

IMAGINARY COMPANIONS:  
THEIR ROLE IN CHILDHOOD DEVELOPMENT

by

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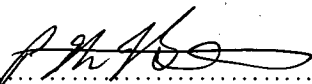
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## ABSTRACT

Five studies were conducted to investigate the emotional and cognitive factors associated with the presence of imaginary companions in children aged 3 to 9 years. In Study 1 parents were asked to complete a questionnaire which sought information regarding the characteristics of children with and without imaginary companions. Overall, a significantly larger number of children with imaginary companions were reported to be very imaginative and to have an increased predisposition to fantasy compared to children without companions.

Study two investigated the fearfulness, anxiety, and temperament characteristics of imaginary companion and non-imaginary companion children. Examination of maternal ratings on the Fear Survey Schedule for Children-II Parent (FSSC-IIP), the Revised Children's Manifest Anxiety Scale (RCMAS), and the Short Temperament Scale for Children (STSC), found that a significantly larger number of imaginary companion than non-imaginary companion children were reported to experience internalised anxiety associated with sensitivity to the environment and the expectations of others.

Study 3 further examined the predisposition to fantasy of imaginary companion and non-imaginary companion children by asking them a series of questions regarding their dreams, daydreams, and scary thoughts. Analysis of children's taped responses indicated that a significantly larger number of imaginary companion than non-imaginary companion children experienced vivid mental imagery that incorporated a fantasy element.

Study 4 investigated the ability of imaginary companion and non-imaginary companion children aged 4 to 8 years to differentiate fantasy from reality. Following children's description of a monster, a monster shaped silhouette was unexpectedly projected into the room. Video recordings of each child's reaction to the silhouette and responses to a subsequent series of questions indicated that a significantly larger number of imaginary companion than non-imaginary companion children thought that an imaginary entity could be reflected in reality. However, as a number of non-imaginary companion children also thought that an imaginary entity could be reflected in reality, differences in children's level of credulity, rather than the presence or absence of the imaginary companion was considered to account for the fantasy-reality confusion.

Study 5 examined the transcribed responses and written evaluations of the children who participated in study 4 to investigate these children's language use and ability to develop rapport. This study found that a significantly larger number of imaginary companion children used more mature language and were easier to develop rapport with than non-imaginary companion children. The mature language used by imaginary companion children was considered to contribute to their increased ability to develop rapport.

Combined, the findings of this series of studies were interpreted to indicate that children with imaginary companions have an increased sensitivity to environmental events that is potentiated by their ability to create vivid mental images. This enhanced imagery ability and consequent increased sensitivity was considered instrumental in the creation and maintenance of an imaginary companion.



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## CHAPTER 1

### INTRODUCTION

A fascinating aspect of children's development involves the occurrence of the imaginary companion. Despite claims that these companions are experienced by as many as 65% of children (Mauro, 1990; Singer & Singer, 1990) there is still very little empirical data on this phenomenon. The lack of systematic investigations in early research (e.g., Vostrovsky, 1895) and the differing data collection procedures utilised in later studies (e.g., Ames & Learned, 1946; Hurlock & Burstein, 1932; Jersild, Markey, & Jersild, 1933; Svendsen, 1934) have led to inconsistencies in the interpretation of results in the imaginary companion literature. More recent research (Harter & Chao, 1992; Manosevitz, Fling, & Prentice, 1977; Manosevitz, Prentice, & Wilson, 1973; Mauro, 1990; Singer & Singer, 1981; Taylor, Cartwright, & Carlson, 1993) has addressed these issues and included constraints such as participants within a similar age range and a standard definition of the imaginary companion. The most frequently cited definition is that offered by Svendsen (1934) who refers to the imaginary companion as:

An invisible character, named and referred to in conversation with other persons or played with directly for a period of time, at least several months, having an air of reality for the child, but no apparent objective basis. This excludes that type of imaginative play in which an object is personified, or in which the child himself assumes the role of some person in his environment. (p. 988)

The theoretical orientation of imaginary companion research has also changed. Earlier research (e.g., Ames & Learned, 1946; Svendsen, 1934; Vostrovsky, 1895) focused exclusively on the individual and environmental factors associated with imaginary companions. In contrast, more recent investigations (Harter & Chao, 1992; Manosevitz et al., 1977; Manosevitz et al., 1973; Mauro, 1990; Singer & Singer, 1981; Taylor et al., 1993) have been aimed at clarifying the relationship between these factors and the role of imaginary companions in childhood development. Collectively these studies indicate that children use imaginary companions to exercise their autonomy, extend social and language skills, engage in role-play, and come to terms with their fears. From a cognitive perspective, the imaginary companion is viewed as a method of assimilating new experiences into available schemas, thus promoting the formation, manipulation, and decontextualisation of symbolic representations. This in turn facilitates the child's understanding of the difference between internal mental representations of external stimuli and the actual stimuli (Singer & Singer, 1990; Somers & Yawkey, 1984; Taylor et al., 1993).

The reported air of reality (Manosevitz et al., 1973; Svendsen, 1934; Taylor et al., 1993) with which children surround their imaginary companions has raised questions regarding their ability to understand the difference between internal mental events (e.g., pretense or fantasy) and reality. As investigators into the child's theory of mind have found that children as young as 3-year-old can distinguish mental entities from real entities (Leslie, 1987; Wellman & Estes, 1986), children's reported treatment of imaginary companions appears contradictory.

However, research findings indicate that there are times when even older children's ability to maintain the border between fantasy and reality breaks down and they revert to fantastic or magical explanations (Chandler & Lalonde, 1994; Johnson & Harris, 1994; Subbotsky, 1984, 1994). Harris, Brown, Marriott, Whittall, and Harmer (1991) hypothesised that these breakdowns may occur because children either become unsure of the rules that govern the transformations between fantasy and reality, or that imagining an outcome may increase the likelihood of such an outcome occurring. Although these hypotheses offer plausible accounts for the air of reality with which children surround their imaginary companions, they should be treated as pure speculation until more is known about the factors associated with the presence of these companions.

The inability of imaginary companion research to clarify the extent to which children with imaginary companions understand the difference between fantasy and reality, underscores the need for more comprehensive research. The majority of research in this area has used traditional questionnaire interview methods which do not allow the behavioural and developmental components to be considered independently. Developmental theorists (e.g., Wellman, 1990; Wellman & Estes, 1986; Woolley & Wellman, 1993) have focused on the fantasy-reality distinction in children but not the behavioural characteristics that may account for individual differences. The fundamental aim of the research reported in this thesis therefore, was to incorporate the principles of traditional research methods within the current developmental framework. In order to fulfill this aim, the emotional and cognitive factors associated with the presence or absence of imaginary companions in children were examined. The factors that were investigated included fearfulness, anxiety, characteristic temperament, language use, and the ability to distinguish fantasy from

reality. Research focusing on these factors will not only provide additional information regarding the role of imaginary companions in children's emotional development, but also much needed information regarding these children's cognitive development and in particular, their understanding of the fantasy-reality distinction.

In the next section, a general description of children and their imaginary companions is presented followed by a detailed overview regarding the characteristics of children who have imaginary companions. Within this overview, existing empirical studies regarding the characteristic temperament, anxiety level, and fearfulness of children with imaginary companions are reviewed. The possible relationship between these variables and the predisposition of children with imaginary companions to engage in fantasy play is also discussed. The remainder of the chapter presents a brief summary of research findings regarding young children's understanding of the fantasy-reality distinction. This summary is followed by a more detailed review of the existing empirical studies that have investigated the ability of children with imaginary companions to differentiate fantasy from reality, as well as the effect that these companions may have on children's language use. Finally, the aims of the thesis in regard to the behavioural characteristics of children with imaginary companions and their ability distinguish fantasy and reality are outlined.

### 1.1 Children and Imaginary Companions

Imaginary companions typically appear between the ages of two years and six years, although their presence has been reported for children up to the age of nine years (Ames & Learned, 1946; Hurlock & Burstein, 1932; Svendsen, 1934).

These companions may take the form of humans, anthropomorphised toys, television characters, or animals. In addition, it is not unusual for children to experience two or more companions rather than a single entity (Jalongo, 1984; Jersild, 1968; Singer & Singer, 1990; Somers & Yawkey, 1984).

Research findings indicate that imaginary companions most often occur amongst children who are either only children or who do not share chronological proximity to their siblings (Manosevitz et al., 1973; Svendsen, 1934). The emotions that these companions evoke are highly charged and positive with children reported to feel love for the companion and to be happy when playing with them (Hurlock & Burstein, 1932; Manosevitz et al., 1973; Mauro, 1990; Singer & Singer, 1990). Imaginary companions are also reported to be either the same age or older than the child and more prevalent amongst girls than boys. Of the children who experience these companions, girls are more likely than boys to have opposite sex companions and boys are more likely than girls to have animals as imaginary companions (Ames & Learned, 1946; Hurlock & Burstein, 1932; Manosevitz et al., 1973; Singer & Singer, 1990). The reality with which children treat their companions has also been described throughout the literature. Children have been reported to treat their companion as a distinct personality who occupies space and who requires a place at the table or space in the child's bed (Hurlock & Burstein, 1932; Manosevitz et al., 1973; Svendsen, 1934; Taylor et al., 1993).

Less consistently reported have been the estimates regarding the prevalence of imaginary companions. These have been highly variable with frequencies ranging from 13% (Svendsen, 1934) to 65% (Singer & Singer, 1990). According to Manosevitz et al. (1973) this variability can be attributed to different methods in data collection including questionnaire, observation, and interview methods (e.g.,

Hurlock & Burstein, 1932; Manosevitz et al., 1973; Mauro, 1990), varying sample sizes, and the degree of inclusiveness of the definition of the companion at times involving toys that are not assumed to have human or live properties but which are carried around as concrete playthings. Singer and Singer (1990) also suggest that the reported prevalence rate of imaginary companions can differ depending on whether the reports are obtained from parents or children. Previous research by these authors (1981) suggests that parents may under-report the presence of these companions by as much as 10%.

### 1.2 Characteristics of Children Who Create Imaginary Companions

The theorised positive effect of the imaginary companion on childhood behaviour has been well documented. Research findings (Ames & Learned, 1946; Manosevitz et al., 1973; Singer, 1961; Singer & Singer, 1981) have reported an increased level of social skill and control in children with imaginary companions. These children were reported to be more skilled at talking to adults and demonstrated a preference for socialising and interacting with other children, reduced aggressiveness, and an increased ability to develop interpersonal relationships. Additional research by Mauro (1990) suggests that children with companions are less shy, more sociable, and have more real friends than those without.

However, in a recent study, Harter and Chao (1992) presented empirical data that suggest imaginary companions play a compensatory role for children. In this study, Harter and Chao administered the Pictorial Scale of Perceived Competence and Social Acceptance for Young Children (PSPCSA; Harter & Pike, 1984). This 24 item measure asks children to rate their own level of competence



and social acceptance in four domains: cognitive competence (e.g., being able to do puzzles), physical competence (e.g., being able to hop), peer acceptance (e.g., having lots of friends), and maternal acceptance (e.g., mother and child playing together). Each item is presented in a pictorial plate that contains two pictures situated side by side; one which depicts a child who is competent or accepted and one which depicts a child who is not so competent or accepted.

Initially, children were asked to choose the picture that they thought represented themselves. Following this choice, children were then asked to indicate using a 4-point pictorial scale (1= least competent or accepted to 4 = most competent or accepted ) the degree to which they thought the picture represented them. Children with imaginary companions were also asked to rate the competence and social acceptance of their companion. Teachers were asked to rate children's level of competence and social acceptance using a parallel scale that utilised verbal statements rather than pictures.

The study found that although teachers rated children with imaginary companions as less competent and less popular than children without companions, this was not the case in children's self-reports. Children with imaginary companions reported a higher level of cognitive competence than that reported by children without companions, as well as levels of physical competence, maternal acceptance, and peer acceptance that was consistent with the self-reports of children who did not have companions. Interestingly however, imaginary companions were rated as either super-competent or less competent according to each child's needs. Overall, these results were interpreted as indicating that children create imaginary companions as compensatory mechanisms for dealing with reduced competence in specific areas.

One potential concern with Harter and Chao's (1992) study is that although teachers were unaware of the hypotheses of the study and the names of the children who had imaginary companions, they did know the general nature of the study. As children with imaginary companions do talk about them (Taylor et al., 1993) teachers may have known which children had imaginary companions and reported levels of competence according to their preconceived ideas about these children.

Another concern with Harter and Chao's (1992) study is the use of the PSPCSA to assess the competence and social acceptance of preschool children. According to Fantuzzo, McDermot, Holliday Manz, Hampton, and Alvarez Burdick (1996) there are a number of problems with the scale. First, the psychometric properties of the scale have not been independently evaluated. Second, the construct validity of the scale is questionable. Third, the sample in the original Harter and Pike (1984) study was predominately from a higher-socioeconomic background. Thus, their assumptions about what constituted a developmentally appropriate measure did not take into account differing levels of children's comprehension in the wider social context. Finally, the preschool version of the PSPCSA was developed by extending test assumptions to preschool children without taking into account younger children's level of comprehension. According to Gorsuch, Henighan, and Barnard (1972) developing a preschool test method without taking into account younger children's level of comprehension can result in random responding that may alter the psychometric properties of a test. Consideration of each of these issues not only raises doubts regarding the reliability of children's responses in the Harter and Chao (1992) study, but also calls into question the interpretation that these investigators offer regarding children's perception of their own and their imaginary companion's competence and social acceptance.

In summary, the literature presents contradictory evidence regarding the role of the imaginary companion in childhood development. The strong conclusion from the collected observations of previous research (e.g., Ames & Learned, 1946; Mauro, 1990; Singer & Singer, 1990) suggests that imaginary companions appear during development for children who are competent in areas such as language and social skills.

### 1.3 Temperament

The view that imaginary companions were compensatory for children with personality difficulties pervaded early research work. Vostrovsky (1895) reported that children with a “nervous temperament” were more likely to create imaginary companions. Subsequent research by Svendsen (1934) found that 88% of mothers whose children had imaginary companions reported that their child exhibited characteristics such as timidity with other children, fear of physical activity, sensitivity, and a reserved demeanour. Thus, it appears that children with imaginary companions were considered to be temperamentally difficult.

In contrast, Ames and Learned (1946) observed that children who created imaginary companions could neither be categorised as a particular personality type nor exclusively described as timid, lonely, or experiencing “personality difficulties”. Additional research evidence (Manosevitz et al., 1973; Mauro, 1990; Singer & Singer, 1981) supports this view and indicates that imaginary companions play an adaptive and constructive role in childhood development.

Although research findings (Manosevitz et al., 1973; Singer & Singer, 1981) have indicated that children with imaginary companions display characteristics such as persistence, sharing behaviour, reduced aggression, general happiness during spontaneous play, and cooperation with adults and children, few investigators have

specifically examined the relationship between temperament and the development of imaginary companions.

One study that did examine this relationship was conducted by Mauro (1990) who used maternal ratings on the Children's Behaviour Questionnaire (CBQ; Rothbart, Ahadi, Hershey, & Fisher cited in Ahadi, Rothbart, & Ye, 1993) to compare the temperamental characteristics of children with and without imaginary companions. This 195 item questionnaire requires mothers to rate their children's behaviour on fifteen dimensions using a 7-point scale (1 = extremely untrue of your child to 7 = extremely true of your child). The dimensions of behaviour that are assessed include: Activity Level, Anger/Frustration, Approach, Attentional Focusing, Discomfort, Fear, High Intensity Pleasure, Low Intensity Pleasure, Impulsivity, Perceptual Sensitivity, Inhibitory Control, Falling Reactivity and Soothability, Sadness, Shyness, and Smiling and Laughter. Mauro (1990) found that mothers of children with imaginary companions rated their children as less shy and more able to focus their attention for longer periods of time than mothers of children without companions. These data were interpreted as indicating that children with imaginary companions enjoy social interaction and develop their increased ability to focus as a consequence of employing sustained concentration during imaginative play.

In an indirect investigation of the attentional capacities of children with imaginary companions, Singer (1961) examined children's waiting ability and its association with imaginative play. Children aged between 6- and 9-years were divided into low and high fantasy groups on the basis of their responses to four questions. These questions were: "What is your favorite game-what do you like to play most?"; "When you play by yourself, what games do you play?"; "Do you ever

have pictures in your head?"; "Do you have a make-believe playmate?". Each question received a score of 1 if it contained an element of fantasy and a score of 0 if it did not, leading to a possible total from 0 to 4. Children who scored a 0 or 1 were considered to have a low predisposition to fantasy and comprised the low fantasy group, whereas children who scored 2 and above were considered to have a high predisposition to fantasy and comprised the high fantasy group. Prior to commencement of the waiting task, each child was told of the need for more astronauts and given a description of the narrow confines and solitude of space travel. Following this, they were asked to either sit or stand quietly in an imaginary space capsule. The length of time that each child could stand or sit quietly before becoming bored was then measured. The results showed that high fantasy children were able to remain quietly in the imaginary capsule for significantly longer periods of time than low fantasy children. In addition, these children tended to sustain themselves by introducing elements of play such as mouthing sound effects and occasionally gesturing as though they were actually participating in space flight. Singer (1961) concluded that children who reported extensive fantasy play became bored less easily because they could focus on their daydreams or imaginary stories rather than the passage of time. Singer and Singer (1990) more recently interpreted these results as providing support for the notion that fantasy play may be associated with an increased ability to concentrate.

One problem with Singer's (1961) study is that it was not specifically designed to compare children with and without imaginary companions. According to Singer's classification, it is possible for children without imaginary companions to be in the high fantasy group, whilst children who answer "yes" only to question four including children with imaginary companions, will be in the low fantasy group. In

addition, attentional capacity was not assessed using a standardised assessment method, but was inferred from the experimental manipulation of an enforced waiting period. These methodological shortcomings reduce the extent to which these findings can be meaningfully compared to the results of other imaginary companion studies (e.g., Manosevitz et al., 1977; Mauro, 1990).

In a partial replication of the Singer (1961) study, Manosevitz et al. (1977) addressed the issue of participant selection and used parent report to identify preschool children with and without imaginary companions. Following this identification, each child was assigned to one of two groups: the imaginary companion group or the non-imaginary companion group. Then, using a modified version of the Singer (1961) procedure these investigators asked each child to sit quietly on the floor and pretend that they were driving a car. A heavy piece of folded cardboard was placed in front and around each child to screen out their surroundings. The length of time that each child could sit quietly before they stood up, turned around, or spoke was then measured.

These investigators obtained results that had not been reported previously. Children with imaginary companions were not able to sit in the imaginary car for longer periods of time than children without these companions. The authors concluded that these results may have been due to the modifications of the task, the selection of younger participants, the criterion used to classify children, and the method of identifying children with imaginary companions. Manosevitz et al. (1977) classified children according to the presence or absence of an imaginary companion, whereas only one of the four questions in the Singer (1961) study dealt with the presence of imaginary companions. Thus, Singer used a much broader definition to classify children. Further, Singer asked children directly whether they

had an imaginary companion, whereas Manosevitz et al. (1977) relied on parent report the accuracy of which has been questioned (e.g., Mauro, 1990).

In summary, the only study that has specifically examined the relationship between temperament and the presence of imaginary companions was conducted by Mauro (1990). According to this investigator, the research findings indicate that: a) children with imaginary companions are motivated to create them by their inherent sociability and the positive emotionality they experience when interacting with others, and b) the sustained concentration they use when engaged in this type of fantasy play increases their ability to focus their attention.

An alternative conclusion from previous research (e.g., Svendsen, 1934; Vostrovsky, 1895) is that children with imaginary companions have a nervous temperament. This claim may have some validity in the light of recent temperament theory. According to temperament theorists (e.g., Goldsmith et al., 1987; Kohnstamm, Bates, & Rothbart, 1989) temperament is a dynamic concept that encompasses the interaction between environment and behaviour, as well as between different levels of behaviour such as observable behavioural patterns and neurological processes. At a neurological level, individual differences in nervous system reactivity are regulated by both environmental influences and through experiences of nervous system reactivity (e.g., the intensity and frequency with which the environment activates the arousal systems). Individuals with more highly reactive nervous systems may experience higher levels of arousal and an increase in the intensity of negative emotions such as fear and anxiety (Bates, 1989).

With regard to children with imaginary companions, these children may have highly reactive nervous systems and consequently experience increased levels of arousal and negative emotionality. In order to reduce their physiological, and hence

negative behavioural reactions to external events, children with these companions may immerse themselves in fantasy. However, additional research that specifically investigates the temperament profiles of children with and without companions is needed before any conclusions regarding the relationship between imaginary companions and temperament can be made.

#### 1.4 Anxiety

Throughout the imaginary companion literature fear and anxiety are treated inseparably. Whilst this may not be completely inaccurate as both involve the same physiological responses (Graham, 1990), the pervasive nature of anxiety necessitates that it be distinguished from fear (Reynolds & Richmond, 1985). Spielberger (1972) defined anxiety as a complex of emotional reactions that occur when an individual perceives a specific situation as threatening, regardless of whether there is any real danger. In contrast, fear is considered to be an adaptive response to a life threatening situation (Reynolds & Richmond, 1985).

Anxiety as a separate concept has not been investigated in children with imaginary companions. Early writings (e.g., Svendsen, 1934; Vostrovsky, 1895) imply that anxiety is present in children with imaginary companions, but refer to it as an inherent characteristic of the child rather than a construct that can be specifically identified and assessed. Recent research has investigated the presence of anxiety in children with imaginary companions, but only in a secondary way. Mauro (1990) and Meyer and Tuber (1989) assessed anxiety in children with imaginary companions as part of an overall behavioural assessment that was conducted using the Child Behaviour Checklist (Achenbach & Edelbrock, 1983). The results from



both of these studies indicate the absence of any pathological anxiety in children with imaginary companions.

Although both the Mauro (1990) and Meyer and Tuber (1989) studies could be considered to provide some assessment of anxiety, two reasons mitigate this view. First, the combined anxiety and depression scale in the checklist makes the differential evaluation of anxiety difficult (Kline, 1994). Second, the checklist is designed to assess severe emotional-behavioural problems in children and incorporates a number of clinical items that may not be appropriate for non-psychiatric populations (Merrill, 1995). Consequently, children who experience non-clinical levels of anxiety may be incorrectly assessed as without anxiety.

Singer and Singer (1981) also indirectly addressed the question of anxiety and the presence of imaginary companions. These investigators observed the affective behaviour of preschool children with and without imaginary companions during several sessions of spontaneous play. Affective behaviours were defined according to their valence. Positive affective behaviours included expressions of liveliness and elation such as smiling, enjoyment during play activities, and laughter. Negative affective behaviours included expressions of anger, fear or anxiety, fatigue, and sadness. Instances of each behaviour that comprised the positive and negative affective categories were then rated on a 5-point scale where 1 corresponded to no overt expressions of these behaviours and 5 corresponded to extreme expressions of these behaviours. The results indicated that children with imaginary companions showed more positive affect in their play and were less likely to be anxious during later play sessions than children without imaginary companions. The authors concluded that the presence of an imaginary companion

increases the likelihood that a child will demonstrate positive emotionality during play and will play happily in preschool.

Despite the implications of these findings, this study did not clarify the nature of the relationship between anxiety and the presence of imaginary companions. Singer and Singer (1981) did not specifically examine anxiety, but included it as a component of fear. Thus, the specific anxieties and levels of anxiety that were experienced by these children was not systematically assessed.

In summary, the relationship between children's anxiety levels and the presence of imaginary companions has received little separate attention in imaginary companion research. The data that are available are inconclusive and vague suggesting that although children with imaginary companions do not experience pathological levels of anxiety (Mauro, 1990; Meyer & Tuber, 1989) they may experience some anxiety but at reduced levels as a consequence of the presence of the imaginary companion (Singer & Singer, 1981). However, before any conclusions can be reached regarding the role of these companions in children's emotional control, the level and types of anxiety that are experienced by children with and without imaginary companions needs to be specifically assessed.

### 1.5 Fear

There are many anecdotal accounts of children who create imaginary companions to overcome specific fears. One frequently cited account is that by Fraiberg (1968) who describes her niece Jan's creation of an imaginary tiger. Named Laughing Tiger because it laughed rather than bit children, this companion was created at a time when Jan was afraid of animals such as dogs that could bite.

Following the creation of this companion, Jan became less frightened of animals until she finally overcame her fear and Laughing Tiger disappeared.

Despite this anecdotal evidence, very little empirical research has been conducted that examines the relationship between children's level of fearfulness and the presence of imaginary companions. Researchers have tended to include fearfulness as a personality trait without quantifying it as a separate construct. For example, Svendsen (1934) reported descriptions of children's fearful behaviour as one of a number of personality difficulties. Similarly, a questionnaire study by Inuzuka, Satoh, and Wada (1991) incorporated fearfulness within a personality trait inventory. The respondents in this study reported that they would describe themselves as "timid" and "inclined to worry". Other studies (e.g., Manosevitz et al., 1973; Singer & Singer, 1981) have incorporated fearfulness within a constellation of observable behaviours. The results of these studies indicate that children with imaginary companions do not display more fearful behaviour than children without companions.

Similar to anxiety, the relationship between children's level of fearfulness and the presence of imaginary companions has received little separate attention in imaginary companion research. Different methodologies such as interview, observation, and questionnaire (e.g., Manosevitz et al., 1973; Singer & Singer, 1981; Svendsen, 1934) and the lack of specificity in the research has resulted in discrepant claims that children with imaginary companions are both more, and less likely to experience fearfulness than children without these companions. The tentative conclusion that can be drawn from anecdotal accounts (e.g., Fraiberg, 1968) is that children with imaginary companions create them in order to overcome their fears. However, the relationship between these children's experience of

specific fears requires systematic investigation before any conclusions regarding the relationship between imaginary companions and fearfulness can be drawn.

### 1.6 Theory of Mind and the Fantasy-Reality Distinction

According to Singer and Singer (1990) children who have an imaginary companion probably vacillate between a sense of reality of their companion and an awareness that the companion is part of their pretend play. The extent to which these children vacillate is particularly relevant given the recent theoretical and empirical work on the child's theory of mind (Harris et al., 1991; Leslie, 1987; Lillard, 1993; Taylor et al., 1993; Wellman & Estes, 1986; Woolley & Phelps, 1994; Woolley & Wellman, 1993).

Much of this research has focused on whether young children understand that pretense involves the manipulation of mental representations of objects. Researchers remain divided on this issue. Leslie (1987) asserts that children's engagement in pretend play implies an understanding of this connection. In contrast, Lillard (1993) presents empirical evidence that suggests children understand pretense as action only and do not consider it as involving a mental state until they are at least six years of age.

Attempts to resolve this controversy have focused on how well children understand the difference between mental representations and reality. Despite recent research evidence (e.g., Estes, Wellman, & Woolley, 1989; Wellman & Estes, 1986; Woolley & Wellman, 1993) that suggests children as young as 3½-years-old understand that imaginary representations do not reflect reality, the extent to which children understand this distinction has yielded a less consistent pattern of results.

Woolley and Wellman (1993) addressed this issue and investigated the extent to which 3- and 4-year-old children believed imaginary representations reflect reality by assessing their understanding of the non-perceptual origin of imagination. These investigators told children stories about characters who were either imagining the contents of a container or who knew the contents of the container. Children were then asked to judge whether the characters believed that the object was in the container and whether they would find it if they looked for it. The majority of children indicated that only perceptual knowledge would allow the character to judge whether the object was in the container and whether they would find it. However, a number of younger 3-year-olds (i.e., children up to 3½ years of age) claimed that the imagined object was in the container.

In a second study, the children themselves either saw or imagined an object in a container. They were then asked to judge whether the object that they had imagined was in the container. Similar to study one, only the younger 3-year-old children believed that the imagined object was in the container. These findings indicate that only younger 3-year-old children become confused about the extent to which mental contents reflect reality and erroneously judge that imaginary representations reflect the real world. Woolley and Wellman (1993) concluded that children between the ages of 3½- and 4-years understand that imaginary representations do not reflect reality.

These findings differ from the developmental pattern that was observed by Harris et al. (study 4, 1991). Children aged between 3½- and 6-years were asked to imagine either a frightening creature (e.g., a monster) or a friendly creature (e.g., a rabbit) in one box whilst the other box remained neutral. After ascertaining children's understanding of the instructions and the imaginary status of the creature,

the experimenter left each child alone in the room and recorded their behaviour towards the boxes on video. The results revealed that half of the children approached the pretend box more frequently, and touched and opened the pretend box more frequently than the neutral box. When questioned about their behaviour toward the boxes, many children admitted to wondering whether a creature was inside the box. Harris et al. (1991) concluded that although young children have an understanding of the fantasy-reality distinction they cannot always maintain a firm barrier between these two realms.

Two hypotheses were proposed to account for this occurrence: the availability hypothesis and the transmigration hypothesis. The availability hypothesis was derived from Tversky and Kahneman's (1973) finding that imagining a possibility makes it easier to bring to mind. According to this hypothesis, engaging in fantasy increases subjective judgments regarding the likelihood of possible events when there is a pre-existing belief in the possibility (e.g., children's pre-existing belief in monsters). The transmigration hypothesis states that children remain unsure of the rules that govern the boundary between fantasy and reality and may entertain the possibility that an imagined creature could change into a real creature. This hypothesis implies that children do not have to have a pre-existing belief in monsters to credit their imagination with the power to infuse life into imagined entities.

However, concerns have been raised regarding the methodology that was employed by Harris et al. (1991). In a close scrutiny of their methodology, Golomb and Galasso (1995) identified three areas of concern. First, children's behaviour toward the boxes in the Harris et al. study may have been influenced by the emotional valence of the imagined creature. Second, the lack of toys in the testing room may have prompted children to examine the boxes because there was nothing

else to do rather than because they believed the imagined entity to be in the box. Finally, because the experimenter did not signal that the pretense was concluded before leaving the room, children may have explored the box in a continuation of the game rather than uncertainty regarding the presence of an imagined entity.

Golomb and Galasso (1995) addressed each of these issues and examined children's ability to maintain the boundary between fantasy and reality in two studies that modified and extended the methodology used by Harris et al. (1991). In the first study, a slightly modified version of the Harris et al. procedure was used. These modifications included the experimenter not leaving the room, a second condition in which toys were provided, and the experimenter terminating the pretense. In contrast to the findings of Harris et al., this study found that the majority of children neither approached nor opened the boxes and did not wonder whether a creature could be inside the box. Terminating the pretense further reduced the number of children approaching and touching the box, with the majority of these children electing to play with the toys when they were provided.

In a second and more extensive study, Golomb and Galasso (1995) investigated the conditions that may affect children's ability to maintain the border between fantasy and reality. Children aged between 3- and 5-years were asked to imagine a creature in a box within pretend play scenarios that were designed to increase their involvement in the pretense. Children were assigned to one of four pretend play conditions: adult initiated pretense and positive imagined entity, adult initiated pretense and negative imagined entity, child initiated pretense and positive imagined entity, and child initiated pretense and negative imagined entity. Similar to the first study, the experimenter stayed in the room, terminated the pretense, and a box of toys was included to provide an alternative activity to examining the boxes.

These investigators found that children's ability to differentiate between an imagined and real entity was not affected by the emotional valence of the imagined creature. Observations of children's behaviour toward the boxes revealed that children approached, touched or opened the pretense and neutral boxes with equal frequency until the pretense was terminated. Following the termination of pretense, the majority of children engaged in exploratory behaviour with the toys. When asked about their belief concerning the presence of a creature, most of the children indicated that the creature was not real and consequently could not have been in the box. Golomb and Galasso (1995) concluded that the findings from both studies did not support those of Harris et al. (1991) and proposed that both 3- and 4-year-old children can maintain the border between fantasy and reality, but their behaviour can be misinterpreted when pretense is not terminated. Moreover, these investigators concluded that the affective valence of the imagined creature is not influential in children's ability to maintain the boundary between fantasy and reality.

Woolley and Phelps (1994) adopted a different perspective from which to examine children's ability to differentiate fantasy and reality. These investigators included a behavioural response that had real world consequences for another person. Children aged between 3- and 5-years saw a real object in one box (e.g., a sock) and were asked to imagine the same type of object (e.g., a sock) in another box. Following an assessment of children's belief regarding the reality of the imagined object, an unfamiliar person entered the room and asked the children for object that they had imagined (e.g., a sock). The results revealed that the majority of children gave the investigator the box with the real item in it, rather than the box with the imagined item in it. In addition, although the younger 3-year-old children verbally indicated that they thought the imagined object was in the box, few children



chose to give this box to the investigator. Thus, the majority of children did not act as though they believed their imagination reflected reality. Woolley and Phelps (1994) concluded that when children perceive that a situation has real world consequences, they do not feel as though they can explore their imaginative beliefs and their behaviour is guided by more practical considerations.

In summary, research findings regarding young children's understanding of the extent to which imaginary representations reflect reality has yielded an inconsistent pattern of results. The conclusion from the Harris et al. (1991) study is that young children can differentiate between fantasy and reality, but this distinction may weaken under some circumstances and children may erroneously judge an imaginary creature to be real. An alternative conclusion from Golomb and Galasso (1995) is that children can differentiate between fantasy and reality, but may not appear to do so because of their deep involvement in the pretense. Similarly, Woolley and Phelps (1994) contend that although children may indulge in the belief that imagination reflects reality, this indulgence disappears when the child is faced with real world consequences.

Thus, it appears that children's ability to differentiate fantasy from reality is subject to a number of influences, and is therefore relative rather than absolute. According to Woolley (1995) one factor that may influence children's ability to judge whether imagination can be reflected in reality is whose idea the imagined entity is. Children who create imaginary companions may have an increased understanding of the mental nature, fantasy-reality, and origin of their imaginings because they create a personal entity.

### 1.7 Imaginary Companions and the Fantasy-Reality Distinction

Taylor et al. (1993) examined the question of whether children with and without imaginary companions differ in their ability to distinguish fantasy from reality in two consecutive studies. In the first study, these investigators were concerned with establishing the extent to which children between the ages of 3- and 5-years were aware of the fantasy status of their companion. Children were asked a series of questions regarding the companion's physical appearance (e.g., hair colour, eye colour) and then prompted to use a toy phone to invite their companion to play with them. The same procedure was followed for children without companions, but they were asked about a real friend. Each child's involvement in the pretense was recorded and rated according to whether it was low, medium, or high. In addition, each child was asked a series of questions regarding whether the companion or real friend could be seen and touched by either themselves or the interviewer. This study found that children with imaginary companions were rated as engaging in significantly higher levels of pretense than children without companions, although some children in both groups indicated that the interviewer could see and touch their companion or real friend. The authors concluded that children with imaginary companions were more highly involved in fantasy than children without companions.

However, one area of concern with this first study by Taylor et al. (1993) is that it did not resolve the issue of whether children with and without imaginary companions differ in their belief regarding the extent to which an imagined entity can be reflected in reality. As these investigators acknowledge, the see and touch questions that were designed to assess the extent to which children were aware of the fantasy status of either the imaginary companion or real friend, may have

reflected children's engagement in shared pretense rather than any fantasy-reality confusion. As a consequence of this methodological difficulty, conclusions regarding the ability of children with imaginary companions to differentiate between fantasy and reality could not be drawn.

In the second study, Taylor et al. (1993) examined the issue of fantasy-reality confusion, as well as the predisposition of children with and without imaginary companions to engage in fantasy. Children participated in a series of tasks that asked them to differentiate real from pretend objects, engage in pretend actions such as brushing their hair, make decisions regarding the reality of a series of pictures, and engage in a period of free play. This study found that both children with and without imaginary companions were able to distinguish real from pretend objects and fantasy from reality. However, children with imaginary companions were more likely than children without imaginary companions to spontaneously engage in fantasy play and use imaginary objects when pretending to perform actions. From the results of both of these studies Taylor et al. (1993) concluded that the reality with which children treat their imaginary companions indicates a strong propensity to engage in fantasy and a more mature level of pretense, rather than confusion differentiating fantasy from reality.

The issue of children's involvement in pretense and fantasy was investigated further in a recent study by Taylor and Carlson (1997). Children aged 3- and 4-years were divided into high and low fantasy groups based on whether they did or did not create an imaginary companion or impersonate a character. Children who created an imaginary companion or impersonated a character were placed in the high fantasy group, whilst children who did not create an imaginary companion or impersonate a character were placed in the low fantasy group. Children's involvement in fantasy

was then determined according to two steps: a) by interview and by assessing their performance on four behavioural measures (the selection of fantasy-oriented versus reality-oriented toys, engagement in fantasy play with reality-oriented toys, engagement in fantasy play with fantasy-oriented toys, and the use of imaginary objects in pretend actions), and b) by conducting a principal components factor analysis on the scores of the interview and behavioural measures that were used in the study.

This investigation found that 4-year-olds in the high fantasy group were more likely to engage in fantasy play with reality-oriented toys and selected more fantasy-oriented toys than children in the low fantasy group. In addition, both 3- and 4-year-old children in the high fantasy group used more symbolic objects when asked to perform pretend actions than children in the low fantasy group. Examination of the results from the factor analysis revealed that the two measures which loaded most heavily onto the fantasy/pretense factor were presence of the imaginary companion (.73) and impersonation of a character (.67). Combined, these findings were considered as providing evidence that children who create an imaginary character have a strong propensity to engage in fantasy and pretense.<sup>1</sup>

Thus, findings from both the Taylor and Carlson (1997) and Taylor et al. (1993) studies support the conclusion that children who create imaginary characters have a strong predisposition to engage in pretense and fantasy. However, conclusions regarding the ability of children with imaginary companions to maintain the fantasy-reality boundary remain highly speculative. Methodological problems

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<sup>1</sup> This paper only became available after the research reported in this thesis had been conducted.

such as shared pretense, and insufficient systematic research prevent firm conclusions being drawn regarding the ability of children with imaginary companions to differentiate fantasy from reality. Addressing these issues in future investigations may provide more conclusive evidence regarding the relationship between the presence of imaginary companions and children's ability to differentiate fantasy from reality.

### 1.8 Social and Verbal Skills

The verbal abilities and social skills of children with imaginary companions have been consistently reported throughout the imaginary companion literature. Investigators (e.g., Ames & Learned, 1946; Manosevitz et al., 1973; Singer & Singer, 1981) have reported that children with imaginary companions demonstrate advanced verbal skills, an increased ability to develop interpersonal relationships, and are more able to carry on a conversation with adults compared to children without these companions.

Consideration of these findings and theoretical assertions regarding the association between connected communication and interpersonal skills (e.g., Gottman, 1983; Slomkowski & Dunn, 1996) suggests that the ability of children with imaginary companions to develop interpersonal relationships may be related to their enhanced verbal skills. However, very few studies have been conducted that specifically examine the speech of children with imaginary companions.

Singer and Singer (1981) examined this issue and recorded the speech of 3- and 4-year-old children with and without imaginary companions during eight periods of spontaneous play. Amongst the language variables examined were the number of spoken utterances, the mean length of utterances, the number of past

and future verbs, descriptive adjectives, personal and possessive pronouns, questions, and nouns. The results indicated that the presence of imaginary companions was strongly associated with increases in the number of words spoken and the mean length of utterances produced by boys. The presence of the companion in girls did not contribute to their use of language. Nevertheless, Singer and Singer (1981) concluded that the presence of an imaginary companion enhances the verbal skills of children.

One potential concern with Singer and Singer's (1981) study is that it did not take into account the extent to which children differ in how much they speak. Language development was assessed purely by numerical scores and no consideration was given to how much speech each child produced. Consequently, it is not certain whether this study's findings reflect the generally enhanced verbal skills of boys with imaginary companions, or an artificial inflation of this group's scores due to some boys talking more than others.

There are also concerns with Singer and Singer's (1981) interpretation of their findings. First, although mean length of utterances (MLU) is a relatively sensitive index of development in very young children, increases in MLUs have been found to slow down after 3½- years of age as children's grammatical knowledge increases and their utterances become more succinct. As a consequence of this loss of sensitivity, MLUs are not considered a very sensitive index of language development in older preschool children (Wells, 1985). Second, according to Wells (1985) analysis of MLUs for an entire sample does not indicate the relationship between MLUs and language development. It is only when each child's MLU is analysed that a relationship between MLUs and stage of language development emerges. Finally, research findings suggest that differences between

boys and girls in spontaneous speech is context dependent (Wells, 1985). Boys speak more when they are playing and girls speak more when they are engaged in helping or general activity.

Thus, Singer and Singer's (1981) interpretation of their findings may have been based on a number of erroneous assumptions. First, MLUs accurately indicate stages of language development for children in all age groups. Second, numerical scores of language variables accurately represent children's language skills. Finally, the language of boys and girls does not differ across contexts.

Both the methodological and interpretative concerns associated with Singer and Singer's (1981) study and the lack of specificity in earlier research (e.g., Ames & Learned, 1946; Manosevitz et al., 1973) indicate the need for further research. Until more research is conducted that specifically investigates the relationship between imaginary companions and the language skills of children, the conclusion that imaginary companions enhance language skills should be treated with caution.

### 1.9 The Aims of the Thesis

The main aim of this research was to investigate systematically the emotional and cognitive factors associated with the presence of imaginary companions. Whilst each of these factors has been investigated to some extent in previous research, methodological problems such as inadequate definitions and methods of assessment (e.g., Manosevitz et al., 1973; Singer, 1961; Singer & Singer, 1981; Svendsen, 1934) have led to inconsistent results and prevented firm conclusions being drawn regarding the relationship between these factors and the presence of imaginary companions.

Thus, the research in this thesis specifically aimed to investigate: a) the prevalence rate and characteristics of children with imaginary companions, b) the level of fearfulness, anxiety, and temperament characteristics of children with and without imaginary companions, c) the degree of absorption in fantasy that is experienced by children with and without companions, d) the ability of children with and without companions to differentiate between fantasy and reality, and e) the language use of children with and without imaginary companions.

These aims are pursued in a series of studies the first of which is an overall examination of the prevalence rate and characteristics of children with imaginary companions. This is followed by study two which sought to examine with greater specificity the association of fearfulness, anxiety, and temperament with the presence of these companions. This study addressed the methodological problems of previous research by examining each factor individually and utilising standard psychometrically sound measurement instruments. Studies three and four examined the extent to which children with imaginary companions become absorbed in fantasy and the ability of these children to differentiate fantasy from reality. The final study examined the language use of children with and without imaginary companions with the aim of identifying those aspects of language structure that could indicate social-cognitive maturity.



## CHAPTER 2

### STUDY ONE

#### 2.1 Introduction

Recent research evidence suggests that imaginary companions occur in up to 65% of preschool children (Mauro, 1990; Singer & Singer, 1990). These companions may take the form of humans, animals, toys, or television characters, and children often include them in their daily routine (Jalongo, 1984; Jersild, 1968; Singer & Singer, 1990; Somers & Yawkey, 1984).

A dominant view regarding the role of the imaginary companion is that it has a positive effect on children's development. Research findings (e.g., Ames & Learned, 1946; Mauro, 1990; Singer, 1961; Singer & Singer, 1981) indicate that children with these companions demonstrate an increased ability to develop interpersonal relationships and exercise social control, a preference for socialising and interacting with other children, reduced aggressiveness, enhanced language skills, and have more real friends than children without companions.

As indicated in chapter one, a large amount of research into this phenomenon has utilised questionable methodologies (e.g., Ames & Learned, 1946; Vostrovksy, 1895). In particular, inadequate sample sizes and insufficient control groups have resulted in a series of non-systematic studies that prevent meaningful comparisons of research findings (Manosevitz et al., 1973).

Moreover, because many of the data derive from differing research methodologies including questionnaire, observation, and interview methods (e.g.,

Ames & Learned, 1946; Hurlock & Burstein, 1932; Jersild et al., 1933; Svendsen, 1934) the ability of research findings to substantiate earlier claims is restricted. For example, Ames and Learned (1946) concluded that children with higher verbal intelligence and higher levels of creativity are most likely to experience imaginary companions. This conclusion was partially supported by subsequent research (e.g., Mauro, 1990; Schaefer, 1969). However, because different methods were employed in gathering these data, the ability of subsequent research to substantiate previous claims remains limited. Thus, inconsistencies regarding the findings and interpretation of results occur throughout the imaginary companion literature.

Consideration of these issues prompted Manosevitz et al. (1973) to conduct one of the most systematic investigations of the factors associated with the presence or absence of imaginary companions. These researchers administered a self-report questionnaire to the parents of preschool children. The factors that were investigated included demographic information, family structure, play activities, and the personality characteristics of both the imaginary companions and the children. The results indicated that birth order was associated with the presence of imaginary companions, with first born children being more likely to have a companion. Only two other factors were associated with the presence of imaginary companions, namely increased self-initiated play and engagement in a greater number of different family play activities. The presence of increased self-initiated play and involvement in a greater number of family play activities was considered evidence that children with imaginary companions could be described as self-starters.

Thus, despite the systematic nature of the Manosevitz et al. study, very little specific information was obtained regarding the factors associated with the presence of imaginary companions. Two reasons may account for these results. First, the age

range of the sample was restricted to children 3-to-5-years-old. As previous research findings (e.g., Ames & Learned, 1946; Hurlock & Burstein, 1932) have reported the presence of imaginary companions in children up to nine years of age, some of the factors associated with the presence of these companions may not have been apparent in younger children.

Second, information regarding children's involvement in fantasy was not included in the original questionnaire. From a cognitive perspective, this oversight may have resulted in the exclusion of information. According to cognitive-affective theory, children use fantasy play as a method of assimilating new experiences into available schemas that reduce the fearfulness of an incongruous event and promote positive emotions such as interest or excitement that permit exploration (Singer & Singer, 1990). Within this theoretical framework, the imaginary companion may be considered to be a fantasy figure that assists children to assimilate new experiences into available schemas, thereby reducing the fearfulness of a highly unexpected event and creating a positive atmosphere for exploration (Singer & Singer, 1990; Somers & Yawkey, 1984; Taylor et al., 1993). This theoretical position has been partially substantiated by research findings that children six years of age can be prompted to engage in fantasy thinking when confronted with the possibility of a highly unexpected event (Harris et al., 1991).

Consideration of each of these issues combined with recent research findings by Harris et al. (1991) suggests that additional insight regarding the role of imaginary companions may be provided by extending the age range to include older children and utilising a method that obtains information regarding children's involvement in fantasy. In addition, consideration of the problems associated with imaginary companion research, necessitates the use of a method that permits

meaningful comparisons with previous research. Thus, for the purpose of the present study the questionnaire used by Manosevitz et al. (1973) was modified and utilised to investigate the prevalence and characteristics of children with imaginary companions.

Specifically, the modified questionnaire sought to investigate: a) the prevalence of children with imaginary companions, b) the family structure of children with and without imaginary companions, c) the personality and behavioural characteristics of children with and without imaginary companions, d) the patterns of play of children with and without imaginary companions, and e) the incorporation of myth (as a measure of fantasy) in the daily lives of children with and without imaginary companions.

Two outcomes, additional to those which would assist in evaluating information provided by the results of the Manosevitz et al. (1973) study, were expected. First, it was expected that the inclusion of fantasy items would indicate an association between the presence of imaginary companions and children's predisposition to engage in fantasy. Second, it was expected that extending the age range would provide information indicating that the tendency to have imaginary companions continues beyond the preschool years.

## 2.2 Method

### 2.2.1 Participants

The Imaginative Play Activities Questionnaire was distributed through preschool and school centres to the parents of 900 children. The final sample on which the analysis was based totaled 478. There were 237 girls ( $M$  age = 5 years and 9 months; range, 2 years and 2 months to 9 years and 5 months) and 241 boys

(M age = 5 years and 11 months; range, 2 years and 6 months to 9 years and 3 months). Within this sample, 81 children were reported to either have, or have had an imaginary companion (M age = 5 years and 6 months; range, 2 years and 9 months to 8 years and 7 months) and 397 children were reported as not having, or never having had an imaginary companion (M age = 6 years and 0 months; range, 2 years and 2 months to 9 years and 5 months).

Because of concerns that questions about income may be considered to be intrusive, parental education level, rather than financial status was used as an indicator of socioeconomic background. In particular, mother's education level was used because according to Entwisle and Astone (1994) it is rarely missing from surveys and has been found to be highly correlated with father's education level.

The education levels of mothers in the present study indicated that respondents were not fully representative of the general population for the area. Questionnaires were completed and returned from 26% of mothers who reported an education level of "some high school", 36% who reported an education level of "high school", and 38%, who reported an education level of "university". In contrast, the percentage of respondents found at these education levels in the general population was 66%, 14%, and 8% respectively (Australian Bureau of Statistics, 1991). Thus, despite efforts to obtain a representative sample by distributing the questionnaire to children from a range of socioeconomic backgrounds, a large percentage of the respondents who completed and returned the questionnaire were educated beyond high school. Consequently, the sample in this study is weighted toward more highly educated families.

### 2.2.2 Questionnaire

For the purpose of the study, the Imaginative Play Activities Questionnaire was developed. This questionnaire comprised four sections: i) demographic data, ii) children's play activities and behaviour, iii) mythical beings, and iv) imaginary companions. Sections 1, 2, and 4 were derived from the Imaginary Companion Questionnaire developed by Manosevitz et al. (1973) and were incorporated in slightly modified form into the current questionnaire. Section 3 was added to provide specific data regarding a child's exposure, incorporation in play, and belief concerning mythical beings (e.g., Santa Claus).

The modifications to sections 1, 2, and 4 included changing and adding items that were more applicable to the present day (e.g., phonograph to CD/record player, and including computer games); rewording items and phrases to suit Australian English (e.g., check to tick); deleting items that may be considered to have an intrusive quality and were not required (e.g., death of a child or spouse); and dividing questions that sought information on two issues concurrently (e.g., child's contact with music and literature).

Each section requested specific information. Section 1 requested information regarding family composition and parental education. Section 2 requested information regarding a child's: a) friends (i.e., age, sex, and number) b) style of play and interaction with others, c) exposure to music and literature, d) type and number of toys, and e) existence of any behavioural problems. Section 3 requested information regarding the extent of the child's: a) exposure to mythical beings through stories and traditions, b) belief in mythical beings and their reaction to the denial by others of their existence, and c) imaginativeness and use of

mythical characters in pretend play and story telling. Finally, section 4 requested information concerning imaginary companions and covered the following topics: a) age when the companion appeared, and if relevant, disappeared, b) age, number, and type (e.g., non-human vs human), c) interaction between the child and the companion, and d) parental attitudes toward the companion.

Following completion of section 2, parents were provided with a definition concerning mythical beings. For the purpose of the research, a mythical being was defined as a fictional character around which stories and cultural traditions have arisen. This definition allowed parents to determine whether the fictional characters and traditions experienced by the child were mythical.

The final section dealt with imaginary companions. An imaginary companion was defined as a very vivid imaginary character that does not actually exist but which is treated as real by the child who plays with it and refers to it in conversation throughout the day. This definition allowed parents to exclude the transient characters or objects that children use in pretend play and determine whether or not their child had an imaginary companion. Those parents whose child had an imaginary companion completed this section. Those whose children did not have an imaginary companion were instructed to proceed to the Optional page at the end of the questionnaire.

As the questionnaire could be returned anonymously, the Optional page was for those parents who were interested in discussing their child's participation in future studies. The provision of choice was designed to promote an acceptable return rate, by allowing parents to return the questionnaire anonymously if they wished. A copy of this questionnaire is presented in Appendix A1.

### 2.2.3 Procedure

Following ethics approval from the institutional ethics committee, questionnaires were delivered to eleven centres (kindergartens, day care centres, preschools, and primary schools) in the Hobart metropolitan area. These centres covered the range of socioeconomic backgrounds (Australian Bureau of Statistics, 1991) and child enrolments ranged from 31 to 209. Initial contact with these centres was conducted via the telephone and followed-up by a personal visit to each in order to enlist cooperation.

The questionnaires were distributed by staff to the parents of all enrolled children. Each centre was provided with a post box as a 'drop off' point for the completed questionnaires. In addition, each questionnaire was accompanied by an envelope and an explanatory cover letter that briefly explained the nature of the research and asked parents to post the completed questionnaires in the box provided at each centre (see Appendix A2). Parents were assured that all information would be treated in the strictest confidence. After 10 days a follow-up letter was sent to all parents urging them to complete and return the questionnaire if they had not already done so.

## 2.3 Results

The prevalence rate for parents reporting of imaginary companions was computed for the entire sample. Within the entire sample, 35 (7%) children were reported as having one or more imaginary companions, 46 (10%) were reported as having had one or more imaginary companions in the past, and 397 (83%) were reported as never having had an imaginary companion. As the low numbers in each imaginary companion group would have rendered separate analyses unreliable



(Siegel & Castellan, 1988), for the purpose of the analysis past and present companion groups were combined to form one imaginary companion (IC) group.

### 2.3.1 Analyses

Analyses of categorical variables were conducted using chi-square tests. Because of the large difference in the number in each group, percentages are referred to in the tables and the text for clarity. However, all analyses were based on frequency data and all of the percentages that are reported in the text are based on the frequency counts within each cell. T-tests were conducted for numerically scored variables such as the total number of behaviour problems, level of imaginativeness, personality characteristics, and the ability to interact with adults and children. Equality of variance of the groups in the t-test was assessed by the Levene test.

Frequency data from the categorical variables were cast into 2x2 ( $df = 1$ ) and larger ( $df > 1$ ) contingency tables and analysed using chi-square ( $\chi^2$ ) tests. However, if the larger contingency tables had one cell with expected frequencies of less than five categories were combined to increase their values. This strategy resulted in frequency data being cast into 2x2 contingency tables. Analyses of these contingency tables were then conducted according to two criteria. First, because it increases accuracy, application of this test was corrected for continuity. Second, as the data were cast into 2x2 contingency tables, the Phi coefficient ( $\phi$ ) was used to measure the strength of association between variables. As  $\phi$  measures the strength of this association on a scale from zero to one, values close to zero should be interpreted to indicate a weak relationship between variables, values close to one should be interpreted to indicate a strong relationship to variables, and values

halfway between zero and one should be interpreted to indicate a moderate relationship between variables (Diekhoff, 1992; Howell, 1987; Siegel & Castellan, 1988).

Results that are significant at an alpha level of .05 are reported. However, because of concerns that this alpha level may result in a Type I error, findings that were significant at .05 but not at more stringent alpha levels should be interpreted with caution.

### 2.3.2 Family Structure

The family structure of IC and NIC children was measured on four dimensions: the number of siblings, birth order, the number of any additional household members (e.g., aunts, uncles) and parents' relationship status. These data are summarised in Table 2.1.

Table 2.1

#### The Percentage of IC and NIC Children Reported for Each Category of Family Structure

Family Structure	IC ( <u>n</u> = 81) %	NIC ( <u>n</u> = 397) %
<u>Number of Siblings</u>		
None	20	12
One or more	80	88
<u>Birth Order</u>		
<i>Firstborn***</i>		
Yes	29	14
No	71	86
<i>Only child</i>		
Yes	20	12
No	80	88

(table continues)

Family Structure	IC ( <u>n</u> = 81) %	NIC ( <u>n</u> = 397) %
<u>Additional Household Members</u>		
None	96	91
One or more	4	9
<u>Parents' Relationship Status</u>		
Living together	87	80
Divorced	3	2
Separated	3	3
Other	7	15

\*\*\* $p < .001$ .

The percentages of ICs and NICs who were reported as having one or more siblings, or having additional household members living with them were not significantly different.

As the number of “divorced”, “separated” and “other” responses to parents’ relationship status was low, these were all considered indicative of a separation response and recoded to equal “separated” for the analysis. The percentage of ICs and NICs whose parents were reported to be separated versus living together was not significantly different.

However, analysis of birth order revealed that a significantly larger percentage of ICs than NICs were reported to be firstborn children  $\chi^2 (1, \underline{n} = 478) = 14.75, p < .001; \phi = .18$ .

### 2.3.3 Education Level

Information regarding the education level of mothers is summarised in Table 2.2. The percentage of mothers of IC and NIC children who reported qualifications at each educational level was not significantly different.

Table 2.2

The Percentage of Mothers of IC and NIC Children Who Reported Education at Each Level

Education Level	IC ( <u>n</u> = 81) %	NIC ( <u>n</u> = 397) %
Some high school	4	5
Finished high school	25	20
Finished high school plus technical training	25	23
Some university	10	13
Finished university	3	13
Finished university plus additional training	33	26

2.3.4 Style of Play and Patterns of Interaction with Friends

The style of play and patterns of friendship interactions of IC and NIC children were measured on four dimensions: the number of friends, the number of hours spent in play with friends, the style of play, and interaction during play with other children. These data are summarised in Table 2.3. The percentages of ICs and NICs who were reported to have one or more friends, spend up to 10 hours in play with these friends, frequently disagree with other children, and engage in self-initiated or quiet play were not significantly different.

However, analysis of how often and well ICs and NICs play with other children revealed that a significantly larger percentage of NICs than ICs were reported to play often and well with other children,  $\chi^2 (1, n = 478) = 5.35, p < .05$ ;  $\phi = .11$ .

Table 2.3

The Percentage of IC and NIC Children Reported for Each Style of Play and Pattern of Interaction with Friends

Play Interactions	IC ( <u>n</u> = 81) %	NIC ( <u>n</u> = 397) %
<u>Number of Friends</u>		
None	31	22
One or more	69	78
<u>Number of Hours in Play</u>		
Up to 10 hours	76	69
More than 10 hours	24	31
<u>Style of Play</u>		
<i>Quiet</i>		
Yes	51	43
No	49	57
<i>Self-initiated</i>		
Yes	89	90
No	11	10
<u>Interaction During Play</u>		
<i>Frequent disagreements</i>		
Yes	7	9
No	93	91
<i>Plays often and well*</i>		
Yes	82	91
No	18	9

\* $p < .05$ .

### 2.3.5 Patterns of Interaction with the Family

The patterns of family interaction that were reported for IC and NIC children were measured on three dimensions: the number of hours spent with mother, the number of hours spent with father, and the number of joint activities that are engaged in with family members. These data are summarised in Table 2.4.

Table 2.4

The Percentage of IC and NIC Children Reported in Each Category of Family Interaction

Interactions	IC ( <u>n</u> = 81) %	NIC ( <u>n</u> = 397) %
<u>Number of Hours Spent with Mother</u>		
Up to six hours	17	19
More than six hours	83	81
<u>Number of Hours Spent with Father</u>		
Up to six hours	80	83
More than six hours	20	17
<u>The Number of Joint Activities Engaged in with Family Members</u>		
<i>Activities with mother</i>		
Up to two	7	9
More than two	93	91
<i>Activities with father</i>		
Up to two	19	18
More than two	82	82
<i>Activities with siblings*</i>		
Up to two	41	29
More than two	59	71
<i>Activities with family group</i>		
Up to two	23	19
More than two	77	81

\* $p < .05$ .

The percentages of ICs and NICs who were reported to spend up to six hours with mother and father were not significantly different. Similarly, the percentages of ICs and NICs who were reported to participate jointly in two or more activities with mother, father, and the family group were not significantly different.

However, a significantly larger percentage of NICs than ICs were reported to engage in two or more activities with siblings,  $\chi^2 (1, n = 478) = 4.02, p < .05$ ;  $\phi = .10$ .

### 2.3.6 Behaviour Problems

A list of 22 behaviours was presented and parents were asked to tick any behaviour problems that "...are giving parents concern at present or have given concern in the past." Examples of the behaviours that were listed include restlessness, shyness, excitability, daydreaming, fearfulness, and lack of self-confidence. A complete list of these behaviours is given in Appendix A3.

The total number of behaviour problems that were reported for ICs and NICs was computed from summing every ticked item for each IC and NIC group. The mean number of behavioural problems was then calculated for each IC and NIC group. A t-test revealed that there was no significant difference between these means (IC,  $\underline{M} = 1.31$ ,  $\underline{SD} = .89$ ; NIC,  $\underline{M} = 1.13$ ,  $\underline{SD} = .89$ ;  $t(476) = -1.63$ ,  $p = .10$ ; Levene test,  $p = .99$ ).

### 2.3.7 Personality Characteristics

The personality characteristics of IC and NIC children were rated on four personality dimensions: imaginativeness, ability to talk and interact with adults, ability to talk and interact with children, and shyness. Each of these dimensions was rated using a 7-point scale where 1 corresponded to very positive and 7 corresponded to very negative.

T-tests were performed to compare parents ratings of IC and NIC children on each of the four personality dimensions. These tests revealed that there were no significant differences in ratings of IC and NIC's ability to talk and interact with adults ( $t(476) = .46$ ,  $p = .64$ ), talk and interact with children ( $t(476) = -.05$ ,  $p = .96$ ), and degree of shyness ( $t(476) = -.94$ ,  $p = .35$ ). However, the mean parent rating of level of imaginativeness for ICs was significantly lower than for NICs (IC,

$M = 1.48$ ,  $SD = .59$ ; NIC,  $M = 2.00$ ,  $SD = .98$ ;  $t(476) = 4.47$ ,  $p < .001$ ; Levene test,  $p = .57$ ) indicating a higher degree of imaginativeness in these children compared to NICs.

### 2.3.8 Involvement in Music and Stories

The involvement in music and stories of IC and NIC children was measured on two dimensions. These were general reaction to music and general reaction to literature. These data are summarised in Table 2.5. The percentages of ICs and NICs who were reported to participate actively or listen quietly to music and literature were not significantly different.

Table 2.5

#### The Percentage of IC and NIC Children's Reported Active and Quiet Participation in Music and Literature

General Reaction	IC ( $n = 81$ ) %	NIC ( $n = 397$ ) %
<u>Music</u>		
<i>Actively participates</i>		
Yes	95	89
No	5	11
<i>Listens quietly</i>		
Yes	41	47
No	59	53
<u>Literature</u>		
<i>Actively participates</i>		
Yes	89	80
No	11	20
<i>Listens quietly</i>		
Yes	57	65
No	43	35



### 2.3.9 Involvement in Myth

The involvement in myth of IC and NIC children was measured on seven dimensions: frequently read stories involving mythical characters, involvement in mythical traditions, belief in mythical beings, angrily denies challenges to mythical belief, make-up stories of mythical beings, involve mythical beings in play, and explain events as magical. These data are summarised in Table 2.6.

Table 2.6

#### The Percentage of IC and NIC Children Who were Reported to Incorporate Myth in Their Daily Life

Mythical Events	IC ( <u>n</u> = 81) %	NIC ( <u>n</u> = 397) %
<u>Parents Frequently Read Stories of Myth</u>		
Yes	32	29
No	68	71
<u>Child is Involved in Mythical Traditions</u>		
Yes	91	91
No	9	9
<u>Belief in Mythical Beings</u>		
Yes	96	93
No	4	7
<u>Angrily Denies Challenges to Mythical Belief</u>		
Yes	14	14
No	86	86
<u>Make-up Stories of Mythical Beings***</u>		
Yes	68	42
No	32	58
<u>Involves Mythical Beings in Play***</u>		
Yes	57	32
No	43	68
<u>Explains Events as Magical*</u>		
Yes	46	32
No	54	68

\* $p < .05$ . \*\*\* $p < .001$ .

The percentage of ICs and NICs who were reported to have mythical stories read frequently to them was not significantly different. Similarly, the percentages of ICs and NICs who were reported to be involved in mythical traditions, believe in mythical beings, and angrily deny challenges to mythical belief were not significantly different.

However, significantly larger percentages of ICs than NICs were reported to make-up stories of mythical beings that did not include the imaginary companion,  $\chi^2 (1, n = 478) = 17.74, p < .001; \phi = .20$ , involve mythical beings other than the imaginary companion in play,  $\chi^2 (1, n = 478) = 16.47, p < .001; \phi = .19$ , and explain events as magical,  $\chi^2 (1, n = 478) = 5.00, p < .05; \phi = .11$ .

### 2.3.10 Imaginary Companions

The next phase of the analysis dealt with the questionnaire data that were obtained from the parents of children with imaginary companions ( $N = 81$ ). The first analysis was conducted to determine the existence of any gender differences with regard to the number of companions experienced by males and females.

The total number of imaginary companions comprising male, female, and those with no specific gender that were reported for females and males did not differ significantly. However, a significantly larger number of male companions were reported for males compared to females (IC as male; male,  $M = .46, SD = .51$ ; female,  $M = .23, SD = .42$ ;  $t(79) = 2.25, p < .05$ ; Levene test,  $p < .0005$ ) and a significantly larger number of female companions were reported for females compared to males (IC as female; female,  $M = .57, SD = .50$ ; male,  $M = .32, SD = .48$ ;  $t(79) = -2.23, p < .05$ ; Levene test,  $p = .06$ ). However, these results should be

treated with caution as the Levene tests indicate that the group variances are not equal.

Additional descriptive data that were obtained from parents whose child has or had an imaginary companion are summarised in Table 2.7. Of particular interest, the imaginary companion was a person whose age was either unknown (37%) the same as the child's (43%) or older than the child's (20%). The majority of children played happily (78%) with their companions, played in the home (88%) with them, and ignored the companion when other children were present (83%).

The attitude of parents toward the imaginary companion was mostly positive. Only one parent referred to the companion as harmful. The other parents either regarded the companion as good for their child (66%) or as having no effect (33%). A similar pattern of results was found for parental treatment of the companion with 73% of parents encouraging the companion, 24% ignoring the companion, and only 3% discouraging the companion.

Table 2.7

A Summary of Questionnaire Data from Parents of Children with Imaginary Companions (N = 81)

Question	% Response
<u>Type of companion</u>	
Person	77
Animal and other	23
<u>Same sex companion</u>	
Males	46
Females	57
<u>Number of companions</u>	
One	59
Two	21
(table continues)	

Question	% Response
<u>Age of the companion</u>	
Unknown	37
Same age as the child	43
Older than the child	20
<u>Parental attitude</u>	
Good for the child	66
No effect on the child	33
Harmful for the child	1
<u>Frequency of appearance of imaginary companions</u>	
Steady companion, appears almost every day	46
Appears frequently but not everyday	42
Appeared only once or twice	7
<u>Mood of child when talking or playing with imaginary companion</u>	
Happy and in high spirits	78
Quiet and reserved	4
Lonely	3
Angry	3
No specific mood	12
<u>Origin of names of imaginary companion</u>	
Friend	21
Television	12
<u>Interaction with companion</u>	
Preferred not to interact with companion when other children were available	83
<u>Nature of relationship between imaginary companion and child</u>	
Usually play peacefully together	85
Sometimes have arguments and disagreements	17
At times child consults or asks permission of imaginary companion before doing something	25
At times the imaginary companion asks permission of the child to do something	21
Child uses imaginary companion to escape blame	25
<u>Place and activities that imaginary companion usually accompanies the child</u>	
Outside	62
In home	88
Driving in car	52
While eating	35
While shopping	27
To and at preschool/school	14

(table continues)

Question	% Response
<u>Place and activities that imaginary companion usually accompanies the child</u>	
To bed	48
While watching television	12
Talks on telephone to imaginary companion	32
<u>Physical space imaginary companion occupies</u>	
Needs its own chair at the table	25
Needs place in child's bed	32
Needs room in the car	36
Needs space of its own, various places other than those specified above	10
Does not need any space	48
<u>Parental behaviour that prompted appearance of the imaginary companion</u>	
Punishment or scolding	9
Requiring child to play indoors or in his/her room	10
Parent unable to attend to child	22
Questioning child or expressing interest in imaginary companion	36
Other	20
<u>Parental Treatment of imaginary companion</u>	
Encourage the companion	73
Discourage the companion	3
Ignore the companion	24
<u>Disappearance of imaginary companion</u>	
Child gradually stopped playing and talking to imaginary companion	37
When child started preschool	12
Imaginary companion left suddenly without explanation	24
Imaginary companion disappeared after a fight	0
Imaginary companion moved away or died	5

## 2.4 Discussion

This study utilised a modified version of a previously developed method to promote meaningful comparisons between the present study and previous research regarding the prevalence and characteristics of children with imaginary companions. The study also explored the possibility of an association between the presence of

imaginary companions and children's involvement in fantasy, as well as the possibility that the effects of imaginary companions continue beyond the preschool years.

The findings of the present study indicate differences between IC and NIC children regarding their birth order and level of imaginativeness that are consistent with previous research (e.g., Ames & Learned, 1946; Manosevitz et al., 1973). In the present study, IC children were more often reported to be very imaginative. In addition, these children were more often reported to be firstborns. This finding substantiates the view that one function of the imaginary companion may be to ameliorate the loneliness of a child who does not have any siblings close in age (Manosevitz et al., 1973).

The results of this study also provide evidence that there is an association between the presence of imaginary companions and children's predisposition to engage in fantasy. Children with ICs were more often reported to make up stories about mythical beings that did not include the imaginary companion, involve mythical beings other than the imaginary companion in play, and explain events as magical. As a measure of fantasy, these results corroborate previous research findings that children with ICs have a strong tendency to engage in fantasy play spontaneously (Taylor et al., 1993). This predisposition to fantasy, combined with the finding in this study that the majority of children were reported to be happy when playing with the companion, suggests that another function of the imaginary companion may be to assist children to assimilate new information into available schemas by creating a positively reinforcing atmosphere for exploration (Singer & Singer, 1990).

The present study also found differences between IC and NIC children in their interactions with family members and other children that are not consistent with recent reports (e.g., Manosevitz et al., 1973; Mauro, 1990; Singer, 1973; Singer & Singer, 1990). This study found that NIC children, rather than IC children were reported to engage in more activities with siblings. In addition, NIC children, more than IC children were reported to play often and well with other children. Although these findings may be interpreted to indicate that IC children are less sociable than NIC children, two explanations can be offered that challenge this assessment. First, as children with imaginary companions were more often reported to be firstborns, age differences may have prevented a significant proportion of these children from engaging in many activities with their younger siblings. Second, use of the word “often” with “well” may have prompted some parents to report their child’s interaction according to either often, well, or both often and well. Thus, it cannot be known whether parents were reporting that their child played often but neither well nor poorly with other children, played well but not always often with other children, or played often and well. As a consequence of these interpretative difficulties, firm conclusions regarding differences in the social interactions of IC and NIC children cannot be made.

The prevalence rate of children with imaginary companions was also found to be much lower in this study compared to that reported by other researchers (see Manosevitz et al., 1973; Mauro, 1990; Singer & Singer, 1990). There are two explanations that may account for this low prevalence rate. First, the questionnaire in the present study did not focus specifically on imaginary companions but requested information on these companions as one of a number of children’s play activities. As a consequence of its broad emphasis, the questionnaire targeted all

parents and increased the likelihood of obtaining responses from parents whose children did not have imaginary companions. In contrast, the questionnaire that was used by Manosevitz et al.(1973) focused specifically on the topic of imaginary companions, thus targeting the parents of children who had these companions and increasing the likelihood of these parents responding.

Second, this study utilised parent report. Previous researchers (e.g., Brooks & Knowles, 1982; Mauro, 1990; Singer & Singer, 1990) suggest that parents are a poor source of information regarding imaginary companions and tend to have negative attitudes toward them. According to these views, parents either report inaccurate details regarding their child's companion, or demonstrate a bias against reporting its presence.

However, subsequent interview research conducted by the author does not substantiate these views. Information gathered from interviews (conducted in study three of this thesis) with 37 NIC children from the present study, indicated that parents had provided accurate information regarding the absence of imaginary companions in their children. In all 37 cases children's responses to the interview questions confirmed the parent report data. Thus, it is argued that the reported prevalence rate of imaginary companions in the present study is an accurate reflection of the prevalence of imaginary companions among children generally, rather than an outcome of inaccuracies and biases.

Additional information obtained by the author whilst conducting these interviews also indicated that parents do not have a negative attitude toward their child's IC, but view them as a positive manifestation of a remarkable imagination. These findings are corroborated in the present study that found only one parent considered the companion as "harmful to the child" compared to 66% who



considered the companion to be “good for the child” and 33% who considered that it had “no effect on the child”.

According to these findings, if the parents in the present study were reporting in a biased manner it would be a positive, rather than a negative bias. Thus, parental reports regarding the absence of imaginary companions in children reflect observation rather than a reluctance to report the existence of an imaginary companion. Indeed, whilst some researchers report evidence of some subjectivity in mothers’ reports (e.g., Bates & Bayles, 1984) other researchers (e.g., Achenbach & Edelbrock, 1978) report evidence that mothers’ reports reflect observable behaviours. As 80% of questionnaires in the present study were completed by mothers, it is not unreasonable to assume that their reporting was based on observation rather than subjective biases.

In summary, this study in combination with previous imaginary companion research (e.g., Ames & Learned, 1946; Manosevitz et al., 1973) suggests that birth order combined with personality characteristics such as imaginativeness and a predisposition to fantasy are significant factors in the presence of imaginary companions. In addition, the data that were obtained in this study support the interpretation that imaginary companions may function to alleviate loneliness and promote emotional and cognitive growth by creating a positive atmosphere for exploration (Singer & Singer, 1990). Moreover, the inclusion of older children in the sample suggests that ICs and their effects extend beyond the preschool years.

However, there are two methodological issues that require discussion. First, a high proportion of the questionnaires was completed and returned from mothers who reported a higher education qualification. Consequently, the findings of this study may have been partially influenced by education level and may not be

applicable to children whose parents do not have this higher education qualification.

Second, although the findings of the present study indicate that children with imaginary companions do not experience an increased number of behavioural problems compared to children without these companions, specific measurement methods and definitions for each behaviour were not given. As a consequence of this lack of specificity, conclusions regarding the relationship between the presence of imaginary companions and children's emotional experience cannot be determined. Consideration of the pertinence of this methodological issue to both the present study and previous research (e.g., Manosevitz et al., 1973; Singer & Singer, 1981; Svendsen, 1934) necessitated a more specific investigation of the emotional experiences of children with and without imaginary companions. Thus, the fearfulness, anxiety level, and temperament of IC and NIC children across an extended age range (i.e., 3 years to 9 years), was examined in the next study.

## CHAPTER 3

### STUDY TWO

#### 3.1 Introduction

The lack of systematic studies that specifically examine the relationship between the presence of imaginary companions and emotional factors of fear, anxiety, and temperament has produced inconsistencies in the interpretation of research findings that occur throughout the imaginary companion literature. Further, the lack of research utilising psychometrically sound instruments and theoretically derived definitions of fear, anxiety, and temperament has resulted in questionable conclusions regarding the relationship between these variables and the presence of imaginary companions. Thus, the present study was guided by the intention to adequately assess the fearfulness, anxiety, and temperament of children with imaginary companions using three standard assessment instruments. The basis of selection for each of these instruments will be discussed in turn.

##### 3.1.1 Fear

Fear is considered to be an innate biologically driven condition that facilitates human survival with autonomic, cognitive and behavioural responses being aimed at either reducing contact with, or mastery of, a specific aversive stimulus (McCathie & Spence, 1991). According to developmental theorists (e.g., Jersild & Holmes, 1935; Jersild et al., 1933; Ollendick, Matson, & Helsel, 1985) children experience similar patterns of fears within each developmental stage from infancy to adolescence, but the pattern differs across developmental stages.

Research findings (e.g., Gullone & King, 1992; Ollendick et al., 1985) have substantiated this view and consequently assisted in the clinical differentiation between developmental (normative) fears and phobias.

Gullone and King (1992) define normative fears as those that do not interfere with daily living and which are age specific and transitory. Typically, concrete and immediate fears are experienced by children within the 1 to 2 year age range; anticipatory or imaginative fears are experienced by children within the 4 to 8 year age range; and fears associated with failure and social criticism are experienced by older children and adolescents (9 years to 18 years) (Gullone & King, 1992; Jersild & Holmes, 1935; Jersild et al., 1933; Ollendick et al., 1985).

However, whilst developmental trends in fear content have been consistently reported, gender differences and developmental trends in fear prevalence have not. According to Gullone (1992) these inconsistencies occur because of the utilisation of differing research methodologies (direct observation, parent report, and interview) (e.g., Eme & Schmidt, 1978; Jersild & Holmes, 1935; Lapouse & Monk, 1959) that may not have accounted for the individualistic expression of fear and the influence of factors such as physical and cognitive development (Gullone & King, 1992).

Consideration of these limitations has resulted in the development and progressive refinement of a self-report methodology to investigate children's fears (Gullone & King, 1992). The most widely used instrument in this progressive refinement is the Fear Survey Schedule for Children (FSSC) (Scherer & Nakamura, 1968). This instrument has formed the basis of numerous adaptations one of which was recently undertaken by Gullone and King (1992). Renamed the Fear Survey Schedule for Children - II (FSSC-II) the scale was amended to be more

suitable for Australian children and adolescents within the 13 to 18 year age range, and included updated items such as nuclear war and AIDS.

The FSSC-II comprises 78 items for which respondents are instructed to rate their level of fear according to a 3-point scale (1 = not scared, 2 = scared, and 3 = very scared). Consistent with previous research (see Ollendick, 1983; Ollendick, King, & Frary, 1989) Gullone and King (1992) obtained a five-factor solution: "Fear of Death and Danger", "Fear of the Unknown", "Fear of Failure and Criticism", "Animal Fears", and "Psychic Stress-Medical Fears". In addition, psychometric evaluation of the FSSC-II revealed a reliable and valid instrument that was applicable across closely related cultures and sensitive to age and gender differences (the number of self-reported fears decreased with increasing age, and girls self-reported more fears than boys).

Despite these advances, the FSSC-II does not allow meaningful comparisons to be made with children younger than 7 years of age. Two reasons may account for this shortcoming. Firstly, the scale does not include many items of relevance to preschool, and secondly it is difficult to obtain reliable self-report for preschool children.

Bouldin and Pratt (in press) addressed these concerns by modifying the FSSC-II to parent report and including items relevant to a younger developmental age period. Permission to modify the FSSC-II was obtained from Neville King (personal communication 25<sup>th</sup> August, 1995). The Fear Survey Schedule for Children-II Parent (FSSC-IIP) developed by Bouldin and Pratt comprises 94 items for which parents are instructed to rate their child's level of fear according to a 4-point scale (0 = not applicable, 1 = not scared, 2 = scared, and 3 = very scared). The not applicable and not scared categories were then coded as equivalent on the

basis that similar to the FSSC-II (Gullone & King, 1992), the purpose of the schedule was to identify situations known to cause fear at that time and both categories signaled that the child had not ever reacted as being scared in that situation. Thus, each category of response was assigned a score on a 3-point scale, where 1 corresponded to not scared or not applicable, 2 corresponded to scared, and 3 corresponded to very scared. These investigators obtained an eight-factor solution. As four of these factors were conceptually very similar to four of Gullone and King's (1992) factors, the factor names were retained. The four additional factors were named: "Mythical Creatures Fears", "Vulnerability Fears", "School Fears", and "Altered Environment Fears".

Using the FSSC-IIP, Bouldin and Pratt report gender differences in the number of reported fears that are consistent with previous research (a greater number of parent-reported fears for girls compared to boys), as well as age differences not previously reported (a greater number of parent-reported fears for older children compared to younger children) (Gullone & King, 1992; King et al., 1989; Ollendick, 1983; Ollendick et al., 1985). However, the authors suggest that this finding does not represent a contradiction of previous research findings, but rather an indication that children may experience increased fearfulness as a consequence of developmental changes. They further conclude that the amount of agreement that was achieved between their study and past research suggests the potential utility of the FSSC-IIP for the assessment of fearfulness in children. Consequently, the FSSC-IIP was utilised in the present study.

### 3.1.2 Anxiety

Although theorists cannot agree on a definition of anxiety, there is general agreement on commonly accepted aspects of the concept such as the experience of an unpleasant affective state. One of the most widely accepted conceptualisations of anxiety is derived from Spielberger (1972) who differentiated between two types of anxiety: state anxiety and trait anxiety. State anxiety occurs in response to a particular situation and is therefore transitory. It is experienced as an unpleasant consciously perceived feeling of apprehension that occurs concomitantly with an increase in the arousal of the autonomic nervous system. In contrast, trait anxiety is considered to be a more permanent aspect of an individual's personality. It reflects an individual's predisposition to experience anxiety even in situations where the stimulus for evoking anxiety is relatively weak. Consequently, these individual's experience of anxiety is more lasting and can occur across a variety of settings.

The necessity for an objective and separate measure of anxiety prompted Taylor (1951) to develop a scale that measured trait anxiety in adults. Using selected items from the Minnesota Multiphasic Personality Inventory (MMPI; Hathaway & McKinley, 1942) Taylor devised the Manifest Anxiety Scale (MAS). The experimental and clinical usefulness of this measure in identifying adults with chronic anxiety reactions resulted in a modification of the scale for children. Renamed the Children's Manifest Anxiety Scale (CMAS; Castaneda, McCandless, & Palermo, 1956) the inventory used items from the MAS and reworded them to be more appropriate for children. Following administration of the new 53-item scale to primary school children, Castaneda et al. (1956) found that it measured a general anxiety factor and incorporated a lie scale.

Despite extensive use of the CMAS by clinicians and researchers, as well as its usefulness in identifying both the specific nature and extent of anxiety experienced by children, the scale was criticised on three accounts: a) for being psychometrically unsound (Flanagan, Peters, & Conry, 1969), b) for not assessing enough areas of anxiety in children, and c) for being too difficult for young children to understand (Reynolds & Richmond, 1978).

Addressing these concerns, Reynolds and Richmond (1978) revised the CMAS and developed the Revised Children's Manifest Anxiety Scale (RCMAS). Originally developed to measure trait anxiety in children and adolescents aged six years to 19 years, the scale was later successfully extended to include preschool children within the four year to six year age range (Reynolds, Bradley, & Steele, 1980).

Subtitled "What I Think and Feel", the RCMAS is a 37-item self-report instrument that includes 28 anxiety and 9 "lie scale" items. Each of these items describe either an action or a feeling (e.g., "I wiggle in my seat a lot", "I feel that others do not like the way I do things") and children are asked to indicate whether the item is descriptive of their actions or feelings by circling either "Yes" or "No".

Children's anxiety level is then measured according to a global measure of anxiety (represented by the Total Anxiety score), and three subscales of anxiety: Physiological Anxiety, Worry-oversensitivity Anxiety, and Concentration Anxiety; that have been consistently identified in previous factor analytic studies of the scale (Finch, Kendall, & Montgomery, 1974; Reynolds & Paget, 1981; Reynolds & Richmond, 1978, 1979). Normative scores segregated by ethnicity, gender, and age have also been calculated and are presented in a manual that accompanies the



RCMAS (Reynolds & Richmond, 1985). These authors advise that scores 1 standard deviation (SD) above or below the mean scores of the normative sample are significant enough to warrant further consideration.

Psychometric evaluation using alpha coefficients has revealed that the RCMAS has high internal consistency ( $> .80$ ) and test-retest reliability for the Total Anxiety Scale ( $> .90$ ) across a broad age range, gender, and ethnicity (Reynolds & Richmond, 1985). In addition, examination of the construct validity of the RCMAS revealed a significant correlation ( $.85$ ) between the Total Anxiety scores from this scale and the Trait scale of the State-Trait Anxiety Inventory (STAIC; Spielberger, 1973), supporting the validity of the RCMAS as a measure of trait anxiety (Reynolds, 1980, 1985).

Although it was recognised that the adaptation of an assessment instrument can alter its psychometric properties, the reliability and validity of the original RCMAS indicated its potential usefulness as a parent report instrument for use in the present study. Adaptation of the RCMAS for parent report (RCMAS-P) involved rewording the 37 items more objectively. For example, “I have trouble making up my mind” was reworded to “Has trouble making up his/her mind”. Permission to modify the RCMAS was obtained from Western Psychological Services (official communication 5<sup>th</sup> September, 1995). Parents were asked to rate whether each of the 37 items were representative of how they perceive their child usually thinks and feels by circling either “Yes” or “No”.

### 3.1.3 Temperament

The definition of temperament that underlies most recent research refers to intrinsic behavioural characteristics that appear early in development, are relatively

stable across time and situations, and can be modified through interaction with the environment (Buss & Plomin, 1975; Goldsmith & Campos, 1982; Thomas & Chess, 1977).

A major influence on the study of temperament has been the work of Thomas and Chess (1977). These investigators defined temperament as the *how* rather than the *what* (content) or *why* (motivation) of behaviour and proposed a transactional or “goodness of fit” model of temperament. This model acknowledges the interaction between individual intrinsic behavioural characteristics and the environment, and the effect that this interaction has on these characteristics (Pedlow, Sanson, Prior, & Oberklaid, 1993; Prior, 1992).

In addition, Thomas and Chess and associates in the New York Longitudinal Study (NYLS) (e.g., Thomas & Chess, 1977) developed a definition of the concept of temperament in terms of nine dimensions: Activity Levels, Adaptability, Approach/Withdrawal, Threshold of Response, Quality of Mood, Distractibility, Persistence, and Rhythmicity. This conceptualisation combined with the research work undertaken by the NYLS has formed the basis for numerous studies (e.g., Carey & McDevitt, 1978; Fullard, McDevitt, & Carey, 1984; Keogh, 1983; Prior, Sanson, & Oberklaid, 1989).

One such study is the Australian Temperament Project (ATP) (Prior et al., 1989). This longitudinal study investigated the continuity and stability of temperament structure in a large sample from infancy to eight years of age using questionnaires based on the nine dimensional model of temperament proposed by Thomas and Chess (1977). Factor analysis of these questionnaires resulted in a series of new short form parent report questionnaires, one of which is the Short Temperament Scale for Children (STSC; Prior et al., 1989).

The STSC is a 30-item parent report inventory that enables the assessment of temperament style in Australian children and provides norms for three developmental age periods: 3 years 5 months to 4 years 5 months, 4 years 10 months to 6 years 6 months, and 6 years 8 months to 8 years 3 months. Each item describes childhood behaviour in specific situations such as completing a puzzle or compliance with parental advice. Parents are asked to rate their child's behaviour on each item according to a 6-point scale, where 1 corresponds to almost never and 6 corresponds to almost always.

Following completion of the inventory, each child's temperament style is classified on four dimensions: Approach (approach vs. withdrawal from new people and situations), persistence (tendency to persevere with tasks or activities), rhythmicity (regularity of biological and behavioural functions), and inflexibility (a combination of cooperation-manageability and irritability factors). The scores on three of these dimensions (approach, persistence, and inflexibility) are then combined to form a continuous easy-difficult scale that permits the classification of each child's overall temperament style without losing any information. A cut-off of 1 SD above and below the mean score on this scale is used as a classification cut-off. Subsequent research by the authors has found the scale to be a reliable and valid instrument with test-retest reliability ranging from .77 for inflexibility to .90 for approach (Prior et al., 1989; Sanson, Prior, Garino, Oberklaid, & Sewell, 1987). Consequently, the scale was utilised in the present study.

In summary, a review of the development of the FSSC-IIP, the RCMAS, and STSC indicates that these instruments have good psychometric properties and utilise theoretically approved definitions and standard assessment procedures. Consideration of these issues, the methodological problems associated with

previous imaginary companion studies investigating fear, anxiety, and temperament, and the aims of the thesis resulted in the utilisation of these instruments in the present study.

The aim of this study was to investigate systematically the association of fear, anxiety, and temperament with the presence or absence of imaginary companions using standard data collection methods and reliable instruments.

Whereas the contradictions in the literature discussed above prevent clear predictions being made regarding the association of these factors with the presence of imaginary companions, as an exploratory study, it was expected that the use of systematic procedures, as well as instruments specifically designed to evaluate fear, anxiety, and temperament would clarify the relationship between these factors and the presence of imaginary companions. Clarification of this relationship was expected to provide more insight regarding the role of imaginary companions in children's emotional development.

## 3.2 Method

### 3.2.1 Participants

The participants were 37 mothers of children who have or who have had imaginary companions (IC children; M age = 6 years and 0 months; range = 3 years and 2 months to 8 years and 6 months) and 37 mothers of children without imaginary companions (NIC children; M age = 6 years and 1 month; range = 3 years and 2 months to 8 years and 7 months) who had participated in study one and expressed an interest in participating in study three. Each child's IC or NIC status was verified by direct questioning by the author. There were 19 girls and 18 boys in each of the IC and NIC groups.

### 3.2.2 Behavioural Measures

The present study used three instruments to measure parents' perceptions of childhood behaviour. These measures were: (a) the Fear Survey Schedule for Children - II Parent (FSSC-IIP; Bouldin & Pratt, in press), (b) the Revised Children's Manifest Anxiety Scale which was adapted for parent report (RCMAS; Reynolds & Richmond, 1985), and (c) the Short Temperament Scale for Children (STSC; Prior et al., 1989; Sanson et al., 1987).

### 3.2.3 Procedure

All 74 mothers were initially contacted by phone. During this initial contact, mothers were given a brief explanation of the study and offered the opportunity to participate in the research. Mothers were also given a brief outline of the child interview that formed the basis of the next study and offered the opportunity for their child to participate in the research. If mothers agreed to participate, a one hour home visit was arranged.

During the visit and prior to commencement of the data collection, a brief explanation regarding the purpose of the interview and of each of the scales was given. General instructions regarding the completion of the FSSC-IIP, RCMAS-P, and STSC were also given. Subsequent to these explanations, all mothers were invited to ask any questions they had regarding either study, as well as confirm their understanding regarding the purpose and completion of the scales. Following this sequence, mothers who agreed for both themselves and their child to participate signed a written consent form (see Appendix B1).

During completion of the scales, mothers were encouraged to request clarification on any issue including the meaning of specific items or methods of rating specific items.

### 3.3 Results

#### 3.3.1 Analyses

Pearson product-moment coefficients of correlation were initially calculated to investigate the magnitude of the relationship between the dependent variables (fear, anxiety, and temperament). Although it was recognised that there may be some overlap between these variables, statistical tests were selected conceptually on the assumption that the scales would largely “tap” distinct areas. Hence three multivariate analyses of covariance (MANCOVA) were planned. However in order to test this assumption, correlation coefficients were considered. Moreover, age was used as a covariate because only the effects of IC status on the dependent variables was desired. An alpha level of .05 was used for all statistical tests.

##### 3.3.1.1 Correlation analysis.

Pearson product-moment coefficients of correlation were calculated on the total fear, anxiety, and temperament scores. The correlations are presented in Table 3.1. Small but significant correlations were found between fear and anxiety, and between temperament and anxiety. The correlation between fear and temperament was not significant.

Table 3.1

Intercorrelations Among Fear, Anxiety, and Temperament (N = 74)

	Fear	Anxiety	Temperament
Fear	--		
Anxiety	.39**	--	
Temperament	.09	.30**	--

\*\* $p < .01$ .

Although these findings indicate some overlap between variables, it was decided for the purpose of clarity to continue with the planned analyses of the data using three separate MANCOVAs.

### 3.3.1.2 Multivariate analyses.

IC and NIC children's reported levels of fearfulness, anxiety, and temperament were examined in three separate between subjects repeated measures MANCOVAs. For each of the analyses results of the evaluation of homogeneity of variance-covariance matrices, homogeneity of regression, and multicollinearity was satisfactory. The results of these evaluations are presented in Appendix B2. As homogeneity of variance-covariance matrices could be guaranteed for each of the three analyses, Wilks' criterion was used to evaluate multivariate significance. Age is recognised as being an adequately reliable variable for covariance analysis (Tabachnick & Fidell, 1989).

### 3.3.2 Fear

A summary of the means and standard deviations for all fear scores is presented in Table 3.2. A between subjects (IC/NIC) repeated measures MANCOVA was performed on the eight individual fear scores that comprise the

overall measure of fearfulness. After adjusting for age, the combined DVs were not significantly affected by IC status,  $F(7, 66) = 1.55, p = .17$ .

Table 3.2

Mean Scores on Each of the Eight Factors and Total Fear for IC and NIC Children (N = 74)

Factor	IC ( $n = 37$ )	NIC ( $n = 37$ )	Total
Factor 1	37.30 (4.22)	36.89 (5.25)	37.09 (4.73)
Factor 2	17.73 (2.67)	16.30 (2.68)	17.01 (2.75)
Factor 3	24.78 (4.65)	24.11 (4.33)	24.45 (4.47)
Factor 4	11.38 (3.34)	11.30 (2.85)	11.34 (3.08)
Factor 5	7.87 (2.42)	7.41 (2.33)	7.64 (2.37)
Factor 6	8.84 (2.48)	8.27 (2.16)	8.55 (2.32)
Factor 7	7.24 (1.30)	7.05 (1.49)	7.15 (1.39)
Factor 8	5.62 (0.92)	5.43 (0.65)	5.53 (0.80)
Total	120.76 (14.49)	116.76 (13.73)	118.76 (14.16)

Note. Standard deviations are in parentheses.

### 3.3.3 Anxiety

A summary of the means and standard deviations for all anxiety scores is presented in Table 3.3. A between subjects (IC/NIC) repeated measures MANCOVA was performed on the four components of anxiety (concentration anxiety, physiological anxiety, oversensitivity and worry, and the lie scale) that comprise the overall measure of anxiety.

After adjusting for age, the combined DVs were significantly affected by IC status,  $F(3, 70) = 3.19, p < .05$ . ICs were reported to experience a significantly higher overall level of anxiety than NICs. However, the strength of the relationship



between the adjusted combined DVs and IC status was relatively weak with  $\eta^2 = .06$ .

Table 3.3

Mean Scores for Each Anxiety Component and Total Anxiety for IC and NIC Children (N = 74)

Anxiety Components	<u>IC</u> ( <u>n</u> = 37)	<u>NIC</u> ( <u>n</u> = 37)	<u>Total</u>
Concentration	0.43 (0.96)	0.70 (1.10)	0.57 (1.03)
Physiological anxiety	2.76 (1.95)	2.68 (1.92)	2.72 (1.92)
Worry-oversensitivity	3.27 (2.21)	2.21 (1.60)	2.74 (1.99)
Lie	3.00 (2.19)	2.32 (2.03)	2.66 (2.12)
Total anxiety score	9.73 (4.36)*	8.22 (4.18)*	8.97 (4.31)

Note. Standard deviations are in parentheses.

\* $p < .05$ .

Because of the correlations among the anxiety components (see Table 3.4) a stepdown analysis was performed to determine which of these components made a contribution to predicting differences between ICs and NICs. This analysis revealed that after adjusting for differences in age, worry-oversensitivity anxiety made a significant contribution to detecting differences between ICs' and NICs' overall level of anxiety, stepdown  $F(1,71) = 4.32, p < .05, \eta^2 = .04$ . Children with ICs were reported to experience more worry-oversensitivity anxiety (adjusted mean = 4.41) than children without ICs (adjusted mean = 3.53). After the pattern of differences measured by worry-oversensitivity and physiological anxiety were accounted for, concentration anxiety was also found to make a significant

contribution to detecting differences between ICs’ and NICs’ overall level of anxiety, stepdown  $F(1,71) = 6.95, p < .05, \eta^2 = .06$ . Children with ICs were reported to experience more concentration anxiety after adjustment for age (adjusted mean = 1.87) than children without ICs (adjusted mean = 1.01). The pooled within-cell correlations among the DVs and the covariate age are presented in Table 3.4.

Table 3.4  
Pooled Within-cell Correlations Among the Four Dependent Variables and Age

	Worry	Physiol	Conc	Lie	Age
Worry	1.93	--	--	--	--
Physiol	0.31	1.93	--	--	--
Conc	0.37	0.43	0.27	--	--
Lie	-0.06	-0.21	-0.84	2.11	--
Age	0.06	-0.20	0.14	-0.01	0.46

Note. Worry = worry-oversensitivity anxiety; Physiol = physiological anxiety; Conc = concentration anxiety.

3.3.4 Temperament

A summary of the means and standard deviations for the four temperament scores and the total temperament score is presented in Table 3.5. A between subjects (IC/NIC) MANCOVA was performed on the four dimensions of temperament (approach, inflexibility, persistence, and rhythmicity) that comprise an overall temperament score. However, as the easy-difficult dimension is an average of the three DVs (approach + inflexibility + persistence) that precede it in the analysis, it would be inappropriate to include this dimension in the MANCOVA.

Thus, in order to determine whether differences exist between ICs and NICs on the easy-difficult dimension, a t-test was performed.

Table 3.5

Mean Scores on the Four Temperament Dimensions and Total Temperament for IC and NIC Children (N = 74)

Temperament Dimension	IC ( <u>n</u> = 37)	NIC ( <u>n</u> = 37)	Total
Approach	3.54 (0.38)	3.68 (0.46)	3.61 (0.42)
Inflexibility	3.03 (0.78)	3.27 (0.71)	3.15 (0.75)
Persistence	3.96 (0.72)	3.92 (0.85)	3.94 (0.78)
Rhythmicity	3.73 (0.42)	3.82 (0.45)	3.78 (0.44)
Total	14.26 (1.36)	14.69 (0.84)	14.48 (0.81)

Note. Standard deviations are in parentheses.

The MANCOVA revealed that after adjusting for age, the combined DVs were not significantly affected by IC status,  $F(3, 70) = .41, p = .75$ .

Scores on the easy-difficult dimension were computed from the sum of approach, inflexibility and persistence for each IC and NIC group. The mean scores on the easy-difficult dimension were then calculated for each IC and NIC group. A t-test revealed that there was no significant difference between these means (IC easy-difficult,  $M = 3.51, SD = 0.36$ ; NIC easy-difficult,  $M = 3.62, SD = 3.57; t(72) = .92, p = .08$ ; Levene test,  $p = .66$ ).

### 3.4 Discussion

The aim of the study was to use systematic investigative methods and assessment instruments to clarify the relationship between the presence of imaginary companions and fearfulness, anxiety, and temperament. Utilising the FSSC-IIP,

RCMAS-P, and the STSC to investigate these factors, the study found reported differences in IC and NIC children's level of anxiety but not in their fearfulness and temperament.

This study found differences in the anxiety level of children with imaginary companions that have not been reported previously (e.g., Mauro, 1990; Meyer & Tuber, 1989; Singer & Singer, 1981). Children with imaginary companions were reported to experience a higher overall level of anxiety than children without these companions. Additional analyses using the stepdown procedure revealed that concentration anxiety and worry-oversensitivity anxiety were the sub-components that contributed to the difference in the anxiety score.

According to Reynolds and Richmond (1985) high worry-oversensitivity anxiety scores suggest that a child is afraid or oversensitive to the environment and tends to internalise this anxiety until they become overburdened with it. High concentration anxiety scores suggest that a child is concerned that they are not as capable as other children and cannot meet the expectations of significant others.

However, the anxiety scores of children with imaginary companions, although higher than the scores of children without companions, were within 1 SD above the normative scores. According to Reynolds and Richmond (1985) scores that do not exceed 1 SD above the mean do not require further attention. This interpretation suggests that the increased anxiety which was reported for children with imaginary companions may be indicative of a tendency to experience anxiety rather than a chronic anxiety that requires attention.

Whilst it is recognised that there are no grounds to draw conclusions about cause and effect, it may be speculated that the interpretation of the anxiety scores combined with the findings of the present study suggests that children with

imaginary companions have an inwardly directed attitude and sensitivity to the expectations of others that results in a form of fantasy that at once personifies, and defends them against their anxious tendencies. Thus, one function of the imaginary companion may be to reduce anxiety in children who are predisposed to experience it.

Further, the reported worry-oversensitivity of children with imaginary companions suggests that these children may have a tendency to experience increased anxiety in new situations. The degree of interrelationship between fear and anxiety that was found in this study and in previous research (King, Gullone, & Ollendick, 1992; Ollendick, 1983) suggests the applicability of cognitive-affective theory to anxiety. Within the framework of this theory, these results suggest that imaginary companions may promote emotional and cognitive growth by reducing the anxiety associated with a new situation, thus creating a positive atmosphere for exploration and play (Singer & Singer, 1990).

However, there are additional findings that require discussion. The strength of the relationship between overall anxiety, the anxiety sub-components and the presence of imaginary companions was found to be relatively weak. There are two possible reasons that may account for this finding. First, children with imaginary companions have an increased predisposition to experience trait anxiety but this is very slight and the imaginary companion does not greatly reduce this anxiety.

Second, children with imaginary companions are predisposed to experience trait anxiety at levels that may cause distress but the companion functions to reduce these anxiety levels. This interpretation is derived from Singer and Singer's (1981) reported observation that the presence of the imaginary companion in preschool children was a predictor that these children would experience reduced anxiety in

later play sessions and play happily in preschool. However, as Singer and Singer did not utilise standard assessment instruments specifically devised to measure trait anxiety, direct comparisons between the findings of the present study and those reported by these investigators cannot be made. In addition, any speculation regarding the strength of association between anxiety and imaginary companions and the possible anxiety reducing function of these companions has a tendency to become circular. Thus, until further research is conducted that can clarify this issue only tentative conclusions can be made regarding the extent to which the imaginary companion reduces anxiety.

The present study found that parents did not report any differences in the fearfulness of children with and without imaginary companions. Children with imaginary companions were not found to experience higher levels of fearfulness compared to children without these companions. These findings are similar to those obtained in previous imaginary companion research (e.g., Manosevitz et al., 1973; Singer & Singer, 1981) although the extent to which they can be directly compared to previous findings is limited because of differing data collection methods and the inadequate assessment and definition of fearfulness (e.g., Manosevitz et al., 1973).

Nevertheless, the findings of this study indicate that fearfulness is not associated with the presence of imaginary companions. Reports of the increased fearfulness of children with imaginary companions in previous research (e.g., Inuzuka et al., 1991; Svendsen, 1934) suggest that fearfulness may have been reported where anxiety was indicated. The inseparable treatment of these two factors in previous imaginary companion research (e.g., Svendsen, 1934), as well as similarity in the physiological, and hence behavioural responses to fear and anxiety (Graham, 1990; Reynolds & Richmond, 1985) may have produced reports that

were based on erroneous assumptions. Thus, it could be concluded that previous reports of the increased fearfulness of children with imaginary companions may have been a misinterpretation of behavioural responses, rather than a true indication of fearfulness.

This study also found that parent reports regarding the temperament of children with and without imaginary companions were not significantly different. This finding contrasts with previous research by Mauro (1990) who found that children with imaginary companions were less shy and more able to focus their attention than children without these companions. These contrasting research findings may be attributed to sampling and instrument design differences. The present study used a questionnaire that assessed children's temperament on a smaller number of dimensions than that used by Mauro.

In addition, the age range of the children in the Mauro study differed to the age range of the children in the present study. The youngest children in the Mauro study were 5-years of age compared to the inclusion of 3-year-olds in this study. According to Prior et al. (1989) although temperamental characteristics are stable across age, the relative significance of these characteristics may change with age. For example, irritability is a distinct aspect of temperament in 3-year-olds but is not a distinct aspect of temperament in 4-year-olds. Thus, some of the temperament differences that were obtained by Mauro may not have been distinct aspects of temperament in the younger children in this study.

However, it is interesting to note that in both the Mauro and the present study, children with imaginary companions were not reported to have a difficult temperament. These findings refute the conclusions made by early imaginary

companion researchers (e.g., Svendsen, 1934) that these children are temperamentally difficult.

In summary, the present study found that only slightly elevated anxiety scores were associated with the presence of imaginary companions. These findings were interpreted to indicate that one function of the imaginary companion may be to alleviate anxiety in children who are predisposed to experience it. However, claims regarding findings from parent report should be treated with caution until they are directly compared to children's self-reports. Thus, future research should directly compare the self-reported fears and anxieties of children with and without imaginary companions with parents' reports of their children's fears and anxieties. In addition, as the study adapted the RCMAS and FSSC-II for parent report, future research should investigate the psychometric properties of these adapted instruments.

Although psychometric evaluation of these instruments is beyond the scope of this thesis, indications in the present study that children with imaginary companions internalise their anxieties and use a fantasy figure to reduce the impact of these anxieties suggests that these children have a predisposition to engage in fantasy. This predisposition is investigated in the next study.



## CHAPTER 4

### STUDY THREE

#### 4.1 Introduction

One belief that is restated throughout the imaginary companion literature is that children with imaginary companions enjoy an enriched fantasy life (e.g., Ames & Learned, 1946; Nagera, 1969; Svendsen, 1934). This belief has been substantiated by recent research findings (e.g., Taylor et al., 1993) that children with imaginary companions spontaneously engage in fantasy play. Evidence for these children's predisposition to fantasy was also found in study one of this thesis. In that study, children with imaginary companions were more often reported to make up stories of mythical beings, involve these beings in play, and explain events as magical compared to children without these companions.

From a cognitive perspective (Piaget, 1962; Singer, 1973) fantasy play, daydreaming, and dreaming all evolve from the same mental processes, with fantasy play considered to be the earlier developmental form. Children use fantasy play to make sense of their world. Within this arena, children reduce complex material to small packets so that it can be explored and manipulated until through repetition in the game, each element of the material is assimilated into the child's available schemas. Thus, according to Singer (1973) fantasy play reflects the continual private rehearsal process that children use to gain control over their symbolic representation system. Children's ability to form, recombine, store, and integrate images over time is reflected in their fantasy play, which in turn reflects a general

imaginative predisposition (Singer, 1973, 1977). Research findings (e.g., Singer, 1961, 1973; Singer & Singer, 1981) that children who reported extensive engagement in fantasy play were also those who were more imaginative, provides partial substantiation for this view.

Despite these findings, Rosenfeld, Huesmann, Eron, and Torney-Purta (1982) claimed that the concept of imaginative predisposition did not account for children's differing styles of fantasy play and daydreaming. Consideration of this issue prompted the authors to devise the Children's Fantasy Inventory (CFI). Comprising 45 items, the CFI asks children to rate their experience of daydreams, dreams, and pretend play on a 3-point scale for items 1- 39 (0 = no, 1 = a little, and 2 = a lot) and on a 4-point scale for items 40 - 45 (0 = never, 1 = sometimes not every day, 2 = one time a day, and 3 = many times a day).

Administration of this scale to 713 children between the ages of six years and nine years revealed that children's style of play could be differentiated on nine dimensions: "Frequency of Imaginative Activity", "Aggressive Fantasy", "Fanciful Fantasy", "Absorption in Fantasy", "Scary Fantasy", "Vividness of Fantasy", "Intellectual Fantasy", "Active-Heroic Fantasy", and "Dysphoric Fantasy". In addition, psychometric evaluation of the inventory revealed a reliable and valid instrument that was sensitive to age and gender differences. Reliability alphas of each scale ranged from .42 (Absorption) to .70 (Frequency) and test-retest correlations ranged from .39 (Absorption) to .67 (Intellectual). Examination of the construct validity of the CFI revealed significant correlations between scores on the nine dimensions and two previously developed measures of fantasy in children. Rosenfeld et al. (1982) concluded that the CFI is a reliable and valid measure of children's fantasy behaviours.

The results of the Rosenfeld et al. (1982) study are of particular interest in imaginary companion research for two reasons. First, reports such as the vividness with which children can describe their companions (e.g., Svendsen, 1934), the tendency of children with imaginary companions to engage in more mature levels of pretense (e.g., Taylor et al., 1993), and the intense emotions that are associated with the presence of the companion (e.g., Hurlock & Burstein, 1932) indicate that a non-specific measure of fantasy predisposition would not adequately assess the type of imaginative activity that these children engage in.

Second, previous research (e.g., Singer, 1961) that has investigated the fantasy predisposition of children with imaginary companions has assessed this tendency using the non-specific concept of imaginative predisposition. Moreover, as noted in section 1.3 this assessment was conducted indirectly as children with these companions may have been grouped together with those who had reported either a high fantasy, or a low fantasy involvement. Thus, although there are suggestions in the literature (e.g., Ames & Learned, 1946; Somers & Yawkey, 1984) that children with imaginary companions are predisposed to engage in fantasy, there has been very little empirical research specifically investigating this issue.

The aim of the present study was to compare the predisposition to fantasy of children with and without imaginary companions. Specifically, the study sought to explore the feasibility of interviewing children with and without imaginary companions as a method of assessing these children's tendency to engage in fantasy. It was expected that the interview would indicate an association between the presence of imaginary companions and children's predisposition to fantasy. In addition, the inclusion of items from the CFI was expected to indicate differences in

the fantasy style of children that are related to the presence or absence of imaginary companions.

## 4.2 Method

### 4.2.1 Participants

The participants were 37 children who have or who have had imaginary companions (IC; M age = 6 years and 0 months; range = 3 years and 2 months to 8 years and 6 months) and 37 children without imaginary companions (NIC; M age = 6 years and 1 month; range = 3 years and 2 months to 8 years and 7 months) whose parents had participated in study two. There were 19 girls and 18 boys in each of the IC and NIC groups.

### 4.2.2 Children's Predisposition to Fantasy Interview

For the purposes of the present study, a structured interview, the Children's Predisposition to Fantasy Interview (CPFI) was developed to measure children's fantasy involvement in five areas: dreams, daydreams, scary thoughts, involvement in pretend games, and the possible presence of imaginary companions. The CPFI comprised 21 items, 12 of which were incorporated from the Children's Fantasy Inventory (CFI; Rosenfeld et al., 1982) and nine additional items. A copy of the CPFI is presented in Appendix C1.

The 12 items from the CFI were selected from four of the nine factors identified by Rosenfeld et al. (1982). These included: five items from the "Frequency of Imaginative Activity" scale, two items from the "Fanciful Fantasy" scale, two items from the "Scary Fantasy" scale, and three items from the "Vividness of Fantasy" scale. These items were selected because they were

considered relevant to a younger age group and to provide information regarding children's tendency to engage in fantasy.

Each of these items was incorporated into the CPFI in a modified form. This modification included rewording items and phrases to suit younger children (e.g., rewording daydream to pictures in your head). A list of these modified items and the factors from which they were selected is presented in Appendix C2.

The nine additional items were designed to obtain descriptive information in each of the five areas. Two of these nine items were specifically devised as alternative or prompt questions which were to be asked if the child did not appear to understand the original form of the question (e.g., the alternative to "Do you have dreams when you are asleep at night?" was "Do you see the pictures in your head when you are asleep at night?").

#### 4.2.3 Procedure

The process of obtaining mothers' consent for their child to participate in the study was outlined in chapter three.

Prior to commencement of the interview each child was offered the following explanation:

(child's name) I'm going to ask you a few questions about the kinds of dreams you have and the games you like to play. If you can't answer then that's OK, but I'd really like you to try hard because I really need your help. OK?

All children were then asked about their dreams, daydreams, scary thoughts, pretend games, and whether they currently had an imaginary companion. The interview was concluded if the child responded "yes" to the imaginary companion

question and the author could satisfactorily conclude that the child's imaginary companion conformed to the definition offered by Svendsen (1934). If the child replied "no" to this question, they were asked if they had ever had a companion before the interview was concluded.

Information concerning the number of children who reported having an imaginary companion has been included because initial participation was based on parent report. The complete agreement that was found in the present study between parents' reports and children's reports regarding the presence of an IC refutes suggestions in the literature that parents under report the presence of these companions (e.g., Mauro, 1990).

### 4.3 Results

#### 4.3.1 IC Status

Children's reports regarding the presence or absence of an IC were exactly the same as those reported by their parents. Of the 37 children for whom parents had reported the presence of an imaginary companion, 19 children stated when asked that they had a companion at present and 18 children stated that they had had one in the past. Of the 37 children whose parents reported that their child did not have a companion, all 37 children stated when asked that they did not and had never had an imaginary companion.

#### 4.3.2 Analyses

Initial analysis of the CPFI was conducted using content analysis (Weber, 1990). Frequency data from the subsequent categorical variables were initially cast into 2x2 ( $df = 1$ ) and larger ( $df > 1$ ) contingency tables and analysed using chi-

square ( $\chi^2$ ) tests. Application of this test for frequencies in the contingency tables was undertaken according to the following criteria. Chi square tests were performed when the sample size ranged between 20 and 40 and all expected frequencies were five or more. These were corrected for continuity to improve the accuracy of the tests. Fisher exact probability tests were performed when the sample size ranged between 20 and 40 and expected frequencies were less than five (Siegel & Castellan, 1988).

Chi square tests for frequencies in larger contingency tables were performed only if less than 20 percent of the cells (i.e., one cell) had expected frequencies of less than five and none of the cells had an expected frequency less than one. If the expected frequencies fell below this criterion, categories were combined to increase their values. As a result of this, all contingency tables larger than 2x2 were reduced to 2x2. The resultant contingency tables were then analysed using the previously specified criteria. Because analyses were conducted using 2x2 contingency tables, the Phi coefficient ( $\phi$ ) was used to measure the strength of the association between variables (Diekhoff, 1992; Howell, 1987; Siegel & Castellan, 1988). As outlined in section 2.3.1 of study one, an upper alpha level of .05 was used for all statistical tests although significant findings at this level should be interpreted with caution.

#### 4.3.2.1 Coding.

Children's audio taped responses to each question on the CPFI were transcribed and coded. Consideration of all responses given by the children resulted in a classification system that enabled responses to be classified according to four major categories. That is, responses were categorised according to confirmation (yes, no, or sometimes) memory (remember or can't remember) mood (happy, sad, or happy and sad) and composition (mythical, fictional, and realistic). Within each

of the confirmation, memory, and mood categories a child's response could only be assigned to one of the subcategories. For example, a child's response to confirmation would be either "yes" or "no" or "sometimes". In contrast, composition responses could include reference to more than one of the subcategories. For example, a child's description of daydreams could include mythical and fictional and realistic elements.

The descriptive content of dreams, daydreams, scary thoughts, and pretend games was classified according to the type of detail that the child supplied. Descriptions were judged to have a mythical quality when the child described mythical items that belonged to a generic group of non-existent beings (e.g., fairies, dragons, and monsters), a fictional quality when the child referred to specific fictional characters (e.g., cartoon characters, Peter Pan), and a realistic quality when the child referred to beings that exist (e.g., animals, parents). Details regarding the classification of children's responses is provided in the code book in Appendix C3.

#### 4.3.2.2 Reliability.

Reliability was established for all responses on the CPFI by two independent judges. The judges were both university students. One judge was a postgraduate student with a psychology major who was recruited through the psychology department. The other judge was an undergraduate student with extensive experience working with young children who was recruited through a general notice board advertisement.

Each judge was provided with a code book (see Appendix C3) that provided sample definitions and protocols for scoring children's responses to each question on the CPFI. Following explanations regarding each protocol, judges completed a sample interview using the coding procedure.



Inter-judge agreement between two judges who independently scored 20% of all protocols was calculated using Cohen's kappa coefficient (Bakeman & Gottman, 1997). The inter-judge agreement for this study ranged from .80 for dreams to .86 for pretend games. Any areas of disagreement were resolved through discussion.

#### 4.3.3 Analyses of Categorical Variables

The number of responses that were analysed did not always sum to the number of subjects in each group (37). The reason for this disparity is that some questions comprised a series where the response to the first question indicated whether subsequent questions should be asked. Thus, the number of responses in the first question in the series (e.g., Q1a, in the series Q1a, Q1b, & Q1c) will sum to the number of subjects in each group (37); responses in the subsequent questions in the series will either sum to the number of "yes" and "sometimes" responses in the first question, or the number of "remember" responses in the memory category of the subsequent question. Questions that comprised a series are identified by a number followed by a letter of the alphabet (e.g., Q2b is part of the series Q2a, Q2c, Q2d, & Q2e).

In addition, as the number of "sometimes" responses was low, it was considered indicative of an affirmative response and recoded to equal "yes" for the analysis.

##### 4.3.3.1 Dreams.

The dreaming activity of ICs and NICs is summarised in Table 4.1. The number of ICs and NICs who reported that they experienced dreams at night was not significantly different. Of those ICs and NICs who reported experiencing

dreams, memory for dreams, fictional and realistic dream content, and dream mood did not significantly differ between the two groups. However, a significantly larger number of ICs than NICs reported mythical dream content,  $\chi^2(1, n = 38) = 5.22, p < .05; \phi = .37$ .

Table 4.1

The Number of IC and NIC Children's Responses to Questions Concerned with Dreams

Question	IC ( <u>n</u> = 37)	NIC ( <u>n</u> = 37)
<u>Dreams</u>		
Q1 A. Do you have dreams at night?		
<u>Confirmation</u>		
Yes	31	27
Sometimes	3	9
No	3	1
Q1 B. Can you tell me about some of your dreams?		
<u>Memory</u>		
Remember	17	21
Can't remember	17	15
<u>Composition</u>		
<i>Mythical*</i>		
Yes	12	7
No	5	14
<i>Fictional</i>		
Yes	3	4
No	14	17
<i>Realistic</i>		
Yes	8	11
No	9	10
Q1 C. Are they happy dreams or sad dreams?		
<u>Memory</u>		
Remember	34	35
Can't remember	0	1

(table continues)

Question	IC ( <u>n</u> = 37)	NIC ( <u>n</u> = 37)
<u>Mood</u>		
<i>Happy</i>		
Yes	10	10
No	24	26
<i>Sad</i>		
Yes	4	7
No	30	29
<i>Happy and sad</i>		
Yes	20	18
No	14	18

\* $p < .05$ .

#### 4.3.3.2 Daydreams.

The daydreaming activity of ICs and NICs is summarised in Table 4.2.

Inspection of the table reveals that a significantly larger number of ICs than NICs reported daydreaming activity,  $\chi^2 (1, n = 74) = 24, p < .001; \phi = .60$ .

Of those ICs and NICs who reported daydreaming activity, memory for daydreams, and daydream content and mood did not significantly differ between the two groups. However, significantly larger numbers of ICs than NICs reported daydreaming when alone, Fisher's exact test,  $p < .05$ , and almost being able to see and hear the contents of their daydream in front of them, Fisher's exact test,  $p < .01$ .

Table 4.2

The Number of IC and NIC Children's Responses to Questions Concerned with Daydreams

Question	IC ( <u>n</u> = 37)	NIC ( <u>n</u> = 37)
<u>Daydream</u>		
Q2 A. Do you sometimes see pictures of things in your head (daydream) during the day?		
<u>Confirmation</u> ***		
Yes	27	6
Sometimes	1	0
No	9	31
Q2 B. What kinds of pictures do you see?		
<u>Memory</u>		
Remember	23	5
Can't remember	5	1
<u>Composition</u>		
<i>Mythical</i>		
Yes	9	0
No	14	5
<i>Fictional</i>		
Yes	5	1
No	18	4
<i>Realistic</i>		
Yes	16	4
No	7	1
Q2 C. Are they happy pictures or sad pictures?		
<u>Memory</u>		
Remember	27	6
Can't remember	1	0
<u>Mood</u>		
<i>Happy</i>		
Yes	21	5
No	6	0
<i>Sad</i>		
Yes	1	0
No	26	6
<i>Happy and sad</i>		
Yes	5	1
No	22	5

(table continues)

Question	IC ( <u>n</u> = 37)	NIC ( <u>n</u> = 37)
Q2D. Do you picture these things in your head when you are on your own?		
<u>Confirmation</u> *		
Yes	26	1
Sometimes	0	2
No	2	3
Q2E. Do the people and things that you picture in your head sometimes seem so real that you think you can almost see or hear them in front of you?		
<u>Confirmation</u> **		
Yes	27	2
Sometimes	1	0
No	0	4

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

#### 4.3.3.3 Scary thoughts.

The reported experience of scary thoughts by ICs and NICs is summarised in Table 4.3. A larger number of ICs than NICs reported experiencing scary thoughts. However, this difference was not significant. Of those ICs and NICs who reported experiencing scary thoughts, memory for scary thoughts, scary thought content, and trying hard not to think about scary things did not significantly differ between the two groups.

Table 4.3

#### The Number of IC and NIC Children's Responses to Questions Concerned with Scary Thoughts

Question	IC ( <u>n</u> = 37)	NIC ( <u>n</u> = 37)
<u>Scary Thoughts</u>		
Q3 A. Do you sometimes get real scared because of something that you think about?		
<u>Confirmation</u>		
Yes	19	14
Sometimes	2	1
No	16	22

(table continues)

Question	IC ( <u>n</u> = 37)	NIC ( <u>n</u> = 37)
Q3 B. What kinds of things do you think about that scare you?		
<u>Memory</u>		
Remember	14	13
Can't remember	7	2
<u>Composition</u>		
<i>Mythical</i>		
Yes	7	3
No	7	10
<i>Fictional</i>		
Yes	2	1
No	12	12
<i>Realistic</i>		
Yes	8	10
No	6	3
Q3 C. Do you try really hard not to think about these scary things?		
<u>Confirmation</u>		
Yes	21	13
Sometimes	0	0
No	0	2

#### 4.3.3.4 Pretend games.

Analyses could not be performed on the memory component of question 5B ("What kind of pretend games do you play with your friends?"). According to the coding scheme, the responses to this question could only be categorised into one of two possible subcategories. The resultant lack of scores in one of the subcategories, rendered an analysis unworkable (Siegel & Castellan, 1988).

The pretend game activity of ICs and NICs is summarised in Table 4.4. The number of ICs and NICs who reported that they played pretend games by themselves was not significantly different. Of those ICs and NICs who reported playing pretend games alone, memory for games and playing games with fictional and realistic content did not significantly differ between the two groups. However, a

significantly larger number of ICs than NICs reported playing games with mythical content,  $\chi^2(1, n = 70) = 4.86, p < .05; \phi = .30$ .

The number of ICs and NICs who reported that they played pretend games with their friends was also not significantly different. Of those ICs and NICs who reported playing pretend games with friends, the types of game content did not significantly differ between the two groups.

Similarly, the number of ICs and NICs who reported that they did not want the game to end was not significantly different. However, a larger number of ICs than NICs reported that they could almost see the pretend people and places in the room with them,  $\chi^2(1, n = 74) = 15.91, p < .001; \phi = .49$ .

Table 4.4  
The Number of IC and NIC Children's Responses to Questions Concerned with Pretend Games

Question	IC ( <u>n</u> = 37)	NIC ( <u>n</u> = 37)
<u>Pretend Games</u>		
Q4 A. Do you play pretend games when you are by yourself?		
<u>Confirmation</u>		
Yes	36	33
Sometimes	1	1
No	0	3
Q4 B. What kinds of pretend games do you play by yourself?		
<u>Memory</u>		
Remember	36	34
Can't remember	1	0
<u>Composition</u>		
<i>Mythical*</i>		
Yes	12	3
No	24	31
<i>Fictional</i>		
Yes	9	10
No	27	24
(table continues)		

Question	IC ( <u>n</u> = 37)	NIC ( <u>n</u> = 37)
<i>Realistic</i>		
Yes	32	29
No	4	5
Q5 A. Do you play pretend games when you are with your friends?		
<u>Confirmation</u>		
Yes	35	35
Sometimes	0	0
No	2	2
Q5 B. What kinds of pretend games do you play with your friends?		
<u>Memory</u>		
Remember	35	35
Can't remember	0	0
<u>Composition</u>		
<i>Mythical</i>		
Yes	5	1
No	30	34
<i>Fictional</i>		
Yes	16	12
No	19	23
<i>Realistic</i>		
Yes	32	28
No	3	7
Q 6. Sometimes when you play pretend games, do you feel so happy that you don't ever want the game to end?		
<u>Confirmation</u>		
Yes	29	20
Sometimes	1	2
No	7	15
Q 7. Sometimes when you play pretend games, do you feel like you can really see the pretend places and people in the room with you?		
<u>Confirmation***</u>		
Yes	30	10
Sometimes	0	2
No	7	25

\* $p < .05$ . \*\*\* $p < .001$ .



#### 4.4 Discussion

The main aim of this study was to investigate the predisposition to fantasy of children with and without imaginary companions. The study explored the possibility that formulation of an interview specifically for this purpose would indicate an association between the presence of imaginary companions and children's predisposition to engage in fantasy. In addition, inclusion of items from the CFI was expected to indicate differences in the fantasy style of children that were related to the presence or absence of imaginary companions.

The findings of the present study provide evidence that there is an association between the presence of imaginary companions and a predisposition to engage in fantasy. The study found that there were differences between ICs and NICs in their reported dream content, involvement in daydreams, vividness of daydreams and game content images, and game content when playing alone. In addition, the inclusion of items from the CFI indicated differences in the fantasy style of children that were related to the presence or absence of imaginary companions.

The finding that there are differences in IC children's involvement in daydreams and vividness of daydream and game images is consistent with previous research (e.g., Singer, 1961; Taylor et al., 1993). Children with these companions more often reported that they daydreamed, daydreamed when they were alone, and felt that they could almost see and hear the contents of their daydream in front of them. This finding substantiates the view that children with imaginary companions are able to create vivid mental images that sustain them in times of solitude (Singer, 1961).

In addition, the more frequent reports by these children that they experienced vivid imagery during pretend games and played solitary games with a mythical theme substantiates Taylor et al's. (1993) findings that children with imaginary companions engage in a higher level of pretense and more spontaneous fantasy play than children without companions.

Consideration of these combined findings and Singer's (1973, 1977) view of a relationship between mental imagery, fantasy play, and fantasy predisposition, suggests that children with imaginary companions are predisposed to engage in fantasy. Moreover, the finding that children with imaginary companions more often reported dreams with a mythical content substantiates previous claims that these children have enriched fantasy lives (e.g., Nagera, 1969) and are highly imaginative (e.g., Ames & Learned, 1946; Svendsen, 1934).

Differences in the fantasy style of children with and without imaginary companions were also reported. Children with imaginary companions more often reported daydream and pretend game activities that were related to the "Frequency of Imaginative Activity" and "Vividness of Fantasy" factors than children without companions. This finding suggests two alternative possibilities. First, incorporating items from the CFI assisted in differentiating the fantasy style of children with and without imaginary companions. Second, there may not be any actual differences between the fantasy style of children with and without imaginary companions, but children with these companions may be more at ease discussing their fantasies.

However, subjective impressions gained by the author when conducting these interviews raises doubts regarding the validity of this second possibility. According to these impressions, children in both groups were willing to discuss their fantasies, but children with imaginary companions tended to provide more detailed

descriptions of their fantasies than children without companions. In addition, children with imaginary companions tended to describe more than one fantasy image. Combined, these subjective impressions suggest that children with and without imaginary companions differ in their fantasy style, rather than their willingness to discuss their fantasies.

In summary, the findings of the present study in combination with previous research (e.g., Taylor et al., 1993; Singer, 1961) suggest that children with imaginary companions have a predisposition to engage in fantasy. In addition, the different fantasy activities that were reported by the children in the present study suggests the potential utility of the interview to indicate this predisposition and differentiate children's fantasy styles.

Despite the success of the interview in determining the fantasy predisposition and fantasy styles of children with and without imaginary companions, the study only assessed children's verbal responses. According to Subbotsky (1984) when children converse with adults they tend to make use of socially approved norms. Thus, it cannot be known whether some children responded to the interview questions (and the author) according to their experience of socially approved norms, or whether they responded to the interview questions according to their experiences of dreams, daydreams, pretend games, and scary thoughts. It was considered necessary therefore, to investigate further the fantasy predisposition of children with and without imaginary companions utilising a method that did not rely solely on verbal responses. This study is presented in the following chapter.

## CHAPTER 5

### STUDY FOUR

#### 5.1 Introduction

The air of reality with which children treat their imaginary companions has resulted in questions regarding these children's ability to differentiate fantasy from reality. Reports (e.g., Manosevitz et al., 1973; Mauro, 1990; Taylor et al., 1993) that children treat their companion as a separate individual who requires space at places such as the dinner table or in the child's bed, suggests the possibility that these children may experience a degree of fantasy-reality confusion. This issue is of particular relevance considering the current debate in the child's theory of mind literature regarding children's ability to maintain the boundary between fantasy and reality.

As discussed in chapter one, recent research findings have indicated that although children as young as three years of age can differentiate between reality and fantasy (see Wellman & Estes, 1986) the presentation of counterfactual evidence often produces fantastic or magical explanations (Johnson & Harris, 1994). Theorists (e.g., Wellman, 1990; Woolley & Wellman, 1993) propose that this contradiction occurs because young children have difficulty understanding how truthfully mental contents (e.g., imaginings or fantasy) reflect the real world. As a consequence, these children erroneously judge that imaginary representations reflect reality. Woolley and Wellman (1993) suggest that these errors disappear by the time children reach four years of age.

Harris et al. (1991) question this view and present research findings that suggest older children are also susceptible to these errors. Children 4- and -6-years-old were asked to imagine a puppy inside one box and a monster inside the other. The results indicated that even some 6-year-olds acted as though the imagined entities were in the boxes as indicated by their willingness to approach the puppy box and desire to avoid the monster box. According to Harris et al. (1991) these erroneous judgments may have arisen because (even older) children remain unsure of the rules that govern the boundary between fantasy and reality.

As discussed in section 1.6, Golomb and Galasso (1995) question this interpretation. These authors cite a number of methodological concerns that they consider may have influenced the actions of the children in Harris et al.'s study. For example, the use of a monster may have resulted in an emotional reaction rather than conceptual awareness, children may have examined the boxes because there were no other toys in the testing room rather than because they believed the imagined entity to be in the box, and children may have continued to engage in pretense because there were no clear indications that the game was over.

However, an alternative explanation for Harris et al.'s (1991) findings is suggested in Subbotsky's (1984) hypothesis that children possess two distinct and inconsistent belief systems: everyday beliefs that differentiate between fantasy and reality and a second set of beliefs that allow for extraordinary transformations to occur.

To test this hypothesis Subbotsky (1984) conducted a series of experiments that assessed children's belief that thought can transform an object. Children 4-, 5-, and 6-years-old were told a story about a magic box that transformed pictures into objects when magic words were recited. Following completion of the story, children

were asked whether this type of transformation was possible in everyday life. The majority of children denied this possibility. However, when left alone in the room with the magic box 90% of the children in each age group attempted some kind of transformation using the magic words. Subbotsky hypothesised that as children's verbal behaviour reflected rational scientific modes of thought, the contrast between children's verbal statements and their subsequent actions was indicative of the existence of these two inconsistent belief systems.

Johnson and Harris (study 3, 1994) investigated this issue and examined children's credulity toward magical transformations. Children 4- and 6-years-old were asked to imagine a pretend entity (fairy or an ice cream cone) in one box whilst the other box remained neutral. After ascertaining children's understanding regarding the imaginary status of the pretend entity, the experimenter left each child alone in the room and recorded their behaviour toward the boxes on video. The results indicated that credulous children (i.e., those who stated that they wondered whether the pretend item may have been inside the box) were quicker to open the pretend box, were more likely to believe that the pretend entity was in the box, and more often referred to magical explanations than less credulous children.

These investigators proposed an explanation for these findings based on two assumptions: Tversky and Kahneman's (1973) hypothesis that imagining a possibility makes it easier to bring to mind and Subbotsky's (1984) hypothesis that children have a latent set of magical beliefs. Combining these two assumptions, Johnson and Harris (1994) proposed that once a possibility has been made available it is either suppressed or accepted according to the child's predominant belief system. Thus, credulous children offer explanations for unexpected events by reverting to magical beliefs, whilst non-credulous children refer to physical laws and practical considerations to explain these events.

However, Johnson and Harris state that these assumptions do not imply that credulous children have difficulty differentiating fantasy from reality, rather any act of imaginative activity will encourage the latent animistic beliefs of these children. This view implies that credulous children may not only be more susceptible to availability effects, but may also have more difficulty suppressing magical explanations in everyday life compared to non-credulous children. These authors further speculated that individual differences in credulity may account for individual differences in fantasy predisposition, as well as the presence of imaginary companions in some children.

In contrast, Woolley (1995) proposes a line of speculation that is consistent with previous research findings (e.g., Woolley & Wellman, 1993) that children as young as three years of age understand fictional mental states before epistemic states. Woolley (1995) suggests that this differential ability occurs because fictional states do not often reflect reality. Consequently, children find it easier to comprehend the difference between fictional mental representation and reality. Research findings by Woolley and Wellman (1993) that show children correctly judged the likelihood of finding a hidden object on the basis of perceptual information, rather than imagination or dreams is considered to substantiate this view.

Extending this theoretical stance to include children with imaginary companions, Woolley (1995) speculates that children who create imaginary companions may have an increased understanding of the mental nature, fantasy-reality, and origin of their imaginings *because* they create a personal mental entity.

Thus, there are two opposing views regarding the presence of imaginary companions. Johnson and Harris (1994) suggest that children with imaginary

companions may be more credulous than children without these companions. This view implies that children with these companions may experience a weakening or confusion of the fantasy-reality boundary because of their susceptibility to availability effects and inability to suppress their latent magical beliefs. Woolley (1995) suggests that children with imaginary companions do not experience any fantasy-reality confusion because of their experience collaborating with a fictional entity.

As discussed in section 1.7, Taylor et al. (study 1, 1993) investigated this issue in 3- and 4-year-old children. These investigators asked children with imaginary companions to pretend that their companion was present and children without companions to pretend that one of their real friends was present. After the experimenter had ascertained that the real friend or imaginary companion had been imagined, children were asked a series of questions to determine the extent to which they thought their imagined entity was reflected in reality. The study found that both children with and without imaginary companions considered their imagined entity to be reflected in reality. However, these authors considered that a methodological flaw prompted children to engage in shared pretense with the experimenter. Thus, children's responses to the questions were considered indicative of their engagement in shared pretense rather than fantasy-reality confusion.

An additional problem with the Taylor et al. study involves the assessment of children's beliefs. Children's non-verbal behavioural responses regarding the extent to which they believed their imagined entity was reflected in reality was not specifically assessed. If, as Subbotsky (1984) suggests, children have two inconsistent belief systems that manifest differentially in verbal and non-verbal behaviours, Taylor et al.'s conclusion that children were not confused about the



fantasy status of their imagined entity cannot be determined with any certainty. As a consequence of these methodological issues, questions remain regarding the extent to which children with imaginary companions believe that imaginary representations can be reflected in reality.

The aim of the present study was to investigate whether the presence of an imaginary companion signals an increased predisposition to fantasy that weakens children's ability to maintain the boundary between fantasy and reality. This issue was addressed by: a) assessing the fantasy predisposition of children with and without imaginary companions through their verbal behaviour, and b) examining the verbal and non-verbal responses of children with and without imaginary companions to the presentation of a counterfactual event.

However, as the present study incorporated elements of previous research methods (e.g., Harris et al., 1991; Taylor et al., 1993) a number of methodological issues had to be addressed. First, in order to avoid a possible emotional reaction to an imagined entity, the children in this study were asked to imagine the monster themselves. According to Golomb and Galasso (1995) children who are asked to do this modify the emotional impact of their entity by varying its features accordingly (e.g., a monster without a mouth).

Second, toys were provided in the testing room as alternative stimuli to the test equipment. This provision addresses concerns raised by Golomb and Galasso (1995) that children may examine the testing equipment (e.g., the boxes in the Harris et al., 1991 study) because there is nothing else to do rather than because they believe that an imagined entity could be reflected in reality.

Third, according to Woolley (1995) explicit requests to children in previous research (e.g., Harris et al., 1991; Taylor et al., 1993) to imagine an entity may

have promoted imagining that is under conscious control. As a consequence of this control, the imagining may not have intruded on reality and children may have been more able to distinguish their imaginings from reality. In order to reduce the possibility of this occurring, the present study used a combination of consciously controlled imagining with an unexpected (counterfactual) event.

Fourth, children's verbal and non-verbal reactions to the counterfactual event were recorded to ascertain whether the verbal responses of children with and without imaginary companions differ to their behavioural responses.

Fifth, the issue of children's shared pretense with the experimenter was addressed by not using the words pretend and make-believe during any phase of the study other than the final one, by providing clear indications that the imaginative episode was at an end, and by presenting counterfactual evidence that did not appear to be under the experimenter's control.

Finally, Woolley and Wellman (1993) have demonstrated that the context of the experimental situation will often guide children's (observed) ability to differentiate between the imagined and the real. Previous research has used either an imaginative situation (e.g., Golomb & Galasso, 1995) or a practical situation (e.g., Woolley & Wellman, 1993). As children project their imaginary companion into the external world where both practical and imaginative activity takes place, separating the practical and imaginative in an experimental situation may produce unrealistic results. The present study attempted to provide a situation that included both imaginative and practical aspects.

In summary, the study sought to investigate whether children with and without imaginary companions differed in their fantasy predisposition and ability to

maintain the boundary between fantasy and reality. The study also addressed previously identified methodological problems.

Three outcomes were expected from this study. First, the examination of children's verbal and non-verbal behaviours following the presentation of a counterfactual event would indicate an association between the presence of imaginary companions and the extent to which children believed an imaginary entity could be reflected in reality. Second, the modifications in the present study would address the problems associated with previous fantasy-reality research and clarify further the relationship between the existence of any fantasy-reality confusion and the presence of imaginary companions. Finally, information gathered from the interview would indicate further that the presence of imaginary companions is associated with children's predisposition to fantasy.

## 5.2 Method

### 5.2.1 Participants

The participants were 40 children with imaginary companions (IC; M age = 5 years and 4 months; range = 4 years and 0 months to 7 years and 11 months) and 40 children without imaginary companions (IC; M age = 5 years and 4 months; range = 4 years and 0 months to 7 years and 5 months), who had not participated in any of the previous studies. Children were selected from one of eight metropolitan primary schools. There were 24 girls and 16 boys in each of the IC and NIC groups.

Children were initially allocated to either the IC or NIC group in accordance with parent report. However, as discussed in section 4.2.3, because of concerns regarding the accuracy of parent report (e.g., Mauro, 1990) each child was asked if

they had an imaginary companion. As in the previous study, children's responses to this question confirmed their allocation to either the IC or NIC group.

### 5.2.2 Materials

#### 5.2.2.1 Equipment.

The equipment used in this study included a child's play tent (height 130cm x length 100cm) with a modified cloth covering that allowed a silhouette to be projected on either side, a slide of a hand drawn monster-like silhouette, a 35/70 - 12 Var 10 carousel slide projector with a modified switch that permitted the projection light (and the silhouette) to be switched on and off without having to switch the projector's motor on and off, a CCD - V200E Video 8 Pro camera, and a basket of toys.

#### 5.2.2.2 Behavioural measures.

*Post-test interview:* Children's ability to differentiate fantasy from reality was sought from a structured interview that was developed to measure children's fantasy involvement in three areas: belief that an imaginative monster could be reflected in reality, daydreams, and scary thoughts. This post-test interview comprised 20 items, eight of which were incorporated from the CPFI (used in study three), one which was derived from Singer and Singer (1981), four of which were derived from Harris et al. (1991), and seven additional items. A copy of this interview is presented in Appendix D1.

The item from Singer and Singer (1981) was incorporated into the post-test interview without modification. This question was "Do you ever see make-believe things or pictures in your mind and think about them?". The four items from Harris et al. (1991) were incorporated into the interview in a modified form. The original

questions were: a) “And what did you think when you went to open the box?”, b) “Did you think there was nothing inside or did you think to yourself.” I wonder if there’s a nice, white, bunny rabbit (horrible, mean, black monster) inside”, and c) “Were you sure there was nothing inside the box or did you wonder whether there was a bunny (monster) inside?”. Each of these questions was reworded to suit the procedure of the present study. Thus, question a) was reworded to “What did you think when you went inside the tent?”, question b) was divided into two separate questions, “Did you think there might have been a monster inside the tent?” and “Did you think there may have been something else inside the tent?” and question c) was reworded to “What made you think that there was nothing inside the tent?”.

The three modified items from Harris et al. (1991) as well as the seven additional items were designed to obtain information regarding children’s belief that an imaginative monster could be reflected in reality. Of the seven additional items, one was specifically devised as an alternative question which was to be asked if the child did not want to enter the tent and three were specifically devised as probes which were to be asked if the child responded inappropriately to the question. The eight items from the CPFI and the item from Singer and Singer (1981) were designed to obtain information regarding children’s daydreams and scary thoughts.

### 5.2.3 Procedure

Prior to conducting the study, ethics approval was obtained from the Institutional Ethics Committee. Following this, parent permission forms were delivered to eight metropolitan primary schools and distributed by teachers to the parents of all children who were enrolled in kindergarten and grades one and two. These forms outlined the nature of the study, asked parents to indicate whether they

were willing to allow their child to participate in this, and the next study, and to indicate if their child had an imaginary companion. A contact phone number was provided and all parents were encouraged to call it if they had any queries regarding the study (see Appendix D2).

*Conducting the procedure:* The procedure was divided into six phases: introductory, control, pre-test, test, post-test, and debriefing. Two experimenters were involved in the procedure, the author who accompanied each child to and from the testing room and the experimenter who conducted the procedure.

The second, independent, experimenter was recruited to conduct the procedure because the author's previous research experience with children who had imaginary companions resulted in a strong impression regarding these children's ability to develop rapport with an adult. As children's ability to develop rapport formed the basis of the next study, there were concerns that the author would inadvertently bias the interaction. Thus, a second independent experimenter was recruited.

Although the second experimenter was aware that the study involved an investigation of children's imaginary companions, she was naïve to the aims and purposes of the study and did not know which children had imaginary companions and which did not. In addition, she was not aware of the author's subjective impressions regarding the ability of children with imaginary companions to develop rapport.

Because this experimenter was not familiar with the procedure, training regarding the protocols associated with conducting the experiment was undertaken one week prior to commencement of the study. During this training period, the experimenter was given written instructions and practical experience in conducting

the procedure (see Appendix D3). Incorporated within these written instructions was the request to write down the ease or difficulty with which rapport was developed with each child.

Approximately 10 children from each school were tested. Each child was tested individually during class time periods to minimise the possibility of children discussing the procedure with others. In order to further minimise this possibility, each child was asked during their escort back to the classroom not to spoil the surprise for other children who may be participating later.

#### 5.2.3.1 Introductory- warm-up phase.

On entering the testing room, the author introduced the child to the experimenter and then left the room. The experimenter then engaged the child in a brief conversation during which they were asked about their favourite TV shows, games and stories. This conversation was designed to promote rapport between the experimenter and the child. Following this warm-up stage, the procedural phases of the study began.

#### 5.2.3.2 Control phase.

In this phase the child was asked to retrieve the experimenter's writing pad from the play-tent. The tent was positioned approximately 40cm from the child. The side of the tent where the silhouette was to be projected was positioned directly in front of the child's line of vision. The tent opening was positioned to the child's side so that the interior of the tent could not be seen without entering it.

#### 5.2.3.3 Pre-test phase.

During this phase, the experimenter presented the following scenario to each child:

Well, I'm trying to write a story for children your age. Its about a monster that lives in a cave, a bit like that tent over there. In my story, this monster is so good at hiding that it might be near you in the cave but you wouldn't know unless it decided to let you see it The only problem is, I'm having trouble describing what it looks like and I need your help. Do you think you could help me describe the monster?

Throughout the description, the experimenter continually drew the child's attention to the tent with comments such as "Do you think the monster would fit in the tent?" or "Do you think the cave would be the same colour as the tent?"

#### 5.2.3.4 Test phase.

Following the description of the monster, the experimenter praised the child's effort and again drew her or his attention to the tent whilst projecting the monster-like silhouette onto it. The silhouette was projected for a maximum of three seconds. If the child indicated either verbally or non-verbally (e.g., looking around the room) that they had seen the silhouette, it was not projected again. If the child did not react to the projection at all the experimenter made two additional remarks. One of these remarks included the question "Are you okay?" that was devised to convey empathy and prompt the child to indicate if they had seen the silhouette. The second remark was the statement " Okay, you just looked a bit worried". This statement was devised both as a dismissive comment to explain the experimenter's question and to prompt the child to indicate if they had seen the silhouette. Although it is not indicated in the text, this statement was said in a very light-hearted tone of voice that would not lead the child into thinking they should be worried. If the child still did not indicate whether or not they had seen the silhouette, the experimenter projected the silhouette again.



After ensuring that the child had seen the projection, the experimenter thanked them for their description and asked if they would put her pad back in the tent. Children who did not wish to enter the tent did not have to do so.

#### 5.2.3.5 Post-test phase.

During this phase the experimenter told each child that whilst she was adding their description to her story, they could play with any of the toys in the room. The experimenter then made herself unavailable and moved away from the child but did not leave the room. After an interval of 90 seconds, and whilst the child was playing with the toys, the experimenter asked the child the post-test questions.

#### 5.2.3.6 Debriefing.

During the debriefing the appearance of the silhouette and the method by which it was projected was explained to each child. Care was taken to ensure that this explanation was appropriate to the child's level of understanding and that she or he understood what had been explained. Following this explanation, the experimenter invited each child to explore the tent with them and see that it was empty. Whilst in the tent the experimenter encouraged the child to think of pleasant uses for it such as birthday tea parties. The debriefing was concluded only when the experimenter was certain that the child understood that the tent had always been empty.

#### 5.2.3.7 Post procedure.

Following the debriefing, the experimenter invited the author to enter the testing room and escort the child back to the classroom. During this escort the IC status of each child was established from their responses to the question "Do you have a make-believe friend who you talk to and who goes places with you?" If the

child responded affirmatively to this question, the “see and touch” questions from Taylor et al. (1993) (see Appendix D4) were incorporated into the conversation to confirm the imaginary status of the friend.

### 5.3 Results

#### 5.3.1 Analyses

Transcriptions were made of each child’s responses in the control, test, and post-test phases of the procedure and used as the basis for content analysis (Weber, 1990). Frequency data from the subsequent categorical variables were cast into 2x2 ( $df = 1$ ) and larger ( $df > 1$ ) contingency tables and analysed using chi-square ( $\chi^2$ ) tests. Application of this test for frequencies in the contingency tables was undertaken according to the criteria specified in chapter four. The only exception in this application was the coefficient used to measure the strength of association between variables. Because the data were cast into contingency tables of varying sizes Cramer’s V ( $V$ ), rather than the Phi coefficient was used to measure the strength of association between variables (Diekhoff, 1992; Howell, 1987; Siegel & Castellan, 1988). An upper alpha level of .05 was used for all statistical tests with the limitation of interpretation stated in section 2.3.1.

##### 5.3.1.1 Coding.

*Children’s responses:* Children’s responses in each phase of the procedure were scored in terms of their verbal and non-verbal responses whilst: a) seeing the silhouette, b) approaching the tent, c) entering the tent, and d) playing with toys. Consideration of all children’s responses in each phase of the procedure resulted in a classification system that enabled non-verbal and verbal responses to be classified according to two major categories. That is non-verbal responses were categorised

according to action (e.g., reaction or no reaction) and verbal responses were categorised according to belief in the monster's presence (e.g., no comment, monster, or non-monster).

*Post-test interview:* Consideration of all responses given by the children resulted in a classification system that enabled responses to be classified according to four major categories. That is, responses were categorised according to belief in monster's presence (don't know, monster, or non-monster), confirmation (yes, no, or sometimes), composition (don't know, mythical, fictional, or realistic), and rationalisation (justification or no justification). Within each category a child's response could only be assigned to one of the subcategories. For example, a child's response to confirmation would be either "yes" or "no" or "sometimes".

The descriptive content of daydreams and scary thoughts was classified according to the type of detail that the child supplied. Descriptions were judged to have an unknown quality when the child could not provide any detail (e.g., "I forgot"), a mythical quality when the child described mythical items that belonged to a generic group of non-existent beings (e.g., fairies, monsters), a fictional quality when the child referred to specific fictional characters (e.g., cartoon characters), and a realistic quality when the child referred to beings that exist (e.g., pets). Additional details regarding the types of responses that were classified in each category are presented in the code book in Appendix D5.

#### 5.3.1.2 Reliability.

Reliability was established for all phases of the procedure by two independent judges. Both judges were postgraduate university students. One judge was a psychology postgraduate who was recruited through the psychology

department. The other judge was a nursing postgraduate who was recruited through child community health services.

Children's responses in each experimental phase were scored from video recordings. Each judge was provided with a code book (see Appendix D5) that provided sample definitions and protocols for scoring children's responses. Following explanations regarding each protocol, judges practiced coding the verbal and non-verbal responses of two children in each experimental phase.

Inter-rater agreement between the two judges who independently scored 10% of all the protocols was calculated using Cohen's kappa coefficient (Bakeman & Gottman, 1997). The inter-judge agreement for this study ranged from .70 for children's general response to the silhouette to .82 for scary thoughts. Any areas of disagreement were resolved through discussion.

### 5.3.2 Analyses of the Children's Reactions to the Silhouette

#### 5.3.2.1 Control phase.

It was originally intended to classify children's approach to the tent according to two categories, hesitation or no hesitation. However, as none of the children hesitated on their approach to the tent, an analysis on these data was not performed.

#### 5.3.2.2 Test phase.

*Responses to the silhouette:* Children's responses to the silhouette were measured according to two dimensions: their non-verbal responses which included a general response and physical reaction, and verbal responses which included spontaneous and prompted comments. These data are summarised in Table 5.1.

*General response:* Children's general response to the silhouette was classified according to two categories, no response or response. The number of ICs and NICs who generally responded to silhouette was not significantly different.

*Physical response:* Children's physical response to the silhouette was classified according to two categories, no movement or movement. Analysis of children's physical responses to the silhouette revealed significant differences between ICs and NICs. A significantly larger number of ICs than NICs physically moved in response to seeing the silhouette,  $\chi^2(1, n = 80) = 6.11, p < .01; V = .30$ .

*Spontaneous comments:* Children's spontaneous comments were classified according to three categories: no spontaneous comment, spontaneous non-monster comment, or spontaneous monster comment. The number of ICs and NICs who did not make any spontaneous comments was not significantly different.

*Prompt statements:* Children's prompt statements were classified according to three categories: no prompt comment, prompted non-monster comment, or prompted monster comment. Analysis of the statements that children made following prompting revealed significant differences between ICs and NICs. A significantly larger number of ICs than NICs stated that they thought they had seen a monster,  $\chi^2(2, n = 80) = 12.95, p < .01; V = .39$ .

Table 5.1

The Number of IC and NIC Children Who Responded Non-verbally and Verbally to the Silhouette

Response to the Silhouette	IC ( <u>n</u> = 40)	NIC ( <u>n</u> = 40)
<u>Non-verbal Response</u>		
<i>General response</i>		
No response	33	36
Response	7	4
<i>Physical response**</i>		
No movement	16	28
Movement	24	12
<u>Verbal Response</u>		
<i>Spontaneous comments</i>		
No spontaneous comment	22	27
Spontaneous non-monster comment	13	13
Spontaneous monster comment	5	0
<i>Prompt statements**</i>		
No prompt comment	18	23
Prompted non-monster	5	13
Prompted monster	17	4

\*\* $p < .01$ .

*Approach to the tent:* Children's non-verbal behaviour during their approach to the tent was classified according to three categories: no hesitation, hesitation, or does not approach. Children's verbal behaviour was measured according to whether their statements indicated no hesitation (e.g., "Can I have a look?"), hesitation ("Is it O. K. if I slip it under?"), or does not approach (e.g., "I don't want to"). However, as the number of children who did not approach the tent was low, these reactions were recoded to equal "hesitation" for the analysis. Each category of response is summarised in Table 5.2. The numbers of ICs and NICs who indicated either verbal or non-verbal no hesitation or hesitation were not significantly different.

Table 5.2

The Number of IC and NIC Children Who Demonstrated Hesitation or No Hesitation in Their Non-verbal and Verbal Approach to the Tent

Approach to the Tent	IC ( <u>n</u> = 40)	NIC ( <u>n</u> = 40)
<u>Non-verbal Behaviour</u>		
No hesitation	33	37
Hesitation	4	3
Does not approach	3	0
<u>Verbal Behaviour</u>		
No hesitation	34	38
Hesitation	3	2
Does not approach	3	0

*Behaviour at the tent:* Children's behaviour at the tent was measured on two dimensions: their non-verbal behaviour which included whether they entered or did not enter the tent, and their verbal behaviour which included whether they did not make any comment, made a non-monster comment, or a monster comment. These data are summarised in Table 5.3. The numbers of ICs and NICs who did not enter the tent or who made comments whilst at the tent were not significantly different.

Table 5.3

The Number of IC and NIC Children Who Entered and Made Some Comment at the Tent

Behaviour at the Tent	IC ( <u>n</u> = 40)	NIC ( <u>n</u> = 40)
<u>Non-verbal Behaviour</u>		
Enters	27	26
Does not enter	13	14
<u>Verbal Behaviour</u>		
No comment	24	31
Non-monster	8	7
Monster	8	2

5.3.2.3 Post-test phase.

*Play with toys:* Children’s interest in the tent during their play with the toys was measured on two dimensions: their non-verbal behaviour which included whether they looked intermittently at the tent or did not look intermittently at the tent, and their verbal behaviour which included whether they did not comment, made a non-monster comment, or made a monster comment. These data are summarised in Table 5.4. As the number of non-monster comments was low, these were considered indicative of a general lack of comment and recoded to equal “no comment” for the analysis. The number of ICs and NICs who did not comment or made a monster comment whilst playing with toys was not significantly different. However, a significantly larger number of ICs than NICs intermittently looked at the tent during play with the toys, Fisher’s exact test,  $p < .05$ .

Table 5.4

The Number of IC and NIC Children Who Demonstrated Interest in the Tent Whilst Playing with Toys

Play with Toys	IC ( <u>n</u> = 40)	NIC ( <u>n</u> = 40)
<u>Non-verbal Behaviour*</u>		
Looked intermittently	8	1
Did not look intermittently	32	39
<u>Verbal Behaviour</u>		
No comment	37	38
Non-monster	0	1
Monster	3	1

\* $p < .05$ .

*Post test interview:* Five questions were excluded from the analysis because they did not yield any additional information regarding children’s daydreams or belief that a monster was in the tent. This redundancy combined with consideration



of the effect that conducting a large number of chi-square tests has on the Type I error rate, resulted in the exclusion of these variables from the analysis (Siegel & Castellan, 1988). However, the summary data from each of these questions are presented in Table 5.5.

Table 5.5

Summary Data of IC and NIC Children's Responses to Questions that were Excluded from the Analysis

Question	IC ( <u>n</u> = 40)	NIC ( <u>n</u> = 40)
Q1A. What did you think when you went inside the tent?		
Monster	17	3
Non monster	2	25
Don't know	21	12
Q2. Did you think there was something inside the tent?		
Monster	1	4
Non monster	3	1
Don't know	0	0
Q3. What did you think was inside the tent?		
Monster	12	3
Non monster	2	4
Don't know	3	0
Q6B1. Can you describe them to me?		
Don't know	6	8
Realistic	1	2
Fictional	1	1
Mythical	0	1
Q6D. Can you see the picture in your head (daydreams) like you see me?		
Negative	7	12
Sometimes	0	2
Affirmative	29	15

Note. The number of responses to Q3 are based on the number of "affirmative" responses to Q2 which were not scored.

An additional feature of the post-test interview analysis that warrants explanation is that the number of responses that were analysed in this interview did not always sum to the number of subjects in each group (40). The reason for this disparity is the same as that explained in section 4.3.3. Some questions comprised a series where the response to the first question indicated whether subsequent questions should be asked. Thus, the number of responses in the first question in the series (e.g., Q6a in the series Q6a, Q6b, & Q6c) will sum to the number of subjects in each group (40); responses in the subsequent questions in the series will either sum to the number of “affirmative” or “sometimes” responses in the first question. The exception in this sequencing occurs in question four where the number of responses in Q4c and Q4d sum to the number of “affirmative” and “negative” responses in Q4a. The number of responses in Q4b is independent of the others in the series.

In addition, as the number of “sometimes” responses was low, it was considered indicative of an affirmative response and recoded to equal “yes” for the analysis. Similarly, as the number of “fictional” responses were low, they were considered indicative of a non-mythical response, recoded to equal “realistic” and both variables were renamed “non-mythical” for the analysis.

*Belief that a monster was in the tent:* The belief status of ICs and NICs is summarised in Table 5.6. A significantly larger number of ICs than NICs thought that there may have been a monster in the tent,  $\chi^2(1, n = 80) = 24.34, p < .001; \sqrt{V} = .58$ . However, the numbers of ICs and NICs who thought that the monster in the tent was similar to the one they described for the story, thought something else was

in the tent, and were unable to justify the reason for their belief that nothing else was in the tent were not significantly different.

Table 5.6

The Number of IC and NIC Children Who Indicated Belief in the Presence of a Monster

Question	IC ( <u>n</u> = 40)	NIC ( <u>n</u> = 40)
Q4A. Did you think there might have been a monster inside the tent?***		
Negative	7	30
Affirmative	33	10
Q4B. Did you think there may have been something else inside the tent?		
Negative	40	39
Affirmative	0	1
Q4C. Did you think the monster inside the tent was like the one you described to me for my story?		
Negative	2	1
Affirmative	31	9
Q4D. What made you think that there was nothing inside the tent?		
Justification	6	21
No justification	1	9

\*\*\**p* < .001.

*Daydreams:* The daydreaming activity of IC and NIC children is summarised in Table 5.7. A significantly larger number of ICs than NICs reported experiencing daydreams,  $\chi^2(1, n = 80) = 8.78, p < .01; V = .36$ . Of those ICs and NICs who reported daydreaming, the numbers of ICs and NICs reporting mythical, fictional, or realistic daydream content were not significantly different. However, a significantly larger number of ICs than NICs reported that their daydreams seemed so real that they could almost see and hear them in front of them,  $\chi^2(1, n = 65) = 9.64, p < .01; V = .42$ .

Table 5.7

The Number of IC and NIC Children Who Experienced Daydreams and Vivid Mental Imagery

Question	IC ( <u>n</u> = 40)	NIC ( <u>n</u> = 40)
Q5. Do you sometimes see pictures of things in your head during the day?***		
Negative	5	18
Sometimes	2	5
Affirmative	33	17
Q6A. Do you ever see make-believe things or pictures in your mind and think about them?		
Negative	4	11
Sometimes	1	5
Affirmative	35	24
Q6B. What kinds of pictures do you see?		
Don't know	8	12
Realistic	9	8
Fictional	4	2
Mythical	15	7
Q6C. Do the people and things that you picture in your head sometimes seem so real that you think you can almost see or hear them in front of you?***		
Negative	3	13
Sometimes	0	2
Affirmative	33	14

\*\*\* $p < .01$ .

*Scary thoughts:* The experience of scary thoughts reported by ICs and NICs is summarised in Table 5.8. As the number of “don’t know” responses was low, these were considered indicative of a non-mythical response and recoded to equal “non-mythical” for the analysis. A significantly larger number of ICs than NICs reported that they experienced scary thoughts,  $\chi^2(1, n = 80) = 4.78, p < .05; V = .27$ . Of those ICs and NICs who reported experiencing scary thoughts, a significantly larger number of ICs than NICs reported scary thoughts with mythical content,  $\chi^2(1, n = 46) = 8.19, p < .01; V = .47$ . However, the number of ICs and

NICs who reported that they tried hard not think about scary things was not significantly different.

Table 5.8

The Number of IC and NIC Children Who Reported Scary Thoughts

Question	IC ( <u>n</u> = 40)	NIC ( <u>n</u> = 40)
Q7A. Do you sometimes get real scared because of something that you think about?*		
Negative	12	22
Sometimes	1	2
Affirmative	27	16
Q7B. What kinds of things do you think about that scare you?*		
Don't know	2	4
Realistic	7	11
Fictional	1	0
Mythical	18	3
Q7C. Do you try really hard not to think about these scary things?		
Negative	2	0
Sometimes	1	0
Affirmative	25	18

\*p < .05. \*\*p < .01.

5.4 Discussion

The main aim of this study was to investigate whether the presence of an imaginary companion signals an increased predisposition to fantasy that weakens children's ability to maintain the boundary between fantasy and reality. In addition, the study sought to examine whether addressing the conditions of previous research would promote understanding regarding the ability of children with imaginary companions to differentiate fantasy from reality. These conditions included requesting children to imagine a monster themselves, the provision of toys in the testing room, the presentation of a counterfactual event, examination of children's

verbal and non-verbal responses, eliminating the possibility of shared pretense, and combining practical and imaginative activity in the procedure.

The present study found differences between children with and without imaginary companions in their non-verbal and verbal responses to seeing the silhouette, their non-verbal interest in the tent whilst playing with the toys, and belief that a monster was in the tent.

Children with imaginary companions were more often rated as physically responding to the silhouette and as looking intermittently at the tent whilst playing with toys than children without companions. In addition, children with imaginary companions more frequently reported following prompting that they thought they had seen a monster in the tent. This belief was confirmed in the post-test interview where children with imaginary companions more often stated that they thought the monster had been in the tent. These findings suggest that children with imaginary companions entertain the possibility that imaginary representations may be reflected in reality.

However, the present study did not find any evidence to suggest that children with and without imaginary companions differed in the extent to which they believed an imaginary representation could be reflected in reality. If a child believed that a monster was in the tent, then irrespective of whether she or he had an imaginary companion, the majority of these children also stated that the monster in the tent was similar to the one that they had described. In other words, the predominant influence on these children's responses is related to their belief system and not the presence of the imaginary companion. This finding suggests that the experience of fantasy-reality confusion cannot be attributed solely to the presence of the imaginary companion. Consideration of this finding and Johnson and Harris's

(1994) view that imaginative activity may prompt credulous children to revert to latent magical beliefs to explain counterfactual events, suggests that individual differences in credulity (the belief that imaginary representations may be reflected in reality) may also account for the fantasy-reality confusion observed in this study.

Additional factors that may have influenced the results of this study involve the experimental conditions under which the study was conducted. The observed differences in children's behavioural responses and beliefs regarding the reality of the silhouette suggest that the presentation of a counterfactual event overwhelmed the controlled aspects of imaginative activity. According to current theoretical opinion (e.g., Golomb & Galasso, 1995; Woolley, 1995) this presentation, combined with measures such as eliminating the words make-believe and pretend from all but the last phase of the study and providing clear indications that the imaginative episode was at an end, reduces the possibility of shared pretense with the experimenter. Thus, it may be concluded that the experimental conditions adopted in the present study "tapped" the predominant belief system of children rather than their desire to engage in shared pretense with the experimenter.

In addition, the provision of toys in the testing room suggests that children's interest in the tent was not due to boredom, but reflected a belief that a monster was in the tent. However, the tendency for these children to continue playing with the toys regardless of their belief, supports Golomb and Galasso's (1995) claim that previous research findings (e.g., Harris et al., 1991) may have been influenced by the lack of stimulation in the testing room.

The present study also found differences regarding the involvement of children with and without imaginary companions in daydreams and vivid mental imagery that are consistent with previous claims (e.g., Singer, 1961), as well as the

research findings reported in chapter four of this thesis. Children with these companions more often reported that they daydreamed, experienced mythical scary image content, and felt that the people and things they daydreamed about seemed so real they could almost see them in front of them. Consideration of these findings and Singer's (1973, 1977) claim that mental imagery ability is related to fantasy predisposition suggests that children with imaginary companions have a predisposition to fantasy.

In summary, these findings suggest that children with imaginary companions have an increased predisposition to fantasy and a credulous attitude toward counterfactual events that results in fantasy-reality confusion. In addition, addressing the methodological issues that have been raised by previous research (e.g., Harris et al., 1991; Taylor et al., 1993) has provided some clarity with regard to the interpretation of the results obtained in this study

However, the lack of empirical investigations into the extent to which children with imaginary companions can maintain the fantasy-reality boundary necessitates caution in the interpretation of both the findings of the present study and the influence of the experimental conditions on these findings. In view of the current emphasis in the child's theory of mind literature regarding the extent to which children can maintain the fantasy-reality boundary, future research should continue to investigate the relationship between the presence of imaginary companions and the existence of fantasy-reality confusion ensuring the utilisation of an appropriate experimental situation.



## CHAPTER 6

### STUDY FIVE

#### 6.1 Introduction

As indicated in section 1.2 and 1.3, children with imaginary companions have been reported to demonstrate enhanced verbal skills and an increased level of social skill and cooperation with adults and children compared to children without these companions (e.g., Ames & Learned, 1946; Manosevitz et al., 1973; Singer & Singer, 1981).

Somers and Yawkey (1984) contend that children with imaginary companions demonstrate these characteristics because their play with the companion increases their sensitivity to others. These authors propose that this sensitivity develops from practice in three major areas. First, play with the companion allows children to model and practice social routines and functions such as preparing and eating a meal. Within this social context, children share comments, thoughts, and statements with the imaginary companion. Second, children's treatment of the imaginary companion as a separate individual promotes an understanding of themselves and others as these children's projection of attitudes, feelings, and beliefs onto another allows them to consider a perspective other than their own. Finally, children learn to develop relationships with others as children's treatment of the companion as a separate entity allows them to practice their feelings without becoming directly involved. Through the practice of anticipating

and expressing feelings children's understanding of their own and other's emotions are enhanced.

Research findings by Mauro (1990) provide partial substantiation for this view. This investigator examined the ability of children with imaginary companions to take the emotional perspective of another person. Children between 4 years and 7 years of age were shown pictures of a happy face, a sad face, and an angry face and asked to identify the emotion in each picture. Following this identification, the experimenter read eight stories to each child: four of which involved the child and the experimenter, and the child and the imaginary companion experiencing the same emotions, and four of which involved the child and the experimenter, and the child and the imaginary companion experiencing different emotions.

After the presentation of each story, each child was asked to point to the picture that represented the feelings of each character in the story. The results indicated that children with imaginary companions were able to accurately identify the emotional perspective of both the imaginary companion and the experimenter. Mauro (1990) concluded that children with imaginary companions view their companion as a separate social entity and consider it to have a perspective that differs from their own.

However, one problem with this study is that Mauro did not examine the ability of children without imaginary companions to identify the emotional perspective of others. Thus, conclusions regarding the effect that the practice of taking the perspective of a separate pretend entity has on the social sensitivity of children with imaginary companions cannot be made. Nevertheless, these findings suggest that through play with the imaginary companion children practice key elements of social interaction such as sensitivity.

Another key element that is practiced through play with the imaginary companion is language use. According to Singer and Singer (1976) children's practice of thinking out loud during imaginative play provides them with feedback regarding previously learned words and allows them to practice and refine their use of the conventions associated with conversation. This view suggests that as an aspect of fantasy play, the imaginary companion would provide children with increased opportunities to practice their verbal skills.

Singer and Singer (1981) found evidence for this view in their investigation of the language use of children with and without imaginary companions. As indicated in section 1.8, these authors found that children with imaginary companions produced an increased number of words and longer utterances than children without companions. Singer and Singer interpreted these findings as evidence that children with imaginary companions have enhanced verbal skills compared to children without these companions.

In summary, there are suggestions in the literature that children's play with the imaginary companion has a positive effect on their behaviour and interactions with others. These children's sustained practice of adopting the perspective of a pretend other promotes a more refined understanding of social actions and relationships, and provides an opportunity to refine their verbal skills within a social context. This refinement results in an increased ability to anticipate and understand their own and other's feelings in particular situations and to regulate their behaviour accordingly (Singer & Singer, 1976, 1981; Somers & Yawkey, 1984).

The enhanced interaction skills of children with imaginary companions has also been noticeable in this series of studies. Throughout studies two and three the author received the strong impression that rapport was easier to establish with

children who had imaginary companions compared to children who did not have these companions. Consideration of this subjective impression combined with previous research findings regarding these children's enhanced social and verbal skills (e.g., Manosevitz et al., 1973; Singer & Singer, 1981) resulted in an exploration of these children's ability to build rapport with the experimenter in study four.

Thus, the main aim of this study was to investigate the perceived ability of children with and without imaginary companions to develop rapport. Specifically, the study sought to investigate: a) the subjective impressions of an independent judge regarding the ability of children with and without imaginary companions to develop rapport, and b) whether the language use of children with and without imaginary companions contributed to this subjective impression.

It was expected that examination of the subjective impressions of an independent judge would indicate further an association between the presence of imaginary companions and children's ability to develop rapport. It was also expected that the presence of imaginary companions would be associated with children's use of language which in turn, would contribute to their ability to develop rapport.

## 6.2 Method

### 6.2.1 Participants

The participants were 40 children with imaginary companions (IC; M age = 5 years and 4 months; range = 4 years and 0 months to 7 years and 5 months) and 40 children without imaginary companions (NIC; M age = 5 years and 4 months;

range 4 years and 0 months to 7 years and 11 months) who had participated in study four. There were 24 girls and 16 boys in each of the IC and NIC groups.

### 6.2.2 Procedure

*Rapport:* During work on study four, the experimenter was asked to provide written subjective impressions regarding the ease or difficulty with which rapport was developed between themselves and the 80 participants who formed the sample in study four. These impressions were noted for each child individually and written down immediately following her or his departure from the testing room. Children's ability to develop rapport was then analysed from these written subjective impressions.

*Language:* The recorded verbal responses of the 80 participants who formed the sample in study four were transcribed verbatim and analysed for linguistic structure.

#### 6.2.2.1 Rapport - definitions.

The development of rapport was classified as either easy or difficult. It was classified as "easy" if the independent experimenter had written that the child was either easy to talk to or did not have to be continually prompted to speak. It was classified as "difficult" if the independent experimenter had written that the child was either difficult to talk to or required continual prompting to speak.

#### 6.2.2.2 Language variables - coding.

*Compound sentences:* These were classified according to four categories. These categories included the child's use of: a) free standing conjuncts only, where the coordinator began the sentence (e.g., "But there's a monster in there"); b) conjuncts 2 only, where the sentence included one coordinator (e.g., "He couldn't

be too big or he couldn't fit in there"); c) conjuncts 3 or more only, where the sentence included two or more coordinators (e.g., "It had a rocking chair and a light and I was thinking about that but then I suddenly said I'm frightened by bears so I wouldn't do that and I've decided to write about a horse"); and d) both free standing and conjuncts 2 or more where the coordinator began the sentence and included one or more additional coordinators (e.g., "And he's camouflaged and he has big eyes").

*Complex sentences:* These were classified according to three categories that included the child's use of: a) an embedded clause only (e.g., "I thought there was a monster in there"); b) a free standing clause only, where the subordinating conjunction began the sentence (e.g., "Because I lifted up the tent and looked in there"); and c) both free standing and embedded clauses (e.g., "Cause when I went in to get the pad there was nothing and I knew there was nothing except for the pad").

*Modals:* Modals were defined as a grammatical main clause in which the speaker expressed attitudes or opinions (Palmer, 1986) and were classified according to four categories specified in Wells (1985). These classifications were: a) Constraint modals that indicate constraints upon an individual's ability to act (e.g., "I can't remember"), b) Likelihood modals that indicate the probability of an event being actualised or true (e.g., "He'd be dead when I punched him"), c) Inference modals, where the individual infers the probability of an event from the available information (e.g., "Probably the monster!"), and d) Performative modals that indicate actions (e.g., "I can see changes in there!").

*"And" as the coordinator:* Children's use of *and* was classified according to three categories. These categories included the child's use of: a) free standing

*and*, where it began the sentence and was used as an indicator that the child had not finished speaking (e.g., “And he has a sword.”); b) conjuncts 2, where the sentence included one *and* (e.g., “He’s a pink monster and that’s all.”); and c) conjuncts 3 or more, where the sentence included two or more *ands* (e.g., “They’ve got sharp teeth and it was white and it’s like a big monster and so you can’t touch it....”).

### 6.3 Results

The analyses were conducted in three stages. First, the subjective impressions of the independent judge were examined for differences in the ability of children with and without imaginary companions to develop rapport. Second, the recorded transcripts were examined by two language experts to ascertain whether the IC status of children could be identified from the transcripts. Finally, dependent on the language experts findings, the language variables on which children with and without imaginary companions appeared to differ were examined in a series of statistical analyses

#### 6.3.1 Exploratory Analyses

*Rapport*: The written subjective impressions of the independent experimenter regarding each child’s ability to develop rapport were classified according to two categories, easy or difficult. These data are summarised in Table 6.1. Frequency data from this categorical variable was cast into a 2x2 ( $df = 1$ ) contingency table and analysed using a chi-square ( $\chi^2$ ) test. This analysis revealed that a significantly larger number of IC than NIC children were reported as being easy to develop rapport with,  $\chi^2(1, n = 80) = 4.45, p < .05; \phi = .26$ .

Table 6.1

The Number of IC and NIC Children Who were Considered Easy or Difficult to Develop Rapport with

Category	IC ( <u>n</u> = 40)	NIC ( <u>n</u> = 40)
<u>Rapport*</u>		
Easy	31	19
Difficult	9	21

\* $p < .05$ .

*Language:* This exploratory analysis involved the examination of 30 randomly selected transcripts (15 IC and 15 NIC) by two language experts who were unaware of each child's IC status. On the basis of the language used, one expert correctly classified 29 of the 30 children as belonging to either the IC or NIC group, and the second expert correctly classified 28 of the 30 children as belonging to either the IC or NIC group.

During this examination, the second language expert also investigated whether there were any differences in the categories of language used by children who had been classified as IC or NIC on the basis of their transcribed responses. This examination revealed that within this sub-sample of transcripts children in the IC group used more types of modals, more complex sentence structure, and *and* as the conjunction compared to children in the NIC group.

### 6.3.2 Analyses

Frequency data from each linguistic category were cast in to 2x2 ( $df = 1$ ) contingency tables and analysed using chi-square ( $\chi^2$ ) tests which were corrected for continuity to improve accuracy. Fisher exact probability tests were performed when the sample size ranged between 20 and 40 and expected frequencies were less



than five. Because the analysis was conducted using 2x2 contingency tables, the Phi coefficient ( $\phi$ ) was used to measure the strength of association between variables (Diekhoff, 1992; Howell, 1987; Siegel & Castellan, 1988). An upper alpha level of .05 was used for all statistical tests with the limitation of interpretation used in section 2.3.1.

Age effects were excluded from the analyses. There are two reasons that account for this exclusion. First, the sole effects of IC status on language was desired. Second, as research findings indicate that children from the age of 3½ years include two or more clauses and modal auxiliaries in a substantial number of their utterances (Ingram, 1989; Wells, 1985) the current analyses were not expected to yield any major age differences.

#### 6.3.2.1 Reliability.

Reliability was established for all responses in each category of language by three independent judges. These judges were recruited through university psychology departments. Two of the judges were psychology postgraduates and the third judge was an expert in psycholinguistics.

Each judge was provided with a coding guide (see Appendix E1) that provided sample definitions and protocols for scoring children's responses. Following explanations regarding each protocol, judges scored two sample transcripts.

Inter-judge agreement between the three judges who independently scored 10% of all the protocols was calculated according to Cohen's kappa coefficient (Bakeman & Gottman, 1997). This agreement was calculated as .72 for sentence complexity with areas of disagreement resolved through discussion, and 1.0 for modal types and categories of *and*.

### 6.3.2.2 Compound sentence structure.

Children's use of compound sentences structure was classified according to whether they did or did not use free standing sentences only, conjuncts 2 only, conjuncts 3 or more only, and free standing and conjuncts 2 or more. These data are presented in Table 6.2. Significantly larger numbers of IC than NIC children used free standing sentences,  $\chi^2(1, n = 80) = 7.58, p < .01; \phi = .33$ , and sentences with 3 or more conjuncts,  $\chi^2(1, n = 80) = 9.76, p < .01; \phi = .38$ . In addition, although the number of IC and NIC children who used sentences with 2 conjuncts was not significantly different, it did approach statistical significance,  $\chi^2(1, n = 80) = 3.07, p = .08; \phi = .22$ .

Table 6.2

#### The Number of IC and NIC Children Who Used Each Category of Compound Sentence Structure

Category	IC ( <u>n</u> = 40)	NIC ( <u>n</u> = 40)
<u>Free Standing**</u>		
Yes	22	9
No	18	31
<u>Conjuncts 2</u>		
Yes	15	7
No	25	33
<u>Conjuncts 3 or More**</u>		
Yes	18	2
No	22	38
<u>Free Standing and Conjuncts 2 or More</u>		
Yes	8	3
No	32	37

\*\* $p < .01$ .

### 6.3.2.3 Complex sentence structure.

Children's use of complex sentences structure was classified according to whether they did or did not use free standing clauses only, embedded clauses only, and free standing and embedded clauses. These data are presented in Table 6.3. A significantly larger number of IC than NIC children used embedded clauses,

$$\chi^2(1, n = 80) = 6.11, p < .05; \phi = .30.$$

Table 6.3

#### The Number of IC and NIC Children Who Used Each Category of Complex Sentence Structure

Category	IC ( <u>n</u> = 40)	NIC ( <u>n</u> = 40)
<u>Free Standing</u>		
Yes	5	3
No	35	37
<u>Embedded Clause*</u>		
Yes	31	18
No	9	22
<u>Free Standing and Embedded Clause</u>		
Yes	14	10
No	26	30

\* $p < .05$ .

### 6.3.2.4 Modals.

Children's use of modals was classified according to whether they did or did not use constraint, likelihood, inference, and performative modals. These data are presented in Table 6.4. The numbers of IC and NIC children who used constraint and likelihood modals were not significantly different. However, significantly larger numbers of IC than NIC children used inference,  $\chi^2(1, n = 80) = 4.45, p < .05; \phi = .26$ , and performative modals,  $\chi^2(1, n = 80) = 4.61, p < .05; \phi = .27$ .

Table 6.4

The Number of IC and NIC Children Who Used Each Modal Type

Modal Type	IC ( <u>n</u> = 40)	NIC ( <u>n</u> = 40)
<u>Constraint</u>		
Yes	9	11
No	31	29
<u>Likelihood</u>		
Yes	9	9
No	31	31
<u>Inference*</u>		
Yes	19	9
No	21	31
<u>Performative*</u>		
Yes	18	8
No	22	32

\*  $p < .05$ .6.3.2.5 “And” as coordinator.

Consideration of research findings by Peterson and McCabe (1988) that children’s use of *and* is indicative of mature language use resulted in the decision to analyse children’s use of *and* separately from their general use of coordinators (*but*, *and*, *or*, or *nor*) in compound sentences.

Children’s use of each category of *and* was classified according to whether they did or did not use free standing *and*, conjuncts 2, and conjuncts 3 or more. These data are presented in Table 6.5. Significantly larger numbers of IC than NIC children used free standing *and*,  $\chi^2(1, n = 80) = 4.32, p < .05; \phi = .26$ , conjuncts 2,  $\chi^2(1, n = 80) = 6.30, p < .05; \phi = .31$ , and conjuncts 3 or more,  $\chi^2(1, n = 80) = 5.88, p < .05; \phi = .30$ .

Table 6.5  
The Number of IC and NIC Children Who Used Each Type of AND

AND Type	IC ( <u>n</u> = 40)	NIC ( <u>n</u> = 40)
<u>Free standing*</u>		
Yes	20	10
No	20	30
<u>Conjuncts 2*</u>		
Yes	22	10
No	18	30
<u>Conjuncts 3 or More*</u>		
Yes	11	2
No	29	38

\*  $p < .05$

6.4 Discussion

The main aim of this investigation was to explore whether children with and without imaginary companions differed in their ability to develop rapport with an adult. The study also explored the possibility that children’s use of specific components of language such as compound and complex sentence structure, types of modals, and *and* as a conjunction contributed to this perceived ability.

The findings of the present study indicate differences between children with and without imaginary companions in their ability to relate to an adult that are consistent with previous research findings (e.g., Manosevitz et al., 1973). Children with imaginary companions were more frequently perceived as easier to develop rapport with than children without companions.

The study also found differences between children with and without imaginary companions in their use of compound and complex sentence structure, inference and performative modals, and *and* as the conjunction that have not been

reported previously. As these specific components of language have not been investigated in previous imaginary companion research, the results of the present study will be interpreted according to relevant findings in child language development.

Children with imaginary companions more frequently used embedded clauses that included the use of subordinating conjunctions in either a temporal sequence (e.g., when I...) or reasoning sequence (e.g., because it...) than children without companions. According to previous research findings (e.g., Short-Meyerson & Abbeduto, 1997; Silva, 1984) children's ability to communicate a temporal sequence and reason about the thoughts and knowledge of others is associated with the maturation of social-cognitive skills that are not necessarily context dependent.

In addition, children with imaginary companions more frequently used compound sentences that either began with a coordinating conjunction or contained three or more coordinators within it. This finding suggests that children with imaginary companions are engaging in sustained connected conversation where the statements that they make are logically related to the statements made by another person until the topic of conversation is changed (Gottman, 1983). As this type of communication has been associated with children's ability to understand the thoughts and feelings of others and regulate their interactions (Slomkowski & Dunn, 1996), the findings of the present study indicate that children with imaginary companions have enhanced social-cognitive skills compared to children without companions.

The more frequent use of *and* as a method of beginning and combining sentences by children with imaginary companions in this study also suggests social-

cognitive maturity. According to Peterson and McCabe (1988) this pragmatic use of the word *and* is characteristic of older children (9-years-old) who use it to indicate the continuation of their conversational turn and to connect thematically related sentences. Consideration of these research findings, the younger age range of the sample in the present study, and the findings of the present study suggest that children with imaginary companions are using forms of connected communication that are indicative of more mature language use.

This study also found that children with imaginary companions more frequently used inference and performative modals than children without these companions. As research findings by Wells (1985) indicate that performative modals occur in the language of 48% of 4-year-olds and inference modals do not occur at all in the language of children younger than 5-years-old, the findings of the present study suggest that children with imaginary companions use more developmentally advanced modals compared to children without imaginary companions.

In summary, the findings of the present study indicate that children with imaginary companions were perceived as easier to relate to than children without companions. Investigation of the language used by children with and without these companions suggest that language is a contributing factor in this perception. The use of more mature language by children with these companions results in coordinated interactions that promote the development of rapport between these children and another conversationalist.

The reason that children with imaginary companions use more mature language can only be speculated upon. However, the findings of the present study combined with previous research findings (e.g., Manosevitz et al., 1973; Singer &

Singer, 1981) that indicate these children have enhanced verbal skills suggest that these children's interaction with the companion is an influential factor in the development of these skills. The sustained practice of viewing the companion as a separate entity with different thoughts and feelings promotes the development of sensitivity and enhances these children's ability to regulate interactions, whilst conversing with the companion in a social context is likely to promote the development of verbal skills and the conventions associated with conversation.

Overall, the findings of the present study combined with speculation regarding the positive influence of the imaginary companion on children's verbal and social skills, suggests that future research should investigate further the relationship between children's verbal skills, their ability to consider a perspective other than their own, and the presence of imaginary companions.



## CHAPTER 7

### DISCUSSION

The main aim of this series of studies was to incorporate a systematic investigation of the role of the imaginary companion in children's emotional and cognitive development within the current developmental framework. Overall, the findings of this series of studies indicate that there is relatively little difference between children with and without imaginary companions. Of the significant differences that were found between these two groups of children, none of these was related to negative effects on children's behaviour. Indeed, the presence of the imaginary companion was found to be positively associated with childhood behaviour as children with these companions demonstrated enhanced social-verbal skills, increased engagement in fantasy play, increased predisposition to fantasy, and indications of emotional control compared to children without companions. In addition, children with imaginary companions were more often reported to be firstborns and to be very imaginative.

These findings present a picture of children with imaginary companions that is very different from early research findings (e.g., Svendsen, 1934; Vostrovsky, 1895) which portrayed these children as nervous and somewhat inadequate. The results from this series of studies presents a profile of these children that supports more recent research findings (e.g., Manosevitz et al., 1973; Mauro, 1990; Singer & Singer, 1981) of socially accomplished children who engage in sustained interaction with the companion.

Although findings from the present series of studies support previous research findings (Manosevitz et al., 1973) that one function of the imaginary companion may be to ameliorate the loneliness of a child who does not have any siblings close in age, additional questions remain regarding the reason that some children experience these companions and others do not. What are the theoretical underpinnings regarding the functions of these companions? In order to answer this question, the presence of the imaginary companion was examined with regard to three major theoretical perspectives regarding children's involvement in fantasy play: cognitive-affective theory, children's understanding of the fantasy-reality distinction, and children's development of sensitivity which allows them to understand another person's perspective.

Cognitive-affective theory suggests that children's involvement in fantasy (as indicated by the presence of the imaginary companion) functions to promote emotional and cognitive growth by reducing anxiety and creating a positive atmosphere for exploration (Singer & Singer, 1990). Theories regarding children's understanding of the fantasy-reality distinction suggest that the presence of the imaginary companion may signal differences in children's credulity and ability to maintain the boundary between fantasy and reality (Johnson & Harris, 1994), whilst these children's enhanced ability to understand others suggests that imaginary companions may assist in the development of these children's sensitivity and ability develop a perspective other than their own (Somers & Yawkey, 1984). Thus, it could be argued that collectively these theoretical viewpoints suggest that children with imaginary companions experience an increased sensitivity to environmental events. As a consequence of this sensitivity, the imaginary companion is created.

This suggestion received support in the present series of studies where children with these companions were found to experience anxiety associated with sensitivity to the environment and other's opinions, were sensitised to revert to latent magical beliefs, and demonstrated an increased understanding of others as indicated by their perceived enhanced ability to develop rapport. How can these findings be explained?

One explanation may rest with these children's predisposition to fantasy. Children with imaginary companions reported that they experienced images that were so real the people and places almost seemed as though they were in the room with them. This ability to experience vivid imagery could have a threefold effect. First, it could increase these children's ability to experience unpleasant vivid images which would create anxiety, second it could increase these children's level of credulity, and third it could provide unlimited opportunities to practice social-cognitive skills.

*Vivid imagery increases these children's ability to experience unpleasant mental images:* The ability to experience unpleasant vivid images which create anxiety may not only make these children more sensitive to anxiety provoking environmental events, but their enhanced imagery ability may also increase the longevity of the experience. In other words, these children may hear or see something and once translated into a mental image it is harder to dispel because of its vividness. As a consequence of experiencing these enduring vivid images, children create an imaginary entity to regulate them. The creation of this companion allows children to deal with their anxieties from a safe emotional distance and creates a buffer through which they experience sensitivity related anxieties to environmental events but in a secondary way. This explanation is drawn from

Somers and Yawkey's (1984) proposition that through play with the companion children can experience emotional events without becoming directly involved.

As a consequence of the type of emotional distancing that is provided by play with the imaginary companion, children are offered opportunities to develop strategies that assist them to deal with daily stresses. Through play with the companion, these children are able to create scenarios which emulate the issues that confront them. However, as these issues are created in the positively reinforcing atmosphere of pretense with their companion, children can comfortably explore different solutions until one is found that adequately solves the problem. This method of problem solving not only teaches children that they can use their mental resources to overcome difficulties, but also increases their self-esteem, persistence, and self-confidence as they begin to recognise that they can effectively control their emotional responses to potentially difficult situations.

*Vivid imagery increases these children's level of credulity:* This explanation is based on Johnson and Harris's (1994) assertion that some children are more credulous than others. It could be argued that the combination of imagery ability and inwardly directed attitude (as indicated by elevated scores on worry-oversensitivity anxiety) not only increases children's sensitivity to believe in the possibility of magical events, but also results in the creation of the imaginary companion. This explanation suggests that credulity alone does not result in the presence of the imaginary companion, but that the companion is created from the combination of imagery ability and an inwardly directed attitude. Thus, children can be credulous without experiencing an imaginary companion. This rationale explains the results of the fourth study where children other than those with imaginary companions thought that there was a monster in the tent.

In addition, the presence of the imaginary companion constantly reinforces these children's levels of credulity as they constantly interact with the imagined entity. Thus, it becomes a self-perpetuating cycle where children with imaginary companions are constantly engaged in imaginative activity that reinforces consideration of magical explanations rather than explanations based on scientific knowledge. This process may sensitise these children to use magical beliefs rather than scientific knowledge to explain highly unexpected events.

These children's constant engagement in imaginative activity with the companion may also promote the development of original ideas that expand less conventional modes of thought. Through play with the imaginary companion, these children are provided with the opportunity to explore their experiences and knowledge in unconventional ways. This exploration not only promotes novel experiences, but may also promote a belief in magical outcomes and increased levels of credulity regarding unexpected events. Thus, children with imaginary companions may develop and refine attitudes that reflect a belief in the possibility that counterfactual events could happen. These children's enhanced imagery ability combined with consideration of unconventional ideas add depth and richness to their imaginative development, whilst play with the companion further extends their imaginative activity. Support for this supposition was found in this series of studies where children with imaginary companions were reported to be more imaginative than children without companions.

The family environment may also influence children's interaction with the imaginary companion and sensitivity to magical beliefs. Parents who believe that their child's imaginative activity has a positive effect on childhood development may provide an atmosphere that promotes aspects of imaginative growth such as

play with an imaginary companion and consideration of magical, rather than factual outcomes. In this atmosphere, children may feel that they can interact freely and openly with the companion and explore a wide variety of magical beliefs.

*Vivid imagery provides unlimited opportunities to practice social-cognitive skills:* This explanation borrows from Somers and Yawkey's (1984) proposition that through creating an imagined entity, children have unlimited opportunities to practice their social and cognitive skills in a way that allows them to view the perspective of another person. As a consequence of this sustained practice, these children develop sensitivity to others. Additional to this explanation though is these children's ability to imagine an entity that appears *real*.

As all children talk to themselves and incorporate elements of reality during pretend play (Singer, 1973), children's interaction with a pretend friend would not seem to provide them with more opportunities to practice their social skills than children who do not have an imaginary companion. However, it is the reality with which these children perceive their images (including the imaginary companion) that may promote a more realistic practice of sensitivity to others. As the enhanced imagery ability of children with imaginary companions allows them to practice social skills with a pretend entity that they can visualise as real, it promotes children's synthesis and use of knowledge more strictly according to the rules of the external world. For example, if the imaginary companion is annoyed, then the enhanced image of the companion as viewed by the child necessitates that she or he deal with the companion's annoyance in a way that realistically emulates the external world. This does not mean that the child does not understand that the interactions and emotions are pretend and cannot determine the rules of the game, but rather that play with the companion is similar to experiences in virtual reality

games. During these games individuals know that the scenarios are not real, but the vividness of the images and the necessity to interact with these images to continue the game, necessitates the use of real world actions and interactions. Thus, the enhanced imagery ability of children with imaginary companions intensifies the realism with which children treat both the pretend situation and the imaginary companion.

These children's enhanced imagery ability may also increase the perceived reality of pretend play situations by promoting the development of symbolic thought processes. This proposition is derived from Singer's (1973) assertion that imaginative play reflects the continual private rehearsal process that children use to gain control over their symbolic representation system. Interacting in pretend social situations requires children to conceptualise a progression of events according to the social conventions associated with entering a social interaction, continuing the interaction, and ending the interaction. As the imagery ability of children with imaginary companions suggests that these children have an enhanced ability to form, recombine, and store mental images, these children's conceptualisation of social interactions may have a realism that more precisely reflects those which occur in the external world. In addition, these children's treatment of the imaginary companion as real and consequent assignment of roles and reactions to it during pretend situations would promote a perspective that extends beyond the effect that these interactions would have on themselves. Examples of extended perspectives may include the effect that these interactions have on a separate entity, as well as the effect that these interactions have on the relationship between a separate entity (i.e., the imaginary companion) and the children themselves.

As this view of social interactions is a more realistic reflection of the social interactions that occur in the external world, children are required to act and react in the pretend situation according to external world conventions if they wish to pursue the game to its ultimate conclusion. Thus, these children's imagery ability enhances the realism of the pretend situation, and this in turn refines their knowledge regarding the accuracy with which mental representations of events reflect external world events.

Earlier, children with imaginary companions were described as having an increased sensitivity to the environment that was attributed to their enhanced imagery ability. Speculation regarding this finding raises a number of questions for future research. One such question is whether children with imaginary companions differ in their imagery ability. For example, do children who create imaginary companions differ in their ability to visualise details regarding the characteristics of these companions? Moreover, if the imagery ability of children with imaginary companions does differ, would this result in differences in sensitivity to environmental events. Although it is recognised that children create imaginary companions for a number of reasons (e.g., anxiety reduction, alleviation of loneliness) this line of speculation suggests that individual differences in children with imaginary companions may ensue from one central point, namely imagery ability. As imagery ability has been proposed to influence these children's sensitivity to environmental events, differences in this ability may also effect other behavioural outcomes such as credulity, experiences of anxiety, and the ability to view others' perspectives.

Consideration of each of these behavioural outcomes also suggests that sensitivity to environmental events may explain the reason that some children have



imaginary companions and some do not. It also raises the question of whether the sensitivity of children with imaginary companions persists beyond the school years into adolescence. For example, does the increased sensitivity of children with imaginary companions result in the development of more effective strategies for dealing with daily stresses when these children are older and the companion is gone? Whatever the outcome of this research, sensitivity to environmental events may provide a method of conceptualising the behavioural characteristics associated with the presence of an imaginary companion and provide a focal point for investigating whether the emotional and cognitive effects of having an imaginary companion persist into adult life.

In conclusion, the findings from this series of studies suggests that children with imaginary companions experience only slightly elevated levels of anxiety, increased social-verbal skills, and increased levels of credulity compared to children without companions. Combined, these findings were interpreted to indicate that children with imaginary companions have an increased sensitivity to environmental events that is potentiated by their ability to create vivid mental images. However, this increased sensitivity does not imply that children with imaginary companions are less able to control their reactions to their environment, but rather that their enhanced imagery ability at once sensitises, and offers them, opportunities to explore less prosaic modes of thought.

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## APPENDIX A-1

## Imaginative Play Activities Questionnaire



UNIVERSITY OF TASMANIA

**Department of Psychology**  
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Hobart  
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Australia

## IMAGINATIVE PLAY ACTIVITIES OF PRESCHOOL CHILDREN

Date.....

Please print :

1. Child's age : Years..... Months.....

Child's sex : Male..... Female.....

2. The person completing this questionnaire is :

Child's mother

Child's father

### Both parents

Other


⇒ (please specify).....

3. Please list below your other children in order of their birth, giving age and sex.

**First Name**

Age

**Sex**

[illegible]



4. Please list below any other members of the household (e.g., relatives, family friends).

Description (e.g., Uncle, family friend)	Age	Sex
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

5. (a) Please tick the box that indicates which parent or parents the child is currently living with.

Mother only	<input type="checkbox"/>
Father only	<input type="checkbox"/>
Mother and Father	<input type="checkbox"/>
Mother and Stepfather	<input type="checkbox"/>
Father and Stepmother	<input type="checkbox"/>
Other	<input type="checkbox"/>

⇒ (please specify).....

(b) Are the child's parents : (tick *one* box)

Living together	<input type="checkbox"/>
Divorced	<input type="checkbox"/>
Separated	<input type="checkbox"/>
Other	<input type="checkbox"/>

⇒ (please specify).....

6. Tick the *one* answer below that best describes the child's mother's educational level.

No formal education	<input type="checkbox"/>
Some primary school	<input type="checkbox"/>
Finished primary school	<input type="checkbox"/>
Some high school	<input type="checkbox"/>
Finished high school	<input type="checkbox"/>
Finished high school, plus technical training	<input type="checkbox"/>
Some university/college	<input type="checkbox"/>
Finished university/college	<input type="checkbox"/>
Finished university/college, plus additional training	<input type="checkbox"/>

7. Tick the *one* answer below that best describes the child's father's educational level.

No formal education	<input type="checkbox"/>
Some primary school	<input type="checkbox"/>
Finished primary school	<input type="checkbox"/>
Some high school	<input type="checkbox"/>
Finished high school	<input type="checkbox"/>
Finished high school, plus technical training	<input type="checkbox"/>
Some university/college	<input type="checkbox"/>
Finished university/college	<input type="checkbox"/>
Finished university/college, plus additional training	<input type="checkbox"/>

8. (a) Please tick the *one* answer below that best describes the present employment status of the child's mother :

Full-time	<input type="checkbox"/>
Part-time	<input type="checkbox"/>
Casual	<input type="checkbox"/>
Student	<input type="checkbox"/>
Home duties	<input type="checkbox"/>
Not currently employed	<input type="checkbox"/>

(b) If home duties, or not currently employed, what was the previous occupation of the child's mother ?

.....

9. (a) Please tick the *one* answer below that best describes the present employment status of the child's father :

Full-time	<input type="checkbox"/>
Part-time	<input type="checkbox"/>
Casual	<input type="checkbox"/>
Student	<input type="checkbox"/>
Home duties	<input type="checkbox"/>
Not currently employed	<input type="checkbox"/>

(b) If home duties, or not currently employed, what was the previous occupation of the child's father ?

.....

10. Please list below other friends your child usually plays with while she/he is at home.

First Name	Age	Sex	No. hours plays with each week
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....

11. For each of the following please indicate whether your child's play at home is usually :

	Yes	No
Active	<input type="checkbox"/>	<input type="checkbox"/>
Self-initiated	<input type="checkbox"/>	<input type="checkbox"/>
Boisterous	<input type="checkbox"/>	<input type="checkbox"/>
Dependent on adult direction or suggestion	<input type="checkbox"/>	<input type="checkbox"/>
Quiet	<input type="checkbox"/>	<input type="checkbox"/>
Seated inside the home	<input type="checkbox"/>	<input type="checkbox"/>
Energetic	<input type="checkbox"/>	<input type="checkbox"/>
Other <input type="checkbox"/> => (please specify).....		
.....		
.....		

12. Please give details of any difficulties your child has in play :

.....

.....

.....

13. Tick **all** the statements below which best describe how your child gets along with other children.

	Yes	No
Plays often and well with other children	<input type="checkbox"/>	<input type="checkbox"/>
Frequently has disagreements and fights with other children	<input type="checkbox"/>	<input type="checkbox"/>
Seldom plays with other children	<input type="checkbox"/>	<input type="checkbox"/>
Other <input type="checkbox"/> => (please specify).....		
.....		
.....		



Other ☐ ⇒ (please specify) .....  
.....  
.....

19. Tick whether your child is usually :

	Yes	No
Careful with her/his toys	<input type="checkbox"/>	<input type="checkbox"/>
Destructive with her/his toys	<input type="checkbox"/>	<input type="checkbox"/>

Other ☐ ⇒ (please specify).....  
.....  
.....

20. (a) Please indicate the amount of contact your child has with music and literature by placing a circle around the number that best describes your child's contact.

For example for the first scale:  
If your child has contact with singing *every day*, circle the number 1;  
If your child has contact with singing *two / three times a week*, circle the number 2;  
If your child has contact with singing *once a week*, circle the number 3;  
If your child has contact with singing *less than once a week*, circle the number 4;  
If your child *never* has contact with singing, circle the number 5.

	Everyday				Never
Singing	1-----	2-----	3-----	4-----	5-----
Piano	1-----	2-----	3-----	4-----	5-----
Record/CD player	1-----	2-----	3-----	4-----	5-----
Radio	1-----	2-----	3-----	4-----	5-----
Other music (please specify) .....	1-----	2-----	3-----	4-----	5-----
Television	1-----	2-----	3-----	4-----	5-----
Stories, read	1-----	2-----	3-----	4-----	5-----
Stories, told	1-----	2-----	3-----	4-----	5-----
Pictures shown	1-----	2-----	3-----	4-----	5-----

(b) Who is the child's main source of contact with music ? (tick *all* that apply)

His/her mother	<input type="checkbox"/>
His/her father	<input type="checkbox"/>
Both mother and father	<input type="checkbox"/>
Other	<input type="checkbox"/> ⇒ (please specify)

.....

(c) How does your child *generally* react to his/her contact with music ?

	Yes	No
Actively Participates	<input type="checkbox"/>	<input type="checkbox"/>
Listens quietly	<input type="checkbox"/>	<input type="checkbox"/>
Appears bored/distracted	<input type="checkbox"/>	<input type="checkbox"/>
Other <input type="checkbox"/>	⇒ (please specify).....	

.....

.....

(d) Who is the child's main source of contact with literature ? (tick *all* that apply)

His/her mother	<input type="checkbox"/>
His/her father	<input type="checkbox"/>
Both mother and father	<input type="checkbox"/>
Other <input type="checkbox"/>	⇒ (please specify).....

.....

(e) How does your child *generally* react to his/her contact with literature ?

	Yes	No
Actively Participates	<input type="checkbox"/>	<input type="checkbox"/>
Listens quietly	<input type="checkbox"/>	<input type="checkbox"/>
Appears bored/distracted	<input type="checkbox"/>	<input type="checkbox"/>
Other <input type="checkbox"/>	⇒ (please specify).....	

.....

.....

21. Please list his/her *most* favourite books.

.....

.....

.....

22. Please estimate the amount of time your child spends each day with :

His/her mother	Hours.....	Minutes.....
His/her father	Hours.....	Minutes.....

23. Please comment briefly on the nature of the activities jointly engaged in by members of the family and the child. (For example: routines, reading, hobbies, excursions to the zoo, museums, railroad stations, airports, lake, marketing, nature walks.)

Father and child.....  
.....  
Mother and child.....  
.....  
.....  
Siblings and child.....  
.....  
Family group.....  
.....  
.....  
Others.....  
.....

24. Please tick *any* of the following problems experienced by your child that are giving parents concern at present or have given concern in the past.

Restlessness	<input type="checkbox"/>	Shyness	<input type="checkbox"/>
Nailbiting	<input type="checkbox"/>	Excitability	<input type="checkbox"/>
Overactivity	<input type="checkbox"/>	Thumbsucking	<input type="checkbox"/>
Nose picking	<input type="checkbox"/>	Flightiness	<input type="checkbox"/>
Hair pulling or twisting	<input type="checkbox"/>	Awkwardness	<input type="checkbox"/>
Masturbation	<input type="checkbox"/>	Submissiveness	<input type="checkbox"/>
Jealousy	<input type="checkbox"/>	Daydreaming	<input type="checkbox"/>
Fearfulness	<input type="checkbox"/>	Over-dependence on adults	<input type="checkbox"/>
Aggressiveness	<input type="checkbox"/>	Undue demand for attention	<input type="checkbox"/>
Competitiveness	<input type="checkbox"/>	Lack of self-confidence	<input type="checkbox"/>
Irritability	<input type="checkbox"/>	Sensitiveness	<input type="checkbox"/>

25. Tick whether your family has any of the following pets.

Dog	<input type="checkbox"/>
Fish	<input type="checkbox"/>
Cat	<input type="checkbox"/>
Bird	<input type="checkbox"/>
Other	<input type="checkbox"/>

⇒ (please specify).....  
.....

26. (a) Please rate your child on the following scale (mark the scale with an X at the point you think best describes your child).

/-----/-----/-----/-----/-----/		
Shy & reserved	Neither shy nor outgoing	Open & outgoing

(b) Please rate your child on her/his ability to talk and interact with adults (mark the scale with an X at the point which you think best describes your child).

/-----/-----/-----/-----/-----/		
Very good at talking & interacting with adults	Neither good nor bad at talking & interacting with adults	Does not talk & interact well with adults

(c) Please rate your child on his/her ability to talk and interact with other children (mark the scale with an X at the point which you think best describes your child).

/-----/-----/-----/-----/-----/		
Very good at talking & interacting with children	Neither good nor bad at talking & interacting with children	Does not talk & interact well with children



**PLEASE READ THE FOLLOWING PARAGRAPH BEFORE CONTINUING**

The following questions deal with mythical beings. A mythical being is a person or thing whose existence is fictional and around which stories and cultural traditions have arisen. Western Examples of these beings include: Santa Claus, Tooth Fairy, Easter Bunny, and Elves. Please answer the following questions regarding the degree to which your child believes in, and includes, these beings in his/her activities.

27. Do you tell/read your child stories about mythical beings such as Santa Claus ?

No	<input type="checkbox"/>	⇒ If so, How often ?.....
Yes	<input type="checkbox"/>	

.....

.....



28. Do you involve your child in mythical traditions such as placing a tooth under his/her pillow for the Tooth Fairy, or leaving supper for Santa ?

No ☐

Yes ☐ ⇒ Please specify.....

.....

.....

.....

29. (a) Does your child believe in : (tick *all* that apply)

	Yes	No
Santa Claus	<input type="checkbox"/>	<input type="checkbox"/>
Tooth Fairy	<input type="checkbox"/>	<input type="checkbox"/>
Easter Bunny	<input type="checkbox"/>	<input type="checkbox"/>
Elves	<input type="checkbox"/>	<input type="checkbox"/>

Other ☐ ⇒ (please specify).....

.....

.....

.....

(b). If your child no longer believes in the existence of these mythical beings at what age did this belief stop ?

Santa Claus	Years.....	Months.....
Tooth Fairy	Years.....	Months.....
Easter Bunny	Years.....	Months.....
Elves	Years.....	Months.....
Other	Years.....	Months.....

(c). How does your child react when the existence of one of his/her favourite mythical beings is questioned ?

Angry denial ☐

Doesn't care ☐

Passive acceptance ☐

Cries ☐

Other ☐ ⇒ (please specify)

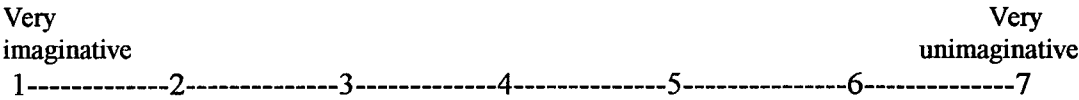
.....

.....

.....

30. Please rate your child 's level of imaginativeness by placing a circle around the number that best describes your child.

- 1 means that your rate your child as *very* imaginative;
- 2 means that your rate your child as *moderately* imaginative;
- 3 means that your rate your child as *slightly* imaginative;
- 4 means that your rate your child as *neither imaginative nor unimaginative*;
- 5 means that your rate your child as *slightly* unimaginative;
- 6 means that your rate your child as *moderately* unimaginative;
- 7 means that your rate your child as *very* unimaginative.



31. Does your child ever make-up stories about his/her favourite mythical beings ?

No ☐  
Yes ☐ => If so, which beings does she/he involve?

.....  
.....

32. Does your child ever involve his/her favourite mythical beings in pretend play ?

No ☐  
Yes ☐ => If so, Which beings does he/she involve ?

.....  
.....

33. Does your child ever explain events as *magical* ?

No ☐  
Yes ☐ => If so, which events ?.....

.....

**PLEASE READ THE FOLLOWING PARAGRAPH CAREFULLY  
BEFORE CONTINUING**

The following questions deal with imaginary companions. An imaginary companion is a very vivid imaginary character (person, animal, or object) with which a child interacts during his/her play and daily activities. Although the companion does not *actually* exist, it is very real to the child who endows it with an individual personality and consciousness. As a consequence, the child often refers conversationally to the companion and indicates its presence throughout the day. Please answer all of the following questions if your child *now has* an imaginary companion or if she/he *has ever had* one. If not please complete question 34 and turn to page 18.

34. Tick whether your child has ever had an imaginary companion.

- No, he/she has never had one

Yes, he/she has one now

Yes, he/she used to have one
- ☐

☐

☐
- ⇒ Please turn to page 18

⇒ Please continue to answer questions

⇒ Please continue to answer questions

35. Tick the answer below that comes closest to the number of imaginary companions that your child now has or has had.

- One

Two

Three

Four

More than four
- ☐

☐

☐

☐

☐
- ⇒ (please specify).....

36. Tick whether the child’s imaginary companion is/was :

- Yes

No
- A person

An animal

A male

A female

Sex unknown

An object
- ☐

☐

☐

☐

☐

☐
- ☐

☐

☐

☐

☐

☐
- ⇒ (please specify).....

Other

☐

⇒ (please specify).....

37. Tick whether your child’ imaginary companion is/was :

- Yes

No
- The same age as the child

Older than the child

Younger than the child

Age is not known
- ☐

☐

☐

☐
- ☐

☐

☐

☐

38. (a) Please list below the name(s) of your child’s imaginary companion(s).

.....

.....

.....

.....

.....

.....

.....

.....

(b) Do you have any ideas as to your child's choice of these specific names ?

Name of a friend	<input type="text"/>
Name of a relative	<input type="text"/>
Toys	<input type="text"/>
Books	<input type="text"/>
Television	<input type="text"/>
Other	<input type="text"/>

⇒ (please specify)

39. How old was your child when his/her imaginary companion(s) first appeared ?

One	<input type="text"/>
Two	<input type="text"/>
Three	<input type="text"/>
Four	<input type="text"/>
More than four	<input type="text"/>

⇒ (please specify).....

40. If your child no longer has an imaginary companion, how old was she/he when the imaginary companions disappeared ?

Years.....Months.....

41. Tick **all** the answers below that come close to describing how your child's imaginary companion disappeared.

	Yes	No
Suddenly, without any explanation	<input type="checkbox"/>	<input type="checkbox"/>
The child gradually stopped playing with and talking about his/her imaginary companion	Yes	No
	<input type="checkbox"/>	<input type="checkbox"/>
The imaginary companion was replaced by another imaginary companion	Yes	No
	<input type="checkbox"/>	<input type="checkbox"/>
The imaginary companion <i>moved away</i> or <i>died</i>	Yes	No
	<input type="checkbox"/>	<input type="checkbox"/>
The imaginary companion disappeared when the child started kindergarten	Yes	No
	<input type="checkbox"/>	<input type="checkbox"/>
The imaginary companion disappeared soon after the child had a fight or disagreement with him/her	Yes	No
	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="text"/>	⇒ (please specify).....

42. Does/did your child’s imaginary companion :

	Yes	No
Appear almost every day	<input type="checkbox"/>	<input type="checkbox"/>
Appear frequently, but not every day	<input type="checkbox"/>	<input type="checkbox"/>
Appear usually on weekends	<input type="checkbox"/>	<input type="checkbox"/>
Appear only once or twice	<input type="checkbox"/>	<input type="checkbox"/>
Other <input type="checkbox"/>	⇒ (please specify).....	

43. Tick the answers which best describe the mood your child is/was usually in when talking about or playing with his/her imaginary companion.

Happy and in high spirits	<input type="checkbox"/>
Lonely	<input type="checkbox"/>
Quiet and reserved	<input type="checkbox"/>
Angry	<input type="checkbox"/>
Tearful	<input type="checkbox"/>
No specific mood	<input type="checkbox"/>
Other <input type="checkbox"/>	⇒ (please specify).....

44. Tick **all** the answers below which apply/applied to your child’s relationship to his/her imaginary companion.

They usually play peacefully together	Yes No <input type="checkbox"/> <input type="checkbox"/>
They sometimes have disagreements and arguments	Yes No <input type="checkbox"/> <input type="checkbox"/>
At times the child <i>consults</i> or asks permission of his/her imaginary companion before doing something	Yes No <input type="checkbox"/> <input type="checkbox"/>
At times the imaginary companion asks permission of the child to do something (for example : “to accompany the child outdoors”)	Yes No <input type="checkbox"/> <input type="checkbox"/>
The child uses his/her imaginary companion to escape blame or punishment (for example : “He told me to do it” or "She did it")	Yes No <input type="checkbox"/> <input type="checkbox"/>
Other <input type="checkbox"/>	⇒ (please specify).....

45. To which of the following places or activities does/did your child's imaginary companion usually accompany her/him ? ( tick **all** that apply)

	Yes	No
Out of doors	<input type="checkbox"/>	<input type="checkbox"/>
In the home	<input type="checkbox"/>	<input type="checkbox"/>
Driving in the car	<input type="checkbox"/>	<input type="checkbox"/>
While eating	<input type="checkbox"/>	<input type="checkbox"/>
While shopping	<input type="checkbox"/>	<input type="checkbox"/>
To and at kindergarten	<input type="checkbox"/>	<input type="checkbox"/>
To bed	<input type="checkbox"/>	<input type="checkbox"/>
While watching television	<input type="checkbox"/>	<input type="checkbox"/>

The imaginary companion sometimes appears as a character on television

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

The child talks on the telephone to the imaginary companion

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

Other ☐ ⇒ (please specify).....

.....

.....

.....

46. Tick whether your child's imaginary companion occupies/occupied any physical space such as : (tick **all** that apply)

	Yes	No
Needs its own chair at the table	<input type="checkbox"/>	<input type="checkbox"/>
Needs room in the car	<input type="checkbox"/>	<input type="checkbox"/>
Needs a place in the child's bed	<input type="checkbox"/>	<input type="checkbox"/>
Doesn't need any space of its own	<input type="checkbox"/>	<input type="checkbox"/>

Other ☐ ⇒ (please specify).....

.....

.....

.....

47. Tick **all** of the following ways in which your child's imaginary companion interacts /interacted with the family.

	Yes	No
The imaginary companion doesn't upset daily routine	<input type="checkbox"/>	<input type="checkbox"/>
At times the family has to change its routine to include or please the imaginary companion	Yes	No
	<input type="checkbox"/>	<input type="checkbox"/>
The imaginary companion doesn't like family members other than the child	Yes	No
	<input type="checkbox"/>	<input type="checkbox"/>
By means of the child, the imaginary companion communicates and gets along well with the rest of the family	Yes	No
	<input type="checkbox"/>	<input type="checkbox"/>

Other ☐ ⇒ (please specify).....  
.....  
.....  
.....

48. Tick below **any** behaviour of yours that seems/seemed to prompt the imaginary companion to appear.

	Yes	No
Punishing or scolding the child	<input type="checkbox"/>	<input type="checkbox"/>
Requiring the child to stay indoors or in his/her room for some reason	<input type="checkbox"/>	<input type="checkbox"/>
Your not being able to attend or play with the child at a particular moment	<input type="checkbox"/>	<input type="checkbox"/>
Questioning the child about or expressing interest in the imaginary companion	<input type="checkbox"/>	<input type="checkbox"/>

Other ☐ ⇒ (please specify).....  
.....  
.....

49. Tick the answer below which comes closest to your treatment of your child's imaginary companion :

	Yes	No
Encourage the imaginary companion	<input type="checkbox"/>	<input type="checkbox"/>
Discourage the imaginary companion	<input type="checkbox"/>	<input type="checkbox"/>
Ignore the imaginary companion	<input type="checkbox"/>	<input type="checkbox"/>

50. Tick whether you as a parent feel that your child's imaginary companion is/was :

	Yes	No
Good for your child		
Harmful to your child		
Has no effect on your child		

Other ☐ ⇒ (please specify).....

51. Does/did your child : (tick ***all*** that apply)

**Prefer to interact with his/her imaginary companion even when other children are available to play with**

Yes	No

**Put aside his/her imaginary companion when other children are around to play with**

Yes	No

**The child does not talk about or play with his/her imaginary companion when strangers are around**

Yes	No

The child *shares* her/his imaginary companion with other children

Yes	No

Other ☐  $\Rightarrow$  (please specify).....

52. In the following space, please feel free to comment further or share any other observations you have made concerning your child's imaginary companion.



**OPTIONAL**

Dear parent, thank you for taking the time to complete this questionnaire. We would like to take this opportunity to invite you to assist us in gathering more information concerning your child's play behaviour. *All* information will be treated *strictly* confidentially. If you are interested, please write your name, address, and contact telephone number in the space provided below

Name : .....

Address : .....

.....

.....

.....

.....

Telephone No : .....

If you have any other comments you wish to make please do so in the space provided below.

.....

.....

.....

.....

.....

.....

.....

.....

.....

**THANK YOU FOR COMPLETING THIS QUESTIONNAIRE. PLEASE PLACE IT IN THE ENVELOPE PROVIDED AND RETURN IT TO YOUR CHILD'S TEACHER.**

**ALL RESULTS WILL BE TREATED CONFIDENTIALLY**

## APPENDIX A-2

## Cover Letter to Parents



**UNIVERSITY OF TASMANIA**  
*Department of Psychology*  
*University of Tasmania*  
*P.O. Box 252C*  
*Sandy Bay 7005*

Dear parent or guardian,

My name is Paula Bouldin. I am a PhD student in the Department of Psychology at the University of Tasmania. Under the supervision of Prof. Chris Pratt, I am conducting a survey to investigate the imaginative play activities of preschool children. As parents you are in the best position to comment on your child's imaginative play, favourite games and books, and other important issues. I would be most appreciative if you could supply this information by completing the enclosed questionnaire.

The questionnaire seeks information on a wide range of topics. These topics include your child's *general* style of play, as well as the more *imaginative* play that is associated with mythical beings (e.g., Santa Claus) and imaginary friends. The majority of questions can be answered by placing a tick in a box, although some do require a brief statement. The questionnaire can be completed by either or both parents for the child who is currently attending the kindergarten where it was distributed. However, if there is more than one child attending the kindergarten a separate questionnaire should be completed for each child.

The questionnaire should be sealed in the envelope supplied and returned to the box provided at your child's kindergarten. It can be returned anonymously. However, as I wish to contact some families who have completed the questionnaire to discuss participation in further studies in this area; I would ask you to supply your name and address on the last page of the questionnaire. Please be assured that in *all* cases information will be treated in the *strictest* confidence. If you have any queries please do not hesitate to contact me on (002) 202260

Thank you for your time.

Sincerely,

.....  
 Paula Bouldin

.....  
 Chris Pratt

## APPENDIX A-3

The 22 Behaviors that are listed in the Imaginative Play Activities

## Questionnaire

Restlessness	Shyness
Nailbiting	Excitability
Overactivity	Thumb-sucking
Nose picking	Flightiness
Hair pulling or twisting	Awkwardness
Masturbation	Submissiveness
Jealousy	Daydreaming
Fearfulness	Over-dependence on adults
Aggressiveness	Undue demand for attention
Competitiveness	Lack of self-confidence
Irritability	Sensitiveness

## APPENDIX B-1

## Parent Consent Form for Studies Two and Three



UNIVERSITY OF TASMANIA  
Department of Psychology

*Consent Form*

Dear parent or guardian,

My name is Paula Bouldin. I am a PhD student in the Department of Psychology at the University of Tasmania. Under the supervision of Prof Chris Pratt, I am conducting a follow-up study on childhood imaginative play that continues from previous research work in which you and your child have participated. At present, I am very interested in obtaining information regarding children's behaviour. This study requires that parents complete a series of behaviour checklists on aspects of their child's behaviour, such as how he/she relates to other children and adults. In addition, a structured interview will be administered to each child that will collect information on aspects of his/her fantasy behaviour (e.g., involvement in pretend play). If you are willing to participate in this study, could you please read and sign the consent form below.

I, ..... of .....  
hereby consent to complete a series of behaviour checklists that will record my child's behaviour and to the administration of a structured interview to my child, as part of the research study to be undertaken by Paula Bouldin and Prof Chris Pratt.

**I understand that :**

1. The study will involve myself as a parent completing checklists on my child's temperament, what makes my child scared, and what my child thinks and feels;
2. A structured interview will be administered to my child that will investigate his/her fantasy behaviour;
3. My child's individual results *will not* be released to any person unless prior written consent from a parent is obtained;
4. The data will be kept in a confidential manner;
5. I may withdraw my child from this study at any time simply by stating my desire not to continue.

" I have read the information above and any questions I have asked have been answered to my satisfaction. I agree to let my child participate in this investigation and understand that I may withdraw at any time without penalty. I agree that research data gathered for the study may be published provided that my child cannot be identified as a subject. "

Signature of parent.....Date.....

"I have explained this project and the implications of participation in it to this parent and I believe that the consent is informed and that he/she understands the implications of participation ."

Signature of investigator.....Date.....

APPENDIX B-2

Summary Tables

1. Table B2-1. Summary of the Evaluation of Homogeneity of Variance-covariance Matrices for Each of the Three Analyses.....p.188.

2. Table B2-2. Tests of Homogeneity of Regression for all Dependent Variables in Each of the Three Analyses.....p.189.

3. Table B2-3. Tests of Homogeneity of Regression for the Covariate (Age) and IC in Each of the Three Analyses.....p.190.

4. Table B2-4. Test of Multicollinearity for Each Dependent Variable-covariate Set in Each of the Three Analyses.....p.191.

Table B2-1

Summary of the Evaluation of Homogeneity of Variance-Covariance Matrices for Each of the Three Analyses

Dependent Variable	Box's M Test
Fear	$F(36,17443) = 1.03, p = .42$
Anxiety	$F(10, 24784) = 1.25, p = .25$
Temperament	$F(10, 24784) = 0.65, p = .77$

Table B2-2

Tests of Homogeneity of Regression for All Dependent Variables in Each of the Three Analyses

Source of Variation	Multivariate			Stepdown		
	<u>F</u>	<u>df</u>	Sig of <u>F</u>	<u>F</u>	<u>df</u>	Sig of <u>F</u>
<u>Fear</u>	0.86	8/63	.29			
Factor1				0.29	1/70	.60
Factor2				0.10	1/69	.75
Factor3				0.06	1/68	.81
Factor4				5.89	1/67	.02*
Factor5				0.70	1/66	.41
Factor6				0.50	1/65	.48
Factor7				2.46	1/64	.12
Factor 8				0.03	1/63	.86
<u>Anxiety</u>	0.98	4/67	.89			
Worry				0.54	1/70	.47
Physiol				0.09	1/69	.77
Conc				0.06	1/68	.80
Lie				0.46	1/67	.50
<u>Temperament</u>	0.98	4/67	.79			
Approach				0.01	1/70	.93
Inflexibility				0.17	1/69	.68
Persist				0.09	1/68	.77
Rhythm				1.44	1/67	.24

Note. Worry = worry/oversensitivity anxiety; Physiol = physiological anxiety; Conc = concentration anxiety.

\* $p < .05$ .

Table B2-3

Tests of Homogeneity of Regression for the Covariate (Age) and IC in Each of the Three Analyses

Effect	DV	Univariate		Stepdown		$\alpha$
		<u>F</u>	<u>df</u>	<u>F</u>	<u>df</u>	
<u>Fear</u>						
Covariate	Factor1	2.32	1/71	2.32	1/71	.01
	Factor2	5.33 <sup>a</sup>	1/71	3.74	1/71	.01
	Factor3	0.44	1/71	0.04	1/70	.01
	Factor4	3.73	1/71	6.38*	1/69	.01
	Factor5	2.24	1/71	1.58	1/68	.001
	Factor6	6.15 <sup>a</sup>	1/71	3.88	1/67	.001
	Factor7	0.88	1/71	0.13	1/66	.001
	Factor 8	0.17	1/71	0.23	1/65	.001
IC	Factor1	1.36	1/71	1.36	1/71	.01
	Factor2	0.07	1/71	0.07	1/71	.01
	Factor3	2.06	1/71	2.20	1/70	.01
	Factor4	0.03	1/71	0.01	1/69	.01
	Factor5	0.00	1/71	1.30	1/68	.001
	Factor6	2.51	1/71	3.65	1/67	.001
	Factor7	2.44	1/71	2.41	1/66	.001
	Factor 8	1.31	1/71	0.96	1/65	.001
<u>Anxiety</u>						
Covariate	Worry	0.23	1/71	0.23	1/71	.01
	Physiol	2.89	1/71	3.78	1/71	.01
	Conc	1.40	1/71	3.81	1/70	.01
	Lie	0.00	1/71	0.20	1/69	.01
IC	Worry	4.32 <sup>a</sup>	1/71	4.32*	1/71	.01
	Physiol	0.33	1/71	0.33	1/71	.01
	Conc	4.96 <sup>a</sup>	1/71	6.95*	1/70	.01
	Lie	0.00	1/71	2.13	1/69	.01
<u>Temperament</u>						
Covariate	Approach	2.31	1/71	2.31	1/71	.01
	Inflexibility	7.16 <sup>a</sup>	1/71	5.27*	1/71	.01
	Persist	3.34	1/71	1.45	1/70	.01
	Rhythm	5.64 <sup>a</sup>	1/71	1.97	1/69	.01
IC	Approach	2.58	1/71	2.58	1/71	.01
	Inflexibility	0.97	1/71	0.97	1/71	.01
	Persist	0.02	1/71	0.01	1/70	.01
	Rhythm	0.83	1/71	0.27	1/69	.01

Note. Worry = worry/oversensitivity anxiety; Physiol = physiological anxiety; Conc = concentration anxiety.

<sup>a</sup>Significance cannot be evaluated would reach  $p < .05$  in the univariate context.

\* $p < .05$ .



Table B2-4

Test of Multicollinearity for Each Dependent Variable-Covariate Set in Each of the Three Analyses

Variable	R-Squared	F-Statistic	Significance
<u>Fear</u>			
Factor1	0.04	1.00	.40
Factor2	0.14	2.71	.04
Factor3	0.11	1.76	.13
Factor4	0.21	3.01	.01
Factor5	0.28	3.67	.00
Factor6	0.18	1.77	.10
Factor7	0.32	3.28	.00
Factor8	0.24	1.95	.05
<u>Anxiety</u>			
Worry	0.08	2.07	.11
Physiol	0.14	2.84	.03
Conc	0.30	5.87	.00
Lie	0.08	0.91	.50
<u>Temperament</u>			
Approach	0.06	1.50	.22
Inflexibility	0.18	3.84	.00
Persistence	0.09	1.39	.24
Rhythm	0.21	3.01	.01

Note. Worry = worry/oversensitivity anxiety; Physiol = physiological anxiety; Conc = concentration anxiety.

## APPENDIX B-3

## MANCOVA Source Tables for IC by Anxiety, IC by Temperament, and

## IC by Fear

IC by AnxietyTests of Significance for Worry Using Cov Adj Sequential Sums of Squares

Source of Variation	SS	DF	MS	F	Sig of F
Within and residual	229.86	71	3.24		
Regression	1.15	1	1.15	.35	.554
IC	13.99	1	13.99	4.32	.041

Multivariate Tests of Significance

Test Name	Value	Exact	F Hypoth.	DF	Error DF	Sig. of F
Pillais	.12024		3.18899	3.00	70.00	.029
Hotellings	.13667		3.18899	3.00	70.00	.029
Wilks	.87976		3.18899	3.00	70.00	.029
Roys	.12024					

Univariate F-tests with (1, 72) D. F.

Variable	Hypoth. SS	Error SS	Hypoth. MS	Error MS	F	Sig. of F
Physiol	1.53385	329.76943	1.53385	4.58013	.33489	.565
Conc	13.68500	198.52415	13.68500	2.75728	4.96322	.029
Lie	.00583	102.57822	.00583	1.42470	.00409	.949

Roy-Bargman Stepdown F - tests

Variable	Hypoth. MS	Error MS	StepDown F Hypoth.	DF	Error DF	Sig. of F
Physiol	1.53385	4.58013	.33489	1	72	.565
Conc	16.50874	2.37435	6.95296	1	71	.010
Lie	2.40289	1.12573	2.13452	1	70	.148

Note. Worry = worry/oversensitivity anxiety; Physiol = physiological anxiety; Conc = concentration anxiety.

IC by Temperament

Tests of Significance for Approach using Cov Adj Sequential Sums of Squares

Source of Variation	SS	DF	MS	F	Sig of F
Within and residual	23.10	71	.33		
Residual	1.15	1	1.15	3.54	.064
IC	.84	1	.84	2.58	.113

Multivariate Tests of Significance

Test Name	Value	Exact F Hypoth.	DF	Error DF	Sig. of F
Pillais	.01715	.40724	3.00	70.00	.748
Hotellings	.01745	.40724	3.00	70.00	.748
Wilks	.98285	.40724	3.00	70.00	.748
Roys	.01715				

Univariate F-tests with (1,72) D. F.

Variable	Hypoth. SS	Error SS	Hypoth. MS	Error MS	F	Sig. of F
Inflex	.18409	13.68345	.18409	.19005	.96863	.328
Persist	.00828	24.81588	.00828	.34466	.02402	.877
Rhythm	.55364	48.18043	.55364	.66917	.82735	.366

Note. Inflex = inflexibility; Persist = persistence; Rhythm = rhythmicity

IC by Fear

Tests of Significance for Factor 1 using Cov Adj Sequential Sums of Squares

Source of Variation	SS	DF	MS	F	Sig of F
Within and residual	48.99	71	.69		
Regression	.04	1	.04	.06	.810
IC	.94	1	.94	1.36	.247

Multivariate Tests of Significance

Test Name	Value	Exact F Hypoth.	DF	Error DF	Sig. of F
Pillais	.14144	1.55326	7.00	66.00	.165
Hotellings	.16474	1.55326	7.00	66.00	.165
Wilks	.85856	1.55326	7.00	66.00	.165
Roys	.14144				

Univariate F-tests with (1,72) D. F.

Variable	Hypoth. SS	Error SS	Hypoth. MS	Error MS	F	Sig. of F
F2	.04112	42.16401	.04112	.58561	.07022	.792
F3	1.50833	52.82239	1.50833	.73364	2.05595	.156
F4	.01206	33.18247	.01206	.46087	.02617	.872
F5	.00178	64.28951	.00178	.89291	.00199	.965
F6	1.32010	37.93641	1.32010	.52689	2.50544	.118
F7	1.64105	48.48228	1.64105	.67336	2.43709	.123
F8	.80531	44.41701	.80531	.61690	1.30541	.257

Note. F = Factor.

## APPENDIX C-1

## Children's Predisposition to Fantasy Interview

**Question 1**

A. Do you have dreams when you are asleep at night ?

[ Prompt: Do you see pictures in your head when you are asleep at night?]

B. Can you tell me about some of your dreams ?/ What sorts of things do you dream about? (Can you tell me about some of the pictures that you see in your head when you are asleep ?)

C. Are they happy dreams or sad dreams ? (Are they happy pictures or sad pictures?)

**Question 2**

A. Do you sometimes see pictures of things in your head (daydream) during the day ?

B. What kinds of pictures do you see ?(What kind of things do you daydream about? / Can you describe them to me or tell me about them)?

C. Are they happy pictures (daydreams) or sad pictures (daydreams)?

D. Do you picture these things in your head (daydream) when you are on your own (when there is nobody else around) ?

E. Do the people and things that you picture in your head (daydream about) sometimes seem so real that you think you can almost see or hear them in front of you?

[Prompt: Can you see the pictures in your head (daydreams) like you see me?]

**Question 3**

- A. Do you sometimes get real scared because of something that you think about?
- B. What kinds of things do you think about that scare you ?/Can you tell me about (or describe) them ?
- C. Do you try really hard not to think about these scary things ?

**Question 4**

- A. Do you play pretend games when you are by yourself (on your own or when nobody else is around)?
- B. What kinds of pretend games do you play by yourself ?

**Question 5**

- A. Do you play pretend games when you are with your friends ?
- B. What kinds of pretend games do you play with your friends ?

**Question 6**

Sometimes when you play pretend games, do you feel so happy that you don't ever want the game to end ?

**Question 7**

Sometimes when you play pretend games, do you feel like you can really see the pretend places and people in the room with you ?

**Question 8**

- A. Do you have a make-believe friend who you talk to and who goes places with you?
- B. Did you have a make-believe friend who you talked to and who went places with you ?

## APPENDIX C-2

## The Selected and New Items that Comprise the Children's Predisposition to Fantasy

## Interview

Table C2-1

Selected Items from the Four Factored Sub-scales of the Children's Fantasy Inventory by Rosenfeld et al. (1982) as well as the New Items that Comprise the Children's Predisposition to Fantasy Interview

Item	
<u>Factor 1 "Frequency of Imaginative Activity"</u>	
R 41.	Do you picture these things in your head when you are on your own (when there is nobody else around) ?
R 42.	Do you sometimes see pictures of things in your head during the day ?
R 43.	Do you play pretend games when you are by yourself (on your own or when nobody else is around)?
N	What kinds of pretend games do you play by yourself?
R 44.	Do you play pretend games when you are with your friends ?
N	What kinds of pretend games do you play with your friends?
R 45.	Do you have dreams when you are asleep at night?
N	Can you tell me about some of your dreams?/ What sorts of things do you dream about?
N	Are they happy dreams or sad dreams?
N	Do you see pictures in your head when you are asleep at night?
N	Can you tell me about some of the pictures that you see in your head when you are asleep? / What sorts of things do you picture in your head when you are asleep?

(table continues)

---

Item

---

Factor 3 “Fanciful Fantasy”

- N        Do you have a make-believe friend who you talk to and who goes places with you ?
- R    2.    Did you have a make-believe friend who you talked to and who went places with you ?
- R    35.   Are they happy pictures or sad pictures ?

Factor 5 “Scary Fantasy”

- R    39.   Do you sometimes get real scared because of something that you think about ?
- N        What kinds of things do you think about that scare you?/Can you tell me about (describe) them?
- R    34.   Do you try really hard not to think about these scary things?

Factor 6 “Vividness of Fantasy”

- R    17.   Do the people and things that you picture in your head sometimes seem so real that you think you can almost see or hear them in front of you ?
- N        Can you see the pictures in your head (daydreams) like you see me?
- R    31.   Sometimes when you play pretend games, do you feel so happy that you don’t ever want the game to end ?
- R    25.   Sometimes when you play pretend games, do you feel like you can really see the pretend places and people in the room with you ?
- 

Note. R = Reworded item; N = New Item



APPENDIX C-3

Response Variables and Sample Definitions Code Book - Study Three  
(Developed by Paula Bouldin)

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## Purpose of this code book

This code book has been specifically devised to allow categorisation of children's responses to each question of the Children's Predisposition to Fantasy Interview (CPFI). The purpose of this categorisation was to assess children's involvement in dreams, daydreams, and pretend games.

In accordance with the sequence of the interview, the code book is divided into five sections: a) dreams, b) daydreams, c) scary thoughts, d) pretend games, and e) imaginary companions

Code the responses to each question by placing a tick in the box beside the appropriate answer on the score sheet provided. Unless specifically directed, score **ONE** response for each child.

## A. Dreams

### *Question 1a*

**Do you have dreams when you are asleep at night?**

**[Prompt: Do you see pictures in your head when you are asleep at night?]**

The prompt question was only asked if the response to question 1a was negative.

Responses are divided into affirmative, negative, or sometimes.

Mark the response **affirmative** if it includes the following *type* of responses:

Yes

Night and morning

Sometimes at night and sometimes in the morning

In the middle of the night

Usually

Mark the response **negative** if it includes the following *type* of responses:

No

Not really

Mark the responses **sometimes** if it includes the following *type* of responses:

Hardly have any dreams

Not often

Sometimes

Sometimes, most of the time not

Sometimes, don't dream much

Not usually, sometimes

If the response to question 1a is affirmative or sometimes, score the response according to question 1a and proceed to question 1b.

If the response to question 1a is negative, proceed to the probe question and score the probe response according to question 1a.

If the response to the probe question is affirmative or sometimes, score the response according to questions 1a and proceed to question 1b.

If the response to the probe question is negative, score the response according to question 1a and proceed to question 2.

### *Question 1b*

**Can you tell me about some of your dreams?/ What sorts of things do you dream about? (Can you tell me about some of the pictures that you see in your head when you are asleep?)**

Responses are divided into memory and dream content. Children's responses can be scored on both memory and dream content.

#### *Memory*

Responses are divided into can't remember or remember.

Mark the response **can't remember** if it includes the following *types* of responses:

Can't remember  
I forgot  
Refuse to describe  
Too many to remember  
Don't know  
Maybe

Mark the response **remember** if the answer to question 1b includes a description.

If the question yields a can't remember response, score the response according to question 1b and proceed to question 1c.

If the question yields a descriptive (remembered) response, score the response according to question 1b and proceed to score dream content.

#### *Dream content*

Descriptive responses are scored according to a **mythical-realistic** dimension which incorporates three classifications. These include **mythical** items that belong

to a generic group of non-existent beings (e.g., fairies) **fictional** items that refer to specific fictional characters (e.g., cartoon characters) and **realistic** items which includes beings that exist (e.g., animals).

Descriptive responses can be scored to indicate one theme (mythical, fictional, *or* realistic) or it can be scored to indicate multiple themes (e.g., mythical *and* fictional; mythical, fictional, *and* realistic). If the content incorporates more than one theme place a tick in the boxes beside the appropriate themes. For example, if a dream includes both mythical and fictional items, then both types of response would be ticked.

Mark the content **mythical** if it includes the following *types* of responses:

Unicorns  
Witches  
Giants  
Monsters  
Aliens  
Dragons  
Dinosaurs  
Fairies  
Magical events or transformations  
Ghosts

Mark the content **fictional** if it includes the following *types* of responses:

Cartoon characters (e.g., characters from the twins of destiny cartoon such as Jules and Julie and Eunuchs)  
Peter Pan  
Noddy  
Pirates  
Batman  
Superman  
queen  
Star

Mark the content **realistic** if it includes the following *types* of responses:

Animals (tigers, cats, monkeys, birds, gorillas)  
People (family members, friends)  
Social and living events (school fairs, school, moving house, walks)

Score dream content and proceed to question 1c.

*Question 1c*

**Are they happy dreams or sad dreams? (Are they happy pictures or sad pictures?)**

Responses are divided into memory and dream mood. Children's responses can be scored on both memory and dream mood.

*Memory*

Responses are divided into can't remember or remember. Use the criteria for question 1b.

If the question yields a can't remember response, score the response according to question 1c and proceed to question 2a.

If the question yields a descriptive (remembered) response, score the response according to question 1c and proceed to score dream mood.

*Dream mood*

Responses are divided into happy, sad, or happy and sad.

Mark the response as **happy** if it includes the following *types* of responses:

Happy  
Mostly good dreams  
Happy mostly  
good pictures

Mark the content as **sad** if it includes the following *types* of responses:

Sad  
Bad  
Don't know, sometimes bad

Mark the content as **happy and sad** if it includes the following *types* of responses:

Some happy, some sad  
Some scary, some not  
Half happy, half sad  
Some good, some bad

Score dream mood and proceed to question 2a.

**B. Daydreams**

***Question 2a***

**Do you sometimes see pictures of things in your head (daydream) during the day?**

Responses are divided into affirmative, negative, or sometimes.

Mark the response **affirmative** according to the criteria for question 1a.

Mark the response **negative** if it includes the following *type* of responses:

- No
- Only when I'm dreaming
- I don't get pictures in my head

Mark the response **sometimes** according to the criteria for question 1a.

If the question yields an affirmative or sometimes response, score the response according to question 2a and proceed to question 2b.

If the question yields a negative response, score the response according to question 2a and proceed to question 3a.

***Question 2b***

**What kinds of pictures do you see? (What kind of things do you day dream about/Can you describe them to me or tell me about them?)**

Responses are divided into memory and day-dream content. Children's responses can be scored on both memory and day-dream content.

***Memory***

Responses are divided into can't remember or remember. Use the criteria for question 1b.

If the question yields a can't remember response, score the response according to question 2b and proceed to question 2c.

If the question yields a descriptive (remembered) response, score the response according to question 2b and proceed to score day-dream content.

### *Day-dream content*

Responses are divided into mythical, fictional, and realistic in accordance with the **mythical-realistic** dimension. Score day-dream content according to the criteria for question 1b.

Score daydream content and proceed to question 2c.

### *Question 2c*

**Are they happy pictures (daydreams) or sad pictures (daydreams)?**

Responses are divided into memory and day-dream mood. Children's responses can be scored on both memory and day-dream mood.

#### *Memory*

Responses are divided into can't remember or remember. Use the criteria for question 1b.

If the question yields a can't remember response, score the response according to question 2c and proceed to question 2d.

If the question yields a descriptive (remembered) response, score the response according to question 2c and proceed to score day-dream mood.

#### *Day-dream mood*

Responses are divided into happy, sad, or happy and sad. Use the criteria for question 1c.

Score day-dream mood and proceed to question 2d.

### *Question 2d*

**Do you picture these things in your head (daydream) when you are on your own (when there is nobody else around)?**

Responses are divided into affirmative, negative, or sometimes.

Mark the response **affirmative** according to the criteria for question 1a.

Mark the response **negative** according to the criteria for question 1a.

Mark the response **sometimes** if it includes the following *types* of responses:

Sometimes alone  
 Sometimes in class  
 Sometimes with mum  
 Sometimes with other people

Score the response according to question 2d and proceed to question 2e
--

### *Question 2e*

**Do the people and things that you picture in your head (daydream about) sometimes seem so real that you think you can almost see or hear them in front of you?**

**[ Prompt: Can you see the pictures in your head (daydreams) like you see me?]**

The prompt question was only asked if the response to question 2e indicated that additional information may be obtained through further questions.

Responses are divided into affirmative, negative, sometimes, or can't remember.

Mark the response **affirmative** according to the criteria for question 1a.

Mark the response **negative** according to the criteria for question 1a.

Mark the response **sometimes** according to the criteria for question 1a.

Mark the response **can't remember** according to the criteria for question 1b.

If the question yields a can't remember response, proceed to the prompt question. The prompted response is scored according to the criteria for question 2e.
---

Score all other responses according to question 2e and proceed to question 3a.
--

## **C. Scary Thoughts**

### *Question 3a*

**Do you sometimes get real scared because of something that you think about?**

Responses are divided into affirmative, negative, or sometimes. Use the criteria for question 1a.



If the question yields an affirmative or sometimes response, score the response according to question 3a and proceed to question 3b.

If the question yields a negative response, score the response according to question 3a and proceed to question 4a.

### *Question 3b*

**What kinds of things do you think about that scare you?/Can you tell me about (or describe) them?**

Responses are divided into memory and scary thoughts content. Children's responses can be scored on both memory and scary thoughts content.

#### *Memory*

Responses are divided into can't remember or remember. Use the criteria for question 1b.

If the question yields a can't remember response, score the response according to question 3b and proceed to question 3c.

If the question yields a descriptive (remembered) response, score the response according to question 3b and proceed to score scary thought content.

#### *Scary thought content*

Responses are divided into mythical, fictional, and realistic in accordance with the **mythical-realistic** dimension. Score scary thought content according to the criteria for question 1b.

Score scary thought content and proceed to question 3c.

### *Question 3c*

**Do you try really hard not to think about these scary things?**

Responses are divided into affirmative, negative, or sometimes

Mark the response **affirmative** according to the criteria for question 1a.

Mark the response **negative** according to the criteria for question 1a.

Mark the response **sometimes** according to the criteria for question 1a.

Score the response according to question 3c and proceed to question 4a.

## D. Pretend Games

### *Question 4a*

**Do you play pretend games when you are by yourself (on your own or when nobody else is around)?**

Responses are divided into affirmative, negative, or sometimes. Use the criteria for question 1a.

If the question yields an affirmative or sometimes response, score the response according to question 4a and proceed to question 4b.

If the question yields a negative response, score the response according to question 4a and proceed to question 5a.

### *Question 4b*

**What kinds of pretend games do you play by yourself?**

Responses are divided into memory and pretend game content. Children's responses can be scored on both memory and pretend game content.

#### *Memory*

Responses are divided into can't remember or remember. Use the criteria for question 1b.

If the question yields a can't remember response, score the response according to question 4b and proceed to question 5a.

If the question yields a descriptive (remembered) response, score the response according to question 4b and proceed to score pretend game content.

#### *Pretend game content*

Responses are divided into mythical, fictional, and realistic in accordance with the **mythical-realistic** dimension. Use the criteria for question 1b with the following additions to the mythical, fictitious, and realistic categories.

Mark the content **mythical** if it includes any of the items listed in question 1b, or the following *types* of responses:

Pretending to be a mythical character that has magical properties (e.g., fairy)

Pretend to be floating in a supernatural way

Devising games that involve any of the items listed in question 1b

Mark the content **fictional** if it includes any of the items listed in question 1b, or the following *types* of responses:

Pretending to be a fictional character (e.g., Batman, Captain Planet)  
Devising games that involve any of the items listed in question 1b

Mark the content **realistic** if it includes any of the items listed in question 1b, or the following *types* of responses:

Pretending to be different animals (e.g., playing puppies)  
Devising games from social and living events (teacher-pupil, tea-parties, dress-ups)  
Well known games (e.g., hide and seek, chasey, duck, duck, goose, sport)  
Building things from real items (e.g., lego, duplo, making a boat out of cushions)  
Devising stories for real items such as plastic dinosaurs, and dolls  
Devising games that involve any of the items listed in question 1b

Score pretend game content and proceed to question 5a
---

### ***Question 5a***

**Do you play pretend games when you are with your friends?**

Responses are divided into affirmative, negative, or sometimes. Use the criteria for question 1a.

If the question yields an affirmative or sometimes response, score the response according to question 5a and proceed to question 5b.
--

If the question yields a negative response, score the response according to question 5a and proceed question 6.
---

### ***Question 5b***

**What kinds of pretend games do you play with your friends?**

Responses are divided into memory and pretend game content. Children's responses can be scored on both memory and pretend game content.

#### ***Memory***

Responses are divided into can't remember or remember. Use the criteria for question 1b.

If the question yields a can't remember response, score the response according to question 5b and proceed to question 6.

If the question yields a descriptive (remembered) response, score the response according to question 5b and proceed to score pretend game content.

### ***Pretend game content***

Responses are divided into mythical, fictional, and realistic in accordance with the **mythical-realistic** dimension. Use the criteria for question 1b with the additions that are listed in question 4b.

Score pretend game content and proceed to question 6.

### ***Question 6***

**Sometimes when you play pretend games, do you feel so happy that you don't ever want the game to end?**

Responses are divided into affirmative, negative, or sometimes. Use the criteria for question 1a.

Score the response according to question 6 and proceed to question 7.

### ***Question 7***

**Sometimes when you play pretend games, do you feel like you can really see the pretend places and people in the room with you?**

Responses are divided into affirmative, negative, or sometimes. Use the criteria for question 1a.

Score the response according to question 7 and proceed to question 8a.

### **E. Imaginary Companion**

#### ***Question 8a***

**Do you have a make-believe friend who you talk to and who goes places with you?**

Responses are divided into affirmative or negative. Use the criteria for question 1a.

If the question yield's an affirmative response, score the response according to question 8a and conclude the scoring for interview.

If the question yield's a negative response, score the response according to question 8a and proceed to question 8b

#### ***Question 8b***

**Did you have a make-believe friend who you talked to and who went places with you?**

Responses are divided into affirmative or negative. Use the criteria for question 1a.

Score the response according to question 8b and conclude the scoring for the interview.

## APPENDIX D-1

## Post -test Interview - Study Four

*If the child went into the tent-*

**Q1A. What did you think when you went inside the tent?**

If the child answers with a single adjective answer (e.g., good) proceed with Probe A

[Probe A: e.g., What was good about it?]

If the child's answer is descriptive of the tent and what they saw proceed with Probe B.

[Probe B: That was what you saw but what were you thinking before you went into the tent?]

If the child's statement indicates the belief that something may have been in the tent proceed to question 4a.

If the child's answer is vague (e.g., don't know) proceed to question 2.

~~~~~

*If the child did not want to go into the tent - ask question 1b*

**Q1B. Oh, did you not want to go into the tent - Can you tell me why ?**

Irrespective of the child's answer proceed to question 2.

~~~~~

**Q2. Did you think there was something inside the tent?**

[Probe: What about when you went to put my writing pad back in the tent did you think there might be something inside the tent?]

If the child's answer is vaguely affirmative (e.g., a head nod) proceed to question 3, otherwise proceed to question 4a.

If the child's answer is indicative of the control phase referring to retrieving the pad from the tent, proceed to the probe.

~~~~~

**Q3. What did you think was inside the tent?**

[Probe: What about when you went to put my writing pad back in the tent did you think there might be something inside the tent?]

If the child's answer is indicative of the control phase referring to retrieving the pad from the tent proceed to the probe, otherwise proceed to question 4a.

~~~~~

**Q4A. Did you think there might have been a monster inside the tent?**

Irrespective of the child's answer proceed to question 4b.

~~~~~

**Q4B. Did you think there may have been something else inside the tent?**

[Probe: What about when you went to put my writing pad back in the tent did you think there might be something inside the tent?]

If the child answers negatively to questions 4a and 4b proceed to question 4d.

If the child answers affirmatively to question 4b, proceed to question 5.

If the child answers affirmatively to question 4a, proceed to question 4c.

If the child's answer is indicative of the control phase referring to retrieving the pad from the tent, proceed to the probe.

~~~~~

**Q4C. Did you think the monster inside the tent was like the one you described to me for my story?**

Irrespective of the child's answer proceed to question 5.

~~~~~

**Q4D. What made you think that there was nothing inside the tent?**

[Probe: What about when you went to put my writing pad back in the tent did you think there might be something inside the tent?]

If the child's answer is indicative of the control phase referring to retrieving the pad from the tent proceed to the probe, otherwise proceed to question 5.

~~~~~

**Q5. Do you sometimes see pictures of things in your head (daydream) during the day?**

Irrespective of the child's answer proceed to question 6a.

~~~~~

**Q6A. Do you ever see make-believe things or pictures in your mind and think about them?**

If the child answers negatively proceed to question 7a.

If the child provides a detailed description of the pictures that they see proceed to question 6c, otherwise proceed to question 6b.

~~~~~

**Q6B. What kinds of pictures do you see?**

If the child's answer is vague (e.g., lots, I don't know) proceed to question 6b1.

If the child's answer is descriptive proceed to question 6c.

~~~~~

**Q6B1. Can you describe them to me?**

Irrespective of the child's answer proceed to question 6c.

~~~~~

**Q6C. Do the people and things that you picture in your head (daydream about) sometimes seem so real that you think you can almost see or hear them in front of you?**

Irrespective of child's answer proceed to question 6d.

~~~~~

**Q6D. Can you see the pictures in your head (daydreams) like you see me?**

Irrespective of the child's answer proceed to question 7a.

~~~~~



**Q7A. Do you sometimes get real scared because of something that you think about?**

If the child answers negatively the interview is concluded.

If the child’s answer is vague (e.g., yes) proceed to question 7b.

If child describes scary thoughts proceed to question 7c.

~~~~~

**Q7B. What kinds of things do you think about that scare you/Can you tell me about them?**

Irrespective of child’s answer proceed to question 7c.

~~~~~

**Q7C. Do you try really hard not to think about these scary things?**

Conclusion of interview.

~~~~~

## APPENDIX D-2

## Parent Permission Form for Studies Four and Five



**UNIVERSITY OF TASMANIA**

*Department of Psychology*

### Parent Permission Form

Dear parent or guardian,

My name is Paula Bouldin. I am a PhD student in the Department of Psychology at the University of Tasmania. Under the supervision of Prof. Chris Pratt, I am conducting a study on childhood play to investigate the role of imaginative activity in childhood development. As I am interested in all aspects of imaginative play including imaginary companions, this study seeks information regarding the play of children who do *and* do not have imaginary companions. An imaginary companion is a very vivid imaginary character (person or animal) that does not *actually* exist although the child treats it as though it does.

This study requires children to actively participate in one controlled pretend play session at their preschool or school. During this session, children will be asked to describe a storybook character such as an animal or monster and then imagine that it exists in the room with them. Each child's reaction to this imagined character will be observed and recorded on video. Previous research has indicated that children thoroughly enjoy this type of pretend play situation and often do not want it to end.

Be assured that every child who participates will be accompanied throughout this session and that *all* recordings and other data will remain *strictly* confidential. Individual results *will not* be released to any person except at parental request and you may withdraw your child from this study at any time simply by stating your desire not to continue. In addition, approval for this study has been obtained from the University Ethics Committee. If you have any queries please do not hesitate to contact me on (002) 207664.

If you are willing to allow your child to participate in this study, could you please read the following paragraph and sign the form below.

" I have read the information above and any questions I have asked have been answered to my satisfaction. I agree to let my child participate in this investigation and understand that I may withdraw at any time. I agree that research data gathered for the study may be published provided that my child cannot be identified as a participant. "

Signature of parent.....Date.....

Contact phone number.....

Address (if no contact phone number).....

Could you please indicate if your child has an imaginary companion by circling either yes or no in the space provided below.

Imaginary companion.....YES.....NO

Thank you for your cooperation.

Sincerely,

.....  
Paula Bouldin

.....  
Chris Pratt

## APPENDIX D-3

### Procedure and Instructions for Conducting Study Four

#### **Procedure**

##### **Author:**

- Sets up the camera and testing room prior to each testing session.
- Accompanies each child to and from the classroom.
- On arrival at the testing room, introduces the child to the experimenter and then leaves.
- Packs up the testing room at the end of each session.

##### **Experimenter:**

After the introductions, invites the child to sit at least 40cm from the tent.

The experimenter *must* ensure that:

- The child is seated facing the side of the tent where the silhouette will be projected.
- The child cannot see into the tent through the tent flaps.
- Both the child and experimenter are in line with the camera lens without obstructing recording.
- The projector remote control is concealed.

The experimenter then sets the camera to record and commences with a 5 to 10 minute conversation that asks children about their favorite TV shows, games, and stories.

#### **Introduction**

Hi (child's name) we'll just sit here shall we? You know I'm really interested in finding out the kinds of games and stories that boys/girls of your age like, so I'm going to ask you a few questions about your favorite games, stories, and TV shows. O.K.?

#### **Control phase**

At the end of this conversation the experimenter then asks the child:  
"Could you get my writing pad out of the tent for me? Thanks."

#### **The test phase**

The experimenter then tells the child:

Well, I'm trying to write a story for children your age. Its about a monster that lives in a cave, a bit like that tent over there. In my story, this monster is so good at hiding that it might be near you in the cave but you wouldn't know unless it decided to let you see it The only problem is, I'm having

trouble describing what it looks like and I need your help. Do you think you could help me describe the monster?

- The child is urged to fully describe the monster. Whilst the child is describing the monster, the experimenter is to continually draw the child's attention to the tent with comments such as "Do you think the monster would fit in the tent?"
- After the child has finished describing the monster, the child's efforts are to be praised and their attention again drawn to the tent whilst projecting the monster-like silhouette onto it
- The silhouette is to be projected for up to three seconds (maximum).
- If the child reacts to the silhouette and indicates that they saw something, the silhouette is not to be projected again.
- If the child does not react to the silhouette or does not indicate that they saw something, the silhouette is to be projected again and two additional remarks are to be made. These are: "Are you okay?" and "O.K. you just looked a bit worried". This second statement should be said in a light dismissive tone of voice.
- If the child responds to these questions with vague responses (e.g., "look!") or questions the experimenter regarding what they saw, two additional questions are to be asked. These are: "What's that?" and "What do you think it is?"
- After ensuring that the child had seen the projection, the experimenter then says: "Thanks (child's name) your description is really good and has really helped me a lot. Would you put my writing pad back in the tent for me?"
- Children who do not wish to enter the tent do not have to do so.

#### Post-test phase

- The experimenter says "I just have to add your description of the monster to my story, whilst I'm doing this you can play with any of the toys in this room."
- The experimenter will then move away from the child and appear engrossed in adding the child's description to the story.
- After an interval of 90 seconds, and whilst the child is playing, the experimenter will ask the child the post-test questions.

#### The post-test questions

- The experimenter can use the written interview provided, but *must* be familiar with the questions and guidelines regarding the progression of the interview.
- The interview questions *must* be asked *exactly* as they appear in the written interview.

- On completion of the post-test questions, the experimenter stops the camera recording.

### Debriefing

The experimenter de-briefs the child with regard to the fact that the shadow is a trick, but does not show the child the whole set-up. For example:

(child's name) you know that shape that you saw on the tent here (points to side of tent) well its a trick that I can do with light. See, I have a very special gadget that uses the light to form a shadow, so there wasn't anything in the tent it was just the light. Okay? Do you want to have a look in the tent with me? See, there's nothing in here. It's nice in here isn't it? you could have tea parties in it. How many friends do you think would fit in here?....

This explanation can be varied according to each child's level of understanding. However, in each case the experimenter *must* ensure that the child understands that the silhouette was a trick and encourage them to think of pleasant uses for the tent.

### **General points**

1. If a lot of children are being tested from one class, the experimenter asks the child to keep it a secret and not to spoil the surprise for others.
  2. The experimenter stops the procedure *immediately* if the child appears distressed.
  3. The words **pretend** and **make-believe** are not to be mentioned at all.
  4. The experimenter should not indicate that they have seen the shadow and should adopt a neutral attitude toward the possibility that monsters exist and could exist in the tent.
  5. The experimenter should always remain facing the child. Do not sit side on/profile to the child because the child will move around to face you and place their back to the camera.
  6. Use the word daydream instead of pictures in the head for older children (6years to 8 years). If daydream is not understood then revert to pictures in your head.
  7. The experimenter should write down (in the note book provided) her subjective impressions regarding the ease or difficulty with which rapport was established with each child. These impressions should be written down as soon as the child leaves the testing room and should include whether the child was easy or difficult to talk to and whether she/he required continual prompting to speak.
-

## APPENDIX D-4

## See and Touch Questions from Taylor et al. (1993)

Can you see (friend's name)?

Can you see (friend's name) the way you see me?

Do you think I can see (friend's name) right now?

Can you touch (friend's name)?

Can you touch (friend's name) the way you touch me?

Do you think I can touch (friend's name)?

Can you describe (friend's name) to me?

## APPENDIX D-5

## Response Variables and Sample Definitions Code Book - Study Four

(Developed by Paula Bouldin)

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## Purpose of this code book

This code book has been specifically devised to allow categorisation of children's responses following the projection of a monster shaped silhouette. The purpose of this categorisation was to assess children's: a) responses to seeing a silhouette of a monster after having described one, b) beliefs that an imaginative monster could be reflected in reality, and c) general immersion in fantasy.

In accordance with the sequence of the study, the code book is divided into three sections: a) the control phase, where the child initially retrieves the pad from the tent; b) the test phase, which includes the child's response to seeing the silhouette, and subsequent approach to, and behavior at, the tent; and c) the post test phase, which includes play with toys and a post test interview.

Code the responses in each section by placing a tick beside the appropriate answer on the score sheet provided. Unless specifically directed, score **ONE** response for each child.

### A. Control Phase

#### Could you get my writing pad out of the tent for me? Thanks

Responses are divided into no hesitation or hesitation.

Mark the response **no hesitation** if it includes the following *types* of response:

There was less than a two second delay between the interviewer's request and the child's readiness to enter the tent and retrieve the pad. This definition excludes any difficulties the child may have had either finding the opening of the tent, or a path past the interviewer into the tent.

*Examples may include:*

Enters the tent through the doorway without hesitation.

Lifts up the sides of the tent and retrieved the pad. Child's head and shoulders do not necessarily enter the tent.

Crawls under the tent walls so that head and shoulders are inside the tent

Mark the response **hesitation** if it includes the following *types* of response:

There was a two second or greater delay between the interviewer's request and the child's readiness to enter the tent and retrieve the pad despite an awareness of, and an ability to negotiate a path to, the opening of the tent.



## B. Test Phase

### RESPONSE TO SEEING THE SILHOUETTE

**Whilst projecting the silhouette, the interviewer asked, “Do you think the monster would fit in the tent?”**

Responses to the silhouette are divided into non-verbal responses which include each child’s expression or general response and physical reaction, and verbal responses. Children’s responses can be scored as both non-verbal and verbal.

In cases where the child either did not react to the silhouette, or required prompting to indicate that they had seen the silhouette, two prompts were used. These prompts were:

**[ Prompt A: Are you O.K. there?]**

**[ Prompt B: O.K. You just looked a bit worried]**

Prompt A was initially asked to convey empathy and induce the child to indicate whether they had seen the silhouette. If no response was obtained prompt B was asked. However, the content of this prompt was never an indication of a child’s facial expression. It was used as a light-hearted dismissive statement to explain the interviewer’s previous question and to prompt the child to indicate if they had seen the silhouette.

If the child’s reply to prompts A and/or B included a verbal response indicating that they had seen something (e.g., “Look!”) two additional prompts were used to elicit further information. These prompts were:

**[Prompt C: What’s that?]**

**[Prompt D: What do you think it is?]**

Prompt C was initially asked to induce a child to explain what they had seen. If the response to this prompt was either vague (e.g., “There was a flash”) or questioning (e.g., “What is it?”) then prompt D was asked.

### Non-verbal Responses

#### *Expression or general response*

Responses are divided into general response or no response.

Mark the behaviour as **general response** if it includes the following *types of response*:

Chewing coat sleeve  
Lowered tone  
Startled

Giggles  
Shivers..Mm

Mark the behaviour **no response** if it includes the following types of response:

The child does not react as described above.

The child does not react except to answer the prompts by nodding their head.

### ***Physical reaction***

Responses are divided into movement or no movement.

Mark the response **movement** if it includes the following types of response:

Crawling around the perimeter

Going inside the tent

Lifts the side of the tent and looks inside

Crawls to the tent opening and opens tent flaps

Looks at the side where the silhouette appeared

Touches the tent where the silhouette appeared

Makes to approach the tent

Goes back to investigate the tent

Turns or moves away from the tent

Looks around the room

Points to the side of the tent where the silhouette had been projected

Mark the response **no movement** if it includes the following types of response:

The child does not engage in any of the previously described behaviors.

### **Verbal Responses**

Responses are divided into spontaneous comments and prompt statements. If a spontaneous comment required clarification then prompts C and D were asked. If the child did not react to the silhouette then prompts A and B were asked followed by prompts C and D if further explanation was required. Children's responses can be scored in both spontaneous and prompted categories.

### ***Spontaneous comments***

Responses are divided into no spontaneous comment, spontaneous non-monster, or spontaneous monster.

Mark the response **no spontaneous comment** if it includes the following types of responses:

The child does not make any statements or comments at all.

Mark the response **spontaneous non-monster** if it includes the following *types* of responses:

Non-monster statements, questions, and exclamations where the context of the conversation indicates that the child saw something but does not specifically state that they thought it was the monster's silhouette.

*Examples may include:*

How's that done?

What's that thing?

Cool!

Huh Huh look!

Ooh I saw something!

There's a light flashed on

There's something flashing on it!

Look!

How come it's glowing?

Monsters have it dark in there and it's light in there

Let me see in here

There's a light just flashed on

There's something flashing on it

I can see changes in there

Oh, there it is

There's something there

Guess what? I saw something on the tent there

Mark the response **spontaneous monster** if it includes the following *types* of responses:

Monster statements, questions, and exclamations where the context of the conversation indicates that the child believes they saw a monster's silhouette.

*Example may include:*

Hey! How did he get in there?

Is that a real monster?

I saw something flash and it looked like the monster

I saw a light and he was like a monster

I saw something flash and it looked like a monster

### ***Prompt statements***

Responses are divided into p-no comment, p-non-monster, or p-monster.

For the following prompt categories, indicate the type of prompts that were used to elicit the response(s) by placing a tick in the box that denotes prompt A/B and/or prompt C/D.

Mark the response **P-no comment** if it includes the following *types* of response:

The child does not react until prompted and when prompted does not comment except to answer the prompt questions.

Mark the response **P-non-monster** if it includes the following *types* of response:

The context of the conversation indicates that the child believes that something, but not the monster, is inside the tent.

*Examples may include:*

It had a shadow of a blue shape

It's only a photo or something

I saw a shadow in there

I saw something flashing there

Shadow, it's flashing

There's something going on and off in there, keeps flashing on and off

Black tiger

Mark the response **P-monster** if it includes the following *types* of response:

The context of the conversation indicates that the child believes that a monster is inside the tent.

*Examples may include:*

That might be the monster's shadow

The monster

A monster

Probably the monster

Looked like a dinosaur...looked like a dragon too

I saw a monster pale blue

The monster how can he do it?

I'm not scared of any monster! I go BOOF!

There's a dark green monster on the tent

Could be the monster

But I can see a shadow of a monster in there

Saw a light in there of a monster

## APPROACH TO THE TENT

The approach to the tent is divided into non-verbal behaviours which includes each child's physical movements, and verbal behaviours. Children's behaviours can be scored as both non-verbal and verbal.

Both non-verbal and verbal behaviours are divided into no hesitation, hesitation, or does not approach.

## **Non-verbal Behaviour**

Mark the response **no hesitation** if it includes the *type* of response that is described in the control phase, or the following examples:

Child rushes to inspect the tent

Child demonstrates an eagerness to inspect the tent immediately following the projection of the silhouette

Child approaches the tent without hesitation

Mark the response **hesitation** if it includes the *type* of response that is described in the control phase.

Mark the response **does not approach** if it includes the following *types* of response:

The child does not make any movement toward the tent.

*Examples may include:*

Child moves closer to the interviewer

## **Verbal Behaviours**

Mark the response **no hesitation** if it includes the following *types* of response:

The child's comments indicate eagerness to look inside the tent.

*Examples may include:*

Can I have a look?

Mark the response **hesitation** if it includes the following *types* of response:

The child's comments suggest a reluctance to enter the tent and replace the pad.

*Examples may include:*

Is it O.K. if I slip it under?

Mark the response **does not approach** if it includes the following *types* of response:

The child responds to the interviewer's request to replace the pad negatively.

*Examples may include:*

No

I don't want to

## BEHAVIOUR AT THE TENT

Behavior at the tent is divided into non-verbal behaviours which includes each child's physical movements, and verbal behaviours. Children can be scored on both non-verbal and verbal behaviours.

### Non-verbal Behaviours

Responses are divided into enters the tent, or does not enter the tent

Mark the response **enters the tent** if it includes the following *types* of response:

Child enters the tent and replaces the pad at the back of the tent.  
Crawls under the tent side, and with head and shoulders inside the tent, replaces the pad.  
Peeks through the tent flaps so that head and/or shoulders are inside the tent and places the pad inside  
Crawls through the tent flaps so that head and/or shoulders are inside the tent

Mark the response **does not enter the tent** if it includes the following *types* of response:

Lifts up the side of the tent and slides the pad under the tent walls  
Refuses to enter  
Throws the pad through the tent flaps without opening them  
Slides pad under the tent wall without lifting up the side of the tent  
Opens tent flaps, but does not enter and throws the pad through the flaps

### Verbal Responses

Responses are divided into no comment, non-monster, or monster.

Mark the response **no comment** if it includes the following *types* of response:

The child does not make any comments

Mark the response **non-monster** if it includes the following *types* of response:

It's fun in here  
When I look at the side it comes on  
I didn't even have to go in  
No really, there is something  
Ooh I wonder what that is  
There's a twig I found it  
'Cause there's something in there  
What was that light then?

See, it's only a shadow  
 This stuff is just kidding  
 Nothing, there was a shadow but there's none in here  
 Is anyone in there?

Mark the response **monster** if it includes the following *types* of response:

I hope there's no monster in there  
 There has to be a monster in here, I saw one  
 I think that monster's still there  
 'Cept you keep watching it. Can you see one?  
 See? How did it get in there?  
 The monster's too big!  
 No monster, where's the monster? He must be a good hider  
 I can't see a monster in here. I'll not go in  
 Real fast because the monster is fast  
 But there's a monster in there!  
 Make sure the monster doesn't get me  
 I don't know how 'cause the monster's not in there  
 As long as the monster isn't there

### C. Post Test Phase

#### PLAY WITH TOYS

Play with toys is divided into non-verbal behaviours which includes each child's physical movements, and verbal behaviours. Children's play can be scored on both non-verbal and verbal behaviours.

#### Non-verbal Behaviour

Non-verbal behaviours are divided into intermittent looking at the tent or no intermittent looking at the tent.

Mark the response **no intermittent looking** if it includes the following *types* of response:

The child does not look at the tent  
 Glances at the tent for less than two seconds whilst playing with the toys.

Mark the response **intermittent looking** if it includes the following *types* of response:

Child keeps looking at the tent  
 Child looks at the tent intermittently during play with the toys  
 Child looks at the tent for longer than two seconds whilst playing with the toys

## **Verbal Behaviour**

Verbal responses are divided into no comment, non-monster, or monster.

Mark the response **no comment** if it includes the following *types* of response:

Child did not make any comments at all whilst playing with the toys.

Mark the response **non-monster** if it includes the following *types* of response:

I got one of these at home

What's this?

This doesn't work

My brother's got one of these

Mark the response **monster** if it includes the following *types* of response:

Monster's gone away, so he's not going to come again

Make the monster mad

The shadow's not there anymore, I think he might be having a sleep

Do you think the monster will come again?

Do you think monster's are true?

## **POST-TEST INTERVIEW**

**Question 1a - What did you think when you went inside the tent?**

**[ Probe A: What was good/scary about it?]**

**[ Probe B: That was what you saw but what were you thinking before you went into the tent?]**

Probe A was asked to induce the child to provide a more detailed answer than a single positive or negative word regarding what they thought about when they went inside the tent.

Probe B was asked if the child answered the question with a description of what they saw inside the tent rather than what they thought when they went into the tent.

Responses are divided into monster, non-monster, descriptive, positive, negative, or don't know.

Mark the response **monster** if it includes the following *types* of response:

The monster, I saw that he had hair all sticking up out of his head

I didn't see any monster!

I thought there was a monster but I didn't know

The monster

There was a monster's shadow 'cause it was up and again



I thought there was going to be a monster in there  
 Got lots of invisible monsters there and a really good hiding monster  
 Might be hiding in the sheet or something  
 It had a monster in it!  
 Because of the monster. I thought the monster was watching me  
 I was thinking there was a monster in there  
 I saw a blue bit and I thought it was the monster  
 Big foot  
 It was the same, that scary antelope  
 A monster 'cause I saw something moving there  
 The monster with big foot steps  
 A monster 'cause I saw the flash there  
 A furry monster

Mark the response **non-monster** if it includes the following *types* of response:

There's nothing in there except the shadow  
 That I saw something  
 That there was a tiger in there  
 I thought there was a few friends in there  
 A teddy bear  
 Something in there I didn't notice before  
 The pad was there  
 It looked like a tree  
 This secret one (indicates twig)  
 A gorilla  
 Things like pens  
 The paper  
 A clown  
 A bird  
 I thought it was a cubby house  
 I thought it might be colorful inside  
 Because there was a projection, I saw it  
 You feel all camouflaged in there  
 Like a cave  
 That monster would fit in it  
 It was just normal nothing in there

Mark the response **descriptive** if it includes the following *types* of response:

There was something looked like people on the side here  
 That it was all white  
 It's my favorite color  
 It was this tent  
 I liked the light  
 Just like seeing white things, just white things  
 It was plain, dull  
 Cubby's good  
 It wasn't dark

Lots of room  
It stinks  
It glowed

Mark the response **don't know** if it includes the following *types* of response:

Don't know  
Ummm  
Can't remember  
I'm not sure  
I forgot  
I guess

Mark the response **positive** if it includes the following *types* of response:

Good  
It was fun  
It was great  
Warm  
Secure  
Liked it  
It's not scary

Mark the response **negative** if it includes the following *types* of response:

Scared  
Scary  
Not really  
Strange

If the first response is positive or negative, proceed to Probe A and score the probe response according to monster, non-monster, or don't know categories of question 1a and proceed to question 4a.

If the first response is a descriptive statement, proceed to Probe B and score the probe response according to monster, non-monster, or don't know categories of question 1a and proceed to question 4a.

If the first response is monster or non-monster, score the response according to question 1a and proceed to question 4a.

If first the response is don't know, score the response according to question 1a and proceed to question 2.

*If the child did not want to go into the tent proceed to the response to question 1b*

**Question 1b - Oh did you not want to go into the tent - Can you tell me why?**

Responses are divided into monster, non-monster, or don't know.

**Monster, non-monster, and don't know** are scored according to the criteria for question 1a.

Score the response according to question 1a and proceed to question 2

## Question 2

**Did you think there was something inside the tent?**

**[Probe: What about when you went to put my writing pad back in the tent did you think there might be something inside the tent?]**

The probe question was asked if the child's initial answer indicated that they were referring to the control phase when they went to retrieve the pad, rather than the post-test phase after they saw the projection. It was used to re-focus the child's attention on the sighting of the monster's silhouette without specifically mentioning it.

Responses are divided into monster, non-monster, affirmative, or don't know.

Mark the response **monster** according to the criteria for question 1a.

Mark the response **non-monster** if it includes any of the items listed in question 1a or the following *types* of response:

No, because there was no colors  
Nothing 'cept the bars holding it up  
Not really  
Nods negatively

Mark the response **affirmative** if it includes the following *types* of response:

Yes  
Nods affirmatively  
Mm - nods affirmatively  
Uhuh - nods affirmatively  
Yep  
Nope...actually I did  
Yes 'cause I saw something on the outside there  
no 'cause I'll get scared

Yeah  
There could be

Mark the response **don't know** according to the criteria for question 1a.

If the response is affirmative but only includes one word or a head nod, do not score the response but proceed to question 3.

Score all other responses to question 2 or the probe question according to the criteria for question 2 and proceed to question 4a.

### Question 3

**What did you think was inside the tent?**

**[Probe: What about when you went to put my writing pad back in the tent did you think there might be something inside the tent?]**

The probe question was asked if the child's initial answer indicated that they were referring to the control phase when they went to retrieve the pad, rather than the post-test phase after they saw the projection. It was used to re-focus the child's attention on the sighting of the monster's silhouette without specifically mentioning it.

Responses are divided into monster, non-monster, or don't know.

**Monster, non-monster, and don't know** are scored according to the criteria for question 1a.

Score all responses to question 3 or the probe question according to the criteria for question 3 and proceed to question 4a.

### Question 4a - Did you think there might have been a monster inside the tent?

Responses are divided into affirmative or negative.

Mark the response **affirmative** if it includes any of the items listed in question 2, or the following *types* of response:

Yeah, I saw it's shadow  
Yes, probably  
I thought it was a real monster  
A monster

Mark the response **negative** if it includes the following *types* of response:

No  
 Nods negatively  
 Don't think so  
 Not really  
 No, it must have been a tree  
 No, there was nothing  
 There's no such thing as monsters

|                                                                        |
|------------------------------------------------------------------------|
| Score the response according to question 4a and proceed to question 4b |
|------------------------------------------------------------------------|

**Question 4b - Did you think there may have been something else inside the tent?**

**[Probe: What about when you went to put my writing pad back in the tent did you think there might be something inside the tent?]**

The probe question was asked if the child's initial answer indicated that they were referring to the control phase when they went to retrieve the pad, rather than the post-test phase after they saw the projection. It was used to re-focus the child's attention on the sighting of the monster's silhouette without specifically mentioning it.

Responses are divided into affirmative or negative.

**Affirmative** and **negative** are scored according to the criteria for question 4a.

|                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| If questions 4a and 4b both yield negative responses, score the responses according to the criteria for questions 4a and 4b, and proceed to question 4d. |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------|
| If question 4b yields an affirmative response, score the response according to question 4b and proceed to question 5. |
|-----------------------------------------------------------------------------------------------------------------------|

|                                                                                               |
|-----------------------------------------------------------------------------------------------|
| If the response to question 4a was scored as an affirmative response, proceed to question 4c. |
|-----------------------------------------------------------------------------------------------|

**Question 4c - Did you think the monster inside the tent was like the one you described to me for my story?**

Responses are divided into affirmative or negative.

Mark the response **affirmative** if it includes any of the items listed in question 2, or the following *types* of response:

He was!  
 That flash might be it's power!

Yeah, it might be a ghost or a monster  
 I saw it  
 Mhmm  
 Yeah, he must be a very good hider  
 He must have got out of his story  
 Yes, I didn't want to go in

Mark the response **negative** if it includes any of the items listed in question 4a, or the following *types* of response:

Just a teddy one

|                                                                        |
|------------------------------------------------------------------------|
| Score the response according to question 4c and proceed to question 5. |
|------------------------------------------------------------------------|

**Question 4d - What made you think that there was nothing inside the tent?**

**[Probe: What about when you went to put my writing pad back in the tent did you think there might be something inside the tent?]**

The probe question was asked if the child's initial answer indicated that they were referring to the control phase when they went to retrieve the pad, rather than the post-test phase after they saw the projection. It was used to re-focus the child's attention on the sighting of the monster's silhouette without specifically mentioning it.

Responses are divided into justification or no justification.

Mark the response **justification** if it includes the following *types* of response:

Saw there was nothing there  
 'Cause I looked in there  
 Couldn't hear anything breathing  
 'Cause the green thing I saw flashing on and off was probably those stripes up there reflecting on here  
 I didn't see anything else  
 Because I lifted up the tent and looked in there  
 'Cause when I went inside to get the pad there was nothing and I knew there was nothing.  
 There was just white walls  
 Because if there was anything inside you'd be able to see it.  
 There's no such thing  
 'Cause you look at the tent and there's nothing that could hide in it - too see through  
 'Cause there was nothing there and I didn't ever think there was something inside the tent.  
 Nobody was in there unless they came in that end and if they could go in I could see them walking in that one

Mark the response **no justification** if it includes the following *types* of response:

Uhhh.....nothing  
Because I just thinked  
I forgot  
Can't remember

Score the response to question 4d or the probe question according to the criteria for question 4d and proceed to question 5.

### Question 5

**Do you sometimes see pictures of things in your head (daydream) during the day?**

Responses are divided into affirmative, negative, or sometimes.

Mark the response **affirmative** if it includes any of the items listed in question 2, or the following *types* of response:

I think in my mind  
Lots of them  
I do get pictures in my head  
Always  
I get pictures in my imagination  
I see monsters and if he was in the tent I was gonna go BOOF! And hit him on the head so hard.

Mark the response **negative** if it includes any of the items listed in question 4a, or the following *types* of response:

What's pictures mean?  
Yes, When I'm asleep

Mark the response **sometimes** if it includes the following *types* of response:

Sometimes  
Yes, sometimes  
Not often  
No, not that much  
Sometimes its something I imagine and sometimes its something I dream.

Score the response according to question 5 and proceed to question 6a.

**Question 6a - Do you ever see make-believe things or pictures in your mind and think about them?**

Responses are divided into affirmative, negative, or sometimes.

Mark the response **affirmative** if it includes any of the items listed in question 2, or the following *types* of response:

I see pictures in my head

I do

I usually think about heroines in a story

I do, but I don't think about them

Mark the response **negative** if it includes any of the items listed in question 2, or the following *types* of response:

No, they're just real

I did see them on the tent only when the light was flashing

Mark the response **sometimes** if it includes any of the items listed in question 5, or the following *types* of response:

Actually it depends on what I see

Sometimes off the TV

If the question yields an affirmative or sometimes response, score the response according to question 6a and proceed to question 6b.

If the response is negative, score the response according to question 6a and proceed to question 7a.

If the response is descriptive, score it as "affirmative" in question 6a and then score it according to the criteria for question 6b. Following this, proceed to question 6c.

**Question 6b -What kinds of pictures do you see?**

Responses are divided into mythical, fictional, realistic, or don't know.

Mark the response **mythical** if it includes the following *types* of response:

Monsters

Ghosts

Dinosaurs

Witches

Vampires

Fairy things/fairies

Aliens

Unicorns



Mark the response **fictional** if it includes the following *types* of response:

- Cartoons
- Peter Pan
- Jack and the beanstalk
- References to events or things that occur in a story
- Reference to artificial enlargement (e.g., things that make things grow huge, a giant tree)
- Reference to dreams (e.g., thinking about what they mean)
- Real animals with fictional markings or powers (e.g., a cat boxing, a duck squirting water everywhere, octopus with poka dots)

Mark the response **realistic** if it includes the following *types* of response:

- Animals (e.g., monkeys, tigers, ducks, wolves, snakes, gorillas, crocodiles)
- Objects or nature (e.g., toys, yacht, lollipops, sky, grass, teddies)
- People (e.g., activities with mum or dad, skeletons, Play School people, soldiers, what people like and what people forget I think I can remember)
- Social and living events (e.g., movies, working in a mine, rollerblading, missing a plane, making up dollies to have a picnic, things that I know)

Mark the response **don't know** if it includes any of the items from question 1a and the following *types* of response:

- Lots
- Everything
- Happy things
- Just pictures
- All sorts of things

If the response is don't know, score the response according to question 6b and proceed to question 6b1.

If the response is mythical, fictional, or realistic, score the response according to question 6b and proceed to question 6c.

**Question 6b1 - Can you describe them to me?**

Responses are divided into mythical, fictional, realistic, or don't know.

Mark the response **mythical** if it includes any of the items listed in question 6b, or the following *types* of response:

- Reference to the monster that was described (e.g., I saw blue, they're hairy and scary, the things in the tent)
- Angels

Mark the response **fictional** according to the criteria for question 6b.

Mark the response **realistic** if it includes any of the items listed in question 6b, or the following *types* of response:

Description of teddy bears (e.g., some are brown with round faces; there's shorttime, long arms, a head and a mouth)  
Reference to mother's bride dress or doll  
Reference to killing a real snake

Mark the response **don't know** if it includes any of the items listed in question 1a, 6b, or the following *types* of response:

Happy times  
I haven't got too many

|                                                                          |
|--------------------------------------------------------------------------|
| Score the response according to question 6b1 and proceed to question 6c. |
|--------------------------------------------------------------------------|

**Question 6c - Do the people and things that you picture in your head (daydream about) sometimes seem so real that you think you can almost see or hear them in front of you?**

Responses are divided into affirmative, negative, or sometimes.

Mark the response **affirmative** if it includes any of the items listed in question 2, or the following *types* of response:

Everything

Mark the response **negative** if it includes any of the items listed in question 4a, or the following *types* of response:

No, I don't make pictures that much  
I can't see them  
Dreams don't seem real

Mark the response **sometimes** according to the criteria for question 5.

|                                                                        |
|------------------------------------------------------------------------|
| Score the response according to question 6c and proceed to question 6d |
|------------------------------------------------------------------------|

**Question 6d - Can you see the pictures in your head like you see me?**

Responses are divided into affirmative, negative, or sometimes..

Mark the response **affirmative** if it includes any of the items listed in question 2, or the following *types* of response:

Yeah 'course!  
Yes I can

Mark the response **negative** if it includes any of the items listed in question 4a, or the following *types* of response:

Sort of  
They're a bit fuzzy  
Almost  
Mm... yes sort of  
I'd have to look in the mirror to see you  
No, I can't see the monster in my brain

Mark the response **sometimes** if it includes any of the items listed in question 5, or the following *types* of response:

Sometimes when I'm at home I can

Score the response according to question 6d and proceed to question 7a.

**Question 7a - Do you sometimes get real scared because of something that you think about?**

Responses are divided into affirmative, negative, or sometimes.

Mark the response **affirmative** if it includes any of the items listed in question 2, or the following *types* of response:

No, only when I see something that's really really scary

Mark the response **negative** if it includes any of the items listed in question 4a, or the following *types* of response:

No, I just think of good dreams and bad dreams  
Nope, 'cause I know they're not real  
No, I think about my favorite things  
No, I quite enjoy it 'cause I know it's a funny one, just my imagination

Mark the response **sometimes** if it includes any of the items listed in question 5, or the following *types* of response:

Yes I do if I'm having a nightmare  
No sometimes when I dream about mummy getting killed I worry about that

If the response is negative, score the response according to question 7a and conclude the scoring for the interview.

If the question yields a one word affirmative response, score the response according to question 7a and proceed to question 7b.

If the response is descriptive, score it as “affirmative” in question 7a and then score it according to the criteria for question 7b. Following this, proceed to question 7c.

**Question 7b - What kinds of things do you think about scare you - Can you tell me about them?**

Responses are divided into mythical fictional, realistic, or don't know..

Mark the response **mythical** if it includes any of the items listed in question 6b, or the following *types* of response:

Navu, he's green, he's got sharp teeth, and he eats tiny boys.

Dragons

Big foot

Dead people who hang around people and go on and on and kill all my friends

Mark the response **fictional** if it includes any of the items listed in question 6b, or the following *types* of response:

The dinosaurs that crushed the rest of the people in Jurassic Park

Videos - Witchy witches

About this story.....a really bad man

Ghosts rides

Agro

Mark the response **realistic** if it includes any of the items listed in question 6b, or the following *types* of response:

Reference to mother dying

Reference to pets dying (e.g., my kitten I don't have anymore)

Reference to murder or harm to self and/or others (e.g., some people will take me away, one time we had a crash)

Reference to dark scary places (e.g., in the dark hearing noise you can't see)

Being teased or somebody else being in trouble

Mark the response **don't know** according to the criteria for question 1a.

Score the response according to question 7b and proceed to question 7c.

**Question 7c - Do you try really hard not to think about these scary things?**

Responses are divided into affirmative, negative, or sometimes.

Mark the response **affirmative** if it includes any of the items listed in question 2, or the following *types* of response:

Yeah, but different things keep coming up into my head

I don't think of them

Yes, I try really hard to think about nice things

Yes, but they still come while you're sleeping

Yes, scary things scare me

Nods affirmative and says "But you can't get them out of your mind."

Mark the response **negative** according to the criteria for question 4a.

Mark the response **sometimes** according to the criteria for question 5.

|                                                                                         |
|-----------------------------------------------------------------------------------------|
| Score the response according to question 7c and conclude the scoring for the interview. |
|-----------------------------------------------------------------------------------------|

# APPENDIX - E

## Coding Guidelines - Study Five

### *Modals*

These are a grammatical main clause in which the speaker expresses attitudes or opinions.

Children’s use of modals are indicated if they use clauses with the following words:

|             |          |
|-------------|----------|
| can         | could    |
| must        | should   |
| might       | may      |
| would       | I’d      |
| will        | I’ll     |
| Probably    | wouldn’t |
| have got to | have to  |
| can’t       | couldn’t |

*Examples:* “I can see you”  
 “Might be the monster”  
 “Mind if I have another look?”  
 “It could be the monster”

### Types of modals

Children’s use of modal types are classified according to whether they use:

- Constraint modals that indicate constraints upon an individual’s ability to act.

*Example:* “I can’t remember”.

- Likelihood modals that indicate the probability of an event being actualised or true.

*Example:* “He’d be dead when I punched him”

- Inference modals, where the individual infers the probability of an event from the available information

*Example:* “Probably the monster!”

- Performative modals that indicate actions.

*Example:* “I can see changes in there!”

### *Compound sentences*

These are sentences that include the use of a coordinating conjunction such as *and*, *but*, *or*, or *nor*.

Children's use of these sentences can be classified according to whether they use:

- Free standing sentences only, where the coordinator began the sentence.

*Example:* "But there's a monster in there."

- Conjuncts 2 only, where the sentence included one coordinator

*Example:* "He couldn't be too big or he couldn't fit in there"

- Conjuncts 3 or more only, where the sentence included two or more coordinators

*Example:* "It had a rocking chair and a light and I was thinking about that but then I suddenly said I'm frightened by bears so I wouldn't do that and I've decided to write about a horse"

- Both free standing and conjuncts 2 or more, where the coordinator began the sentence and included one or more additional coordinators

*Example:* "And he's camouflaged and he has big eyes"

### *And as the coordinator*

These include three types of children's use of *and*:

- Free standing *and*, where it began the sentence and was used as an indicator that the child had not finished speaking.

*Example:* "And he has a sword."

- Conjuncts 2, where the sentence included one *and*.

*Example:* “He’s a pink monster and that’s all.”

- Conjuncts 3 or more, where the sentence included two or more *ands*.

*Example:* “They’ve got sharp teeth and it was white and it’s like a big monster and so you can’t touch it....”

### *Complex sentences*

These are sentences that include the use of a subordinating conjunction that embeds one sentence within another sentence.

*Example:* “I saw the things [that were in the tent]

↓  
subordinating  
conjunction

complex clause

Sentences are also considered complex if the conjunction is missing.

*Example:* “I saw [ they were happy”] rather than “I saw [that they were happy”]

However, sentences are not considered complex if the verb is missing.

*Example:* “I think [the monster]” rather than “I think [that is the monster]”

Subordinating conjunctions indicate time or reason and include words such as:

|          |          |
|----------|----------|
| like     | if       |
| when     | whenever |
| wherever | so       |
| as if    | because  |
| unless   | that     |

Children's use of complex sentences were classified according to whether they used a:

- Free standing clause only, where the subordinating conjunction began the sentence and was used as an indicator that the child was continuing the conversation.

*Example:* ["Because I lifted up the tent and looked in there"]



- Embedded clause only, where the subordinating conjunction embedded a sentence within another sentence.

*Example:* “I thought [there was a monster in there]”

- Both free standing and embedded clause

*Example:* “Cause when I went in to get the pad there was nothing and I knew there was nothing except for the pad”