children, referred to surprises for Zinc's family members. Taking in consideration the whole picture, it could be argued that children acted logically and consistently when reporting that these are 'secret' items in one research (apparently they are secrets as far as the members of the family are concerned), while opting to share them with both friends and non-friends in the next research (the surprises did not concern either the friends or the non-friends).

The link that connects these apparently discrepant behaviours appears to be what Vangelisti (1994) calls 'dissemination or form' of the secret. The 'dissemination or form' of the secret refers to the persons from whom the secret is being kept, and it is closely related to the nature and strength of the secret. Following Vangelisti's (1994) postulations and in view of children's behaviour, it seemed that the specific items were treated by the young children in the way they would be treated by older children, adolescents and adults: as 'sweet secrets', i.e. as secrets that are not particularly strong (otherwise they would not be shared under any condition with friends and non-friends indiscriminately), are time-limited and made for the purpose of fun (Imber-Black, 1998, pg.13).

Still, considering the previous studies' and the 'clue condition' group's results, the fact that children in the 'no clue condition' group seemed not so influenced by the hint (the word 'surprise') and apparently treated the 'surprise' items as adults would appears surprising. It is difficult to fully explain this difference in the influence by the various clues. However, this difference might suggest that five- and six-year-old children cast a critical eye at the clues and hints provided by adults, probably depending on the 'power' of the clue provided. It is possible that the hint 'Some of these things might be Zinc's secrets' provided in the beginning of the interview in the 'clue condition' group was perceived as more powerful than a word included in the wording of a sentence. Thus, this different treatment might be an indication that children at the age of five have reached a point where they can challenge adults' rules or at least put them in some perspective. Piaget (Piaget & Inhelder, 1969) claimed that this was

possible only after the age of seven. He sustained that at an earlier age (five or six years of age) children follow the structure of 'moral realism', according to which obligations and values are determined by the law or the order itself, independent of intentions and relationships (pg. 125). According to Piaget, children before the age of seven regard the rules they receive from their elders as 'sacred', untouchable, and of transcendent origin. It is only after the age of seven that children regard rules as the result of agreement, and accept the idea that rules can be changed or challenged (pg. 127). A recent research (Mills & Keil, 2005), however, has shown that children at six years of age, like adults, can understand and estimate false claims made by other people and judge them (as lies or mistakes) according to whether the false claims are consistent, or not, with the character's self-interest. The researchers concluded by saying that 'children may be more gullible than adults, but the seeds of doubt are present from an early age', a conclusion apparently incongruent with Piaget's postulations, but congruent with the results of the 'no clue condition' group.

The results discussed so far have shown that children from the age of 4.5 years can distinguish between low and highly intimate (non-secret and secret) pieces of information and that they purposefully choose **not to share** the latter with peers with whom they **do not** have a close relationship. Thus, it is considered that children at this age have already made an essential step towards the acquisition of the restrictive disclosure-to-friends pattern. The important question that now emerges, in order to get a complete picture of children's capacity for restrictive disclosure to friends, is whether young children choose **to share** these intimate pieces of information with the peers with whom they **do** have a close relationship. Are young children's friends important recipients of young children's highly personal disclosures, or do young children keep these secret pieces of information to themselves?

The inspection of the frequencies in the 'no clue condition' group revealed that there were high percentages of 'nobody' responses. It appears that a considerable proportion of children would choose not to disclose information neither to their friends nor to non-friends. It is remarkable that the five 'secret' items (the four 'core' secret items and the 'dangerous behaviour' item) had the highest percentages of 'nobody' responses (the percentage of 'nobody' responses for the five secret items ranged from 33.3% to 40.6%, while for the other items the percentage ranged from 9.3% to 25.9%). These high percentages of 'nobody' responses suggest that children might withhold the most intimate pieces of information even from their close friends.

Researchers investigating adults' disclosure of secrets have reported controversial findings regarding 'total secrecy', i.e. one not disclosing one's secret to anyone. Vrij, Nunkoosing, Paterson, Oosterwegel and Soukara (2002) sustain that total secrecy is rare. In their research on secrets with a sample of 70 college students, they found that most secret-holders had informed at least one other person about their secret. Out of the 41 secret-holders, only four reported that they had not informed anybody else about their secret. It is noted that all four participants who kept total secrecy expected serious consequences if the secret was disclosed. On the other hand, Finkenauer and Rime (1998), on two researches on socially shared emotional experiences and emotional experiences kept secret, have found that among adults 55% in the first study and 40.5% on the second study could retrieve the memory of an emotion or event kept as a total secret. They claimed that these findings suggest that among adults 40% to 50% can retrieve a memory of an event or emotion never shared. Investigating further the characteristics and the consequences of shared and non-shared events and emotions, Finkenauer and Rime (as mentioned briefly in the introduction of the Second Study) have found that the non-shared events involved more shame and guilt, increased appraisal of personal responsibility and more dissimulation of emotion than did shared events. It appears that the results of these researches, although they differ on the reported proportion of 'total secrets' kept by adults, they both suggest that the non-shared experiences are more negatively charged (more shame and guilt, serious consequences expected if the secret is disclosed) than shared experiences.

It could be argued that the five secret items in the present study, which had the higher percentages of nobody responses than all other items, are more negatively charged than the other items, in the sense that they might trigger more shame and guilt (for instance consider the secret items: 'Zinc took something that wasn't his/hers', 'Zinc doesn't always tell the truth', 'Zinc fancies a boy/girl in his/her class', 'Zinc wet him/herself once'), and more negative consequences are expected, such as parents' telling off, if the secret is disclosed (for instance consider the secret item: 'Zinc sometimes does dangerous things, like climbing up big trees'). It can thus be postulated that this negative charge is a reason for the high percentages of the 'nobody' responses of the five secret items.

This postulation about a possible negative charge of specific items was also put forward in the case of the Personal Interview in the First Study, where the percentage of 'nobody' responses reached a peak of 20.8% in the case of 'Negative personal' items

(while for the other topics the percentages ranged from 7.1% to 13.2%). It was then asked whether young children choose to keep things that relate to negative personal information to themselves. It has to be noted, however, that the results of the Zinc Interview seemed not to support this postulation, as in the case of the 'Negative personal' items in the Zinc Interview only 4.3% of the disclosures was not addressed to anyone. Yet, the high percentage of 'nobody' responses in the 'Negative personal' items of the Personal Interview, and the high percentage of 'nobody' responses in the secret items of the Third Study appear to suggest that children, similarly to adults in Finkenauer's and Rime's study, choose to keep a considerable amount of negatively charged information to themselves.

On the other hand, as it was illustrated by researches exploring children's interactions with family members (e.g. Dunn, Creps & Brown, 1996) and by the findings of the First Study, the family is a context where young children self-disclose to a considerable extent. This is congruent with the basic assumption held by secrecy and disclosure researchers, i.e. that secret-holders confide information to those who they feel emotionally close (Bok, 1984; Rotenberg, 1986; Vrij, Nunkoosing, Paterson, Oosterwegel & Soukara, 2002; Yovetich & Drigotas, 1999), as young children are emotionally attached to the members of their family (Bowlby, 1969; 1973; 1980). Based on this, it is clear that the high percentage of the 'nobody' responses needs to be viewed not only as children's tendency to keep things to themselves, but as a possible hesitation or refusal to share the highly personal items with the particular choice of disclosure targets presented to them, namely the friend and the non-friend. It is possible that if other possible targets of disclosure, such as family members, were presented to them, that the 'nobody' percentages would be lower.

The chi-square analysis which was performed in order to explore whether young children's friends are important recipients of their secrets showed that once more the secret items have reacted differently than the other items: in all other items (but the items that had loaded on the secret factor) statistically significant differences were found. The inspection of the frequencies revealed that in all non-secret/low personal items the percentage of 'nobody' responses was lower than the expected, suggesting that most young children would openly share these items with their peers.

This finding seems to confirm young children's ability to differentiate between highly and low intimate disclosures. The importance of this ability needs to be stressed: it is certainly perceived as a prerequisite for restrictive disclosure, which has to be

conquered before young children are able to apply the restrictive disclosure pattern, as it is only logical that one should first be able to discriminate which pieces of information are to be treated in a way that pertains to highly intimate pieces of information, before meaningfully treating them in this way.

Furthermore, the results of this chi-square analysis indicated that for one third of young children their friends are their confidants; the presumably carefully selected recipients of their secrets. This one third of the young children are able to apply the restrictive disclosure-to-friends pattern, first by differentiating between the high and low intimate disclosures, and then by treating the highly personal disclosures in a way that pertains to them, in the same way that adolescents and adults would treat them (Kelly, Klusas, Weiss & Kenny, 2001; Vriza, Nunkoosing, Paterson, Oosterwegel, & Soukara, 2002;). Based on these results (and the limitations of these results, as one third of the children reacted in this way) it can be supported that the hypothesis put forward in the introduction of the research project, that the restrictive disclosure pattern occurs from a young age, seems to be partially substantiated

The exclusive disclosure of highly personal information to friends, that one third of the young children displayed, is particularly emphasized as a key element of the restrictive disclosure pattern. It is noted that the percentage of disclosures addressed only to non-friends was remarkably low. However, there was another third of the children who chose to share intimate pieces of information, **not only with non-friends**, but with both friends and non-friends. Even in this case it can be supported that friends are important recipients of disclosures –it is clear that young children would not share pieces of information to non-friends, while not sharing them with their friends. Yet, it is evident that this third of the children who chose to share the highly personal pieces of information with both friends and non-friends did not apply the restrictive disclosure pattern.

The question emerged whether these children who shared the secret pieces of information indiscriminately with both friends and non-friends did so because they did not consider the specific pieces of information as highly intimate. The discriminant analysis which was performed in order to examine this question showed that this was not the case. It appears that one third of the 4.5- to 6.5-year-old children, although are able to discriminate between secret and non-secret pieces of information, which is the first step towards the acquisition of the restrictive disclosure-to-friends pattern, do not subsequently treat these different kinds of information in a distinctive way. In other

words, it seems like they have not yet taken the 'following step', which would make it possible for them to actually display the restrictive disclosure pattern.

Finally, the other third of the children chose not to share the secret pieces of information with anybody. The high percentage of 'nobody' responses and the questions that it generates have been previously discussed on account of the high percentages of the 'nobody' responses in other statistical analyses.

Comparing the chi-square analysis' results presented above with the findings from corresponding researches with older children or adult secret-holders, it appears that young children's and older children's or adults' behaviour is not as dissimilar as it might have been expected. From the 133 undergraduate students in Kelly's, Klusas', Weiss' and Kenny's (2001) sample, 82 indicated that they would share their secret with a same- or opposite-sex friend. There were 15 participants who indicated their parents (13 indicated their mother and two their father) as their confidants, suggesting that even at much older age parents could be considered recipients of secrets. It is noteworthy that there were three participants who indicated that they would disclose their personal secret to a stranger, and five who indicated other types of confidants (for whom no more information is provided, but apparently are not friends or family members). It is noteworthy that even at a much older age there is a percentage (however low) of interviewees who would chose to disclose a secret to a person with whom they do not have a close relationship. This is also evident in Vrij's, Nunkoosing's, Paterson's, Oosterwegel's, and Soukara's (2002) research who found that secret-holders who informed others mainly informed friends, partners and family members, but there were also cases where acquaintances were informed. Finally, in Rotenberg's research (1986) with fourth-grade children, it was reported that secrets were more frequently shared among friendship pairs, but there were cases where secrets were shared among non-friends.

The question that is now posed concerns individual differences, namely why some young children seem to have attained the restrictive disclosure-to-friends pattern, while others do not appear able to apply it; or even, why some children choose to disclose a secret, while others choose to keep it to themselves. Based on the results of the researches on older children and adults presented above, it could be supported that this enquiry on the individual differences might be useful for older age groups as well. However, it cannot be denied that the individual differences appear more proclaimed in the case of younger children where considerable differences were noted.

As regards the high percentage of young children who reported that they would not share the secret pieces of information with anyone (already examined in relation to the limited choice of disclosure targets offered to the children in the present study), it is pertinent to note that Vrij, Nunkoosing, Paterson, Oosterwegel, and Soukara (2002) offered an alternative explanation on why some people keep secrets, based on individual, idiosyncratic characteristics. They argued that some people may keep a secret for intrinsic motivation, because it is fun or for enjoyment. The results of their study suggested that more secret-holders held secrets in order to avoid disapproval, i.e. forced by external reasons, rather than for intrinsic motivation. However, it was clear that a sub-group of the sample studied reported that they held secrets for intrinsic motivation.

Young children might have a particularly forceful source of intrinsic motivation for secret keeping: their strive for autonomy. In the Second Study's Discussion section the significant function of secrecy within the framework of young children's individuation process was extensively discussed. It was postulated that having and keeping secrets is implicated in the developmental line of separation-individuation (Mahler, Pine & Bergman, 1975), and that the psychological and psychosocial meaning of apartness involves a person's having secret thoughts and feelings (Margolis, 1966). This apparently important function of the possession of secrets combined with the concept of the secret as a 'private possession' that might be lost if shared, that Watson and Valtin (1995) argued is the concept young children have of secrets, might be a reason for the high percentage of 'nobody' responses in the case of secrets. Watson and Valtin sustained that young children have a rudimentary concept of 'secrets' as pieces of information that they have 'all to themselves', or otherwise they are lost. The present study's results suggested that this was not the case for most children: two thirds of them chose to share their secrets either only with their friends, or with both friends and non-friends. However, it is possible that this strive for autonomy is a factor that motivates some young children who, in their search of their separate identity, choose to cling on to their secrets. Mashek and Sherman (2004) have reported a similar tendency in adults. They proposed that perceived threat to personal control and identity causes the desire for less closeness. They argued that the ability to differentiate between self and other is most likely to break down when trying to establish intimacy. It seems possible, they continue, that individuals may be able to tolerate only a certain degree of this inability

to differentiate between self and other, and when this threshold is crossed, the self may feel too close to the other.

Other individual factors could play a role in young children's choice of the recipients of secrets. To my knowledge there are no researches investigating children's individual differences in self-disclosure. However, the review of studies exploring individual differences in friendship or friendship quality could provide useful information and inferences can possibly be made.

Dunn and Cutting (1999) in their research on individual differences in young children's friendship interactions investigated the links between four-year-olds' (128 children, mean age = 4.16 years) social understanding, language abilities, temperament, behavioural adjustment and family background and the quality of interaction with a close friend assessed in two sessions of joint pretend play. The findings suggested the existence of marked differences in children's interactions with their friends. Particularly relevant to the study of individual differences in self-disclosure to friends seem to be Dunn's and Cutting's findings regarding individual differences in successful communication between friends: the smoothness of children's communication with their friends was strongly related to theory of mind skills, emotionality, mother's education and children's narrative skills. Furthermore, the results suggested that the good mindreaders (children who scored high on theory of mind tasks) and those who scored high on emotion understanding talked more to their friends.

Although Dunn's and Cutting's research did not investigate children's restrictive disclosure to friends (talking more to a friend does not necessarily imply the exchange of highly intimate disclosures), based on these results [results which are backed up by other researches which found positive correlations between false-belief measures and young children's peer social skills (Watson, Nixon, Wilson & Capage, 1999), or between social understanding and pretend play with a close friend (Maguire & Dunn, 1997)] it could be hypothesized that children's ability for restrictive disclosure might be similarly influenced by individual factors, such as emotion understanding and theory of mind skills. Children with more developed emotion understanding and theory of mind skills might have a more 'advanced' concept of a close friendship relationship, where trust is used as the basis for the decision to share highly intimate pieces of information (Watson & Valtin, 1997).

By contrast, Lecce's and Hughes' (2005) research indicated that things might be more complex as far as the relation between young children's individual differences

(such as theory of mind skills) and communication with friends is concerned. In their research with four-year-old children Lecce and Hughes found that children's talk about their own inner states with their siblings or with their friends was not significantly correlated to their theory of mind skills, as assessed with a battery of six false-belief prediction, explanation and deception tasks. Interestingly, though, children's talk about others' or shared inner states was significantly correlated with the children's theory of mind skills. According to the researchers, these results suggest that children's inner state talk is not a homogeneous category and should be considered as a complex system of distinct components. It seems that further research, which would take in consideration all the permutations and distinct components of young children's communication with their friends, is needed to clarify the relation between children's theory of mind skills and the characteristics of their friendships; a research which would benefit greatly the investigation of the individual differences in young children's self-disclosure in friendships.

On the other hand, Peskin and Ardino (2003) suggested that theory of mind skills might be related to another facet of young children's self-disclosure, that is the ability to keep a secret. According to the researchers, the ability to keep a secret involves the conceptual understanding that what one knows may not be accessible to others, and they hypothesized that individual differences in the ability to keep a secret would be related to performance on theory of mind tasks. The results confirmed the hypothesis. Keeping a secret was significantly correlated with children's performance on ToM tasks even after controlling for age and executive function (a term which covers processes needed to hold in mind a goal amidst distracting alternatives, such as inhibitory control and working memory).

Following a different vein on the exploration of individual differences in friendships, Stocker and Dunn (1990) investigated the relation between temperament and relationships in childhood. They reported significant individual differences in friendships which are connected to children's genetic differences. Studying children in middle childhood, the researchers found that the more sociable children had more positive relationships with their friends, and reported more closeness and less hostility in their friendships. If closeness, as a feature of friendship quality, is connected to children's temperament, then the question emerges whether a specific characteristic of closeness, that is the capacity to restrictively disclose highly personal information to friends, is also connected to temperament characteristics.

Moreover, individual differences in friendships have been connected to the quality of the child-parent attachment relationship (for a meta-analysis, see Schneider, Atkinson & Tardiff, 2001). Other factors affecting the parent-child relationship, such as the parental behaviour characteristics of authoritative, authoritarian and permissive parenting styles (Fagot, Luks & Poe, 1995; Neal & Frick-Horbury, 2001) or 'parental ideas' about the importance of young children developing intimate ties with non-family persons (Aukrust, Edwards, Kumru, Knoche & Kim, 2003), have also been studied in relation to children's ability to create intimate friendships, but it appears that intimacy patterns are specifically connected to the parent-child attachment relationship.

According to attachment theory the security of the early child-parent bond is reflected in the child's interpersonal relationships across the life span, as the child-parent relationship serves as a prototype for subsequent relationships (Bowlby, 1969, 1973, 1980). Grabill and Kerns (2000) studied the hypothesis that a secure attachment style enhances intimacy in friendship with a sample of 600 university students. The findings provided evidence that attachment styles were related to perceptions of intimacy. Individuals with secure attachment were more likely to self-disclose, to respond when others self-disclosed to them, and to feel understood, validated, and cared for by others. The researchers concluded that these differences suggest that people with a secure attachment style have the general characteristic necessary for the development of intimate relationships with other people.

Things do not seem so straightforward with young children. It appears that the link between attachment and friendship relations strengthens with age (Schneider, Atkinson & Tardiff, 2001), since the internal working models become more stable with age (Bowlby, 1969). As far as young children are concerned, although there is indication that more positive and secure parent-child relationships are associated with more positive friendships for this age as well (Schmidt, 1998), some conflicting findings are also reported, according to which securely attached young children tend to be in friendships that are less dyadically positive, that is less connected, less synchronous and less cognitively sophisticated in play (Youngblade & Belsky, 1992). In any case, the early relationships with the parents seem to influence young children's ability to form intimate friendships; the unanswered question is to which effect. However, either if there is an affective carryover between relationships, so that children who share a warm, sensitive bond with their mothers come to recreate familiar relationships with their friends (Sroufe & Fleeson, 1986), or if children compensate, by

forming close friendships, for parent-child relationships that are not particularly satisfying emotionally (Youngblade & Belsky, 1992), the family and the friendship system are not seen as independent; they are viewed as functioning interdependently (Isley, O'Neil, Clatfelter & Parke, 1999) and the characteristics of one seem to largely affect the other. In the present study no data concerning the family characteristics or family relationships of the participants were collected, since the focus of the research was the investigation of children's friendship relations outside the family constellation. However, it cannot be denied that the individual characteristics of each family system might influence the friendship behaviour, and in particular, the restrictive disclosure behaviour of each child.

The Third Study examined closely young children's ability for restrictive disclosure to friends. Building on the findings of the First and Second Study, which indicated that young children have conquered the necessary prerequisites for the restrictive disclosure pattern, and using the research tools they have provided, the Third Study attempted to portray young children's capacity for restrictive self-disclosure. It attested to young children's ability to differentiate between highly and low intimacy disclosures and showed that under certain conditions a considerable percentage of young children choose to share the first ones only with their friends and the latter with both friends and non-friends. The implications and the limitations of these findings are further analyzed in the General Discussion chapter.

General Discussion

1. Overview.

This chapter presents a general discussion on the findings of the research project. Furthermore, the rationale behind the design of the three studies of the research, as a common framework, is analyzed and methodological issues are discussed. Their results are combined, displaying the common thread that unites them. However, issues which are particular to each study and are thoroughly discussed in the corresponding discussion section (e.g. gender differences particular to the Third Study and analyzed in the Third Study's Discussion section) will not be taken up in the present chapter, unless a novel suggestion/contribution is to be made. The chapter concludes with an account of the original contributions of the research project, its limitations and suggestions for future research.

2. General Discussion.

2.1 Introduction

A basic question was asked in the introduction of the research project: whether young children (3.5 to 6.5 years of age) are capable of forming intimate friendships which are characterized by the sharing of highly personal information (Hypothesis 1). Based on the results of the three studies, it can be supported that the present research project managed to provide an answer to this basic question and to contribute to the debate concerning the specific questions (Hypotheses 2 and 3: age and gender differences) that are posed when the study of multi-faceted phenomena, such as intimate peer relations, is considered.

The research on the development of children's intimate friendships maybe comes to address Berndt's (2004) observation, reported in his article on children's friendships and the shifts over a half-century in perspectives on their development, that lately there has been a 'dramatic decrease in the investigation of normative development', which would be 'valuable', especially on the friendships of children in the preschool and early school years. In fact, Berndt in his concluding remarks stated that a 'challenge for future research is charting the developmental changes in friends' interactions and in the activities in which they engage when they are together'. The research project has attempted to chart the developmental changes in friends' intimate interactions, presumably responding to a need expressed in Berndt's words.

In the present research project friendship intimacy was examined as a verbal construct following the tradition of relevant researches on older children's, adolescents' and adults' friendships, where in most cases physical intimacy is not included as a necessary condition for friendship intimacy (Timmerman, 1991), as one of the objectives was to connect the findings on friendship intimacy in young ages with the findings on intimacy development throughout the life span.

Again following the tradition of most studies on intimate friendships in older ages (e.g. Buhrmester, 1990; Fehr, 2004; Grabill & Kerns, 2000), friendship intimacy, operationalized as a verbal construct, was associated to self-disclosure. Specifically, friendship intimacy was equated to the depth of the disclosures a child makes to a peer, since, as Jourard has stated in his classic book on self-disclosure (1971, pg. 13),

the depth of personal information that a person is willing to disclose to another is an index of the intimacy of the relationship.

However, looking at the exchange of personal information more closely, it became clear that there were certain prerequisites that had to be examined before the sharing of personal information could be considered evidence for the existence of intimate friendships in early childhood. First, it had to be explored whether young children are able to make the distinction between highly personal pieces of information and low personal ones. Second, it had to be investigated whether young children, if able to discriminate between highly and low personal information, would choose to share the first ones only with friends, while they would choose to share the latter with both friends and non-friends, as having an intimate friendship does not mean that someone excludes all other people from his/her environment. Sebanc (2003) has supported that intimacy in preschool children's friendships is closely connected, if not equated, with exclusivity, and as such is associated with negative outcomes. In the present research intimacy was not considered connected to exclusivity, in fact, Rotenberg's and Sliz's (1988) 'restrictive disclosure pattern to peers' was adopted from the beginning of the research.

2.2 The First Study

Methodological challenges were faced in the designing of the tasks of the First Study. The question was posed whether to assess children's self-disclosure to friends through self-report measures, or to employ more observational techniques. It was decided to use both methodological approaches, as research on older children's and adolescents' self-disclosure focuses on what subjects report they tell their friends, while in the existing research on young children's disclosures observational measures are mainly used, and the intention of the present research project was to connect its findings with the self-disclosure literature in all developmental periods. Another reason for using both reported and actual measures of friendship intimacy in the First Study was the results reported by Simpkins and Parke (2001) that only modest correlations between the two sources of assessment can be found for children's peer relations and that these two methodological approaches may tap different aspects of friendship processes.

What seems to have evaded my attention at the time was the investigation of the reason why research on self-disclosure at later developmental periods is performed using almost exclusively reported measures. Is it just because a self-report questionnaire is easier to distribute to (older) individuals who are cognitively able to read and write, or is there another reason? Given the results of the present research project it can be assumed that there is another reason: that of the sensitive and private nature of the information which close friends share with each other. Older individuals do not wish an experimenter to eavesdrop on their intimate conversations, and apparently researchers are aware of this fact and do not attempt to do so. Most researchers investigating older individuals' sharing of highly personal pieces of information use questionnaires and procedures which painstakingly secure the participants' anonymity, for instance the questionnaires are mailed back to the experimenters (Vrij, Nunkoosing, Paterson, Oosterwegel & Soukara, 2002) or are returned through a slot atop a sealed box (Wegner & Lane, 1995). This hesitancy to have intimate conversations with a friend in the presence of an 'outsider' could well be true for young children as well, and maybe this is one of the reasons why the two methodological approaches seemed to have tapped different aspects of friendship intimacy, as Simpkins and Parke (2001) have suggested. It is possible that young children in the presence of a researcher do not interact with their friends in the same way as when they are alone, and that they do not share with each other neither the same amount nor the same quality of information.

Therefore, the First Study was carried out using both reported (Personal/Zinc Interviews) and actual measures (Tape-Recording Task) of self-disclosure to a friend. Specific hypotheses were tested:

HS1. Young children make a differential number of highly versus low personal disclosures to friends and non-friends (restrictive disclosure).

HS2. Restrictive disclosure to friends increases with age.

HS3. Restrictive disclosure to friends varies with gender.

As regards the common topics used in both actual and reported measures of self-disclosure, children did not provide more highly personal disclosures to friends than to non-friends. Specifically, the statistical analysis conducted on the data from the Tape-Recording Task revealed no interaction between the type of peer ('friend' or 'non-friend') and the assumed level of personal content of each topic examined. Similarly, the percentage of the disclosures made to the targets 'friend' and 'non-

friend' in the Personal and Zinc Interviews did not seem to differ among the assumed level of personal content of the common topics examined with both methodological approaches. In short, if only the common topics included in both the Personal/Zinc Interviews and the Tape-Recording Task were studied, possibly the conclusion would be drawn that young children do not have the capacity for restrictive disclosure to friends, i.e. HS1 would be disconfirmed. However, another topic not common between the two approaches, the disclosure of secrets, was also examined, which apparently provided a more accurate picture of young children's ability to have intimate friendships where the sharing of intimate information takes place.

It is underscored that the comparison between the two methodological approaches can only be made on the common topics included in both measures, that is the topics put forward by Rotenberg and Sliz (1988), which theoretically reflect different levels of intimacy, the first two being low intimate topics ('Description of the environment', 'Description of people and activities'), while the other three being highly intimate topics ('Personal preferences', 'Positive personal items', and 'Negative personal items'). The 'secret-sharing' item, added on top of these topics in the Personal and Zinc Interviews, was not included in the Tape-Recording Task due to ethical and investigative constraints: it appeared problematic to ask a child to reveal a secret to an unknown interviewer, and it seemed questionable whether children's responses would be valid, as it is unclear whether children would make a tape-recording revealing a secret, knowing that this recording will be heard by the researcher.

The principal component analyses conducted in the First Study to test the validity of Rotenberg's and Sliz's (1988) topics revealed that the proposed topics did not reflect increasing or different degrees of personal disclosure in young children. Assumed highly personal and low personal topics did not form distinct categories. In fact, variables which were considered highly personal (e.g. 'Positive personal items') loaded on the same factor with variables which were considered low personal (e.g. 'Description of people and activities').

Hypotheses HS2 and HS3, regarding age and gender differences, could not be confirmed based on the results of the Tape-Recording Task. However, given the results of the PCA, it was decided to further examine age and gender differences in relation to the secret-sharing item.

In the Personal and Zinc Interviews, the 'secret-sharing' item was treated in a distinct way, where signs of the restrictive disclosure-to-friends pattern were apparently displayed. The 'secret-sharing' item had the lowest percentages of disclosure to non-friends than all other topics in both the Personal and the Zinc Interviews, while in both Interviews friends received a high proportion of the disclosure of secrets. The differences between the percentages of disclosure to friends and non-friends were statistically significant at the .01 level (hypotheses HS1p and HS1z). It can be argued that the 'secret-sharing' item was the only item that was treated as a highly personal disclosure by young children.

Since 'secret-sharing' was the only topic where young children seemed to display signs of the restrictive disclosure pattern, it was decided to investigate it further, and the effects of age and gender (HS2 and HS3) were explored. The log-linear analyses confirmed hypothesis HS2, as 'secret-sharing' was associated with age, but failed to support hypothesis HS3, as 'secret-sharing' was not associated with gender. As far as the age differences were concerned, the inspection of frequencies indicated that the preferred recipients of secrets for the children in the 'older age group' were their friends, while for the children in the 'younger' and in the 'middle age groups' in both interviews the preferred targets of disclosure of secrets were the members of the immediate family.

The exploration of children's disclosures towards friends, non-friends and members of the immediate family was the main point of interest in the Personal and Zinc Interviews. The congruence of the results on the disclosures addressed to these targets from the two Interviews was remarkable, and lead to the conclusion that the two Interviews produced comparable results.

In the Literature Review chapter reference was made to Newcomb's and Bagwell's (1996) meta-analysis performed on 82 published and unpublished studies, which aimed to quantitatively assess the ways in which children's (ranging between preschool years and early adolescence) friendships and acquaintanceships differ. Newcomb's and Bagwell's primary strategy in this meta-analysis has been to compare dyads of friends with dyads of non-friends on a variety of behavioural and affective dimensions. Their findings quantitatively demonstrated significant differences in the interactions of children with their friends as compared to interactions with their acquaintances, and provided quantitative support for the argument that friendship

relations are marked by more intense affective and affiliative features than are relations among acquaintances.

The findings of the First Study pointed towards yet another difference apparent at an early age between dyads of friends and dyads of acquaintances. The findings suggested that children at the age of four to six years displayed signs of the restrictive disclosure-to-friends pattern, even though these signs were only evident in the case of disclosure of secrets. In other words, the findings indicated that in the case of 'secret-sharing' children from this young age are able to differentiate between friends and non-friends. Naturally, these findings beg the question: why were these seeds of the capacity for restrictive disclosure apparent only in the case of 'secret-sharing'? Why have the children not reacted in the same way (i.e. showing signs of the restrictive disclosure-to-friends pattern) when the other presumed highly personal topics were concerned? The answer to this question seems connected to both methodological and theoretical issues.

As far as the methodology is concerned, the quest revolves around the topics used in the Tape-Recording Task and the Personal/Zinc Interviews which apparently failed to elicit increasing degrees of personal disclosure. These topics were used by Rotenberg and Sliz (1988) in their study on children's in middle childhood restrictive disclosure. This study, to my knowledge, is one of the first studies in the developmental literature which has addressed the issue of the variance of the personal content of the disclosures children make to friends and to non-friends, and was followed by a similar study with a younger sample (Rotenberg, 1995a). Reservations about the validity of the topics were expressed in the Literature Review chapter. Furthermore, the absence of a statistical analysis (such as a factor analysis or a PCA) in Rotenberg's and Sliz's (1988) or Rotenberg's (1995a) data was noted. It is stressed that when such an analysis was performed in the data from the Tape-Recording Task of the First Study, the results did not verify the assumption that these topics reflect varying degrees in the personal content of children's disclosures. It can be argued that all items, but the secret-sharing item, were treated in a uniform way by the young children because none of them was considered as deriving from a topic varying in personal content.

Besides these methodological limitations, theoretical issues might also be connected to the reason why the seeds of the restrictive disclosure pattern were evident only in the case of 'secret-sharing' and not in other presumed highly personal

topics. The issue of the distinction between secrets and other highly personal pieces of information (discussed to some extent in the Literature Review chapter) seems of relevance.

Theorists and researchers, when investigating disclosure in later developmental stages (adolescence or adulthood) tend to make a distinction between secrets and highly personal/private pieces of information, a distinction which may not be yet conquered by young children. Derlega, Metts, Petronio and Margulis (1993) made this distinction very clear. They stated that the distinction rests on the degree of access other people have to one's personal information. Highly personal/private information refers to material that others do not normally know about one (e.g. opinions, feelings about oneself, relationships with others), but that one might be willing to disclose based on others' need to know. Highly personal information might be divulged if one wants to develop a close relationship with someone else, to obtain assistance in solving a personal problem, or to communicate concerns about a relationship-related problem. Secrets, on the other hand, refer to content that one actively withholds and conceals from others. They are rarely disclosed, as when one wishes to keep a secret, he/she blocks others from obtaining the information by keeping it from view.

Maintaining secrecy seems to imply more control than found in privacy. That is, as Margulis (2003) argues, while they both regulate access, only secrecy is likely to involve denials of the very existence of secrets. Secrecy requires tighter controls over information than privacy because there is more at stake, hence greater potential vulnerability. The most widely accepted statement on the distinction between privacy and secrecy seems to be Bok's (1984, p.11) who maintained that 'privacy need not hide; and secrecy hides far more than what is private'. DePaulo, Wetzel, Sternglanz and Walker-Wilson (2003) made this statement explicit by providing an example: 'private property is not necessarily hidden or secret. The contents of gifts, in contrast, often are concealed, but not because they are private'.

Guerrero and Afifi (1995) in their study on topic avoidance in parent-adolescent relationships also made a distinction between secrets and topics avoided in a conversation, i.e. topics considered taboo in a relationship because they give too much access to the partner. They stated that secrets imply the active hiding of information from others, while avoided topics may be fully known by others although

their discussion is avoided. However, Guerrero and Affifi supported that secrets may be conceptualized as a subcategory of avoided topics.

Vangelisti and Caughlin (1997) in their research on family secrets made an analogous distinction between secrets and private information. To point at this distinction they used Derlega's and Chaikin's (1977) theoretical formulation on the boundary process involved in the act of self-disclosure. Vangelisti and Caughlin argued that revealing secrets typically involves more serious ramifications than revealing private information. As a consequence, the circumstances under which secrets are disclosed are likely more limited than those under which private information is revealed. Therefore, the boundaries regulating the disclosure of secrets must be considered as less flexible than those regulating private information.

Thus it appears that on a theoretical level, while secrets and highly personal/private pieces of information are connected to a considerable extent, as they both involve control over transactions the goal of which is to regulate access to information about us (Margulis, 2003), a fine distinction can also be made between them. It seems that adults and adolescents can make this fine distinction and treat secrets and highly personal disclosures in a comparable, yet distinct, way, that is **actively withholding** secrets from the knowledge of others (unless an appropriate confidant is found), while **just avoiding** to talk about other highly personal pieces of information to people with whom they do not have, or they do not want to develop a close relationship. It is possible that children do not have the ability to make this fine distinction. It can be argued that the topics put forward by Rotenberg and Sliz did not tap the disclosure of young children's highly personal pieces of information, because for young children there is no such thing as a highly personal piece of information: for them either a piece of information is a secret (in which case some signs of the restrictive disclosure pattern are found in its disclosure), or it is just a piece of information that can be shared openly with anyone.

Indication that the disclosure of secrets is a special process for young children, possibly different from the disclosure of all other personal pieces of information, comes, albeit indirectly, from Ladd's, Kochenderfer's and Coleman's (1996) research on young children's friendship quality. In order to tap the six conceptually distinct friendship processes (validation, aid, conflict, exclusivity, companionship and self-disclosure), the researchers prepared six sets of items, each of which contained three to four semantically similar items. Self-disclosure was measured with three items, two

of which were intended to tap differences in the extent to which children shared feelings with their friend, and one item which intended to tap differences in the extent to which children shared secrets with their friend. The factor analysis which was conducted to test the validity of the research instrument showed that the two items referring to sharing affect with a friend loaded on the same factor, while the third item that referred to sharing secrets with a friend loaded on a distinct 'non-interpretable' factor. This finding possibly denotes that a particular process underlies the sharing of secrets in early childhood, which differentiates secret sharing from the disclosure of other personal pieces of information. In any case, Ladd, Kochenderfer and Coleman excluded the 'secret-sharing' item from further analysis to 'achieve greater interpretability'.

The First Study's results pointed to a similar direction as Ladd's, Kochenderfer's and Coleman's findings. Either due to methodological limitations, i.e. Rotenberg's and Sliz's items' failure to elicit highly personal information from the children, or due to children's inability to make the distinction between low personal, highly personal and/or secret pieces of information, the First Study indicated that if the 'glimmerings' of friendship intimacy are to be found at a young age, they should be sought out in the secret sharing between friends. When considering, however, the investigation of such private pieces of information as secrets, the question of the appropriate methodological tools surfaces once more.

The disclosure of secrets was deemed as a very sensitive subject (Finkenauer and Rime, 1998), and contemplating the investigative and ethical constraints presented above [Is it ethical to ask children to disclose a secret in front of a researcher, especially when children's tendency to conform to an adult authoritative figure is well documented (Pipe & Goodman, 1991; Pipe & Wilson, 1994)? And even if children are asked to reveal secrets in front of a researcher, would they give valid responses?] it was decided to utilize in the following studies only reported measures of self-disclosure, following closely the tradition justly set by self-disclosure researches at later developmental stages, and taking into account the good reception by the young children of the reported measures used in the First Study. After all, even Simpkins and Parke (2001) who are supporting the use of both actual and reported measures in the study of friendship relationships, have attested that 'some aspects of friendship, for example, self-disclosure, in which an individual shares personal,

private information or feelings, may only be detectable through the use of self-reports'.

Furthermore, based on the results of the First Study which showed that the basic tendencies found in the two reported measures (Personal and Zinc Interviews) were common, it was decided to use the puppet Zinc and to conduct 'puppet interviews' in the next studies. This decision was not only dictated by the difficulties encountered in the administration of the Personal Interview, where some children protested when few items presented to them did not relate to their actual experience, but more so by the supposition that the use of the puppet would keep the interviews on secrets from being intrusive, as it was clear that by studying secrets the research has entered a very sensitive area.

Therefore, the First Study has provided a direction for the future research, pointing toward the investigation of young children's secrets, and has also provided the appropriate tool to be used in the research of this sensitive subject.

2.3 The Second Study

The Second Study was dictated by the need to explore why the 'secret-sharing' item was treated in such a distinct way by young children. Two hypotheses were put forward, one reflecting the methodological limitations of the First Study's items discussed above (HS2a: Young children systematically identify secret pieces of information; however, such pieces of information were not included in the topics put forward by Rotenberg and Sliz, but were only reflected in the 'secret-sharing' item), and the second relating to the theoretical issues regarding young children's cognitive abilities to systematically differentiate the personal content of disclosures (HS2b: Young children identify secret pieces of information only when a clue is given to them).

The research on children's suggestibility by external clues has grown in the past decade, with researchers attempting to outline the parameters which delineate the phenomenon. Koriat and Goldsmith (1996) provided a theoretical framework which conceptualizes memory performance in an interview as the result of complex interplay between: a) memory storage, that is the amount of information that can be retrieved, b) monitoring effectiveness, that is the extent to which the subject's confidence distinguishes between correct and incorrect information, and c) control processes which determine whether an answer will be volunteered or withheld, and

are related to situational demands, clues, incentives or payoffs. From a developmental perspective researches have specifically focused on the third factor, as situational demands, clues and payoffs seem to be especially influential to young children (Hernandez-Blasi, Roebbers, Wurzburg & Suco, 2005; Koriat, Goldsmith, Schneider, Nakash-Dura, 2001; Paine & Hansen, 2002). Young children's suggestibility is a well documented phenomenon (e.g. Bottoms, Goodman, Schwartz-Kenney & Thomas, 2002; Pipe & Wilson, 1994; Wilson, Powell, Raju & Romeo, 2004), and thus it was hypothesized that it could be associated with children's ability to identify secret pieces of information.

Other specific hypotheses were also tested in the Second Study:

HS1: Young children's secrets fall into the categories of secrets described by researchers of secrets at later developmental stages.

The Second Study aimed to specify which pieces of information young children regard as secrets. To my knowledge, there is no research which fully addresses this issue and it was believed that by performing this research a gap in the literature would be filled.

HS3: Children differ in their ability to identify secrets, as a function of age

HS4: There are gender differences in young children's ability to identify secret pieces of information.

In the design of the Second Study ethical issues had to be taken into consideration. Ethical constraints were one of the reasons why it was decided not to include examples of [in Imber-Black's (1998) words] 'toxic' or 'dangerous' secrets, although the study of children's disclosure of the 'dangerous' secret of abuse has provided findings that seem relevant to the present investigation. For instance, researches have shown that age is an important variable as far as the disclosure of abuse is concerned, with children under five being least likely to disclose abuse during investigation (Keary & Fitzpatrick, 1994). When preschool children make disclosures this is likely to happen accidentally. In contrast, older children make abuse disclosures purposefully (Campis, Hebden-Curtis & DeMaso, 1993). These findings could be related to children's less than five years of age difficulty to differentiate between intimate and non-intimate pieces of information.

Also, research on young children's disclosure of abuse has identified the importance of verbal clues presented to children during investigation. The consequence of the use by the interviewers of clues or leading questions has been largely investigated (Ceci & Bruck, 1995). Keary and Fitzpatrick (1994) studying children's disclosure of sexual abuse during formal investigation called into question the value of a 'non-leading' interview style, since they argued that many children who had previously disclosed abuse did not repeat this information during investigation in which 'non-leading' interviews were used. On the other hand, Bruck and Ceci (1997), exploring the effects of interviewer bias and the use of leading questions on the accuracy of children's reports, supported that children's recollections are considerably impaired by suggestive interviewing techniques, and that children are not only suggestible about peripheral details but also about central events.

The decision to exclude 'toxic' or 'dangerous' secrets from the research was also connected to the discussion on the advantages and disadvantages of secrecy. As discussed, the traditional view of secrecy considers it as problematic and early researches on secret-keeping have almost exclusively focused on its physical and psychological disadvantages for the secret-holder (Finkenauer, Engels & Meeus, 2002). Researchers have assumed that secrecy and concealment are important aspects of psychopathology (Bouman, 2003), while Wegner and Lane (1995) have argued that secrecy sets into motion certain cognitive processes that can create an obsessive preoccupation with the secret thought. Secret-keeping is considered connected to physical symptoms as well. Larson and Chastain (1990) have found that self-concealment contributes significantly and uniquely to increased depression, higher anxiety, and also more physical symptoms even after controlling for other variables, such as traumatic experiences or lack of social support. Similarly, Finkenauer and Rime (1998) found that individuals who keep emotional secrets report more physical complaints than people who do not have emotional secrets. Besides these psychological and physical disadvantages, secrecy is hypothesized to have social disadvantages among which loneliness figures prominently (Finkenauer, Engels & Meeus, 2002).

According to Vangelisti (Vangelisti & Caughlin, 1997; Vangelisti, 1994), casting secrets as downright negative promotes a focus on taboo-like issues. Of course, very few people would argue that the function of secrets concerning physical or sexual abuse is positive or beneficial for those holding the secret. However, it is

important to note that not all secrets are negative, and consequently not all serve negative functions. Van Manen and Levering (1996) have expressed their wonder that although literature on 'pathological secrecy and therapy' is already quite elaborate, little has been written about the meaning of 'ordinary' secrets in the lives of children which, according to the authors, have been overlooked in psychological, psychiatric and political studies, but nevertheless have 'a positive role in personal becoming' (pg. 9). Meares and Orlay (1988) in their research on the development of the concept of secrecy have reported that they were actually surprised to find out that most children's secrets concerned pleasant and positive events.

As it has been discussed in the Second Study's Discussion section, there is growing evidence that the withholding of information can serve beneficial and even necessary functions in personal development and interpersonal relationships. Sgarzi (2003) using a more poetic expression to illustrate this point has stated that 'secret itself is necessary fragment of psychic infrastructure'. Lately, even researchers (Kelly, 2002) who typically maintain that 'secrecy is linked to problems' (pg. 41), have admitted that 'the ability to conceal information from others even may be seen as a sign of maturity or normal adult functioning' (pg. 21).

The decision to exclude 'toxic' or 'dangerous' secrets from the research was made with respect to the aims of the present research project. The present research project chose to focus on the positive outcomes of children's secrets, as it intended to connect the findings on secrets disclosure with children's emerging capacity to form intimate friendships, which is a positive feature of young children's growing social competence. Following Vangelisti's and Caughlin's (1997) advice the potentially harmful effects of secrecy were not ignored, however, the focus of the research was directed to the types of secrets which lead to positive outcomes and apparently their sharing has the power to enhance the development of close relationships.

In order to test the validity of the Second Study' hypotheses a list of young children's secrets and non-secrets was devised. The list (42 items) was first piloted on a sample of adults participants. The final list, which was presented to the young children, consisted of the 22 statements which had the greatest level of agreement amongst the adults participants, of either being secrets (seven secret items), or not being secrets (15 non-secrets items). This difference in the number of secret and non-secret items that were included in the final list presented to the children was remarkable. It could be proposed that most of the secret items in the initial 'List of

Secrets' were not considered as secrets by adults participants due to methodological limitations. It is true that it was challenging to find age appropriate secret items for adults while trying to minimally alter the statements of the 'List of Young Children's Secrets' which was devised for the target group of young children.

However, a closer inspection of this finding could lead to a different conclusion. It appears that adults were positive about which type of information is not a secret. It is remarkable that in nine out of the 15 non-secret items the decision to classify them as non-secrets was unanimous, that is all participants agreed that the specific items were not secrets. This was not the case with secret items. It appears that the classification of secret items was not an equally easy task, and individual differences seemed more prominent.

A similar tendency was observed in the Main Study, where age differences were found (HS3 was confirmed). Only the 'older group' of children (5.5- to 6.5-year-old children) seemed able to identify both secret and non-secret pieces of information. While the 'younger group' (3.5- to 4.5-year-old children) did not seem able to identify neither non-secret nor secret pieces of information, unless given a clue, the 'middle group' (4.5- to 5.5-year-old children) appeared able to systematically pinpoint non-secret pieces information, but they were still not able to identify which pieces of information are secret (unless of course a clue was provided). Therefore, it can be postulated that the ability to identify non-secrets precedes that of identifying secrets. Presumably the identification of non-secrets, as indicated by the results of both the Pilot and the Main Study, is an easier task (as compared to the identification of secret pieces of information), accomplished by children at an earlier age.

This common trend between adults' and young children's ability to pinpoint non-secret pieces of information is the first, among several, common characteristics in adults and young children's secrets. Based on the results of the Second Study it can be argued that HS1 is confirmed and that young children's classification follows closely that of adults, with minor exceptions. This finding is incongruent with Wilson's, Powell's, Raju's and Romeo's (2004) argument that it is not until around eight years of age that children can demonstrate an understanding of what it means to have a secret similar to that of an adult.

However, amid those similarities, an important (although expected) difference between adults' and children's classification of secrets was found which concerned their corresponding capacity to give a definition of a secret. It appeared that most

young children could not provide a definition of a secret, be it an incomplete or inadequate one. In fact, almost 62% of young children provided definitions that were erroneous or stated that they did not know what a secret is. By contrast, all adults stated that they knew what a secret is and all, but one, adults provided 'Aristotelian-like' definitions of secrets.

As exemplified in the Second Study's Discussion, this difference between adults' and young children's ability to define 'what is a secret' was not surprising. Researches have shown that word definition ability improves gradually with age, with the ability to define words in an 'Aristotelian' way developing in late childhood (Al-Issa, 1969; Nippold, 1995). Things get more complicated when an abstract noun, such as the word secret, is concerned. Abstract nouns are more difficult to define than concrete ones; it is not until the age of 18 that full definitions are given to abstract nouns (McGhee-Bidlack, 1991). Young children's difficulty to fully define words is a well-documented phenomenon and has been studied in a variety of contexts (e.g. Cohen & Lopato, 1995; Saywitz, Jaenicke & Comparo, 1990; Spitzer & Cameron, 1995). However, the inability to define does not connote an inability to understand. The Second Study's results indicated that, while children are not good at defining secrets, they are good at differentiating between secret and non-secret pieces of information (at least when not influenced by adults' cues).

The principal component analyses conducted in the Second Study showed that children's classification of secrets and non-secrets is to a large extent comparable to that of adults'. They indicated that secrets, non-secrets, and 'surprise' items formed distinct categories. In short, non-secret items loaded on the first factor. More specifically, 13 out of the 15 non-secret items loaded on the first factor, while none of the secret items did. On the other hand, the second factor was mostly defined by secrets. Five out of the seven items that loaded on this factor were items categorized as 'secrets' by the adults participants in the Pilot Study. However, the 'Negative personal preferences' items ('Zinc doesn't like broccoli', 'Zinc doesn't like the colour yellow') which were categorized as 'non-secrets' by the adults participants also loaded on the second factor. Finally the analyses showed that the two 'surprise' items ('There is going to be a surprise party for Zinc's father's birthday', 'Zinc's parents are going to give a surprise present to his/her granddad next week') formed a distinct

category. They both loaded on the third factor, separately from all the other items of the interview.

The similarity between young children's and adults' classification of secret and non-secret items cannot be considered totally unexpected, not if the results of the studies on individuals' secrets on different developmental periods, reviewed in the introduction of the Second Study, are carefully examined. The inspection of the categories of secrets from middle childhood to adulthood reveals that the categorizations of secrets, although different to some extent, are nevertheless compatible. For instance, it seems that Wegner's and Lane's (1995) 'offenses', Vangelisti's (1994) 'rule violations' (both these categories of secrets apply to adults), Guerrero's and Affifi's (1995) 'dangerous or irresponsible behaviours' (this category applies to adolescents), Last's and Aharoni-Etzoni's (1995) 'moral transgression' and Watson's and Valtin's (1997) 'guilty secret' (these last two categories apply to children in middle childhood) refer to the same thing, namely breaking the rules. Similarly, Last's and Aharoni-Etzoni's 'heterosexual involvement', Guerrero's and Affifi's 'romantic interests' and Reynold's, Brewin's and Saxton's (2000) 'boy/girl relationships' refer to the relationship between the two sexes which is considered a private matter in all ages: Wegner and Lane report that the statement 'I have a crush on someone' is considered secret by adults, as well. Another example of the similarities between the categorizations of secrets in different developmental periods would be Imber-Black's (1998) 'essential secrets', that is secrets regarding one's fears and insecurities, Wegner's and Lane's 'sorrows' which involve a potential for failure or sadness and they concern the kinds of things one would want to keep from others as a means of protecting one's self-esteem or avoiding depressive emotion, and Guerrero's and Affifi's 'failures and negative experiences', or even the examples of secrets that involve shame reported by Meares and Orlay (1988) in their study with young children. Finally, from the review of the existing literature on the categorizations of secrets it can be deduced that Imber-Black's 'sweet secrets' (secrets which are 'made for the purpose of fun and surprise') are considered as secrets by adults and by children in middle childhood (see Watson's and Valtin's example of an 'innocent secret' which concerned a surprise gift for mother's birthday).

The similarities between the categorizations of secrets across the developmental periods are striking, possibly indicating that the same topics, the same

thoughts, facts or feelings are considered secret at all ages. In the introduction of the Second Study it was stated that it appeared unlikely that young children's secrets are the same as the secrets of adults or adolescents, due to the significant differences in experiences, needs and expectations of the different developmental periods. However, it was thought possible that some of children's secrets might fall into the categories described by researches on secrecy in adulthood, adolescence or middle childhood, and that some inference on what might be a secret for young children can be made. Apparently, not only inferences can be made, but the findings of the Second Study have indeed suggested that young children's secrets are compatible to older children's, adolescents' and adults' secrets.

Thus, it appears that from the time when young children are able to identify secrets and non-secrets (a task not accomplished by the younger children in the sample of the Second Study) their classification of secrets and non-secrets follows closely that of adults'. Of course the necessary adjustments have to be made, the secret items have to be age-appropriate, that is connected to young children's experiences (e.g. irresponsible behaviour/ breaking the rules for a six-year-old would be taking money for the mother's purse to buy ice-cream, while for a 14-year-old would be drinking alcohol and smoking), but the underlying theme (irresponsible behaviour/breaking the rules) is apparently recognised as secret by individuals in all age groups. Based on these findings it could be postulated that secrets are a kind of 'collective experience' in the sense that they seem to run through all age groups, and they seem to be recognised as secrets by individuals in a very wide age range; probably a wider age range than it has been previously postulated. DePaulo, Kashy, Kirkendol, Wyer and Epstein (1996) when researching the question 'what is it about ourselves that we most want to protect from unwanted access' came up with a similar finding. The things people prefer to keep to themselves are common regardless of differences in socio-economical status or age. In DePaulo's and his colleagues' research 77 undergraduates and 70 people from the community were recruited to keep a diary, every day for a week, of all their social interactions that lasted at least ten minutes, where they described, in their own words, all of their lies and their reasons for telling them. The college and community samples differed from each other in many ways, but in the data they provided the groups were not so different. The participants from both samples lied about their feelings more than they lied about anything else: they feigned invulnerability when they were feeling hurt, they

professed enthusiasm when they had none, and they claimed not to mind when they actually did.

It is indeed interesting that certain items, such as 'Zinc doesn't always tell the truth', are recognised as secrets by adults and young children alike, a finding which implies that five- and six- year-old children, just like adults, think that if Zinc is sometimes insincere, the best he/she can do is to keep it quiet. Piaget believed that children below seven or eight years of age are not capable of such complex thoughts as far as moral rules are concerned. He has stated (1969, pg. 126) that 'veracity is external to the personality of a pre-school child' and that the children are told not to lie long before they understand the social value of this order. This understanding is thought to be achieved around the age of seven or eight. In fact, at a younger age the power of orders (in this case, the order not to lie) was thought to be dependent upon the physical presence of the person who gives them. In his/her absence the order loses its force and its violation is accompanied only by a momentary uneasiness (pg. 124). The present Study's findings indicated that Zinc's lying was treated as a secret by pre-schoolers and this happened in the absence of the 'person who gives the orders', possibly indicating that veracity is not external to young children's personality after all.

Of course, the similarity between the classifications of adults and young children was not absolute. The 'Negative personal preference' items were not classified in the same way by adults participants in the Pilot and children participants in the Main Study: adults classified them as 'non-secrets', while children viewed them as 'secrets'.

The 'Personal preference' items have reacted in a distinct way throughout the research. Their distinctive behaviour has already been noted in the First Study where the principal component analysis showed that they loaded on a distinct factor, separately from all the other variables¹. As all other assumed highly personal topics loaded on the same factor with low personal topics, the question was posed whether 'Personal preference' items are highly personal items for young children, possibly the only highly personal items tapped by the interviews based on Rotenberg's and Sliz's (1988) topics. In the Second Study the 'Positive personal preference' items were

¹ Also in the Personal Interview, children seemed especially sensitive to the Personal preference items, as some of them protested about the content of two of the Personal preference items, notably the two Negative personal preference items.

classified as 'non-secrets' by both adults and children participants. However, the 'Negative personal preference' items were classified as 'secrets' by the young children. In view of these findings, the question that was posed in the First Study was modified: it was now asked whether **negative** personal preferences are considered highly personal/secret pieces of information by young children. The question of the 'Negative personal preference' items and their uncertain high or low intimacy status will be taken up when the results of the Third Study are discussed, as the Third Study provided information that contributes to the clarification of this point. It has to be said that this question is one of the themes which, in parallel with the main research questions, has run through the whole research project and in a way creates a spine which holds together the three Studies.

An important issue the Second Study's findings underscored was children's possible influence by the verbal clue (the word 'surprise') provided to them. The chi-square analysis showed that young children identified the 'surprise' items as secrets at the significance level of .01. Furthermore, in the PCAs children classified the two items including the word 'surprise' on a distinct factor. Based on the literature on young children's influence by external clues, it was speculated that the children could have been influenced by the word 'surprise' included in the wording of those items. On the other hand, it is possible that another specific quality of those items, such as the topic those items derived from, was the reason why the 'surprise' items were treated differently than the other secret items.

Surprises are 'sweet secrets' (Imber-Black, 1998) that apparently are recognized as such by individuals at a wide age range (adults at the Pilot Study also classified the 'surprise' items as secrets). It is possible that surprises are one of the first things that young children recognize as secrets. It is true that when young children were asked in the beginning of the interview to give a definition of a secret a number of them said that a secret is a surprise. Also, according to Watson and Valtin (1997) surprises are the only well kept secret for six-year-old children: 'you are not allowed to tell people about surprises', a six-year-old participant in their study explained. Furthermore, the close connection between secrets and surprises for young children is reflected in researches investigating young children's capacity for secrecy. For instance, Peskin and Ardino (2003) used a secret about a surprise (a birthday cake hidden in the fridge) when exploring young children's capacity to keep a secret, and

in Meares's and Orlay's (1988) study several young children gave examples of birthday surprises when interviewed on the concept of secrecy. Therefore, in view of the Second Study's results it was unsure whether the cue (the word 'surprise') was the only factor that influenced children's responses, or whether children were also influenced by the topic the items derived from.

Things become more complicated when the age differences found are taken into consideration. While there were age differences in young children's ability to identify secret and non-secret pieces of information, the surprise items were identified as secrets by children at all ages, even by 3.5- to 4.5-year-old children who were not able to make any other systematic classification of the items presented to them. Was it because of the verbal clue, or because of the topic the items derived? Or perhaps both factors were part of the cause?

In the beginning of the Second Study two apparently conflicting hypotheses (HS2a and HS2b) were put forward based on the distinct treatment of the 'secret-sharing' item in the First Study: either children reacted this way to the 'secret-sharing' item because they reliably single out secrets and they treat them in a different way than the non-secret items, or young children were just influenced by the clue provided to them, the word 'secret'. In view of the findings of the Second Study it can be supported that this is probably not a matter of either/or. Young children probably do both! From the age of 4.5 years, children seem to have some kind of capacity to identify secrets and to differentiate them from non-secrets. However, at the same time, young children are probably influenced by external clues when considering the secret status of an item. Although age differences are evident in this ability, there are no gender differences (HS4 was not supported). Girls and boys apparently follow the same developmental pattern as far as the identification of secrets is concerned.

The Second Study investigated the content of young children's secrets. It indicated that, with very few exceptions (i.e. the 'Negative personal preference' items), the items that young children regard as secrets are comparable to the items adults regard as secrets. To my knowledge there is no other systematic investigation of the content of young children's secrets, of the 'ordinary' secrets in children's lives, as Van Manen and Levering have put it (1996, pg. 9). The Second Study also explored young children's ability to systematically identify secrets and non-secrets. The results suggested that children from around the age of five have this ability,

although their influence by external clues has proven yet again ‘a matter of some concern’ (Pipe & Goodman, 1991). Taken together these results suggest that, given the appropriate tools, systematic research on secrecy is possible and meaningful at a young age, as it is at older ages (Finkenauer & Rime, 1998).

2.4 The Third Study

By employing the findings of the Second Study the research was able to move towards another area of investigation, that of children’s behaviour concerning the disclosure of their secrets to their peers. The Third Study was designed in order to examine whether young children apply the restrictive disclosure-to-friends pattern when sharing pieces of information that they have distinguished as secrets. Additionally, the Third Study aimed to examine more closely children’s influence by external clues. The specific hypotheses tested in the Third Study were:

HS1a. When young children (4.5 to 6.5 years of age) are not given any clue relating to the ‘secrecy status’ of an item, they apply the restrictive disclosure-to-friends pattern.

HS1b. When young children (4.5 to 6.5 years of age) are given a clue that a specific piece of information is secret, they treat it as a secret, by sharing it only with their friends, while refraining from sharing it with non-friends.

Furthermore, age and gender differences (HS2 and HS3) were explored. For methodological reasons, the reliability of the Second Study’s results was also tested (HS4).

In order to test the hypotheses, two experiment conditions were administered. In the first condition, the ‘no clue condition’, the participants were not given any clue regarding the level of secrecy of the items, while in the ‘clue condition’ participants were hinted that some items might be secrets.

Based on the previous studies’ findings it was decided to exclude the ‘younger age group’ (3.5- to 4.5-year-old children) from the Third Study. In the First Study the members of the ‘younger age group’ indicated as their preferred targets of disclosure of secrets (and of all other disclosures for that matter) the members of their family. As discussed, this might be a valid form of restrictive disclosure but its study was beyond the scope of the present research project. The decision taken is connected to the remark made in the Literature Review chapter where it was asked how a finding on children’s disclosure to friends could be interpreted if in real life young children make

only a small percentage of disclosures to peers, while the rest of the disclosures is addressed to parents or other members of the immediate family.

Age differences in the number of children's verbal interactions with peers have been reported by other researches as well. Uehara (2005) in a study measuring age differences in patterns of peer verbal interaction among three- to six-year-old children when no play material was presented found that the younger children (three- and four-year-olds) tended to show less verbal interaction with peers. Even if younger children responded to peers their responses included more imitational activities and non-verbal actions than older children's.

Furthermore, in the Second Study the members of the 'younger age group' did not seem able to discriminate between secret and non-secret pieces of information. This discrimination is a prerequisite for the acquisition of the restrictive disclosure-to-friends pattern, which presupposes an ability to tell between low and highly intimate pieces of information. It appears that 3.5- to 4.5-year-old children do not have this prerequisite ability.

In view of these findings it was decided to limit the sample of the Third Study to the two older groups, deducing that four-year-old children do not have the ability to form intimate friendships with their peers characterized by the exchange of highly personal information. It is sustained that the restrictive disclosure-to-friends pattern emerges at a later age, a conclusion which seems in line with the findings of researches on children's treatment of secrets.

Peskin (Peskin & Ardino, 2003; Peskin, 1992) has described a developmental trend in children's ability to keep a secret. In Peskin's and Ardino's research only few of the three-year-olds (33%) seemed able to keep a secret about a surprise birthday cake, more than half of the four-year-olds (67%) kept the secret, while almost all of the five-year-olds (89%) did. Notably, children in this research were specifically told that the birthday cake was a secret and were instructed to keep it secret. It appears that even when a clue is provided, or even when a direct instruction is given, age differences in children's ability to keep secrets are marked, with a considerable proportion of children younger than five having difficulty to keep a secret. This is also suggested by the findings of Bottoms', Goodman's, Schwartz-Kenney's and Thomas' (2002) study which examined children's reports for activities they were motivated to conceal. Forty-eight three- to six-year-old children participated in a standardized play session with their mothers. Half of the children were told by an experimenter not to

play with certain toys, but did so at the urging of their mothers who told their children to keep the play activities secret. The other half of the children were not restricted from playing with the toys, nor told by the mothers to keep the play activities secret. Later, all children were interviewed about the activities. The results indicated that older children (five- and six-year old children) who were instructed to keep event secrets withheld more information than did older children who were not told to keep events secret. By contrast, younger children's reports were not significantly affected by the secret manipulation. Finally, Meares and Orlay (1988) in their study on the notion of secrecy as an indication of the existence of a self-boundary found that only children older than four years of age understood the notion of secrecy ('they knew what it was to have a private idea'), while younger children seemed not to have attained the concept.

The reliability of the Second Study's results (HS4) was examined first. The Third Study confirmed the results of the Second Study that children's classification of secrets and non-secrets is comparable to that of adults', and also provided an answer to the question left open regarding the secrecy status of the 'Negative personal preference' items. In the PCAs conducted with the 'older' sample (4.5- to 6.5-year-old children) the 'Negative personal preference' items appeared 'halfway' between the secret and the non-secret factor, in that they had high loadings on both. Therefore, the assumption was formulated that there is an age effect, and that young children view the 'Negative personal preference' items as highly intimate disclosures, while older children tend to regard 'Negative preference' items as non-secrets. This assumption was supported by the findings of the chi-square analyses performed separately for the 'middle' and the 'older age group'. The analyses indicated that members of the 'middle age group' would treat the 'Negative preference' item 'Zinc doesn't like broccoli' as a highly personal information, while members of the 'older age group' would treat it as a low personal information.

As discussed in the literature review, the perceived level of intimacy of personal preferences may vary according to age. Selman and Jaquette (unpublished manuscript; cited in Diaz and Berndt, 1982) described the sequence of developmental changes in the information children regard as important to know about a close friend: preschoolers mention observable information as important things to know about a best friend, children in middle childhood mention the knowledge of a friend's preferences, while adolescents stress the importance of knowledge about a friend's internal

attributes or personality characteristics. The present research's findings suggest that personal preferences are an intimate subject for young preschool children, but even before middle childhood they seem to lose their secrecy status. However, there is a difference between Selman's and Jaquette's study and the present research which may account for the incongruent results: in the present research the focus was on the child's own personal preferences, while Selman and Jaquette focused on information about the other person, i.e. the close friend.

Speculations can be made regarding the reason why young preschool children consider personal preferences as highly personal information. One explanation in the present research would be social desirability. For instance, a child's 'not liking broccoli' could be something his/her mother would not be pleased to find out, as 'greens are healthy'. Therefore, children would be eager to conceal the fact that they do not like broccoli and treat this piece of information as a secret, a secret kept in order to avoid disapproval (Vriz, Nunkoosing, Paterson, Oosterwegel & Soukara, 2002).

The results of the Third Study confirmed hypothesis HS1b. In the 'clue condition' 18 items out of the 22 were treated as highly personal information. The four remaining items were items that had loaded on the non-secret factor, suggesting that in this case children were not influenced by the clue given to them. However, the results are compelling in that children were highly influenced by the adults' input, even though the clue provided by the experimenter was quite vague indicating that 'some of these things might be Zinc's secrets'. It seems that clues have a considerable power to influence children, and that when a clue is presented children tend to disregard their own personal judgment. These results on children's significant influence by clues provided to them are congruent with findings on children's suggestibility on various contexts (e.g. Hernandez-Blasi, Roebbers, Wurzburg & Suco, 2005; Koriat, Goldsmith, Schneider, Nakash-Dura, 2001, Pipe & Wilson, 1994).

On the other hand, it appears that when 4.5- to 6.5-year-old children are not influenced by external clues they display signs of the restrictive disclosure pattern: hypothesis H1a was confirmed. In summary, the findings of the 'no clue condition' group showed that young children systematically refrained from sharing the secret items (the items that had loaded on the secret factor) with peers with whom they did not have a close relationship. This finding was replicated in the chi-square analyses conducted separately for each age group and gender. There were small variations

across age groups and more between boys and girls (HS2 and HS3 are thoroughly discussed in the Third Study's Discussion section), but there was a 'core' of secret items ('Zinc took something that was not his/hers', 'Zinc doesn't always tell the truth', 'Zinc fancies a boy/girl in his/her class', 'Zinc wet him/herself once') that were treated as highly intimate disclosures by five- and six-year-old boys and girls alike, in the sense that they were systematically shared only with friends or kept to oneself.

Rotenberg's and Sliz's (1988) restrictive disclosure-to-friends pattern, which is connected to the ability to have intimate friendships, comprises of a) individuals' greater disclosure of information of highly personal content to their friends than to non-friends and b) their approximately equal disclosures of information of low personal content to both friends and non-friends. The Third Study showed that 4.5- to 6.5-year-old children display signs of the restrictive disclosure capacity, in that they equally share non-secrets (information of low personal content) both with friends and non-friends, while they refrain from sharing secrets (information of highly personal content) to non-friends. The tendency to disclose information of highly personal content to friends had not been thoroughly investigated up to this point. Therefore, the question whether 4.5- to 6.5-year-old children choose to share their secrets (information of highly personal content) with their friends was now posed and investigated.

The chi-square analysis performed in the Third Study between the disclosure targets friend, nobody and non-friend/both addressed this point. The results suggested that the secret items reacted differently than the other items. Young children's ability to differentiate and treat secret items differently than non-secret items was once more confirmed. The non-secret items were openly shared with friends and non-friends, and there was a low percentage of nobody responses. As far as the secret items were concerned, the results showed that one third of the children would choose to share them only with their friends, one third of them would not share them with anyone (or at least anyone from the proposed disclosure targets), while the other third would share them both with friends and non-friends.

The issue of the high percentage of 'nobody' responses was discussed in the Discussion section of the Third Study. Two assumptions were put forward. First, it was suggested that the high percentage of 'nobody' responses could be due to the limited choice of targets of disclosure offered to the children in the Third Study. On the other hand, the possibility that young children might choose to keep a

considerable percentage of the more intimate pieces of information to themselves (not to share them with anybody regardless of the proposed disclosure targets) was suggested. Future research is needed to clarify this point.

Still, there was a considerable proportion of young children who chose to share their secrets with both friends and non-friends. It is reminded that the proportion of secrets shared **only** with non-friends was low ranging from 7.5% to 12%. However, the obvious question was raised in the Third Study's Discussion section, namely why some children displayed signs of the restrictive disclosure capacity, while other children, by indiscriminately telling their secrets to both friends and non-friends, showed no signs of this ability. The discriminant function analysis indicated that the reason for the indiscriminate sharing of the secret pieces of information was not that the children who reacted this way did not perceive the specific pieces of information as intimate. It is evident that further research is required to clarify this issue and assess the role of individual factors in children's choice of disclosure targets, which is connected to children's ability for restrictive disclosure.

The Third Study provided an answer to the basic question asked in the introduction of the research project, namely whether young children create intimate friendships characterized by the sharing of highly personal information. Using the tools and building on the results of the two previous studies, the Third Study seems to have 'completed the circle'. It provided evidence that the seeds of the restrictive disclosure-to-friends pattern can be found in 4.5- to 6.5-year-old children's behaviour. Children at this age appear able to discriminate between secret and non-secret pieces of information, and purposefully choose not to share the secret pieces of information with non-friends, while a considerable proportion of them chooses to share them only with their friends. However, it has to be underscored that children at this age appear considerably influenced by adults' cues, 'deferring to the authority of the knowledgeable adult' (Wilson, Powell, Raju & Romeo, 2004). It seems that when an external clue is provided to them, they tend to disregard their own judgment concerning the secret status of a specific piece of information and the appropriate target for its disclosure, and tend to act in the way imposed or implied by the particular clue.

2.5 Conclusions and suggestions for future research

The findings of the three studies partly corroborated the main hypotheses of the research project. They indicated that children from the age of 4.5 years engage in restrictive self-disclosure to friends in some, but certainly not all, circumstances. Age differences are evident in young children's capacity for restrictive self-disclosure. Children younger than 4.5 years of age do not display signs of the restrictive disclosure-to-friends pattern, unless they are given a clue that a piece of information is secret. Age differences were also found in older children's ability to classify secret and non-secret pieces of information. Gender differences are not apparent in children's perceptions of the level of intimacy of specific pieces of information, although boys appear more 'secretive' than girls when sharing them.

As discussed, theorists and researchers (e.g. Berndt, 2004; Dunn, 2004, Peterman, 2003) have argued that 'glimmerings' of intimacy can be observed in children's friendships from the early years. Studies have thoroughly investigated young children's verbal interactions with important figures in their environment, including friends in some occasions (e.g. Brown & Dunn, 1992; Dunn & Cutting, 1999; Dunn, Brown & Beardsall, 1991; Lecce & Hughes, 2005). However, most of these researches have not taken into account the dimension of the variance of the personal content of children's disclosures. In the present research, special attention was given to the depth of the personal information shared with friends and non-friends, a point which seems to have been overlooked by most others researches in children's friendships. Its study, which appears to provide the possibility of forming a clearer picture of young children's ability to create intimate friendships characterized by the sharing of highly personal information, is considered the main original contribution of the present research in the developmental literature.

Investigative and ethical constraints was possibly the main reason why the issue of the variance of the personal content of the disclosures has not been fully addressed in most existing studies on young children's friendships. Children's disclosure of personal information is not easily accessible to researchers as it is by definition private, and there are ethical problems in attempts 'to listen in on' such disclosures (Rotenberg & Sliz, 1988). However, in the present research project the necessity to study the level of young children's disclosures in order to investigate the existence of intimate friendships at this early age became apparent, for the basic tenet of the self-disclosure literature that the sharing of highly intimate disclosures is what

indicates the existence of intimate relationships was adopted. Therefore, appropriate tools which would measure children's low and highly intimate disclosures had to be designed. The design of these tools is considered another original contribution of the present research.

Furthermore, the devising of the 'List of Young Children's Secrets' is considered an original feature of the present research project. To my knowledge there was not a systematic exploration of the content of young children's secrets in the literature. The 'List of Secrets' gives an account of the 'ordinary' secrets (Van Manen & Levering, 1996) in the lives of young children. Finally, the pinpointing of the close connection between the secrets of young children and the secrets of individuals in later developmental periods is considered an important contribution of the research project to the developmental literature.

The present research project provides a starting point for examining young children's capacity to form intimate friendships characterized by the exchange of highly personal information. There are several points that require further exploration. The study of individual differences seems of particular importance, as individual factors may account for the difference in children's choice of targets of intimate disclosures. In the Third Study's Discussion section several individual factors which need to be examined in relation to children's disclosure to peers, including differences in children's theory of mind abilities and emotion understanding, and differences in the quality of attachment to their parents, were discussed.

Another individual factor that, to my knowledge, has not been studied in connection to children's emerging capacity for restrictive disclosure to friends is friendship quality. A research measuring the qualities that are traditionally studied in young children's friendships, such as companionship, aid, or validation (Ladd, Kochenderfer & Coleman, 1996), could connect the specific friendship quality features with children's restrictive disclosure to friends, clarifying the possible cause-effect associations between children's friendship quality and their tendency to disclose highly personal pieces of information to their friends.

Furthermore, gender differences in children's capacity for restrictive self-disclosure is an area which will benefit from further research. In the Third Study Discussion section the gender differences found were discussed and connected to the existing, often conflicting, literature on gender differences. However, it was interesting that significant gender differences were found only in the Third Study,

where children's actual disclosing behaviour was measured. In the Second Study, where children were asked about the level of intimacy of a particular item no gender differences were found. The assumption was put forward that boys and girls might share a common perception on the level of intimacy of a specific piece of information, but when it comes to sharing them, boys act differently than girls. On the other hand, the inconsistency in the findings between the two studies could simply reflect the inconsistencies generally found in the research on gender differences in communication in young ages where the picture is hazy, few stable and consistent differences can be reported (Dunn, 2004, pg. 118), and a systematic explanation of the sporadic differences has not been offered yet (Underwood, 2004).

Finally, the developmental pattern of the restrictive disclosure-to-friends capacity needs further exploration. In particular, a longitudinal research examining children's restrictive disclosure behaviour from the age of around five years of age, when the restrictive disclosure-to-friends pattern apparently emerges, until preadolescence or even adolescence, when the pattern has been established and friends become particularly important disclosure figures (Buhrmester, 1990; Hernandez, 2001; Updegraff, McHale & Crouter, 2002) could provide valuable answers regarding the process through which children build intimate relationships with peers, a process which inevitably involves the restrictive sharing of highly intimate pieces of information and secrets with close friends (Grabill & Kerns, 2000; Matsushima & Shiomi, 2002)

It is important to highlight that this process starts in early childhood, as indicated by the findings of the present research, a finding which supports Brown's, Donelan-McCann's and Dunn's (1996) argument that children are not isolated thinkers but from a young age social interaction between friends plays an important role in their development. This, after all, was the main point of investigation of the present research project, as it was already noted in the literature review: the present research, although focusing on a presumably specialized aspect of children's ability to communicate with other children (restrictive self-disclosure), in essence examined young children's growing abilities of interactions in a social world. In this social world, relations with peers carry a special developmental significance (Dunn, 2004, pg. 7), as between peers there is no disparity in status (as there is between parents and their children), children are 'equal partners' and so conversations between them are of special importance. This point has not only been raised by Piaget (1965), but even a

long time before developmental psychology was an area of research, in the 16th century, Michel de Montaigne on his essay 'On Friendship' spoke of the same thing. He noted that:

From children to fathers it is more a matter of respect; friendship, being fostered by mutual confidences, cannot exist between them because of their excessive inequality; it might also interfere with their natural obligations; for all the secret thoughts of fathers cannot be shared with their children for fear of begetting an unbecoming intimacy (1590/1991, pg. 3)

It is remarkable that five centuries ago friendship was associated with the sharing of secrets and intimacy, as it was done in the present research.

As pointed out before, friendship intimacy and self-disclosure become particularly important at later stages, especially in preadolescence and adolescence. Friendship intimacy is considered so important in adolescence that intervention programs aiming to facilitate the development of the adolescents' intimacy with a best friend have been designed (Shechtman, Freidman, Kashti & Sharabany, 2002). However, it appears that the seeds of self-disclosure and intimate peer relationships are already laid in early childhood. As Dunn characteristically writes (2004, pg. 2-3), 'children don't leap into full-blown intense friendships that are loyal and committed relationships during the preschool and early school years'. The present research project suggests that children don't leap at all. They gradually proceed, and step by step achieve intimacy with a best friend, starting out with the sharing of their secrets at a young age.

Appendix A

Pictures of the materials used in the First Study.



Picture 1: Box used in the Sociometric Interview



Picture 2: 'Children' puppets



Picture 3: 'Adult' puppet



Picture 4: Tape-recorders

Appendix B

Guidelines for the coding of the Tape-Interviews.

- We code information that suit the following categories:

- a. description of the environment
- b. description of people and activities
- c. personal preferences
- d. positive personal items
- e. negative personal items

Category a: includes descriptions of inanimate objects and animals, but if a phrase describes the relation between a person and an animal or an inanimate object is coded accordingly b or c. E.g. The cat is grey (a), I have a dog (b), I like dogs (c).

Category b: includes descriptions of other people and activities (E.g. My brother is tall) and descriptions of self and personal activities with neutral emotional charge. E.g. I am six (b), I went for a walk (b).

Category c: includes all the phrases that describe personal likes and dislikes. E.g. I like broccoli (c), I don't like art (c). Also includes phrases with 'I love...' and 'My best...' E.g. I love playing (c), My best friend is Nick (c).

Category d: includes bragging and descriptions of self, personal feelings and activities with positive emotional charge. E.g. I am good at playing football (d), I hugged her (d). Remember that we only code positive personal items, so phrases about other people with positive emotional charge are coded b. E.g. My brother is good at football (b). BUT phrases that describe a positive relationship about another person and the interviewee are coded d. E.g. My brothers are nice to me (d). Also category d includes the phrase: 'I am his best friend', but the phrase 'I am his friend' is coded b.

Category e: includes description of self, personal feelings and activities with negative emotional charge. E.g. I am not good at counting (e), I get cross (e), I started hitting at him (e). Remember that we only code negative personal items, so phrases about other people with negative emotional charge are coded b. E.g. He is not good at running (b).

BUT phrases that describe a 'negative' relationship between another person and the interviewee are coded e. E.g. He is horrible to me (e).

Note: if we are not certain about the quality of the emotional charge of a phrase we code it 'b'. E.g. I can ride a bicycle (b).

- We code each disclosure utterance. More specifically, we give a coding to each sentence and each apposition. E.g. I like playing, reading (2 'c' codings). Note 1: We don't give a separate coding when a subordinate sentence serves as object to the previous verb. Ex. I like it when we go swimming (1 'c' coding). Note 2: Quotations are not given a separate coding. E.g. I said: 'let's go' (1 'b' coding). Note 3. Conditionals are coded as a single phrase. E.g. If you play with me, I'll play with you (1 'b' coding).
- We separate each sentence with a vertical line and write on top of the sentence the appropriate letter. E.g. I like playing (c).
- We do not code repetitions. We just mark 'R' the second time the same sentence appears. E.g. I like playing (c)...I like playing (R). Note: If a statement is repeated but more information is provided, a separate coding is marked. E.g. I like playing (c)... I like playing with my toys (c). Also, a new coding is marked if the statement is emphasized. E.g. I like playing with you (c). I really like playing with you (c).
- We do not code sentences that do not conform to the aforementioned categories. We mark 'I' (irrelevant). Thus, we do not code questions (direct or indirect). E.g. 'Do you like the sunshine? (I), I want you to tell me if you like the sunshine (I). Note: If the interviewee answers the question for him/herself then a coding is marked. E.g. Do you like the sunshine? (I) I do (c).
- We do not code invitations, advices, wishes. Note: Sentences with: 'You can...' are not coded if they are invitations, but they are coded if they are part of a description. E.g. 'You can come to my house' (I), but 'At school, you can play at the climbing frame' (b).
- Statements that are inaudible or incomprehensible (or partly inaudible or incomprehensible) or unfinished, and for which contextual cues don't give us enough information to allow coding are coded 'IN'.

- Refusal: We consider refusal any case in which the interviewee 1) does not get any coding mark and 2) does not address the other child, but either says nothing or talks to the interviewer. E.g. 'Hello' is not considered refusal. 'I don't know what to say' is considered refusal.

Appendix C

Results of the principal components analysis (PCA) with varimax rotation conducted on the Tape-Recording Task's data, excluding the variables 'Description to environment to friend' and 'Description of environment to non-friend'.

The PCA with varimax rotation that was conducted excluding the variables 'Description of the environment to friend' and 'Description of environment to non-friend', because of their low MSA values, produced similar results as the PCA reported in the main text which included the variables 'Description of the environment to friend' and 'Description of environment to non-friend'.

As shown in Figure X, two factors were extracted with eigenvalue >1 . The two factors cumulatively interpreted 51% of variance. The first factor interpreted 32.5% of variance, while the second interpreted 18.6% of variance. Information on the percentage of variance explained by the principal factors is presented in Table X1.

Table X1: Percentage of Variance Explained by the Components Extracted by the PCA on the Personal Content of the Tape Interviews Excluding the Variables 'Description of the Environment to Friend' and 'Description of the Environment to Non-Friend'

Components	Eigenvalue	% of Variance	Cumulative %
1	2.6	32.5	35.5
2	1.5	18.6	51.0

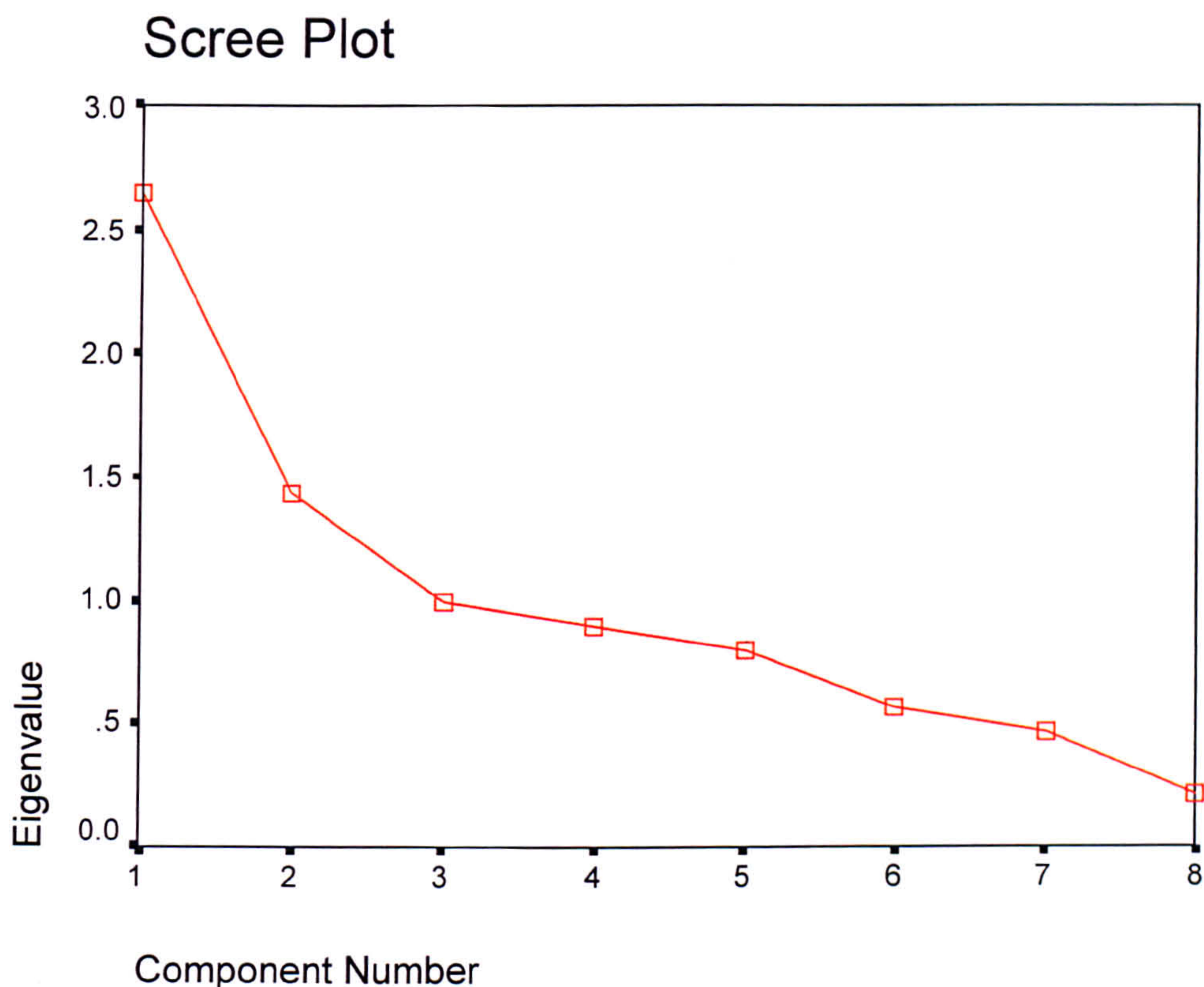


Figure X: Graph of the Eigenvalue of the Components Extracted by the PCA on the Personal Content of the Tape Interviews Excluding the Variables ‘Description of the Environment to Friend’ and ‘Description of the Environment to Non-Friend’

With a cut of .50 for inclusion of a variable in interpretation of a factor, only the variable ‘Positive personal items to non-friend’ did not load on any factor. Similarly to the PCA reported in the main text, the variables ‘Description of people and activities to friend’, ‘Description of people and activities to non-friend’, ‘Positive personal items to friend’, ‘Negative personal items to friend’ and ‘Negative personal items to non-friend’ loaded on the same factor, while the variables ‘Personal preferences to friend’ and ‘Personal preferences to non-friend’ loaded together on a separate factor. Loadings of the other variables on factors are shown in Table X2. Variables are ordered and grouped by size of loading to facilitate interpretation.

Table X2: Rotated Component Matrix of the PCA on the Personal Content of the Tape Interviews Excluding the Variables ‘Description of the Environment to Friend’ and ‘Description of the Environment to Non-Friend’

Variables	Component	
	1	2
Description of people and activities – Friend	.89	
Description of people and activities – Non-Friend	.75	
Positive Personal Items – Friend	.70	
Negative Personal Items – Friend	.64	
Negative Personal Items – Non-Friend	.56	
Personal preferences – Friend		.83
Personal preferences – Non-Friend		.77

Appendix D

Guidelines for the coding of the answers to the question: 'What is a secret?'

• The answer of each participant (child or adult) is classified according to its content into one of the following three categories:

1. Full comprehension of the meaning of secrets
2. Poor/Inadequate comprehension of the meaning of secrets
3. Erroneous/Irrelevant answers/ 'Don't know'

Category 1: includes answers that indicate that the participant understands fully the meaning of secrets. Category 1 includes answers that define secrets by means of their main characteristic, their 'differentiae' (Nippold, 1995), as given by the Oxford Dictionary (1989): concealment, 'keeping from public knowledge, or from the knowledge of persons specified'. More specifically, Category 1 includes answers that define secrets as information that one withholds from others or chooses to disclose only to people he/she has a close relationship with:

E.g. 'Something you keep inside yourself', 'Personal events that only you know or very intimate people', 'Kind of thing that friends tell and keep from other people'.

*Answers that are classified into Category 1 are marked for statistical purposes with 2 points.

Category 2: includes answers that are not incorrect but indicate a poor/inadequate understanding of the meaning of secrets. Category 2 includes answers where the interviewee provides a definition of secrets that covers some of their characteristics, or gives an example of a secret, but their main characteristic (concealment) is not stated clearly as a personal choice. More specifically, category 2 includes

a) answers that describe/give an example of a secret:

E.g. 'A surprise', 'Like when I hided ...'

b) answers that define secrets as information labeled as 'secret' by other people:

E.g. 'Something that somebody tells you and you are not allowed to tell'.

c) answers that describe one feature of secrets or secret sharing

E.g. 'When you whisper to someone else's ear.'

*Answers that are classified into Category 2 are marked for statistical purposes with 1 point.

Category 3: includes:

a) answers that are erroneous or irrelevant.

E.g. 'You are talking jokes'.

b) cases where the interviewee states that he/she does not know what a secret is.

*Answers that are classified into Category 3 are marked for statistical purposes with 0 points.

- Missing data: includes cases where for various reasons the question was not asked and the rare cases where the interviewee's answer was incomprehensible.

Appendix E

Results of the principal axis factoring analysis with varimax rotation conducted on the Second Study's data investigating young children's classification of 'secrets' and 'non-secrets'.

The principal axis factoring analysis with varimax rotation applied to the three levels of the children's answers (non-secret/small secret/big secret).

As shown in Figure Y, the analysis extracted three factors with eigenvalue >1.

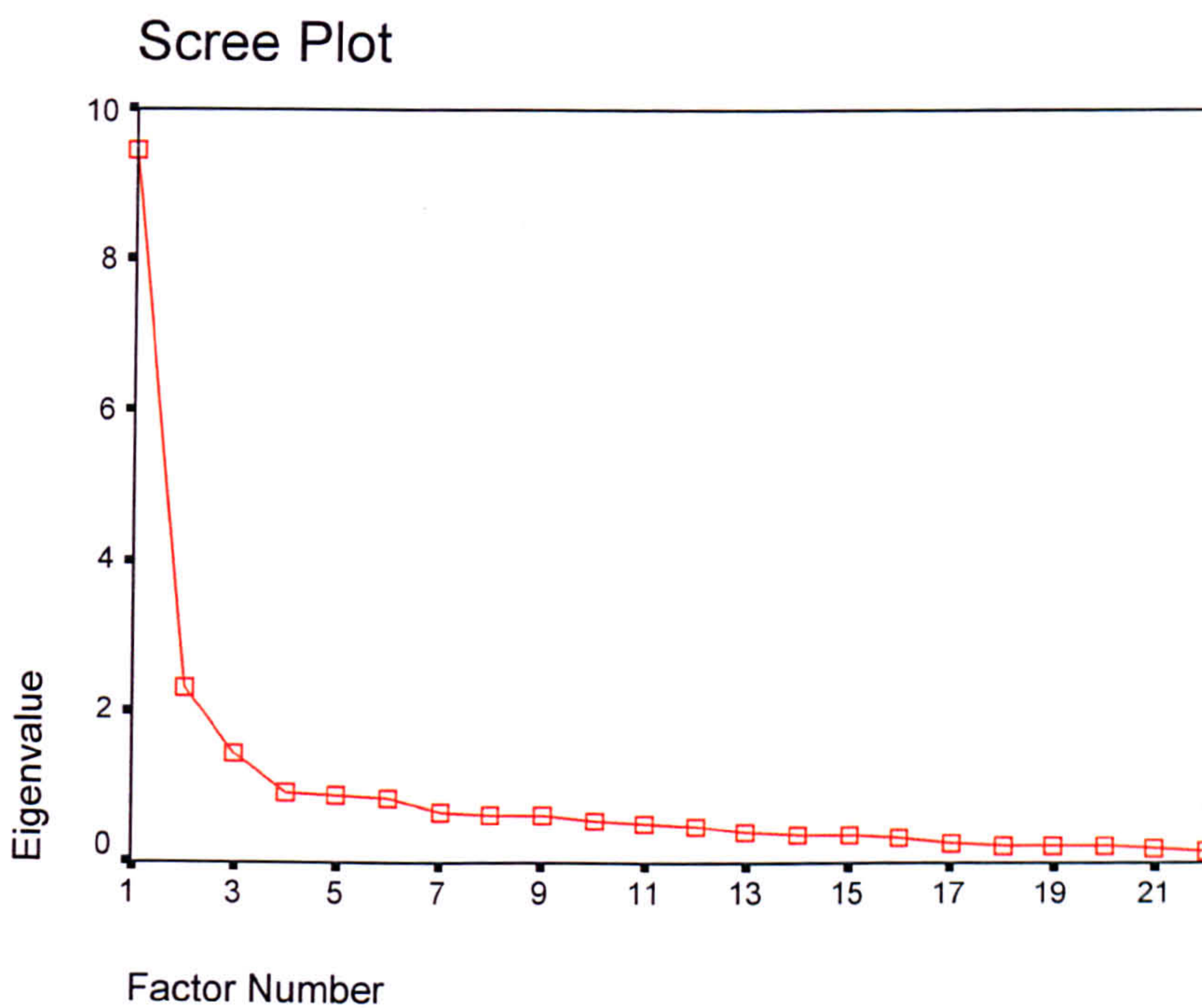


Figure Y: Graph of the Eigenvalue of the Components Extracted by the Principal Axis Factoring Analysis of the Second Study Investigating Young Children's Classification of Secrets and Non-Secrets

The three factors cumulatively interpreted 54.1% of variance. The first factor interpreted 29.6% of variance, the second 16.9%, and the third interpreted 7.6% of variance. Information on the percentage of variance explained by the principal factors is presented in Table Y1:

Table Y1: Percentage of Variance Explained by the Components Extracted by the Principal Axis Factoring of the Second Study Investigating Young Children's Classification of Secrets and Non-Secrets

Components	Eigenvalue	% of Variance	Cumulative %
1	6.5	29.6	29.6
2	3.7	16.9	46.5
3	1.6	7.6	54.1

With a cut of .50 for inclusion of a variable in the interpretation of a factor, all variables loaded on a single factor. Loadings of variables on factors are shown in Table Y2. Variables are ordered and grouped by size of loading to facilitate interpretation. (The items are presented with the numbering they had in the interview.)

Table Y2: Rotated Component Matrix of the Principal Axis Factoring of the Second Study Investigating Young Children's Classification of Secrets and Non-Secrets

Variables	Component		
	1	2	3
30.Zinc read a book at school	.81		
24.There is a playground in Zinc's school	.78		
38.Zinc can draw really well	.72		
31.Zinc likes watching TV	.71		
25.Zinc's room has a window	.70		
28.Zinc's cousin has short hair	.69		
26.There is a big tree outside Zinc's school	.69		

34.Zinc likes cats	.67	
27.Zinc drinks a glass of milk every morning	.65	
23.Zinc's home is close to school	.62	
29.Most people are taller than Zinc	.59	
36.Zinc can run faster than most children in his/her class	.59	
37.People sometimes say that Zinc is very good	.58	
18.Zinc wet him/herself once		.74
6.Zinc took something that was not his/hers		.71
33.Zinc doesn't like broccoli		.68
14.Sometimes Zinc does dangerous things like climbing up big trees		.60
11.Zinc doesn't always tell the truth		.55
15.Zinc fancies a boy/girl in his/her class		.53
32.Zinc doesn't like the colour yellow		.51
2.Zinc's parents are going to give a surprise present to his/her granddad next week		.78
1.There is going to be a surprise party for Zinc's father's birthday		.66

Appendix F

Results of the principal components analysis (PCA) with varimax rotation conducted on the data of the Third Study.

The principal component analysis with varimax rotation conducted using the data from the Third Study only applied to the three levels of the children's answers to the question 'Is this a secret?' (non-secret/small secret/big secret). The sample size ($N = 209$) was satisfactory for the employment of the technique and all PCA assumptions were satisfied.

As shown in Figure Z1, the PCA extracted four factors with eigenvalue >1 .

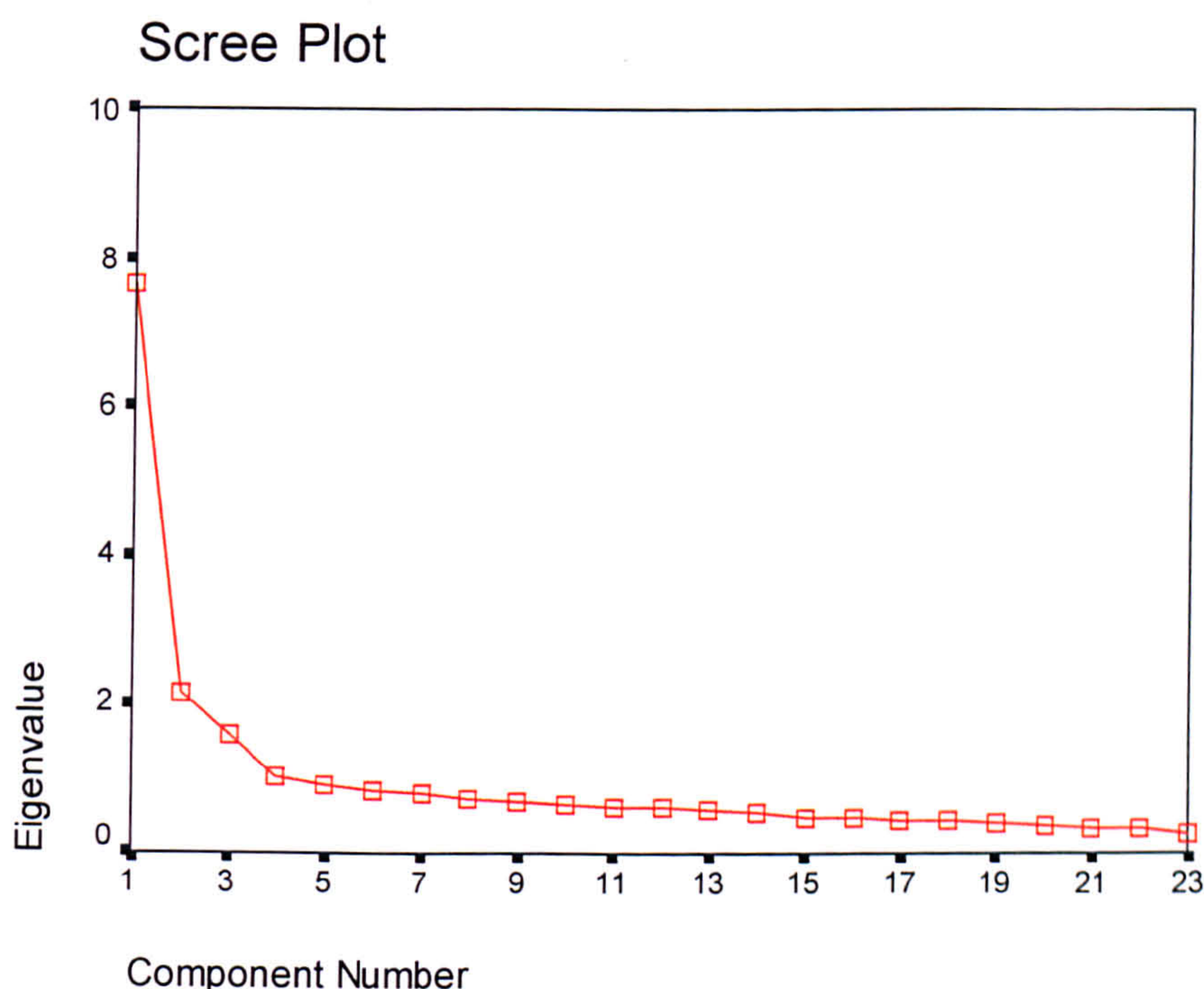


Figure Z1: Graph of the Eigenvalue of the Components Extracted by the PCA Conducted on the Data of the Third Study

The four factors cumulatively interpreted 53.9% of variance. The first factor interpreted 16.7% of variance, the second 15.9%, the third interpreted 12.8%, while the fourth interpreted 8.8% of variance. Information on the percentage of variance explained by the principal factors is presented in Table Z1:

Table Z1: Percentage of Variance Explained by the Components Extracted by the PCA Conducted on the Data of the Third Study

Components	Eigenvalue	% of Variance	Cumulative %
1	3.8	16.7	16.7
2	3.6	15.9	32.3
3	2.9	12.8	45.0
4	2.0	8.8	53.9

With a cut of .50 for inclusion of a variable in the interpretation of a factor, all but two variables loaded on a factor. The two variables that did not load on a factor are: Item 38 ('Zinc can draw really well') and Item 28 ('Zinc's cousin has short hair'). Loadings of variables on factors are shown in Table Z2. Variables are ordered and grouped by size of loading to facilitate interpretation. (To facilitate comparisons the items are presented with the numbering they had in the Second Study).

Table Z2: Rotated Component Matrix of the PCA Conducted on the Data of the Third Study

Variables	Component			
	1	2	3	4
33.Zinc doesn't like broccoli	.69			
36.Zinc can run faster than most children in his/her class	.62			
29.Most people are taller than Zinc	.59			
31.Zinc likes watching TV	.59			
26.There is a big tree outside Zinc's school	.57			

23.Zinc's home is close to his/her school	.55	
32. Zinc doesn't like the colour yellow	.51	
24.There is a playground in Zinc's school		.74
34.Zinc likes cats		.72
30.Zinc read a book at school		.72
25.Zinc's room has a window		.54
37.People sometimes say that Zinc is very good		.52
27.Zinc drinks a glass of milk every morning		.50
6.Zinc took something that was not his/hers		.76
7.Zinc doesn't always tell the truth		.75
18.Zinc wet him/herself once		.72
15.Zinc fancies a boy/girl in his/her class		.64
14.Sometimes Zinc does dangerous things like climbing up big trees		.61
1.There is going to be a surprise party for Zinc's father's birthday		.79
2.Zinc's parents are going to give a surprise present to his/her granddad next week		.78

The present PCA extracted four factors, in contrast with the other PCAs conducted so far (using the Second Study's data or the merged data of the Second and Third Study) which have extracted three factors. However, it is striking that once more non-secret, secret and 'surprise' items (items that included the word 'surprise' in their wording) loaded on distinct categories, a result which is congruent with the other PCAs conducted so far.

In all other PCAs non-secret items loaded on the first factor, secret items loaded on the second, and 'surprise' items on the third. In the present PCA it seems that the non-secret items (items that have loaded on the first factor in the other PCAs)

have split up in two parts and loaded on two factors: Factor 1 and Factor 2. Factor 3 is loaded by secret items: the items that have been characterized as secrets by adults, and have loaded on the second factor in the other PCAs. Just like in the other PCAs, in the present analysis the secret items loaded on a factor separately from the non-secret and 'surprise' items; however, due to the 'split' of the non-secret items they now loaded on Factor 3. The last factor, Factor 4, is loaded by the 'surprise' items, which once more formed a distinct category.

An interesting finding of the present PCA is that the two items referring to negative personal preferences, Item 32 ('Zinc doesn't like the colour yellow') and Item 33 ('Zinc doesn't like broccoli'), loaded on an apparently non-secret factor, Factor 1. It is reminded that these were the only items where differences were found between adult and children participants in the Second Study: adults classified these items as 'non-secrets', while children classified them as 'secrets'. Did children follow adults' classification in the present analysis? In the PCA reported in the main text, where the files from the Second (excluding the youngest age group) and the Third Study were merged the two 'Negative personal preferences' items appeared 'halfway' between the non-secret and the secret factor. Item 32, with a loading of .49, loaded marginally lower than the cut-off point of .50 on the non-secret factor, but also loaded high on the secret factor (.43). Item 33 loaded on the secret factor with a loading of .53, but also had a high loading of .43 on the non-secret factor.

Although the present PCA produced results in congruence with the previous PCAs in the sense that non-secrets, secrets and 'surprise' items formed distinct categories, the fact that four factors (as opposed to three) were extracted and that the non-secret factor seemed split in two appeared puzzling. Therefore, it was decided to perform a constrained to three factors principal component analysis with a varimax rotation on the same data, in order to examine the behaviour of the non-secret items under the constrained condition.

The constrained principal component analysis with varimax rotation applied to the three levels of the children's answers to the question 'Is this a secret?' (no secret/small secret/big secret). All PCA assumptions were satisfied.

The three factors extracted are shown in Figure Z2. The three factors cumulatively interpreted 50.2% of variance. The first factor interpreted 26.7% of variance, the second 14.4%, and the third interpreted 9% of variance. Table Z3

presents information on the percentage of variance explained by the principal factors.

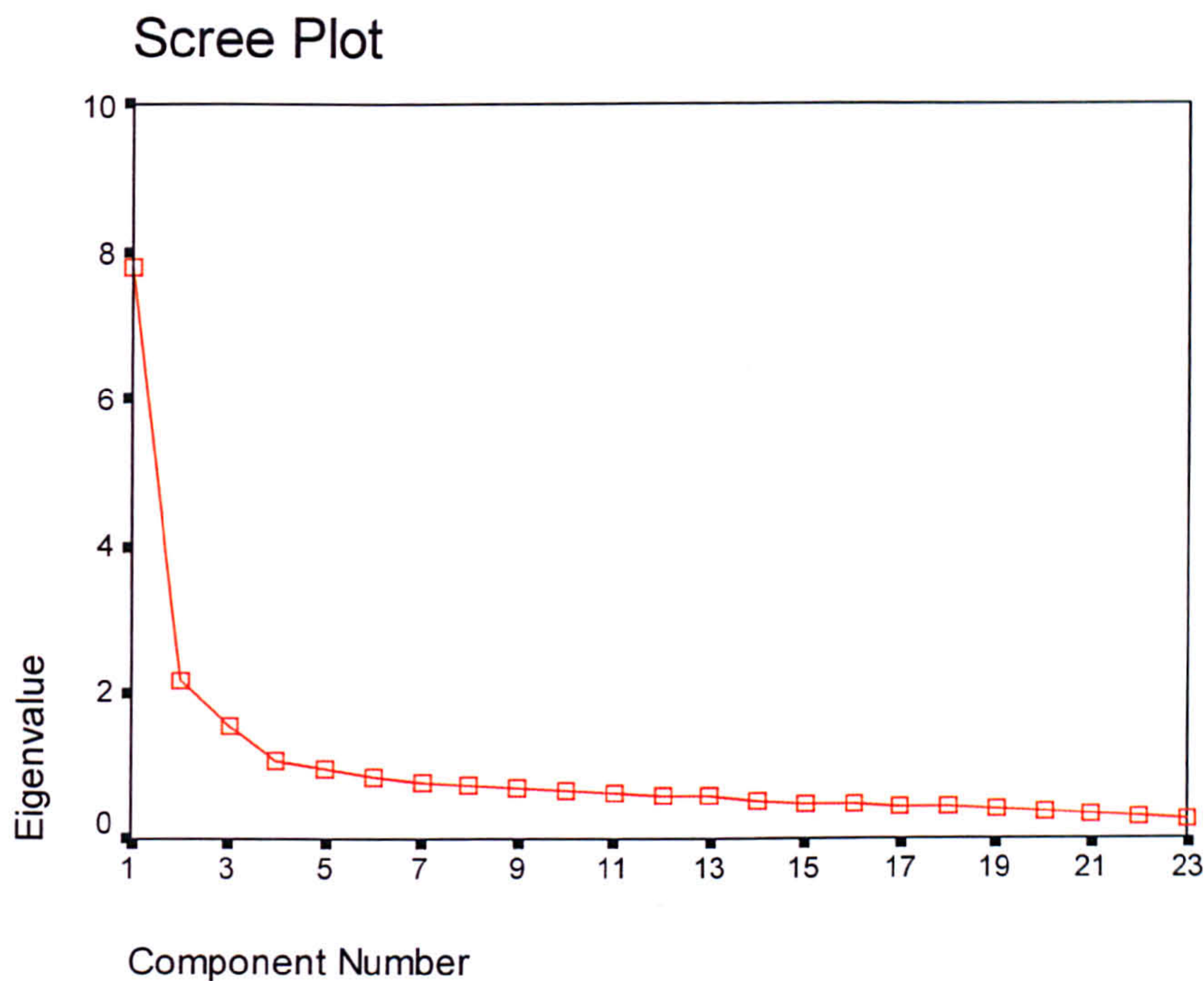


Figure Z2: Graph of the Eigenvalue of the Components Extracted by the Constrained PCA Conducted on the Data of the Third Study

Table Z3: Percentage of Variance Explained by the Components Extracted by the Constrained PCA Conducted on the Data of the Third Study

Components	Eigenvalue	% of Variance	Cumulative %
1	6.1	26.7	26.7
2	3.3	14.4	41.1
3	2.1	9.0	50.2

With a cut of .50 for inclusion of a variable in the interpretation of a factor, all variables but one, Item 23 (Zinc's home is close to his/her school) loaded on a factor. Loadings of variables on factors are shown in Table Z4. Variables are ordered and

grouped by size of loading to facilitate interpretation. (To facilitate comparisons the items are presented with the numbering they had in the Second Study).

Table Z4: Rotated Component Matrix of the Constrained PCA Conducted on the Data of the Third Study

Variables	Component		
	1	2	3
31.Zinc likes watching TV	.73		
25.Zinc's room has a window	.71		
24.There is a playground in Zinc's school	.71		
38.Zinc can draw really well	.70		
30. Zinc read a book at school	.69		
27.Zinc drinks a glass of milk every morning	.69		
34.Zinc likes cats	.65		
26.There is a big tree outside Zinc's school	.62		
37.People sometimes say that Zinc is very good	.61		
36.Zinc can run faster than most children in his/her class	.60		
28.Zinc's cousin has short hair	.58		
32. Zinc doesn't like the colour yellow	.56		
29.Most people are taller than Zinc	.56		
33. Zinc doesn't like broccoli	.54		
6. Zinc took something that was not his/hers		.78	
7. Zinc doesn't always tell the truth		.77	
18.Zinc wet him/herself once		.71	
14.Sometimes Zinc does dangerous things like climbing up big trees		.67	
15.Zinc fancies a boy/girl in his/her class		.59	
2. Zinc's parents are going to give a surprise present to his/her granddad next week			.80
1.There is going to be a surprise party for Zinc's father's birthday			.79

The reliability of each factor was calculated in order to test the reliability of this factor solution. The reliability coefficients for each factor were high, ranging from .72 to .90 (Alpha = .90 for Factor 1, Alpha = .80 for Factor 2 and Alpha = .72 for Factor 3).

As Table Z4 clearly shows, non-secret, secret and 'surprise' items (items that included the word 'surprise' in their wording) formed distinct categories, a finding which appears robust, as it is a common finding of all PCAs conducted. Under the constrained condition the two factors extracted by the previous PCA and were characterized by non-secret items (Factors 1 and 2 of the previous PCA) seem to have merged and together formed the first factor, the non-secret factor, which includes all non-secret items (and the 'Negative personal preference' items). Items characterized as 'secrets' by adults and young children alike loaded on Factor 2, the secret factor, while Items 1 and 2 which include the word 'surprise' in the wording loaded separately from all other items on Factor 3.

As noted above, in the present constrained PCA, the 'Negative personal preference' Items 32 and 33, loaded on Factor 1, the non-secret factor, as they did in the non-constrained PCA. When investigating the question posed before, whether older children followed more closely adults' classification this time, the fact that there was a high loading (.43) of Item 32 on the secret factor has to be taken into consideration. The postulation, put forward before, that these items are 'halfway' between the secret and non-secret factors appears supported.

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