IMAGINARY COMPANIONS: PHENOMENOLOGY AND THE CHILD'S RESPONSE

by

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Catherine Ashcroft

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Thesis Abstract

The first paper in this thesis reviews the limited literature on imaginary companions. Publications have addressed their frequency in children and their associations with familial factors, intelligence, creativity and waiting time. The limited literature on imaginary companions in the adult clinical population is acknowledged.

The review notes that theoretical literature on imaginary companions is scant. The two models that have been empirically examined are discussed. The first proposes that imaginary companions are a form of practicing reality discrimination. The second suggests imaginary companions are the same experience as hallucinations, but labelled as the former in children and the latter in adults.

The second paper describes a study that aimed to test the above model. Two comparisons were conducted. The phenomenological characteristics of children's imaginary companions were compared to adult psychiatric patients' hallucinations. Patterns of cognitive, behavioural and affective responses of these two groups to their respective experiences were also compared. Additionally, the study aimed to determine if children's behavioural and affective responses were correlated with their parents' attitude to their imaginary companion.

More differences than similarities were found between the two groups descriptions of the phenomenological characteristics of their experiences. Conclusions regarding children's patterns of response to their imaginary companions were tentative. Correlations were found between Benevolence and Engagement, Power and Engagement and Resistance and Negative affective response, suggesting that children's behavioural and affective responses may be related to their beliefs. However, the association was not as strong as in the adult clinical population. The study's third aim was not tested due to lack of data.

REVIEW OF THE LITERATURE ON IMAGINARY COMPANIONS IN CHILDREN AND ADULTS

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Abstract

This paper examines publications on imaginary companions over the last 100 years. The literature is limited both in the number of published papers and the quality of these papers, with many of them taking the form of case studies. The frequency of imaginary companions in pre-schoolers and older children is discussed, and whilst it is acknowledged that imaginary companions are usually confined to children, there are some reported cases of adults and older adults with imaginary companions.

Correlations between familial factors, intelligence, creativity and imaginary companions are outlined and the different findings considered. The paper then moves on to review the literature on functions and models of imaginary companions and the evidence to support these. Imaginary companions have been presented as ego defence mechanisms, compensatory strategies, methods of reality discrimination practice and failures in reality discrimination. Finally, consideration is given to the course of future research.

Introduction

The majority of the literature on imaginary companions uses the same description, that is, "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. The imaginary playmate is a visual or auditory idea that becomes as real and vivid as a visual or auditory percept, but that the child nevertheless always recognises its unreality" (Svendson 1934 p.988).

Vostrosky (1895) cited in Svendson (1934) conducted the first published study on imaginary companions. He stated that they were make-believe characters who contributed to the emotional stability of the young child. These themes of fantasy and functionality have continued to appear throughout the literature, however, many complaints have been made about the research on imaginary companions. Manosevitz, Prentice and Wilson (1973) noted that studies have provided relatively little data on imaginary companions and that there are few systematic studies on the area. They highlighted the lack of uniform data collection procedures, control groups, and samples of reasonable size. Hancock (1983) found only ten systematic research studies between 1895 and 1983. Due to this limited literature on imaginary companions, the fantasy play literature was examined for directly related literature, none was found.

The literature has followed Western societal trends in parenting. In the 1930's imaginary playmates were viewed as harmful but by the 1960's opinion had shifted to a more positive view. Imaginary companions were now to be encouraged (Cohen 1996). The literature has also followed general research trends, for example, the relationship between intelligence and imaginary companions has been examined throughout the last century (e.g. Svendson 1934, Manosevitz, Fling & Prentice 1977) and more recently links with adult psychopathology have been investigated (Schulz, Braun & Kluft 1989, Sanders 1992 and Ross 1996).

A significant proportion of the literature on imaginary companions consists of psychodynamic single case studies which assert that imaginary companions fulfil a number of functions for the individual. These include ego defence mechanisms (Fraiberg 1959) and transitional objects (Klein 1985), but unfortunately, there is no empirical evidence to support these claims.
Two other main theories have been proposed. Taylor, Cartwright & Carlson (1993) suggest imaginary companions are a way in which children practice reality discrimination. Secondly, Pearson (1998) has suggested that imaginary companions illustrate a failure in the meta-cognitive skill of reality discrimination. This review will examine all of the above in greater detail and suggest directions for future research.

Frequency of Imaginary Companions in the Normal Child Population

The frequency of the imaginary companion experience in pre-school children varies greatly depending on data collection methods used and age of the participants. Manosevitz et al (1977) noted the use of three different procedures; parental reports, direct questioning of children and adolescents recall of their childhood. Svendson (1934) used parents (n=119) to identify children with imaginary companions and found that 13.4% of her four to16 year old sample had imaginary companions. She also noted that parents reported imaginary companions more frequently in girls (75%) than in boys (25%), a finding that has not been replicated.

Manosevitz et al (1973) also used a parental questionnaire and found that 28% of their sample of pre-schoolers were reported to either currently have or had previously had one or more imaginary companions. A more recent paper (Pearson, Rouse, Doswell, Ainsworth, Dawson, Simms, Edwards & Faulconbridge 2001B), using a self-report method, found that imaginary companions were also common in older age groups. Thirty per cent of 1,795 five to 12 year olds reported they currently experienced an imaginary companion or had done so in the past.

Schmechel (1975) reported that in her study direct questioning of the child produced a substantially higher frequency (50%) of children experiencing imaginary companions than did parental report (31%). She suggested that

child's difficulty in discriminating fantasy and reality. Mauro (1991) believes the former, concluding that parents were not good informers about imaginary companions. Schmechel also suggests that adolescents' recall of the imaginary companions they had as children may be affected by the passage of time, that is poor memory could increase the likelihood of negative reporting.

Frequency of Imaginary Companions in Clinical Child Populations

There is very scant literature on the frequency of imaginary companions in clinical child populations. Data has to be considered from other sources, that is reported difficulties in children already identified as having imaginary companions. Of course the problem with using such data is the lack of clarity as to whether the problems reached a clinical threshold. Svendson (1934) found that personality problems were reported by parents for 35 of 40 participants with imaginary companions. Timidity in the presence of other children headed the list, yet seven of the children were also described as leaders.

Manosevitz et al (1973) asked parents to complete a checklist of problems experienced by their children that were either currently or previously of concern. The list consisted of 22 items including jealousy, attention seeking and hair pulling. Although there was a difference in the mean number of problems reported between those children who had and those who did not

have an imaginary companion, the difference was not statistically significant, nor was there a difference in the kind of problems reported. The paper also noted that two children from each group had received psychological intervention for either emotional or behavioural difficulties. Thus, no firm conclusions as to the frequency of difficulties in the two groups could be drawn.

The only other reference to imaginary companions in a clinical child population comes from Putnam (1997). He states that pathological dissociation in children can produce a range of symptoms and behaviours including vivid imaginary companions. He cites no data on possible differences in the frequency of dissociation between those who have imaginary companions and those who do not, nor is evidence presented about the characteristics of the imaginary companions and their deleterious effect, or otherwise, in children who dissociate.

In summary imaginary companions appear to be common in pre-schoolers and older children. No study has been published on the frequency of imaginary companions in a clinical child population. Some attention has been given to specific difficulties children with imaginary companions experience, but findings from Manosevitz et al (1973) and Svendson (1934) contradict one another. Additionally, it is unclear whether the children who experienced difficulties could be classified as a clinical population. From the high number of children in the Pearson et al (2001B) study, reporting imaginary companions, it can be concluded that they are a part of normal

developmental experience. Children with mental health and behavioural difficulties may experience imaginary companions, but the frequency of imaginary companions in this population is yet to be determined.

The Frequency of Imaginary Companions in Adults

Although imaginary companions are usually discussed with reference to children, adults have also been found to experience them. Publications consist almost entirely of the presentation of single cases receiving psychoanalysis for mental health difficulties. Coleman (1988) and Sobel, Wolski, Cancro & Makari (1996) present cases of men aged approximately 30, with diagnoses of psychosis, who have imaginary companions. Bass (1983) reports on the development of an imaginary companion belonging to a 28 year old male. The friend was acquired during the course of analysis, which was for the treatment of impulse control regarding the seeking out of prostitutes. The client described his imaginary companion as like a good friend who enabled him to throw off responsibility onto someone else's shoulders. O'Mahoney, Shulman & Silver (1984) reported three cases of older adults (78-84 years) who acquired imaginary companions following bereavement. These case studies, although interesting, do not inform the reader as to the frequency of imaginary companions in adult clinical populations. Barrett & Etheridge (1992), to the author's knowledge, are the only researchers to ask a non-clinical population of adults about imaginary companions. Their 345 college student participants, mean age 20.4 years,

completed a questionnaire on hallucinations. One item asked them to report if they had ever had an experience similar to an "imaginary playmate". Nearly 19% of participants answered in the affirmative. Yet these results cannot be taken as evidence to suggest that normal population adults experience imaginary companions. The phraseology of the questionniare did not confine the participants' recollections to adulthood.

Factors Correlated With Imaginary Companions

Familial Factors – The aforementioned Manosevitz et al (1973) study as well as examining pre-school children's behavioural/emotional difficulties looked at the individual and family correlates of children with and without imaginary companions. Parental questionnaires requested information on family demographics, children's play activities, parents' perception of child's ability to interact with peers and adults and details of a current or recent imaginary companion. Two hundred and twenty-two questionnaires (just less than half of the original sample) were returned with many more coming from higher than lower socio-economic classes. Sixty-three of the parents reported the child had an imaginary companion.

When comparing those children with imaginary companions to those without, a wide range of similarities and differences were noted. Examination of the demographics illustrated no significant difference between the two groups on

rates of parental divorce or separation. Significantly more children who were reported to have an imaginary companion were the first-borns but there was no significant difference in mean age of the next oldest sibling. For those whose questionnaires gave sufficient detail (n=11), parents reported the imaginary companion disappeared on average 10 weeks after the birth of the next sibling. There was no significant difference between the two groups regarding number of siblings. The imaginary companions of females appeared, in the majority of cases (61%), at a time when the child had no siblings.

The two groups were comparable when examining the number of playmates and pets in the house, or how well the child got on with other children. However, children with imaginary companions initiated significantly more home play, engaged in a wider variety of activities with members of the household and were viewed as more capable of interacting with adults. This difference was particularly apparent in males. Yet no difference was seen between the groups on the shy-outgoing continuum.

Attitudes of parents towards the child's imaginary companion varied. Sixty-two per cent of parents thought that the imaginary companion was good for the child, 42% were of the opinion that the imaginary companion had no effect on their child, while 4% of parents believed that the imaginary companion had a harmful effect. Parents encouraged the imaginary companion in 50% of cases, ignored it in 43% and 7% of parents discouraged their child regarding his/her imaginary companion. Ninety-three

per cent of children preferred not to interact with their imaginary companion when other children were available and most children stopped playing with their imaginary companion when children came to play.

Seventy-three per cent of children with imaginary companions compared to 49% of children without were only and/or first born children, suggesting only or first born children are more likely to have imaginary companions. This finding was replicated by Gleason, Sebanc & Hartup (2000). These findings led Manosevitz et al (1973) to conclude that family structure was an important factor in determining the presence or absence of imaginary companions. What they felt was most important was that the siblings of children with imaginary companions were significantly younger than the non-imaginary companion group. In conclusion they suggested the age gap between siblings was of greatest importance when determining the presence or absence of imaginary companions.

Although Manosevitz et al (1973) conducted a sizable study, some level of caution needs to be exercised when drawing conclusions. Firstly, it is doubtful whether the sample is representative of children with imaginary companions. The authors admit that many more questionnaires were returned from high socio-economic classes. Secondly, although the occurrence of imaginary companions was correlated with being either an only child or the firstborn child, this does not mean this status causes the occurrence of the imaginary companion. What is more, the study is likely to have had a larger sample of first born children and fewer third and fourth

born children, thus making it more difficult to draw firm conclusions. Finally, the reports of imaginary companions disappearing following the birth of a sibling are based on very small numbers.

Intelligence, Creativity and Waiting Time - It has long been suggested that imaginary companions are signs of intelligence and creativity (Singer 1961, Schaefer 1969 and Putnam 1997). The numerous studies on these factors vary widely in their methodological rigor and their conclusions. The methodologically superior studies are those by Svendson (1934), Manosevitz, Fling & Prentice (1977) and Pearson,Burrow, Fitzgerald, Green, Lee & Wise (2001A).

Svendson (1934) obtained information from parents, school reports of academic achievement and intelligence tests on 40 children with imaginary companions. She found that children with imaginary companions had higher mean IQ scores. However, as four different intelligence tests were used, due to there being a wide age range of participants (four to16 years), Svendson suggested that firm conclusions could not be drawn and instead concluded that imaginary companions were not limited to children of superior intelligence but that they were more prevalent among this group.

Manosevitz, et al (1977) used only one intelligence test when examining the relationship between imaginary companions, intelligence, creativity and waiting time. Parental reports identified 42 children with and 42 children

without imaginary companions. The sample was comprised of equal numbers of boys and girls, with an average age of five years nine months. An index of verbal intelligence was obtained from the Peabody Picture Vocabulary Test form A (adapted by Ward 1968). No significant differences were found in scores between the two groups. Children with an imaginary companion obtained a mean intelligence quotient (IQ) score of 110.6; children without an imaginary companion had a mean IQ score of 114.7. This finding mirrors that of Bairdain (1959) who found that there was no significant difference in IQ scores for high school children who could recall an earlier imaginary companion compared with a group who could not.

When examining creativity Manosevitz et al (1977) used The Uses and Abstract Patterns Tasks. The former asks participants to list uses of four everyday objects (newspaper, table knife, cup and coat hanger). The pattern task asks the child what a number of abstract patterns might be pictures of. These tests adapted by Ward (1968) for pre-school children were administered using Ward's procedures. The quality of the children's responses were independently scored by two judges who were uninformed as to the subjects group membership. Statistical analysis found no significant difference in scores between the two groups, leading Manosevitz et al to conclude that children with imaginary companions were just as creative as their peers who did not have an imaginary companion.

Pearson et al (2001A) also examined the suggestion that children with imaginary companions were more creative than those without imaginary

companions. These authors used an older sample aged five to 12 years. Again creativity was measured by the Uses Test with the items being presented pictorially and time limited to ten minutes (this was indicated as sufficient by a pilot study). The children's lists of uses were scored by a panel of five psychologists and interrater reliability was measured and found to be high at 0.98. The panel excluded responses believed to be bizarre, meaningless or repetitious. Statistical analysis found no significant difference in creativity scores between those children who reported an imaginary companion and those who did not.

Waiting ability has been the subject of fewer studies. Singer (1961) reported that children with imaginary companions could wait longer, possibly as they provided a richer inner world for themselves. Manosevitz et al (1977) used Singer's (1961) procedure, with minor alterations. The child was seated on the floor and told that to be a good driver they must not speak, stand up or turn round. The number of seconds was then recorded until the child did so. Once more statistical analysis found no significant difference between the two groups suggesting children with and without imaginary companions could wait for similar periods of time.

In summary, a number of social/familial factors, intelligence, creativity and waiting time have all been examined as correlates of imaginary companions. Findings are mixed with only children, and those with significantly younger siblings, being more likely to have imaginary companions, although the reader should be cognisant of the aforementioned criticisms when

considering this conclusion. Intelligence has been examined in a number of studies, the methodologically superior being that of Manosevitz et al (1977) whose findings demonstrated no correlation between imaginary companions and superior verbal intelligence. The same conclusion has been reached in the two studies on creativity and one study relating to waiting time. Thus, one must conclude that the presence of imaginary companions does not demonstrate higher intelligence, greater creativity or better ability to wait.

Theories of Imaginary Companions

Psychodynamic Theories - Unanimity exists within the psychodynamic literature; imaginary companions are regarded as a defensive phenomenon, a form of problem resolution. Different authors highlight different mechanisms. Sperling (1954) suggests the imaginary companion is a means of communication whereby children can express wishes and fears without taking responsibility for them. Fraiberg (1959) takes a similar stance and cites the case of a child whose imaginary companion was the scapegoat for any bad behaviour. Fraiberg posits that this permits the ego to operate freely without being restricted by avoidance and phobic symptoms. Klein (1985) views the imaginary companion in two to five year olds as functioning as a transitional object. All of these theories are based on an unspecified number of case studies, no empirical evidence is provided.

Nagera (1969) gives slightly more information about the sample he bases his theory upon. He refers to an unspecified number of children attending an outpatient clinic for mental health/behavioural difficulties with whom he worked. In no case was the imaginary companion the reason for referral but was alluded to in a standard diagnostic interview. The information gathered on imaginary companions across children was not standardised and Nagera notes that the imaginary companion didn't play a significant role in the analysis of the children. Using the information from this population he compared imaginary companions to other forms of fantasy and concluded that all are used to resolve conflict and restore at least transitionally an inner equilibrium. He suggests this is done before expressive stress leads to symptom formation and regression to other disturbances.

The only authors to put forward a psychodynamic theory and support it with empirical evidence are Meyer & Tuber (1989). Their study examined the scores of 18 four and five year olds with imaginary companions on the Child Behaviour Check List (CBCL Achenbach, Howell, Quay & Conners 1991) and a Rorsach test (Rorsach 1932). On the former, scores were within the normal range. The Rorsach protocols when compared to those of children without imaginary companions were characterised by a larger number of human, animal and inanimate movement scores and poorer form level. This pattern of response was said to be suggestive of excellent imaginal resourcefulness and a remarkable capacity for symbolic representation. Meyer & Tuber concluded that their findings supported the assumption that

imaginary companions serve a reparative function in handling interpersonal conflict and consequently preventing overt symptomotology.

Whether these conclusions can be drawn from the data is questionable. The results of the CBCL illustrate that none of the children had behavioural difficulties. However, this does not prove that the lack of behavioural difficulties were attributable to the imaginary companion. Nor was there any information given as to why these children could be at risk of developing 'overt symptomotology'. When examining the results of The Rorsach Test it can be concluded that children with imaginary companions are more likely to see human and animal shapes in the inkblots than were the comparison group. How this relates to the creation of an imaginary companion in order to deal with difficulties is not transparent, nor is it explained.

The difficulty with all of the proposed psychodynamic theories for imaginary companions is that rather than being based on strong empirical evidence, they are based on interpretation of single cases, a number of cases or conclusions too far removed from the data. Consequently, these ideas should be viewed as hypotheses that require testing rather than validated theories which can be used with confidence to explain the occurence of imaginary companions.

Imaginary Companions as Compensatory Mechanisms - Imaginary Companions have long been viewed as one way in which a child constructs

that which is lacking in their life. For example Hall (1907) has suggested that imaginary companions reduce loneliness. As already discussed Manosevitz et al (1973) found familial differences between those children with and those children without imaginary companions. From these results they concluded that if a child lives in an environment with no siblings and predominantly adult oriented social interaction, then an imaginary companion may provide some necessary developmental experiences. Such experiences were suggested to include the practice of social and language skills, which might otherwise develop more slowly. The difficulty with this conclusion is that it assumes a lack of similar aged siblings leads to a lack of opportunity to practice such skills. This may not necessarily be the case when attendance at play groups, the existence of friends and the use of fantasy play, along with other factors, may provide the same opportunities.

Harter & Chao (1992) conducted a study on competence with 40 pre-school and kindergarten children (age range: two years eleven months to six years) with imaginary companions. They found that children who had reported an imaginary companion were judged by their teachers to be less competent and less socially accepted by peers. Children's descriptions of themselves and their imaginary companion were also sought using the pictorial scale for perceived competence and social acceptance of young children (Harter 1982). Scores illustrated considerable gender differences. Most boys created super competent companions (70%) whereas girls imagined friends who were less competent than themselves (75%). From these results the authors concluded that the function of imaginary companions was to increase

competence. This occurs either by enabling the child to feel masterful when they assist the imaginary companion or by the child identifying with a more able companion in order to feel more competent. While the study used validated measures and multiple sources of information, its conclusions are, like so many other studies, inferences.

Blind and sighted children's imaginary companions have also been studied (Singer & Streiner 1966). Twenty matched pairs of blind and sighted children, aged eight to 12 years participated in the study. Data was collected from interviews, spontaneous play sessions and accounts of dreams and fantasy. Accounts were rated independently by a number of judges for imaginativeness. Results suggested that sighted children proved more imaginative in all three areas, blind children's fantasy content was generally rated as concrete and limited except for their greater reliance on imaginary companions. Blind children nearly always had an imaginary companion who could see. The authors concluded that the playmate filled a gap for the visually impaired children. It is however unclear exactly what "gap" is being filled and how the imaginary companion achieves this.

The same difficulty arises with the conclusions of these studies as with the psychodynamic publications. Conclusions tend to go beyond the findings of a study. If Singer & Streiner had presented data to illustrate that the sighted imaginary companions helped the blind children with tasks they found particularly difficult due to their lack of vision, then the conclusions may have been a little more palatable. Similarly, if Harter & Chao had illustrated that

imaginary companions did increase competence and if so how this was done, their conclusions would be more valid. The age of participants in the studies is also of concern, although understandable. Predominantly pre-schoolers have been used, hardly surprising as it has only been very recently that older children have been acknowledged as having imaginary companions. However, studies need to use a wider range of ages when examining possible theories of imaginary companions if their findings are to withstand scrutiny.

Imaginary Companions as an Aid to Reality Discrimination - Attention has also been given to the hypothesis that imaginary companions assist in the practice of distinguishing between reality and fantasy (Taylor, Cartwright and Carlson 1993). This ability to separate the two has been examined from a number of different perspectives in the last decade or so. A review by Lillards (1993) found that children were able to distinguish mental representations from external stimuli in the domain of pretence. That is, although young children have difficulty distinguishing a real identity from an apparent one, e.g. a sponge that has the appearance of a rock, they have no trouble distinguishing the real identity of an object from its pretend identity, e.g. a crayon that an experimenter is pretending is a toothbrush (Flavell, Flavell and Green 1987). If given assistance, e.g. "can other people touch and see X?", three year olds can distinguish pretend from real identities (Wellman & Estes 1986).

Yet under some conditions children may become confused between pretend and real. For example Harris, Brown, Marriott, Whittal & Harmer (1991) claimed that Wellman and Estes's results might only be true for relatively commonplace forms of pretend identities such as the ones they used in their experiments, that is, pretend cookies and cups. Harris et al's study required children to pretend there was a monster in a box. They reported that following this children were apprehensive about the contents of the box. Harris et al suggested that when an imagined identity is emotionally charged and projected outside of the head, children's ability to think of the identity as imaginary might break down. This is supported by other studies (Bretherton 1989).

Taylor et al acknowledged that imaginary companions are different to imaginary entities used in previous research (monsters) in that they are around before testing, emanate from the child rather than the experimenter and are predominantly positive rather than frightening in nature (Mauro 1991). However, there are similarities in that there is an emotional involvement on the part of the child. Additionally, children project their imaginary companions into space just as the monster is viewed as existing in space. Consequently, Taylor et al viewed imaginary companions as similar enough to the imaginary entities used in previous research and thus they reported employing the same methodology to examine whether young children understood the fantasy status of their imaginary companion. Additionally, whether children with imaginary companions differed to those without in their ability to distinguish reality from fantasy was assessed.

Twelve children aged four with imaginary companions and 15 without participated in four laboratory tests and a free play session. The first test examined the child's discrimination between real and pretend objects using a shortened version of Wellman & Estes's (1986) task. This consisted of two pictures, one illustrating a boy with a cookie, the other illustrating a boy pretending to have a cookie. Children were asked to choose "which boy could (a) see the cookie, (b) could not touch the cookie, (c) could eat the cookie, (d) could let a friend eat the cookie, (e) could save the cookie and eat it the next day?" Children had to choose either or both of the pictures in response to these descriptions.

The second test was that designed by Taylor & Howel (1973) to examine discrimination between real and fantasy events. Ten pictures, half of which were real and half of which were fantasy events, were presented in randomised order. The fantasy pictures consisted of a fairy and animals behaving as humans; reality pictures were of humans and animals in appropriate roles. For each the child was asked, "What is happening in this picture?" and, "Could this happen in real life?"

The third test required participants to pretend to perform three actions (brush their teeth, comb their hair and drink from a glass). The researcher recorded whether children used a body part or pretended to use an imaginary object. Finally, in the free play session, children were provided with blocks and plastic figures. The children were left to play for three minutes and then a

wand was introduced for the remaining two minutes, to permit the examination of whether fantasy play increased. The child's play was video taped and then rated by two independant judges using the criteria of reality and fantasy play.

The fourth laboratory test required participants to invite the imaginary companion, or a friend in the case of the control group, to the laboratory and interact with the friend in the presence of the experimentor. A series of questions were then asked, the aim being to determine the child's awareness of the imaginary status of the friend. The questions included:- can you see .....? Can you see..... the way you see me? Can you touch .....? Can you touch them the way you touch me? Do you think I can touch .....? The responses to these questions were categorised as low, medium or high pretence, that is if the child reported they believed the friend to be very pretend they would be scored as high pretence.

Results illustrated no differences between the two groups in children's ability to distinguish fantasy and reality as measured by the object and events tests. However, the authors noted that children with imaginary companions were more likely to hold an imaginary object instead of substituting a body part when performing a pretend action, and were more likely to engage in fantasy play in the free play session.

When examining children's estimations of reality of their imaginary companions when compared to the control group's estimations of a friend

they pretended to invite to the laboratory, little difference was found. Similar numbers of children from each group reported that if they could see and touch their friend so could the experimenter. It was noted these findings were consistent with those of Mauro (1991) who reported that children with imaginary companions were willing to share them with their friends. Taylor et al concluded there was no evidence to support the hypothesis that children with imaginary companions are less clear about the distinction between fantasy and reality than those children who do not have imaginary companions. Taylor et al went on to suggest that this supports Taylor & Howel's (1973) hypothesis that there are two distinct aspects of fantasy behaviour in young children, one involving the creation of an imaginary world and one involving the distinction between fantasy and reality.

Taylor et al also collected information from parents through an interview. They found that parental reports did not differ across the two groups when examining children's beliefs in imaginary characters. Half of the children in each group had a strong belief in the reality of at least one character from a cartoon or film e.g. Batman, Superman or Mickey Mouse. Thus, parents' impressions of their children's susceptibility to confusion between reality and fantasy were similar across the two groups. These findings were consistent with research by Prentice, Manosevitz & Hubbs (1978) and Goy (1990).

Considering all of their findings, Taylor et al concluded that although no differences were found on fantasy reality discrimination between the two groups, it was possible that children who were adept at fantasy had

experiences that helped them master the relationship between mental life and the real world. In support of this idea they cited Flavell et al's (1987) opinion that pretending might facilitate an understanding of the distinction between internal mental representations of external stimuli and the stimuli themselves, and Chandler, Fritz & Hala's (1991) suggestion that the report of an imaginary companion was a predictor of an early mastery of false belief. Taylor et al suggested that once this distinction is practiced and mastered in pretend play, children may be better equipped to think about similar distinctions in other situations or contexts. Finally, they suggested that further investigation of individual differences in fantasy play may provide new insights into the relationship between pretence and development of children's theory of mind.

The conclusions of Taylor et al reflect the frequently seen desire of researchers in the area of imaginary companions to continue to promote a hypothesis for which they have found no supporting evidence. Taylor et al's results showed no difference in fantasy/reality discrimination between children with and without imaginary companions, yet in their conclusions they refer back to the work of Flavell et al (1987) and Chandler et al (1991).

Admittedly, Taylor et al's numbers were small and no statistical analysis was conducted on the data so firm conclusions should be avoided. However, it could tentatively be suggested that children with imaginary companions are neither inferior nor superior at reality discrimination when compared to their peers who do not have imaginary companions. What is also difficult to

understand about Taylor et al's study is the lack of replication of Harris et al's (1991) monster in a box test. In their introduction Taylor et al suggested that children with imaginary companions may be particularly good at this test as they practice reality discrimination with an emotionally charged entity, i.e. their imaginary companions, yet they did not replicate this test. Admittedly, Taylor et al did try to assess children's estimations of the reality of their imaginary companion in comparison to the control group's friend whom they were pretending was in the laboratory. However, surely applying the same test, with the same imagined entity, to both groups would have been preferable.

Imaginary Companions as Hallucinations - There is one other model that has been put forward to explain the occurrence of imaginary companions. Interestingly, it also addresses the skill of reality discrimination. Pearson (1998) suggests that imaginary companions are the same experience as auditory hallucinations. He proposes that society re-labels the experience depending on the percipient's age. Pearson's thinking was prompted by the frequency of hallucinations in the normal population (e.g., Posey & Losch 1983). Hallucinations, in DSM IV (1994) (pp. 767), are defined as "a sensory perception that has the compelling sense or reality of a true perception but that occurs without external stimulation of the relevant sensory organ." The definition excludes hypnagogic (occurring when falling asleep) and hypnopompic (occurring when awakening) imagery. No distinction is made between hallucinations where the source of the voice is perceived as

being inside or outside the head and the definition acknowledges that individuals without mental health difficulties can experience transient hallucinations.

Hallucinations have long been acknowledged as common in a wide range of psychiatric disorders (Lowe 1973, Alpert 1986 and Chaturvedi & Sinha 1990). Yet there is a growing body of evidence suggesting that hallucinations are common in the normal population, that is within groups without mental health difficulties. Reports of the frequency of such experiences in normals range from five per cent (Eaton, Romanoski, Anthony & Nestadt 1991) to 71% (Posey & Losch 1983). A number of strategies have been used to acquire these figures, they fall into two categories, surveys and questionnaires.

The former methodology was the first to be used, where there are a small number of studies with varying results. The more reliable investigations are those of Sidgewick (1894) and Tien (1991). The former was conducted on behalf of the Society for Psychical Research. Seventeen thousand participants over the age of 21, predominantly in England, but also in Brazil and Russia were interviewed. Approximately 10% of the sample reported hallucinations in every day life, twice as many visual hallucinations as auditory were reported and females reported hallucinations 50% more frequently than males. Tien (1991) with the assistance of the National Institute of Mental Health (NIMH) conducted a similar sized study. Despite the relatively stringent criterion for including reports of hallucinations, Tien was surprised to find 13% of the sample reported experiencing

hallucinations. Females were more likely to report hallucinations than were males. Tien attributes this to memory and recall differences between the sexes rather than a difference in the rate of experiencing hallucinations. However, before concluding that 13% of the normal population reported hallucinations it should be noted that the sample included reports from members of the psychiatric population, hallucinations attributed to drug use (illicit and prescribed), and other medical problems as well as hallucinations experienced by a non-clinical population.

Questionnaire measures are numerous; one of the first to be designed was that of Launay and Slade (1981) and titled 'The Launay Slade Hallucination Scale' (LSHS). They found individuals who endorsed as true, items such as "In the past I've had the experience of hearing a person's voice and then found that no one was there", were also likely to endorse items pertaining to vivid but otherwise normal experiences. For example, "In my daydreams I can hear the sound of a tune as clearly as if I were actually listening to it". On the basis of responses to such items by normals, prisoners and psychotic patients, Launay & Slade constructed their 12 item scale. By the inclusion of vivid imagery as well as hallucinatory experiences, the scale ensured the former was not classified as the latter, an error that may have occurred in earlier studies. The LSHS was found to be valid and reliable (Levitan, Ward, Catts & Hemsley 1996). Using this scale Bentall & Slade (1985) found 15.4% of persons reported a history of hallucination. Young, Bentall, Slade and Dewey (1986) found that 13.2% of normal subjects endorsed the LSHS

item of hearing voices when nobody is present, as *certainly* applying to themselves.

Another questionnaire measure was designed by Posey & Losch (1983). It incorporated items from papers published on hallucinations in the normal population and some generated by participants in their pilot study. The 14 item measure included the LSHS item on hearing a voice calling one's name, as well as hearing one's thoughts spoken aloud or holding a conversation with a deceased relative. Three hundred and seventy five first year university students completed the measure. Results showed that 71% of the sample had experienced at least one hallucination and 42% at least two hallucinations that could not be construed as hypnogogic or hypnopompic imagery. The most commonly reported experiences were those of hearing one's name called and hearing one's thoughts aloud. However, more complicated experiences such as conversations heard in the car whilst driving alone and conversations with deceased relatives were experienced by only 10% and 15% of the sample respectively. Barrett & Etheridge (1992) obtained similar findings and were also able to report that their results were not due to the effects of social conformity or psychopathology (overt or incipient) as measured by the completion of the Minnesota Multiphasic-Personality Inventory (Hatharway & McKinley 1967). A small number of participants rated as hallucinators and an equal number of non-hallucinators completed the inventory.

The variation in survey and questionnaire results needs to be considered. It is possible that the face-to-face interviewing in the surveys lead to greater concern about the stigma of reporting the experience of hallucinations in the participants, whereas the questionnaires permitted the respondents' anonymity. It may also be important that the questionnaires gave participants a long list of items to which they could respond, whereas the surveys asked people if they had ever experienced a hallucination, requiring the participant to understand the question and/or have a conceptualisation of hallucination themselves. It is tempting for some authors to cite the highest percentage scores from the aforementioned questionnaire studies when wishing to convince others that hallucinations are common in normals. However, we need to remember that the more complicated experiences (e.g. conversing with dead relatives) are reported less frequently.

Evidence against Pearson's view on societal labelling of imaginary companions in children and hallucinations in adults comes in the form of literature on hallucinations in children. Romme and Escher (1989) reported that a significant number of a self-selected group of adult voice hearers reported they started to experience auditory hallucinations in childhood. Six per cent reported their voices began before the age of six and 10% between the ages of 10 and 20. These reports prompted Romme and colleagues to examine hallucinations in children more closely.

Escher, Romme & Buiks (1998) give halfway findings from their four-year study of 80 children aged eight to 18, experiencing voices. Half of this

sample were receiving assistance from psychiatric services. Escher et al (1998) noted that voices in children did not seem to be a continuous condition, nor were they related to age. They found that children's attitudes towards the voice greatly affected their every day coping. Parental attitudes were found to be influential in shaping this coping and the ability to grow out of the voice.

Schreier (1999) reported hallucinations in 13 children with anxiety or affective disorders and migraines. Other authors have also picked up on mood disturbance as well as anxiety (Kotsopoulos, Kanigsberg, Cote & Fiedorowicz, 1987) and conduct and emotional disorders (Garralda, 1984). Even hallucinations in children following poorly controlled parietal complex seizure clusters (Nissenkorn, Moldavsky, Lorberboyn, Raucher, Bujanover & Lerman-Sagie 1999) have been reported.

Several studies have discussed the phenomenon of hallucinations in children in relation to early onset schizophrenia (McKenna, Gordon, Lenane, Kaysen, Fahey & Rapoport, 1994, Volkmar, 1996 and Kumra, Briguglio, Lenane, Goldhar, Bedwell, Venuchekov, Jackobsen & Rapoport 1999). Additionally, hallucinations in children have been discussed in a wider range of psychotic disorders including schizophrenia, bipolar disorder, psychosis not otherwise specified, psychoactive disorder and organic psychosis (McClellen 1999). Some authors preach caution warning that some children presenting with hallucinations and other symptoms may not be psychotic but suffering from Multi-dimensionally Impaired Disorder (Kumra, Jackobsen, Lenane, Zahn,

Wiggs, Alaghband-Rad, Castellanos, Frazier, McKenna, Gordon, Smith, Hanberger & Rapoport 1998). It is also reported that hallucinations, along with other psychotic symptoms in children, can be indicative of dissociative disorder as well as neurological conditions or personality disorder (Silberg & Nemzer 1998). Hallucinations as indicators of trauma in children has also been highlighted by Kaufman, Birmaher, Clayton, Retano & Wongchaowart (1997), who present a single case in which a five year old girl developed hallucinations following sexual abuse.

All of these studies indicate that children do experience hallucinations. However, in defence of Pearson's stance, all bar one of the studies focuses solely on clinical populations. Thus it could be argued that society is only prepared to label children's experiences as hallucinations if they are associated with mental or physical health difficulties. The exception is Escher et al's (1998) study which includes a group of children who are experiencing hallucinations, who are not in receipt of psychiatric services, and whom therefore the reader is invited to assume do not require such services. Pearson (2002) views this as a grey area between hallucinations and imaginary companions and highlights society's desire to link hallucinations in childhood with some form of ill health as evidenced by the aforementioned studies.

Pearson (1998) further supports his model by comparing qualitative reports of hallucinations and imaginary companions. He did this by utilising qualitative reports of auditory hallucinations obtained from psychiatric and

non-psychiatric populations (Launay & Slade 1981, Posey & Losch 1983, Romme & Escher 1989, Barrett & Etheridge 1992, 1994, Romme, Honig, Noorthoon & Escher 1992, Bentall, Haddock & Slade 1994 and Nayani & David 1996) against the reports he obtained from children about their imaginary companions. Sixty four children between the ages of five and 12 were interviewed, in the presence of their parents, about their imaginary companions using a structured interview designed for the study. Many of the questions had been taken from the above studies and rephrased for use with children, the interview was not piloted and the same version was used for all age groups. Statistical analysis of the children's and adults' responses was not possible due to the wide variety of measures and methodologies used by Pearson and all of the published studies. Examining the data, Pearson first noted that imaginary companions fitted the description of hallucination (DSM IV) in that they had the sense of reality of a true perception without the external stimulation. Secondly, similarities were found in accounts between adults and children in the percentages reporting hearing voices inside and outside their heads (50/50 split) and level of control of their experience (50% reported some control). Additionally, about 30% of each group had heard their own thoughts aloud and about 60% had heard their own name. The greatest difference between the two groups related to adults' reports of voices being linked with an increase in anxiety and fear and children reporting imaginary companions being a happy experience. This difference was attributed to the child data being compared to a clinical population. Pearson concluded that although his study did not provide

empirical evidence to suggest hallucinations and imaginary companions were the same experience, they did appear to be the same experience.

The last type of evidence that Pearson cites in support of the idea that hallucinations and imaginary companions are differently labelled but identical experiences, comes from experimental findings. Pearson et al (2001A) replicated Feelgood & Rantzen's (1994) laboratory study which measured adults' disposition to hallucinate when attending to ambiguous stimuli. Pearson et al wanted to determine if children sampled from a normal population would generate hallucinations in a similar way to the adult participants in Feelgood and Rantzen's study.

The 210 participants, aged nine to 11 years, in Pearson et al's study were separated into three groups. The high propensity to hallucinate group consisted of children reporting the current experience of an imaginary companion. It was hypothesised that this group would report more hallucinations than the low propensity group. The latter was comprised of children who had never experienced an imaginary companion. Children who had experienced imaginary companions prior to testing but not at the time of screening were excluded from the study. Sixty-five per cent (n=138) of the sample were in the low group and 9.5% (n=20) of the sample were in the high propensity to hallucinate group.

A taped sound recording of white noise produced from the human voice was used as an ambiguous stimulus. This was a professional recording of the

human voice spliced into one second sound bites randomly mixed and played backwards. The recording was piloted and adjusted to provide adequate volume so that it could be heard throughout the classroom. The recording was played for three rather than five minutes to take account of the potentially short concentration span of the participants. Children were required to write down any words they heard whilst the tape was playing. When analysed, only words appearing in Collins English Dictionary were accepted. Illusions were eliminated by removing any word reported by 10% of any class or of the total sample. Statistical analysis demonstrated a significant difference in the number of words heard between the two groups, with the high propensity group hearing significantly more words than the low propensity (children without an imaginary companion) group.

Pearson et al concluded that these findings supported their hypothesis that children with imaginary companions were more likely to hallucinate when ambiguous stimuli was presented. They suggested these findings are understandable if imaginary companions are the same as hallucinations, because what the results of their test show is poorer reality discrimination performance in conditions of ambiguous stimuli in those children with imaginary companions.

This fits with the reality discrimination model of hallucinations (Bentall 1990). This model suggests that hallucinations result from a failure in the skills of reality discrimination. This meta-cognitive process continually checks the content of consciousness in order to identify its origin. A judgement that the

origin is external leads to the contents being treated as perceptual information. If a judgement is made that the origin of consciousness is internal, then the contents are assumed to be an image. The model proposes hallucinations are images that are incorrectly identified as perceptions.

Other conclusions drawn by Pearson et al were that their findings also provided evidence of a continuum between adult and child hallucinatory experiences as well as a continuum between normal and pathological experiences. They suggested that such a continuum model could provide a developmental framework on which to understand pathological hallucinatory experiences that contribute to adult problems such as psychosis or dissociation.

Pearson certainly raises some interesting points. The ambiguous stimuli study may illustrate that those children with imaginary companions have a greater propensity to hallucinate, when ambiguous stimuli are presented, than those children without imaginary companions. However, there may be alternative explanations for these findings, such as individual differences in sensory thresholds. Pearson et al (2001A) also illustrate that children and adults can hallucinate in the same ambiguous stimuli condition. It can be concluded that there is a continuum between child and adult hallucinations in that both groups can experience hallucinations. Prior to Pearson et al's study previous literature had suggested that there is a continuum between normal and pathological hallucinations by highlighting the frequency of hallucinations in normal adult populations as well as psychiatric populations (Bentall 1990).

However, whether imaginary companions can turn into pathological hallucinations because of the experience of trauma is less clear and cannot be concluded from Pearson et al's findings. Perhaps Pearson et al could have provided further support for their model by assessing whether, imaginary companions could be explained by the cognitive model of hallucinations (Morrison, Wells & Nothard 2000). For example, one could assess whether children's propensity to have an imaginary companion was affected by meta-cognitive beliefs about thought and hallucination.

Future research

The phenomenon of imaginary companions has received very limited attention. It has been established that they are a common experience in children ranging from pre-school age to 12 years. It has also been relatively well established that there is no link with intelligence and creativity. However, more work does need to take place on other factors imaginary companions may be correlated with. Only one published study (Manosevitz et al 1973) has thoroughly examined family correlates. If researchers wish to suggest that imaginary companions are created to deal with loneliness or the need to practice social skills, further studies need to examine family structures, access to peers and the need to practice social skills entirely with other individuals, over and above pretend play. Furthermore, if it is to be hypothesised that children acquire imaginary companions so they can

practice social skills, then such a function needs to be established empirically.

When considering the psychodynamic literature, what is immediately apparent is the lack of empirical evidence to support the theorised mechanisms of imaginary companions. Future energy needs to go into the design, implementation and analysis of studies, which use an appropriate number of participants and suitable measures to assess the use of imaginary companions as ego defence mechanisms or transitional objects.

When considering children's acquisition of the skill of reality discrimination Chandler et al's (1991) assertion that children with imaginary companions acquire this skill earlier than those children without imaginary companions, needs testing. This could be done by conducting a study of a matched pairs design on young children with and without imaginary companions, using the reality discrimination tests cited by Taylor et al (1993). Also, researchers need to investigate whether imaginary companions do lead to superior reality discrimination of emotionally charged stimuli. This may be achieved by repeating the monster in a box test (Harris et al 1991) on children with and without imaginary companions.

Although Pearson compared some of the phenomenological characteristics of imaginary companions and hallucinations, this was not done in a sufficiently rigorous manner. What is required is a systematic analysis of the phenomenological characteristics of imaginary companions using well-

designed and piloted measures. This should then be statistically compared to data from adults experiencing hallucinations.

What may also be of benefit in determining the issue of whether or not imaginary companions and hallucinations constitute the same experience is an examination of the patterns of response to imaginary companions and hallucinations. Pearson refers to work by Romme et al (1989, 1992), which acknowledges the importance of the percipients' response to their hallucinations. Romme et al reported how coping was correlated with hearer's beliefs about control over their voices. This raises the question of what are children's beliefs about their imaginary companions? Are beliefs linked to their responses? And are these as important in children as Romme et al have found in adults? Escher et al (1998) found that children's responses to hallucinations were affected by their parent's attitudes. This raises the question of whether imaginary companions and consequently children's responses to them can be affected by parental attitude. Perhaps research could assess children's beliefs about their imaginary companions, how these are linked to children's responses to their experience and if parental beliefs correlate with children's. This could be done either by questionnaire or interview schedule.

Finally, Escher et al (1998) is the only study which examines in any detail children's experience of hallucinations. Not only that but it reports the existence of children experiencing hallucinations who are in a non-clinical population. This suggests that children in the normal population do

hallucinate and the experience is labelled as such by them and the adults around them. This goes against Pearson's argument and leads one to query what is it about their experience that leads them to label it as a hallucination rather than an imaginary companion? Maybe future research could look at the differences between childhood hallucinations and imaginary companions with a view to determining why they are labelled differently. Such research would have to recruit participants from both clinical and non-clinical groups who both report hallucinations and imaginary companions.

In summary, there are many areas for further research on imaginary companions as the existing literature is so limited. This limitation is not merely the number of papers but the quality in terms of size of studies, methods used and statistical analysis. Whatever direction future research takes, investigators should be cognizant of the need for significant improvement in methodology and analysis.

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Empirical Paper:

IMAGINARY COMPANIONS: PHENOMENOLOGY AND THE CHILD'S RESPONSE

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IMAGINARY COMPANIONS: PHENOMENOLOGY AND THE CHILD'S RESPONSE

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ABSTRACT

Imaginary companions have long been acknowledged as common in pre-school children and, more recently, in older children. In both psychiatric and non-psychiatric adult populations, auditory hallucinations have been reported as common. Recently it has been suggested that the frequent occurrence of these two experiences suggest they are in fact the same experience merely labelled differently due to the percipient's age.

This exploratory study aimed to test this hypothesis by comparing imaginary companion phenomenology and children's patterns of response to this experience with that of published data on auditory hallucinations in adult, psychiatric populations. Additionally, the study aimed to determine if there was a correlation between the responses of parents and children to the imaginary companion.

Findings suggest that children were significantly more likely to report hearing their imaginary companion in their mind as well as seeing it in their mind, than adult hallucinators. Additionally, children were more likely to view themselves as having some level of control over their experience and were less likely to view their experience as real, when compared to their adult psychiatric counterparts. No significant difference was found between children's and adult's estimations on the publicness of their imaginary companion/voice.

Conclusions regarding children's patterns of response to their imaginary companion are more tentative. Correlations were found between Benevolence and Engagement, Power and Engagement and Resistance and Negative affective response, suggesting that children's beliefs may be related to their behavioural and affective responses to their imaginary companions. Clinical and research implications of these findings are discussed.

INTRODUCTION

Young children have long been acknowledged as having imaginary companions. These have been described 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...The imaginary play mate is a visual or auditory idea that becomes as real and vivid as a visual or auditory percept, but that the child nevertheless always recognises its unreality" (Svendson 1934, p.988).

The frequency of imaginary companions in preschool children has been studied since the 1970s and found to vary between 12% and 33% depending on the sample studied, data collection methods and age of the children (Manosevitz, Fling & Prentice 1977). A more recent paper (Pearson, Rouse, Doswell, Ainsworth, Dawson, Simms, Edwards & Faulconbridge 2001B) found 46.2% of five to 12 year olds either currently or previously had an imaginary companion. Significantly more girls reported a current imaginary companion than boys of the same age. There was no significant difference in past reports of imaginary companions. Percentage reports decreased with age; 33-43% of five to nine year olds reporting a current imaginary companion with 19% of ten year olds and 9% of 12 year olds reporting currently having an imaginary companion.

There are two main theories on imaginary companions and they both focus on reality discrimination. The first, put forward by Taylor, Cartwright and Carlson (1993) proposed that the function of having an imaginary companion was the practice of distinguishing between reality and fantasy. However, they found no difference in reality discrimination skills in their pre-schoolers with imaginary companions when compared to a control group without imaginary companions. The only difference in the groups lay in children with imaginary companions engaging in more fantasy play with neutral objects than the control group. These findings suggest that there is no difference in reality discrimination skills between those children with and those without imaginary companions. Thus, it cannot be maintained that children with imaginary companions have superior reality discrimination skills or that the imaginary companion's function is to allow the child to practice reality discrimination in order to make up for an inferior performance.

The second theory suggests that imaginary companions are actually hallucinations, but labelled differently, because children, rather than adults, experience them. Imaginary companions are explained in the same way as a hallucination, that is by attributing them to a failure in the meta-cognitive skill of reality discrimination (Pearson 1998). Pearson cites three types of evidence in support of this statement. Firstly, he believes that imaginary companions fit the description of hallucinations, that is "A sensory perception that has the compelling sense of reality of a true perception but that occurs without external stimulation of the relevant sensory organ" (DSM IV 1994 p.767).

Secondly, Pearson notes that hallucinations are common in the normal population, with statistics ranging from five per cent (Eaton, Romanoski, Anthony & Nestadt 1991) to 71% (Posey & Losch 1983) of the population having had the experience. He suggested that it is unlikely that adults start hallucinating at age 18 but that they have always done so, calling them imaginary companions when they were younger. Thirdly, Pearson, Burrow, FitzGerald, Green, Lee & Wise (2001A) found that children sampled from the normal population generated hallucinations in a similar way to adults when presented with ambiguous stimuli (a condition believed to create reality discrimination difficulties). Moreover, children with imaginary companions hallucinated significantly more than did the control group who had never experienced an imaginary companion. These findings support Pearson's hypothesis that children with imaginary companions experience more reality discrimination difficulties when ambiguous stimuli are presented.

These two theories (although both focusing on reality discrimination) address the experience from different perspectives. Taylor et al suggested that children were practicing reality discrimination, whereas Pearson et al suggest that imaginary companions illustrate a failure in this process. Although both theories have been the subject of research publications neither has substantial support. Pearson supports his model by citing findings that children with imaginary companions have a greater propensity to hallucinate than their counterparts who do not have imaginary companions. However,

Consequently, the current study set out to compare imaginary companions in children with hallucinations experienced by adult voice hearers receiving psychiatric care, on phenomenology and patterns of behavioural response. Phenomenological characteristics, as already stated, are considered by Pearson to be the same in imaginary companions as in hallucinations. Suitable literature on phenomenological characteristics was already available on adult psychiatric populations (Aggernaes 1972, Miller 1996).

Response characteristics were chosen as the published literature has given attention to the importance and variation of hearers' responses to their hallucinated voices. For example, Romme, Honig, Noorthoorn and Escher (1992) compared the reports of experiencing voices between those individuals receiving psychiatric treatment and those not receiving such services. They found that those individuals who defined themselves as copers were significantly less often in psychiatric care, 24% as opposed to 49% of non-copers. Sixty six per cent of the psychiatric care group were unable to cope with their voices, they had less control and used distraction more frequently. The copers were found to use coping strategies of setting limits and selective listening significantly more than the non-coping group. Chadwick and Birchwood (1994, 1995) also conducted studies on psychiatric hearers responses to their voices and found behavioural and emotional responses to voices correlated with beliefs about malevolence and benevolence.

As well as studying adults with hallucinations Escher, Romme & Buiks (1998) have examined children's responses to auditory hallucinations. They reported that children's attitudes towards the voice greatly affected their every day coping. Parental attitudes were found to be influential in shaping this coping and the ability to grow out of the voice. Consequently, the third aim of the study was to examine whether responses to imaginary companions (like children's responses to hallucinations) were influenced by parents.

Such research is important so that parents and clinicians alike can be informed about the nature of imaginary companions. If they are the same as hallucinations, that is, they are seen as a failure in reality discrimination, then imaginary companions could be viewed in the context of being part of a life long, normal experience that a significant proportion of the population experience. If imaginary companions are not the same experience as hallucinations, then clinicians would need to find another frame of reference within which to understand the experience. Either way clinicians need to know how to discuss imaginary companions with parents and children alike. Moreover, if children's perceptions of imaginary companions are influenced by their parents attitudes clinicians need to be aware of this and the associated advantages and disadvantages.

The aims of the current study were, firstly, to determine whether imaginary companion phenomenology was comparable to that of hallucination phenomenology. Secondly, to assess whether children's patterns of

response to imaginary companions were comparable to responses of adults to their hallucinations. Finally, to assess whether children's cognitive and affective responses to their imaginary companions were correlated with their parents' beliefs about that imaginary companion.

METHOD

Design

This exploratory study used a between group design. Children's imaginary companions were compared with the hallucinated voices of adult psychiatric patients. The comparison group consisted of data from the published literature. Additionally information was obtained from parents on their child's imaginary companions.

Participants

Screening - One hundred and fifty-seven children, between the ages of seven and 11 years, attending a mainstream local education authority junior school were screened for the existence of imaginary companions. The occurrence of imaginary companions in seven to 11 year olds has been reported as ranging from 14% to 38% (Pearson et al 2001B). Consequently, if the current study only obtained the lower of these two percentages it would provide sufficient children reporting imaginary companions to be approached for interview.

The seven to 11 year age group was chosen for two reasons. Firstly, it was important to identify an age group who were able to consider their

relationship with their imaginary companion. Eight year olds are acknowledged as having social constructions of self and others (Dodge 1993). Thus, it was hoped that children of this age would have social constructions about their relationship with their imaginary companion. Secondly, this age group is understudied. Previous research has concentrated on much younger children (Manosevitz, Prentice and Wilson 1973). Exclusion criteria for screening included lack of parental or child consent. Teachers were also given the option of removing those children whom they felt may have been distressed by participation. One hundred and sixty-four children were identified for possible participation in the study. A letter was sent out to the parent or guardian of each child. Seven children were removed from the study by a parent returning a withdrawal slip. Out of the 157 children screened, 56 reported currently having an imaginary companion.

Interview - Thirty children were selected for interview. Teachers were asked to identify any children they thought would find the interview difficult or distressing. As teachers did not remove any children from the interview list, 30 children were approached with similar numbers of boys and girls in each age group. Twenty-eight children agreed to be interviewed. Two of the children interviewed did not have an imaginary companion. If a child reported an imaginary companion to be only recently acquired, the interviewer checked to determine if the reported experience was a result of medication (see appendix 7 for a copy of the drug exclusion criteria). This was done in an attempt to ensure the quality of the data was not

compromised by reports of drug-induced hallucinations. This was only done in the case of recent onset imaginary companions as it was felt that it was possible to clarify a temporal relationship between initial medication use and the onset of an imaginary companion. In the case of long-term medication use, it would have been more difficult to clarify the relationship (if any) between medication and the sustained experience of imaginary companions. It is acknowledged that children may have been taking perception-altering medication in the longer term. However, it was felt that it would have been difficult for the interviewer to obtain clear information on this from the child due to limitations of memory and knowledge. No children who reported onset of the imaginary companion in the last six months reported onset to be associated with medications. The average age of children interviewed was 9.4 years, standard deviation was 1.45 years, the median was 9 years and there were two modal values nine and 11 years. For a breakdown of the number of children interviewed in each age group and the mean and standard deviation of ages see Table 1.

(Insert table 1 here)

Questionnaire - Invitation for parental participation was determined by child consent. Eleven out of the 26 children consented to their parents being sent the postal questionnaires. One was returned.

Measures

Screening question - children were asked a question based on that used by Pearson et al (2001B). Two changes were made to this original question; the first was the addition of the imaginary companion being described as someone the child may 'play with'. This addition, based on the description of an imaginary companion, was added so as to make the question appear more normal. It was felt leaving the question as only talking to someone may lead to the adoption of the commonly held view that this was not a 'normal' thing to do. Secondly, the phrase "this person is often known as an imaginary friend" was changed to "called" in the hope this simplified the language of the question. Consequently, the researcher asked children, "Some children talk to and play with a friend that nobody else can see. This person is called an imaginary friend, have you got an imaginary friend?"

Structured Interview Schedule for use with Children - A review of the literature provided publications that examined the phenomenology of and responses to hallucinations. However, no suitable publications were found on assessing children's imaginary companions. Consequently, a structured interview schedule was constructed for the study. The content and structure of the interview schedule was informed by the published literature on hallucinations. This included work by Aggernaes (1972), Chadwick & Birchwood (1995), Miller (1996), and Pearson et al (2001B). In some cases original questions were used, in others, items were adapted, so as to be child

friendly and refer to imaginary companions rather than hallucinated voices. The interview schedule consisted of four sections:-

General Information – this obtained information on the child's age. Questions on what the children liked doing and whom they lived with were included, with the aim of engaging the child in the interview process.

Descriptive Information – this covered information about the imaginary companion, including how much time the child spent with it and what they did together. Again, these questions were aimed at engaging the child. Many of the questions were either taken from or prompted by Pearson's (1998) interview schedule. Hypnogogic and hypnopompic screening questions were also included in this section to ensure the experience of the imaginary companion was not merely a result of such sleep related imagery (DSM IV 1994).

Phenomenology – the questions in this section were adapted from those of Aggernaes (1972) and Miller (1996). Items from the former covered how the imaginary companion was experienced (through the senses or in the mind), whether the child believed the interviewer could perceive it and the level of control they had over the experience. The question adapted from Miller (1996) related to how real the child rated their imaginary companion.

Cognitive, Behavioural and Affective Responses – Research on response to hallucinations has been dominated by the work of Chadwick & Birchwood

(1994, 1995), Romme & Escher (1989, 1996) and Romme et al (1992), and their work on hallucinated voices. Chadwick and Birchwood have focused on the examination of psychiatric patients' cognitive, behavioural and affective responses to their hallucinated voices. Clinical observation has led to Chadwick & Birchwood (1994) conceptualising their clients' voices as 'malevolent' or 'benevolent' and, consequently, hearers either 'resist' or 'engage' with the voices. A Negative affective response was associated with Malevolence and Resistance and more Positive affective responses with Benevolence and Engagement. It was also noted that, independent of Malevolence and Benevolence, most voices were viewed as powerful. From these clinical observations Chadwick and Birchwood (1995) constructed The Beliefs About Voices Questionnaire (BAVQ) with the aim of testing the seven concepts and the relationships between them. It was found to have good face and criterion validity and sensitivity with participants using the full range of scores. Test-retest reliability was conducted on fifteen individuals who completed the BAVQ twice, one week apart. Test retest reliability was also found to be good.

The BAVQ was used as a partial template for the interview because of its basis in observation and its validation. Additionally, it was the only questionnaire measure that systematically assessed hearer's responses to their voices. The questionnaire used by Romme et al (1992) covered a wider range of areas in less detail. However, although the reliability and validity scores of the BAVQ justify its choice for adaptation they did not apply to the BAVQ as used in the current study, as only 17 out of its 30 items were used.

Items on what the hallucinated voice said to the percipient and its statements about the hearer were omitted, as were items that were strongly pathological, for example those relating to evil and sanity or those which were viewed as too difficult for the children to understand e.g. 'I am reluctant to obey my voice'. The 17 items were rephrased making the language simpler/child friendly and changing references from voices to imaginary companions.

Thus the seven subscales covered the following:- Engagement was illustrated by the child speaking to the imaginary companion, asking the companion what she should do and the child doing as the companion tells them. Resistance covered the child telling the imaginary companion to leave her alone, trying to stop and not think about the imaginary companion, and doing things to make sure the companion didn't come to her. The subscale of Malevolence consisted of the child believing the imaginary companion was naughty, wanted to hurt her, was nasty to her and wanted the child to do naughty things. Benevolence on the other hand covered the child's beliefs that their imaginary companion helped them to have special powers and protected them. Additionally, the child reported being happy they had the imaginary companion and she did what her imaginary companion wanted her to do. The subscale of Power reflects the imaginary companion's power when it decides when it is going to be around rather than the child. Further items requested the child's opinion on the imaginary companion's power and intelligence. Positive emotional response items covered the child feeling happy, reassured and as though they could do things because of the imaginary companion. Negative emotional response on the other hand was

characterised by the imaginary companion prompting anger, sadness, worry and fear.

Structure of the Interview Schedule – The structured interview schedule was constructed on the same principles as the Autism Diagnostic Interview Revised (Lord, Rutter & Le Couteur ADIR1994). That is, firstly, the classification of the presence or absence of a factor. Secondly, the extent to which the factor is present. This is done by the interviewer categorising responses with the codes provided. For example, a question may require a simple yes/no response, in which case the interviewer would mark the appropriate code. However, if a question referred to a frequency the interviewer would choose the most appropriate code but also write down the participant's response in support of the choice of code. Questions in the interview schedule were grouped according to theme to maintain a formal structure and to facilitate clarity of response. (See appendix six for a copy of the interview schedule and coding).

Neither Aggernaes nor Pearson reported validation of their measures. For this reason, along with the change in phraseology of the BAVQ questions, it was deemed prudent to pilot the interview schedule, this will be discussed later.

Comparison Data

Hallucination phenomenology in psychiatric populations has been well studied (Aggernaes 1972, Lowe 1973, Junginger & Frame 1985, Miller 1996, Nayani & David 1996). All of these studies employed the same methodology, that of interviewing patients about their experiences. Aggernaes' (1972) publication was chosen as the comparison data for the current study as questions had been based upon his questions, his interview covered a wide range of phenomenological characteristics and his study had a suitable sample size. Aggernaes (1972) interviewed 45 individuals, with an age range of 18 to 80 years and a mean age 49.6 years. All participants were classified as chronic schizophrenics with a duration of illness ranging from two to 46 years, mean 22.3 years. Four of the participants were also classified as 'intellectually inferior' and six had had psychosurgery (performed more than 10 years prior to interview). Amongst other phenomena, Aggernaes examined the hearer's beliefs about how they experienced their hallucinations, whether others could perceive them and the amount of control the hearer believed they had over their experience.

The one phenomenological characteristic that Aggernaes (1972) did not ask about, was that of reality. As the percipient's estimation of reality is important when defining an experience as a hallucination, the researcher felt it was important to include such an item in the current study. Thus as already stated Miller's (1996) question was adapted. Consequently, her data was

employed as comparison data as it had been obtained from a credible number of participants.

Miller (1996) examined hallucination characteristics in 28 individuals admitted to psychiatric hospitals. All participants were experiencing auditory hallucinations as defined by DSM-IIIR and were interviewed about these experiences shortly after admission. The participants' average age was thirty-one years (range 18 to 69). Duration of illness ranged from less than one year (6%) to 25 years (4%). Mean duration of illness was 8.6 years. The analysis of hallucinations before and after treatment found that they were less frequent, less intense and less likely to prompt overt behavioural responses.

Having based the cognitive, behavioural and affective questions on items taken from Chadwick and Birchwood (1995) the data was naturally compared against the data Chadwick and Birchwood reported from the BAVQ. They reported data on 60 participants, 42 men and 18 women, their average age was 39.9 years, standard deviation 12.2 years. All participants were either currently, or had previously received psychiatric care. All met DSM-III R criteria for schizophrenia or schizoaffective disorder. As already mentioned, Chadwick and Birchwood found that the participants tended to engage with their voices if they believed them to be Benevolent and resisted them if they believed them to be Malevolent.

Parent Questionnaire - This consisted of questions covering the child's emotional and behavioural response to imaginary companions and the parent's beliefs about their child's imaginary companion. It was constructed in accordance with the same principles as the interview, with the same coding structure for responses. The description of an imaginary companion given to parents at the start of the questionnaire was that of Svendson (1934) this was chosen as it had been used in previous research Taylor et al (1993). (see appendix 8 for a copy).

Pilot Study

First Phase - This aimed to test the appropriateness of the measures constructed for the study in terms of participant comprehension, attention span and ease of use for the interviewer. A girl aged seven and a half years and her mother gave consent to participate in the interview and complete the questionnaire respectively. Having completed the interview, the researcher examined the questions the child found difficult to answer or for which explanation was needed, and added examples and prompts. The child's mother completed the parent questionnaire and was asked if she found any of the questions difficult to understand. No changes were made to the parent questionnaire.

Second Phase - The second phase of piloting had three purposes. Firstly, to examine the suitability of the screening question and method by which responses were collected. Secondly, the validity and reliability of the child interview and the parent questionnaire were examined. Thirdly, the pilot study tested inter-rater reliability on the child interview.

Method of Screening - A local education authority junior school was recruited to participate in the pilot study only. Four classes containing a total of 124 children aged between seven and eight participated. Having completed the parental consent procedure, the children were screened for imaginary companions using the question and pilot instructions. The interviewer then

approached each child in the class and recorded their answer. It was noted that this response collection strategy permitted children to discuss their answer with their peers and listen to each other's answers.

Consequently, a teacher suggested that responses could be collected by secret ballot, something the children had recently studied on the National Curriculum. Response collection by secret ballot was used in the fourth class and was found to circumvent discussion between the children as well as to speed up the data collection process. When comparing the two collection methods, it was noted that in the three classes where verbal responses were given, approximately 30% of children reported imaginary companions. When using the secret ballot collection method with the fourth class, imaginary companion reporting went up to approximately 50%. Pearson et al (2001B) hypothesised that as children become older they are increasingly concerned about their peer group's opinion of their imaginary companion and this may lead to a reduction in reporting. The ballot collection method was seen as addressing this, as it enabled children to keep their response private. Thus, the ballot procedure was used in the main study. Less than eight per cent of the children requested clarification as to the meaning of the screening question so consequently it was used in the main study.

Pilot of the Child Structured Interview - Six children aged eight were randomly selected for interview. All agreed to talk to the interviewer. The children's responses were written down verbatim and then coded by the

interviewer and a second person (the coder). Coding training had already been completed by the coding of information given by the child in phase 1. This resulted in revision of the coding instructions, after disagreements had been discussed. Each child was interviewed again, either one or two weeks later and both the interviewer and coder coded their verbatim answers. The overall test-retest contingency coefficient was .85 ($p<.0001$) suggesting good test re-test reliability. Percentage agreement ranged from 100%-17% when examining individual questions. Questions with 50% or less agreement were examined and either removed, rephrased or their coding changed. In the case of inter-rater reliability, the overall contingency coefficient was .91 ($p<.0001$) demonstrating a high degree of inter-rater reliability. Agreement ranged from 100%-42%. As before, questions with 50% or lower agreement were examined and removed or altered if this had not already been done.

Pilot of Parent Questionnaire - Four parents were asked to complete the questionnaire about their child's imaginary companion. Two parents currently had a child with an imaginary companion (the children were aged 4 and 7.5 years) and two parents had a child who previously had an imaginary companion (the children were aged 2.5 and four years when they had the imaginary companions). One to two weeks later parents were asked to complete the questionnaires again. After the second completion, participants were asked if they found the description of the imaginary companion or any of the questions difficult to understand. All four participants reported no difficulty with either description or questions. The analysis demonstrated a

test-retest reliability of .89 ($p<.000$) and an inter-rater reliability of .93 ($p<.000$). No questions had less than 50% agreement. However, questions and codes were altered in line with any alterations made to the child interview.

Procedure

Approval for the research was obtained from the University Ethics Committee. (See appendix 1). Two schools were then approached to participate in the study (see appendix 2 for a copy of the information for schools). Having obtained teachers' and the head teacher's approval, information and consent letters were sent by post to all parents whose children had been identified for possible inclusion in the study (see appendix 3 for a copy). Parents were given two weeks to return slips withdrawing their child from the study. After this time, the interviewer attended the school to conduct the screening.

Each teacher held the withdrawal slips for their class and asked if any children had any post for them, to double check if any further slips were being returned. It was then left to the teachers' discretion as to how they removed the excluded children from the class so that the screening could be conducted. Without exception, teachers found sensitive ways to do this. Errands, computer work, reading, or completing a task with the teacher were used, children were not told the real reason for their removal from the class.

The interviewer then conducted the screening procedure. She stood in front of the class and told the class, "Today we are going to do a secret ballot. That means you are going to answer a question on a piece of paper and you are not going to tell anyone else what your answer is, that is what a secret ballot means". The researcher then asked the screening question and handed out slips of paper. The children were instructed, "Write your name, age and yes or no in the spaces provided. Remember, this is a secret ballot so it means no talking. Once you have finished, fold the paper in half and I will come round and collect them ". The class was then thanked for their participation, which ended the screening procedure. (See appendix 4 for a copy of the ballot slip.)

Ballot papers were assessed and the information put on a class summary sheet. All children reporting an imaginary companion were listed as their ballot papers were read. Equal numbers of boys and girls in each age group were selected by taking their names from the top of the class lists (see appendix 5 for a copy of the class summary sheet). Only children with imaginary companions were interviewed. However, to ensure that children were not identified as having imaginary companions by their removal from the class the research was explained differently. The researcher went back into the classroom and told the children "I am interested in finding out about imaginary friends and best friends so I am going to talk to some of you about your imaginary friends and some of you about your best friends, if you don't want to talk to me that is O.K".

Having sat down with the child, in a private room, the interviewer went through the introductory and consent information (see appendix 6). If consent was obtained, the interviewer proceeded. Two children out of the 30 did not consent to participate in the study. In these cases children were thanked for their time and returned to their classroom. If the interviewer, having started the interview, was of the opinion the child did not have an imaginary companion the interview was discontinued, the child being thanked for their participation, this happened in two cases (See appendix 7 for exclusion criteria). When conducting the interview with those children who did consent the interviewer coded the child's responses following coding guidelines. Interviews took approximately 20 minutes. (See appendix 6 for a copy of these guidelines). At the end of the interview, the researcher informed the child of the parental questionnaire and said "I would like to send your mum (and or dad used as appropriate) a questionnaire so that they can tell me what they know about ..... Even if they don't know anything about ..... I would still like to hear from them. The questionnaire doesn't say what you told me. If you don't want me to send them a questionnaire that is O.K. Is it alright for me to send a questionnaire home?" The interviewer noted if consent was given, if it was the child was asked not to assist their parents in the completion of the questionnaire. Children were then thanked for their participation in the study and returned to their classroom.

Results

Analysis

Total scores were calculated for each of the five phenomenological and seven response subscales. These were obtained by adding together the scores from all of the questions in each subscale. Statistical analyses were conducted using SPSS for windows version 10 (Statistics Package for the Social Sciences inc. 1989-1999). The exception to this was the χ^2 analysis on the phenomenology characteristics which was conducted by hand. An alpha value of .05 or higher was used throughout all analyses.

Phenomenology subscale maximum and zero totals were classified as positive and negative respectively. For the subscales of ears and eyes these were four and zero respectively while for reality and voluntarity they were six and zero, the maximum score for publicness was two. All scores in-between zero and the maximum score were placed in the sometimes/partial category.

Statistical analysis of differences in phenomenology between the groups was conducted by χ^2. This test was chosen as it permitted a comparison between two groups of different sizes consisting of relatively small numbers. To enable this analysis the current study's three categorisations of positive, partial/sometimes and negative needed to be collapsed into the two

categories of positive and negative. Partial/sometimes scores were placed in the positive category. This was done as a partial score was viewed as the individual reporting some experience of a phenomenon. For example, partial control scores were placed in the total control category rather than the no control category.

Internal Consistency of the response subscales was examined using Cronbach's alpha. As the correlations were pre-planned, to ascertain if internal consistency was comparable to those of Chadwick and Birchwood (1995), and questions were only correlated to those in the same subscale, alpha values were not altered from .05.

Cognitive, behavioural and affective responses – Chadwick and Birchwood (1995) used a Pearson's correlation coefficient to examine the correlation between their concepts. The imaginary companion data (n=26) was a large enough sample to enable a similar correlation of the same concepts. For ease of comparison a two-tailed Pearson's was conducted. However, it should be noted that Pearson's was not the most appropriate test of correlation for either set of data. Chadwick & Birchwood's data were nominal and not normally distributed. The imaginary companion data were ordinal. Therefore, a more suitable non-parametric test, two tailed Spearman's rank test was also conducted.

Frequency of Imaginary Companions

Of the 157 children participating in the study, 56 (36%) reported currently having an imaginary companion. The frequency of reporting varied from 24 out of 56 (44%) in the seven to eight year olds to 15 out of 26 (58%) in the 10-11 year olds. There were an unusually low number of children, two out of 27 (7%) in the nine to 10 year olds, with the eight to nine year olds reporting similar frequencies 15 out of 48 (31 %) to the other two age groups.

Phenomenology

The children's ratings on each phenomenological characteristic are illustrated in table 2. *Positive* indicates that the phenomenon is experienced through the senses, viewed as public, controllable (voluntary) and real. *Negative* indicates the antithesis of these, that is experienced in the mind, viewed as private, uncontrollable and unreal. The classification of *partial/sometimes* illustrates respondents reported their experience as neither positive nor negative but in between these two opposites. For example, partially real or sometimes experienced through the senses and sometimes in the mind.

(Insert table 2 here)

When examining how children saw their imaginary companion, most children reported a combination of seeing through their eyes and in their mind. An equal number of children were clear about viewing their imaginary companion either only through their eyes or their mind (n=4). Children were clearer about how they heard their imaginary playmate. However, the greatest number (n=10) still fell into the partial/sometimes category. The second most common report (n=9) was that imaginary companions were heard in the mind, and 23% (n=6) reported they heard their imaginary companion through their ears.

In relation to the public/private dichotomy most children viewed their imaginary companions as a private experience (n=17), that is, other people could not see and/or hear their imaginary companion. The remainder of children (n=9) did think others could perceive their imaginary playmate. Interestingly, none of the children reported that others could see their imaginary companion on some occasions but not others, indicating that children either viewed their experience as public or private and not something in-between. The children's reports on voluntarity illustrated that most had some level of control over their imaginary companion (n=19) with approximately one in five (n=5) reporting they had complete control and one in 10 (n=2) reporting they had no control over the experience of their imaginary companion. Finally, most children rated their imaginary companion as partially real and partially unreal/pretend (n=18). As many children stated they were unsure about the reality of their imaginary

companion, as reported their imaginary companion was completely pretend. No children rated their imaginary playmate as completely real.

A comparison of proportions was conducted between the phenomenology data in the current study and the data of Aggernaes (1972) and Miller (1996). For a breakdown of each phenomenological characteristic and the corresponding scores for adult hallucinators and children with imaginary companions see table 2. Aggernaes and Miller's data are given under the heading *previous research.*

As table 2 illustrates, a greater proportion of adult hallucinators report their experience as being perceived through their senses than children do their imaginary companions. Data for the children's reports of eyes and ears is presented separately so as to acknowledge the difference between the senses. Aggernaes did not present data on the different senses separately so it was not possible to compare sense against sense across the two groups. More adults reported perceiving their hallucinations through their senses than did children their imaginary companions.

There was less difference between the two groups when examining reports of publicness. Adult voice hearers appear to be slightly less likely to say that others are able to perceive their hallucinations than do children their imaginary companions. The greatest difference between the two groups was in their reports of voluntarity. Children viewed themselves as having control over their imaginary companions considerably more frequently than did

adults over their hallucinations, with twice as many children reporting total control than did adults. The largest number of children reported some control over their imaginary companion (73%). As this category was not used by Aggernaes no direct comparison could be made.

To determine if the reports of hallucination phenomenology were significantly different from the reports of imaginary companion phenomenology handwritten χ^2 analyses were conducted. To enable comparison with the Aggernaes data the responses from the current study were collapsed into positive and negative. (See appendix 9 for χ^2 calculations.)

The greatest significant difference between the reports of the two groups was on the phenomenological characteristic of voluntarity (χ^2=48.9, 2 df, p<.001). Adults' and children's reports of hearing their experiences were also considerably different with significantly more children reporting they heard their imaginary companion in their mind (χ^2=12.5, 2 df, p<.01). A significant difference was also found in reports of visual perception of imaginary companion and all sensory perceptions of hallucinations but at a lower level (χ^2=5.55, 2 df not significant at any level). This suggests children were more likely to report seeing their imaginary companion in their mind than adults were their hallucinations.

No significant difference was found between the reports of publicness when comparing the imaginary companion and hallucination reports (χ^2=1.0, 2 df, p>0.2), suggesting that similar proportions of children and adults believed

others were able to perceive their imaginary companion or hallucinations. Finally, a significant difference was found in estimations of reality (χ^2=7.3, 2 df, p<.05), that is, children reported their experiences as real significantly less than did their adult counterparts.

In conclusion, the tentative findings of the comparison of the data in table 2 suggests that reports of imaginary companions were more similar to those of Aggernaes' hallucinating adult psychiatric population when examining beliefs about publicness. The greatest difference was seen in the comparison of reports of voluntarity with children being over ten times more likely to report some level of control over their imaginary companion than the adult psychiatric population comparison group. A significant difference was found when comparing auditory and visual perception of imaginary companions and hallucinations, although the latter was to a lesser extent. Overall, the data suggests that, although children and adult psychiatric populations have similar views as to the publicness of their imaginary companions/hallucinations, they hold considerably different beliefs regarding reality, voluntarity and perception through the senses.

Sensitivity of the Cognitive, Behavioural and Affective Subscales

This was measured indirectly, by determining if the subscales responded to the differences in the characteristic being measured. The researcher examined the data to ascertain if the full range of scores were being utilised.

This was the case for all of the seven subscales. However, Resistance, Malevolence, Benevolence, Positive and Negative affective response were all positively skewed. The Power subscale was negatively skewed leaving only Engagement being normally distributed.

Internal Consistency of the Cognitive, Behavioural and Affective Subscales

The internal consistency of the Engagement, Resistance, Malevolence, Benevolence, Power, Positive and Negative affect subscales were measured by examining the intra-scale correlations by Cronbach's α.

The highest alpha value was obtained for Benevolence (.73) suggesting relatedness between its items. Engagement (.56), Malevolence (.53) and Positive affective response (.54) had lower alpha values suggesting their items accounted for approximately a quarter of the variance in scores. Resistance (.46) and Negative affective response (.42) both had slightly lower alpha values suggesting less relatedness between their items. Finally, Power had a negative alpha value of -.26 suggesting some of its items were answered positively while others were answered negatively. This suggests this subscale was not measuring a single construct. Examination of the relationship between each of the three items illustrated that scores on the imaginary companion's intelligence were unrelated to how powerful the child viewed it. Additionally, neither of these items were related to who decided the imaginary companion was going to be around.

Cognitive, Behavioural and Affective Responses

The second aim of the current study was to examine the children's patterns of cognitive, behavioural and affective responses to their imaginary companions and compare them to adults patterns of response to their hallucinations. This was investigated by examining the children's total scores on the Malevolence, Benevolence and Power (Cognitive responses), Engagement and Resistance (behavioural responses) and Positive and Negative (affective responses) subscales. Correlations between these 7 subscales were compared with those reported by Chadwick & Birchwood (1995).

Chadwick & Birchwood used a Pearson's product correlation coefficient to examine the correlation between their subscales. The results are shown in Table 3 with the results of the Pearson's and Spearman's tests in the current study.

(Insert Table 3 here)

The greatest proportion of variance on the Pearson's test, in the present study, was the relatedness of Power and Engagement, suggesting children's estimations of their imaginary companion's power increased with their engagement with it. Power also had a negative relationship with a Negative affective response, suggesting that the more powerful the child believed the

imaginary companion to be, the less they were distressed by it. However, it should be noted that these proportions of variance explained considerably less than half of the variance in the results.

In their study, Chadwick & Birchwood found the greatest relatedness to be between Benevolence and Engagement, with over 60% of the variance in Benevolence being explained by Engagement or vice versa. Additionally, Malevolence and Resistance showed satisfactory relatedness with one subscale explaining very nearly half of the variance in the other. They reported no other correlations in their study, although they noted that all other correlations were strongly negative. None of the correlations of children's responses were as high as those of Chadwick and Birchwood.

The Spearman's test was also used to examine the relationship between the seven subscales. This revealed that almost 50% of the variation in Power was attributable to Engagement or vice-versa. Other significant correlations between Benevolence and Engagement, Resistance and Negative affective response accounted for less than 20% of the variance in each other. The current study's correlation between Resistance and Malevolence illustrated little relationship between the two subscales, suggesting little interaction between negative beliefs about the imaginary companion and the child's resistance.

The relationship between child and parent beliefs

The third aim of the current study was to examine if there was a correlation between the parents', and child's beliefs and emotional responses to the child's imaginary companion. Unfortunately, only one parent out of the 11 who received questionnaires returned it. Consequently, no analysis could be conducted.

Discussion

This exploratory study found that imaginary companions were common among seven to 11 year olds with 36% currently reporting having an imaginary companion. Frequencies varied from 44% in the seven to eight year olds to 58% of the 10 -11 year olds. These figures are different to those of Pearson et al (2001B) who recorded 38% of seven year olds and 14% of 11 year olds reporting imaginary companions. These differences could be due to the present study's smaller sample or the data collection method. That is, the secret ballot may have encouraged all children, but particularly older individuals, to report imaginary companions more than Pearson et al's data collection method, as the ballot ensured greater confidentiality. In the current study there were an unusually low number of children (7%) in the nine to 10 years age group reporting imaginary companions. This may have been a freak occurrence more easily seen due to the current study's small sample size.

The current study also found that two children who reported imaginary companions in the secret ballot, did not appear to have them when interviewed. This could have happened for a number of reasons including misunderstanding the question.

Additionally, the study found that one phenomenological characteristic of imaginary companions was similar to those of hallucinations. That is, children's and adults' accounts of the publicness of their experiences were

not significantly different, with individuals in both groups being more likely to report their experience as private. However, all of the other phenomenological characteristics that the study measured; those of perception through the senses, voluntarity and reality, were experienced differently by the two groups. Children were more likely to report experiencing imaginary companions in their minds, to view themselves as having some level of control over the experience and to view their experience as pretend, when compared to the adults hearing voices. Consequently, it must be concluded that on the phenomenological characteristics assessed in the current study there was more difference than similarity between the reports of children and adults.

However, these results must be viewed with caution for the following reasons. Firstly, by collapsing the current study's three phenomenological response categories into the two of Aggernaes (positive and negative) problems were created. It lead to children's sometimes/partial responses being counted as positive responses. This meant children's data was classified as something it was not, the children's true responses were not used in the analysis, thus conclusions were not based on a completely accurate representation of the data.

Secondly, there is the issue of the quality of the Aggernaes data with which the children's data was compared. The high number of children reporting some level of control over their imaginary companion fits with Aggernaes' (1970) description of how the normal population describe their experiences.

He suggests that voluntarity/involuntarity is not a dichotomy but a continuum in the normal population. Yet, when considering the qualities of hallucinations in a psychiatric population, Aggernaes reports that the experience is either completely voluntary or involuntary. Of course the reader is unable to test Aggernaes' opinion against his data as his participants were not given the option of answering 'sometimes'. Thus they may have been forced into answering 'yes' or 'no', when these responses did not fit their experience. Yet, as already mentioned, the same difficulty arose when the current study's data was collapsed for the statistical comparison.

Thirdly, Miller's 'vivid but distinguishable from real perceptions with certainty' may not have been directly comparable with the 'part real/part pretend/not as real as the interviewer' codes used to categorise the children's responses. However, it may be said that the most common belief about hallucinations and imaginary companions was that they were not either real or unreal but somewhere in the middle of this continuum. Thus, they share the characteristic of being a partially real experience, but as to whether one is slightly more real than the other cannot be answered by the current study.

Due to the number of participants and the total number of questions in the seven subscales it was not possible to conduct a factor analysis. Many more participants than variables are required (Tabachnick & Fidell 1996). As this preferred internal consistency measure could not be used a Cronbach's α was conducted. However, there were a number of difficulties with this test. It demonstrates a lack of sensitivity to scales where items are only moderately

related. This, together with the low number of participants, the low number of items in each subscale, and the small number of codes for each item, ensures its results are less than robust. Consequently, the results of the Cronbach's α on the cognitive (Malevolence, Benevolence and Power), behavioural (Resistance and Engagement) and affective (Positive and Negative) subscales should be viewed with caution.

The highest correlation on this test was for Benevolence, illustrating good internal consistency. However, other subscales showed poorer internal consistency. These results suggest some of the subscales were not measuring a single construct. The negative correlation of the Power subscale is particularly concerning as it suggests the items were unrelated.

Additionally, as already stated, most of the subscales were skewed towards positive experience. This is hardly surprising when we consider that children were asked about 'imaginary friends'. However, it means that the levels of internal consistency that were obtained on the negative subscales could have been a function of multiple no responses.

None of the response subscales in the present study had values as high as their counterparts measured by Chadwick & Birchwood (1995). This was apparent from examining the statistics themselves thus it was not necessary to conduct a formal statistical comparison. In the case of Power this could be a result of the subscale being constructed for the current study rather than consisting only of rephrased BAVQ questions. The poor internal consistency

of some of the subscales may illustrate the difficulty in adapting an adult scale for the assessment of pathology to be used with a normal child population. For example when answering questions on how imaginary companions frightened children the current study's participants tended to refer to games of hide and seek or times when they were surprised by their imaginary companion. Such experience is considerably different to adult psychiatric patients fear of their hallucinations which tend to induce real terror rather than playful surprise.

Consequently the conclusions that can be drawn from the results of the current study regarding children's patterns of responses to their imaginary companions, are tentative. It is suggested children engage with their imaginary companions more if they view them as powerful and benevolent and are not distressed by them. Additionally, Resistance can be accompanied by a Negative affective response. These findings mirror the clinical observations of Chadwick & Birchwood (1994) of psychiatric patients' responses to their voices. The correlation of Benevolence and Engagement replicates their 1995 findings but the current study did not find the same correlation between Malevolence and Resistance. As already mentioned this could be due to the positive nature of the experience of imaginary companions. Alternatively, the current study may not have examined the appropriate negative aspects of imaginary companions.

In conclusion it could tentatively be stated that children's beliefs about their imaginary companion's Malevolence showed little correlation with their

response to the imaginary companion, and that children's beliefs about Benevolence and response of Engagement, although correlated on the Spearman's test, were less significantly associated than the corresponding beliefs and responses of adult voice hearers. This could suggest that children's responses to their imaginary companions were less dependent on their beliefs regarding Malevolence and Benevolence. Alternatively, the results may suggest that either the interview schedule did not address the important beliefs of children about their imaginary companions or that the poor internal consistency of a number of the scales did not permit the correlations between belief, behaviour and emotional response to be seen.

Finally, the overall reliability and validity of the structured interview schedule was not assessed. Changes were made to the schedule following the pilot study and although these were only minor it would have been prudent to measure the reliability and validity of the measure following these changes.

Due to the lack of data, the study was unable to examine the correlation between the child's and parent's responses to the child's imaginary companion. The low number of children giving consent for questionnaires to be sent to their parents (42%) is of interest. It would appear that children did not want it brought to their parent's attention that they had an imaginary companion. The poor response rate could be viewed as illustrating either parental apathy, lack of knowledge about their child's imaginary companion, or a reticence about providing information on the experience.

As well as the previously outlined restrictions this exploratory study was constrained by its conceptual framework. In comparing imaginary companions to psychiatric adult hallucinations the study obtained empirical evidence regarding the similarity of the two experiences but missed a great deal of other information. By removing the need to compare the children's data to that of an adult psychiatric population, a less structured interview schedule could have been used. This would have enabled a more qualitative examination of imaginary companions to be conducted, leaving more room for participants to guide the researcher to the area's of importance to them. Alternatively, the researcher could have to investigated beliefs about the onset and maintenance of imaginary companions. Such data could then have been compared on a case-by-case basis to onset and maintenance beliefs about hallucinations, therefore permitting an assessment of whether the cognitive model of hallucination could be applied to imaginary companions.

Clinical Implications

The present study's findings support those of Pearson et al (2001B) in suggesting that imaginary companions are common in 7 -11 year olds and could therefore be construed as part of normal development. The current study also found that children's experiences of imaginary companions were skewed towards the positive end of the continuum whether examining

emotional, cognitive or behavioural responses, again suggesting these are a normal rather than an abnormal experience in childhood.

Yet, in conducting this study, anecdotal evidence suggested, that parents were anxious/concerned about their children either being asked about imaginary companions or the implications of their children having imaginary companions.

One may conclude then, that the trend in society is to pathologise such experiences. This would also account for children's growing reticence to report the presence of imaginary companions with age as reported by Pearson et al (2001B) and perhaps reflected in the higher frequency of reporting in the current study, possibly as a result of the secret ballot. One could also argue that the low consent rate for parental questionnaires to be sent out reflects children's desire to ensure others do not know about their imaginary companion. Consequently, perhaps one of the most important clinical implications of the current findings is that it provides clinicians with evidence to feedback to concerned parents, and children, that imaginary companions are a normal part of childhood and not a sign of mental illness. That is, as approximately a third of children experience imaginary companions they can be considered to be, statistically within the range of normal experience.

Research Implications

This exploratory study requires replicating with a number of changes. Firstly, the current study found more children reported a current imaginary companion than did Pearson et al (2001B). As already noted, in the piloting of the screening question the manner in which responses were collected can have an impact on reporting. The Pearson et al (2001B) study obtained verbal answers from children; the current study used the secret ballot system, which appeared to increase the reporting of imaginary companions.

Another explanation may be that the current study, because of its smaller number of participants, obtained unusual results, which were not evident in the Pearson et al (2001B) study due to its greater number of participants. A large-scale study needs to be conducted to clarify the effect of data collection methods at screening.

Secondly, some of the current study's subscales on response to imaginary companions were found not to measure the single concepts by which they were titled. Therefore, the results on the correlations between them, e.g. Benevolence being positively correlated with Engagement, must be viewed with great caution. The poor interscale correlations no doubt reflect the difficulties encountered when adapting an adult measure of pathology for use with children, reporting an experience, which is part of normal development. If future research wishes to test the same concepts then the questions in the

subscales require significant alteration. In the light of the positive skew in the data, it may not be appropriate to give equal weighting to Malevolence, Resistance and Negative affective response. That is not to say all questions on these areas need to be removed, rather a more suitable way of picking up the child's range of responses needs to be considered. The difficulty with this is the lack of existing appropriate measures. The BAVQ was chosen since, as far as the author was aware, it was the only validated scale that examined response to hallucinations. There were no previously used measures for responses to imaginary companions. It may be necessary to conduct a study whose focus is the clarification of suitable assessment methods/questions for determining children's views of and responses to imaginary companions. Only by testing different ideas, will it be possible to ascertain how the experience can be assessed. Perhaps semi-structured interviews could be used to obtain more detailed information on imaginary companions, which could then inform question phraseology. Such information might include children's thoughts, beliefs and assumptions about their imaginary companions thus not only adding to the information about their experience but also providing further comparison data when examining the cognitive model of hallucinations.

In short, future research needs to construct and test a further interview schedule. The construction of such a measure needs to give greater consideration to the quality of the experiences as well as internal reliability. Additionally, such a scale could be used to compare children with imaginary companions against children with hallucinations, thus removing the difficulty

of different phraseology for different age groups. Such an examination may also be preferable as researchers could report on findings confident that extraneous variables related to age were avoided. Previous work by Escher et al (1998) has illustrated that it is possible to obtain a large enough sample of children experiencing hallucinations for research.

The present study's third aim was to examine parental cognitive and affective responses to their children's imaginary companions. This was not possible due to the lack of data. The methodology of postal questionnaires is well known for its low response rate, thus, if parent's opinions are to be obtained a different collection strategy may have to be employed. Also requiring consideration in further research are strategies to address the child's consent to contact with parents by the researcher. One possible way around this would be to give a questionnaire to the parents of all the children who were screened in a study, before any were interviewed. A disadvantage of such a strategy would include the resources required to put it into practice. Additionally, it would then be prudent only to interview those children whose parents had completed the questionnaire, hence introducing self-selection into the procedure.

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Table 1.

Descriptive Details of Participant Children.

School Year Group	Gender	Number Interviewed	Number who agreed letter could be sent to parent	Average age of interviewees (Years)	Standard Deviation (Years)
Year 3 *	M	4	3	7.7	.0.49
	F	3	1	7.9	0.39
Year 4	M	2	0	9.1	0.06
	F	4	1	9.3	0.18
Year 5	M	0	0	-	-
	F	1	0	10.4	-
Year 6	M	7	5	11.0	0.28
	F	5	1	11.1	0.19

* 2 refused, 2 found not to have an Imaginary Companion

Table 2.

Comparison of Imaginary Companion and Hallucination Phenomenology

Compared with Aggernaes (1972). n=44								
	Positive		**Negative**		**Partial**		**Doubtful**	
Phenomenological Quality	Previous Research n=44	Current Research n=26	Previous Research n=44	Current Research n=26	Previous Research n=44	Current Research n=26	Previous Research n=44	Current Research n=26
Sensation (Eyes)	93%)	4 (15%)	1 (2%)	4 (15%)	na	18 (70%)	2 (4%)	0 (0%)
(Ears)		6 (23%)		9 (35%)		10 (38%)		1 (4%)
Publicness	13 (29%)	9 (35%)	30 (67%)	17 (65%)	na	0 (0%)	2 (4%)	0 (0%)
Voluntarity	4 (9%)	5 (19%)	38 (84%)	2 (8%)	na	19 (73%)	3 (7%)	0 (0%)
Compared with Miller (1996). n=28								
Reality	10 (36%)	0 (0%)	1 (4%)	4 (15%)	17 (61%)	18 (70%)	0 (0%)	4 (15%)

Note.
Positive = the percipient has indicated the presence of the characteristic
Negative = the percipient has indicated the absence of the characteristic
Partial = the percipient has indicated partial presence of the characteristic
Doubtful = the percipient is uncertain
Sensation (eyes) = the experience is perceived through the eyes
Sensation (ears) = the experience is perceived through the ears
Aggernaes did not distinguish between sensation through the eyes and sensation through the ears)
Publicness = the experience can be shared by others
Voluntarity = the percipient has control over the experience
Reality = the percipient views the experience as being real

Table 3.

Comparison of behavioural affective and cognitive response correlations between present study and Chadwick & Birchwood (1995)

= 26 Pearson/ Spearmans		Engagement	Resistance	Malevolent	Benevolent	Power	Positive emotional response	Negative emotional response
Engagement	Correlation				.82			
	N				60			
Resistance	Correlation	.21/.60		.76				
	N	25		60				
Malevolent	Correlation	-.05/.19	.25/.019					
	N	24	23					
Benevolent	Correlation	.47*/.43*	.53*/.35	.19/.25				
	N	23	22	22				
Power	Correlation	.65**/.70**	.23/.04	.08.26	.34/.30			
	N	16	16	14	14			
Positive emotional response	Correlation	.06/.15	-.06/-.03	-.22/-.12	.05/.05	-.37/.00		
	N	26	25	24	23	16		
Negative emotional response	Correlation	-.10/.02	.24/.43*	.29/.13	.24/.30	-.64*/-.50	.12/-.04	
	N	24	23	22	21	15	24	

Note: Chadwick and Birchwood (1995) results given above the diagonal line. Current study results are below the diagonal line

* P<.05, ** , P< .01 level

Appendices

"In accordance with LREC guidelines all consent forms and information sheets were printed on university headed paper."

Appendix 1. Letters of Ethics Committee Approval

Date Fri, 25 Jan 2002 10:45:46 +0000

From KATHRYN SMITH <K.M.Smith@soton.ac.uk>

To C.L.ASCROFT@soton.ac.uk

Reply-To K.M.Smith@soton.ac.uk

Subject Ethical Approval

Parts Message Source

Dear Katie,

The application you submitted to the ethical committee has now been given approval from the department.

Should you require any further information, please do not hesitate in contacting me.

Best wishes,

Kathryn Smith
Ethical Secretary

Date Thu, 11 Apr 2002 15:05:49 +0000

From KATHRYN SMITH <K.M.Smith@soton.ac.uk>

To C.L.ASCROFT@soton.ac.uk

Cc j.turner@soton.ac.uk

Reply-To K.M.Smith@soton.ac.uk

Subject Amendments to ethical application

Parts Message Source

Dear Katie,

The proposed changes to your ethical application have been given approval from the department.

Should you require any further information, please do not hesitate in contacting me.

Best wishes,

Kathryn

On headed paper

Appendix 2
Imaginary Companion Research
Guidance Notes for Teachers

While the children are noting their responses we would appreciate it if you could spend a couple of minutes doing the following on this copy of your class register:-

- Draw a line through the names of any children who are absent today
- Put an asterisk * in the left hand column against any children whose parents do not wish them to participate in the research
- Put a T against the name of any children you think should not be interviewed. (The interview has been designed for children of 8 years old and above. If you feel the level of understanding of any of your pupils is considerably below this and that they would be upset by the interview, you may wish to remove them from the study. We leave this to your discretion.)

- Please mark on the envelope provided times today or next Tuesday that you would like us to try and avoid interviewing your class. For example you may feel that a P.E lesson would not be a good time for us to talk to your pupils.

If you have any questions please do not hesitate to ask.

Further Information

Having taken away the ballot papers and listed the children reporting an imaginary companion we will come back to you with a list of children we would like to interview. We are aiming to interview approximately five children from each class. The list we draw up will have seven or so children on it, this is to allow for false positives and children not wishing to discuss their imaginary friends with us.

If it is acceptable to you, we will take the first child from the list and having completed the interview will ask this child to bring the next person for interview and so on.

On headed paper

Appendix 3

IMAGINARY COMPANIONS IN CHILDREN
INFORMATION & CONSENT FORM FOR PARENTS

We are involved in a university and hospital based piece of research which is looking at normal aspects of children's imagination and development. In particular we are interested in the frequency and experience of imaginary companions in children.

An imaginary companion is a very vivid imaginary character, person, animal or inanimate object with which your child interacts during their play and daily activities. Research has found that nearly 50% of children have an imaginary companion at some point in their lives.

What will we be asked to do?
If you agree to take part in this research your child will be screened for normal imaginary companions. Your child may then take part in a 20 minute interview about these experiences. If your child is interviewed the school will give your address to the researcher and she will send you a questionnaire to fill in. The questionnaire takes about 10 minutes to complete.

What will happen to the questionnaire and interview information after that?
The information you and your child have given is confidential, that is, it will not be shared with anyone else. You do not have to put your name on the questionnaire.

The information will be added to data from other participants. It will then be analysed to see how many children have imaginary companions and how they feel about them. The information will be used to inform professionals about children's imaginary companions.

PLEASE NOTE - It is just as important your child participates in the research even if you think they do not have any imaginary companions. If you do not want your child to take part in the research please fill in the slip below and return it to school. If you do not return the slip we will assume you are happy for your child to take part in the research.
PLEASE KEEP THE ABOVE PART OF THIS INFORMATION SHEET.

✂----------

I DO NOT wish the researcher to talk to my child about normal aspects of imaginary companions.

Please could you return the bottom part of this form to school

Child's Name Class

Signed

Relationship to child

Appendix 4
Ballot Slip

Name.....

Age.....

Do you have an imaginary friend?.....

Appendix 5
Class Summary Sheet

Class Name.....

Class size.....

Number absent
(boys).....
(girls).....
(total).....

Number withdrawn by parent
(boys).....
(girls).....
(total).....

Number withdrawn by teacher
(boys).....
(girls).....
(total).....

Number reporting imaginary companions
(boys).....
(girls).....
(total).....

Number of uncountable responses
(boys).....
(girls).....
(total).....

Interview List:

(1)

(2)

(3)

(4)

(5)

(6)

(7)

Appendix 6
Structured Interview Schedule & Guidance Notes For Use

In the secret ballot you said you had an imaginary friend. We want to understand a bit more about imaginary friends and that is why we are asking questions. If you decide to talk to me about your imaginary friend I won't go and tell anyone "(child's name) said this about their imaginary friend". What you tell me will be mixed up with lots of information from other children so nobody will be able to tell what you said. Would it be O.K if I asked you some questions about your imaginary friend? Have you got any questions?

Section 1. GENERAL INFORMATION

a. How old are you? (Years and months).....
b. Who do you live with? .....
c. Who is in your family? .....
d. What do you like doing? .....

(Definition – someone that you can see or talk to, but no one else can see). If clarification is required "do you see or hear something or somebody that only you know is around". (Interviewer may need to take some time clarifying the experience. Exclude toys or inanimate objects, determine if the imaginary companion is currently being experienced or has been experienced in the last six months).

The following questions are to be asked about the imaginary companion(s) whether it is past or present. If there is more than one imaginary companion, and time permits, go through the questions for each in turn. Imaginary companions may differ in numerous ways thus it is important that the participant is asked the bridging question of how each imaginary companion differs. It is preferable that the child's phraseology is used. If the child cannot differentiate then ask about all the companions together.

Section 2. The Imaginary companion

Question	Code
1. (a) Have you got more than one imaginary friend?	No = 0 2 3 4 5 6 7 or more 8 don't know 9 not applicable

(b) If yes can you tell me about them? (c) Is there a main one?	No = 0 Yes = 1 Don't Know = 8 Not applicable = 9
2. What is its name? (If more than one ask child to choose one)	
3. Have you told other people about...?	No = 0 Yes = 1 Don't know = 8 Not applicable = 9
4. What did they think?	I was silly = 0 I was strange = 1 I was special = 2 I was clever = 3 Not much = 4 They didn't believe me = 5 They had one too = 6 Other = 7 Don't know = 8 Not applicable = 9
5. How long have you had ...around?	Up to & including 6 months = 1 7 months to 1 year = 2 13 months to 2 years = 3 25 months to 3 years = 4 37 months to 4 years = 5 49 months and over = 6 Other = 7 Don't know = 8 Not applicable = 9
Is ...about when you are waking up?	Never = 0 Sometimes = 1 Always = 2 Other = 7 Don't know = 8 Not applicable = 9

Is...about when you are going to sleep?	Never = 0 Sometimes =1 Always =2 Other = 7 Don't know = 8 Not applicable = 9
6. How often is ...around?	Every day = 4 2-6 times a week = 3 Once a week = 2 Less than once a week = 1 Other = 7 Don't know = 8 Not applicable = 9
7. How long do you spend with...?	Up to and including 10 minutes = 1 11-20 minutes = 2 21-30 minutes = 3 31 minutes to 1 hour = 4 2-6 hours = 5 All day and night/all of the time = 6 Other = 7 Don't know = 8 Not applicable = 9
8. Is...more likely to be around at a particular place?	No = 0 Yes = 1 Don't know = 8 Not applicable = 9 (give example)
9. When is the most likely time for you to be with...?	Breakfast = 1 Other meal times = 2 At school = 3 After school and/or weekends = 4 When feeling a certain way = 5 (Specify emotion)..... Other = 7 Don't know = 8 Not applicable = 9
10. How does ...normally feel?	Doesn't feel = 0 Happy = 1 Sad = 2 Angry = 3 Frightened = 4 No one specific feeling = 5 Other = 7 Don't know = 8 Not applicable = 9

11. How do you know...feels this way?	They tell me = 1 Show me = facial and vocal expression and/or action = 2 Other = 7 Don't know = 8 Not applicable = 9
12. Is ...naughty?	No = **0** Sometimes = **1** Yes = 2 Other = 7 Don't know = **8** Not applicable = **9**
13. What do you do with...?	Talk to = **0** Play with = 1 Homework = 2 Eat meals = **3** Other = **7** Don't know = **8** Not applicable = **9**

Section 3. Emotional and behavioural responses and beliefs about imaginary companions.

14. Do you speak to them?	No = 0 Yes = 1 Don't Know = 8 Not applicable = 9
15. What do you talk about with...?	Things that worry me = 1 Things that I and/or IC have done = 2 Everything = 3 Other = 7 Don't know = 8 Not applicable = 9
16. tell...to leave me alone	**0 1 2 8 9** Always/ Sometimes / Never / DK / NA
17. try not to think about...	**0 1 2 8 9** Always/ Sometimes / Never / DK / NA
18. try and stop...	**0 1 2 8 9** Always/ Sometimes / Never / DK / NA
19. I do things to try and make sure...doesn't come to me	**0 1 2 8 9** Always/ Sometimes / Never / D.K / N.A
20. I want to do what ...tells me to do	**0 1 2 8 9** Never / Sometimes / Always / DK / NA
21. I ask...what I should do	**0 1 2 8 9** Never / Sometimes / Always / DK / NA
22. Who decides when .....is about?	**I decide = 0** **Both decide in turn = 1** **...decides = 2** **Other people apart from child and IC decide/ nobody/other = 7** **Don't know = 8** **Not applicable = 9**

23. How clever is...?	**More clever than you = 3** **As clever as you = 2** **Less clever than you = 1** **Don't know = 8** **Not applicable = 9**
24. ...Is very powerful	**0 1 2 8 9** Never / Sometimes / Always / DK / NA
25. Can you make ...come to you?	No = 2 Sometimes = 1 Yes = 0 Don't know = 8 Not applicable = 9
26. Can you make...go away?	No = 2 Sometimes = 1 Yes = 0 Don't know = 8 Not applicable = 9
27. Can you make them do what you want?	No = 2 Sometimes = 1 Yes = 0 Don't know = 8 Not applicable = 9
28. Do you hear ... in your mind?	No = 2 Sometimes = 1 Yes = 0 Other = 7 Don't know = 8 Not applicable = 9
29. Do you hear...through your ears?	No = 0 Sometimes = 1 Yes = 2 Other =7 Don't know = 8 Not applicable = 9

30. Do you see...through your eyes?	No = 0 Sometimes = 1 Yes = 2 Other = 7 Don't know = 8 Not applicable = 9
31. Do you see...in your mind?	No = 2 Sometimes = 1 Yes = 0 Other = 7 Don't know = 8 Not applicable = 9
32. If...was here now would I be able to see and hear him if I was close enough?	No/probably not = 2 Don't know/not sure = 1 Yes/probably yes = 0 Not applicable = 9
33. How pretend is...?	Completely pretend = **0** A bit pretend = **1** A bit real = **2** Completely real = **3** Don't know = **8** Not applicable = **9**
34. Are they as real as I am now?	Less real = **1** As real = **2** More real = **3** Don't know = **8** Not applicable = **9**
35. ...tells me things are going to be ok	**0 1 2 8 9** Never / Sometimes / Always / DK / NA
36. ...frightens me	**0 1 2 8 9** Always / Sometimes / Never/ DK / NA
37. ...makes me happy	**0 1 2 8 9** Never / Sometimes / Always / DK / NA
38. ...makes me sad	**0 1 2 8 9** Always / Sometimes / Never/ DK / NA

39. ...makes me feel cross	**0 1 2 8 9** Always / Sometimes / Never/ DK / NA
40. ...makes me worry	**0 1 2 8 9** Always / Sometimes / Never/ DK / NA
41. ...makes me feel like I can do things	**0 1 2 8 9** Never / Sometimes / Always / DK / NA
42. I have...because I have been naughty	**0 1 2 8 9** Always / Sometimes / Never/ DK / NA
43. ...Wants to help me	**0 1 2 8 9** Never / Sometimes / Always / DK / NA
44. ...is nasty even though I haven't done anything wrong	**0 1 2 8 9** Always / Sometimes / Never/ DK / NA
45. ...wants to protect me	**0 1 2 8 9** Never / Sometimes / Always / DK / NA
46. ...is helping to keep me happy	**0 1 2 8 9** Never / Sometimes / Always / DK / NA
47. ...wants to hurt me	**0 1 2 8 9** Always / Sometimes / Never/ DK / NA
48. ...is helping me to develop my special powers	**0 1 2 8 9** Never / Sometimes / Always / DK / NA
49. ...wants me to do naughty things	**0 1 2 8 9** Always / Sometimes / Never/ DK / NA
50. ...is helping me to do what I want	**0 1 2 8 9** Never / Sometimes / Always / DK / NA
Is there anything important about...you haven't told me, that you would like to tell me?	

Have you got any questions?

I would like to send your mum and dad (use as appropriate) a questionnaire so that they can tell me what they know about..... Even if they don't know anything about .... I would still like to hear from them. The questionnaire doesn't say what you told me. If you don't want me to send them a questionnaire that is O.K. Is it ok for me to send a questionnaire home?

Consent given to send questionnaire ☐

No consent given ☐

If child gives consent - It would be good if you don't help them, I'd like to see what they know without you helping them.

Closing statement

Thank you for taking part in this interview. What you have told me is quite normal for children of your age. Is there anything that we have discussed that you are worried about?

If the child is distressed by their experience and he/she and the parent would like to discuss it further a follow up meeting can be arranged.

Guidance notes for interviewer

Screening

- If a child reports only recently acquiring an imaginary friend you may wish to ask a bit more about them before starting the interview proper.
  (a) Questions on appearance are helpful as they can clarify that the reported I.C is in fact a true friend/class mate rather than an I.C.
  (b) If it is an animal or object make sure the I.C can be around when the animal or object is not.
  (c) If the I.C is only recently acquired but clearly not a true friend or toy check the child is not taking any asthma, hay fever or cold medications at the moment. If onset of the I.C was when the child started to take such medications do not interview the child.
  (d) If you are still unsure after asking these questions do not interview the child.
- If the child is struggling to comprehend questions at the start of the interview and appears to be frustrated or distressed by this difficulty, discontinue the interview.

Coding

- Always note the child's first relevant response to the question.
- If an answer falls between two codes or you are unsure how to code it for any other reason write the answer down verbatim.
- If a child answers sometimes take an example of this, e.g. what can you make them do, what can't you make them do?
- If a child consistently does not answer questions you may want to repeat the question or gently prompt them to answer your questions.

Other

- If children ask about their experience and it appears in line with other experiences you can feedback their experience is normal.
- If a child becomes distressed seek guidance from their teacher.

Appendix 7.
Exclusion Criteria

Southampton NHS
University Hospitals NHS Trust

Wessex Drug & Medicines Information Centre
Pharmacy Department
Southampton General Hospital
Southampton SO16 6YD

Dr Simon Wills
Tel (023) 8079 6906 Direct
Fax (023) 8079 4467
simon.wills@suht.swest.nhs.uk

Dr Tony Brown
Clinical Psychology Dept
Shakelta Building
Southampton University

20th March 2001

Dear Dr Brown,

DRUGS CAUSING HALLUCINATIONS, DELUSIONS, ABNORMAL THINKING OR PSYCHOSIS-LIKE REACTIONS

Thank you for your enquiry about the use of drugs that may cause hallucinations or delusional states in children. I understand that you are researching "imaginary friends" in children and wanted a list of drugs that might cause problems during the study. It is difficult to provide an exhaustive list. I have concentrated on drugs that are used reasonably commonly in children. The data however is mostly derived from adults because side effect data is rarely collected specifically for one age group.

The following drugs might be a problem:

- Anticonvulsants – All of these have at least some connection with these side effects.
- Antidepressants – Both tricyclic antidepressants and SSRIs may be a problem.
- Antihistamines – Mainly the older sedating type (eg chlorpheniramine, promethazine, cyclizine, diphenhydramine).
- Cimetidine and ranitidine.
- Opioids – eg codeine, morphine, dihydrocodeine, tramadol.
- Salbutamol.
- Sympathomimetics – eg pseudoephedrine, phenylpropanolamine, phenylephrine, ephedrine. Commonly found in cough and cold mixtures bought over-the-counter. Children are more sensitive to these than adults.
- Volatile substance abuse.

I hope that this is helpful.

Yours sincerely,

Simon Wills PhD MSc MRPharmS
Head of Wessex Drug & Medicines Information Centre

Appendix 8
Information Letter & Parent Questionnaire

On headed paper

Dear Parent

You may recall receiving a letter a little while ago about some research being conducted by the local university into normal aspects of children's imagination and development.

We are particularly interested in children's imaginary companions.

Your son/daughter has reported they have an imaginary companion. To find out more about this they have been interviewed. If you have any queries about this Katie Ashcroft will be happy to talk to you. If you tell the school you wish to discuss the research with her she will contact you at a time to suit you.

Part of the research aims to find out how much parents know about their children's imaginary companions. Therefore we would be very grateful if you could complete the attached questionnaire. Please answer all the questions and do not ask your child for any help. If you do not know anything about your child's imaginary companion it is still important to return the questionnaire to us.

If you have any queries about the questionnaire please do not hesitate to ask Katie Ashcroft to contact you.

Once you have filled in the questionnaire please put it in the envelope provided, seal the envelope and post it. YOU DO NOT NEED TO PUT A STAMP ON THE ENVELOPE.

The information is anonymous as you do not have to put your name, your child's name or your address anywhere on the questionnaire.

Many thanks for your help.

Yours faithfully

Katie Ashcroft

SECTION A. ONSET AND NUMBER OF IMAGINARY COMPANIONS 1. Do you think your child has an imaginary companion either at the moment or has had an imaginary companion in the last six months.	No = 0 Currently has an imaginary companion = 1 Has had an imaginary companion in the last six months = 2 Don't know = 8 Not applicable = 9
2. How many different imaginary companions does your child have?	**1** **2** **3** **4** **5** **6** **7 or more** **8** = don't know **9** = not applicable
3. How do you know about your child's imaginary companion(s)?	**1** = My child talks to me about their imaginary companion **2** = My child has told other people about their imaginary companion **3** = I've seen my child talking to or playing with someone who isn't there **8** = Don't know
4. What form do these companions take? (take first answer)	**0** = People **1** = animals **2** = toys **3** = monsters **4** = beings from outer space **5** = objects, **6** = unspecified **7** = other **8** = don't know **9** = Not applicable
Is there a main imaginary companion? (one that's the main one) What is it's name	
5. How long have they had this imaginary companion(s) for?	Up to & including 6 months = **1** 7 months to 1 year = **2** 13 months to 2 years = **3** 25 months to 3 years = **4** 37 months to 4 years = **5** 49 months & over = **6** other = **7**

	Don't know = 8 Not applicable = 9
6. What was happening around the time the imaginary companion(s) appeared?	Loss including =**0** death in the family, parent or sibling moving out sibling going to school main carer going to work moving house, other Additions to the family = **1** birth of younger brother or sister parent finding new partner new person moving into the house Stressors = **2** Exams Being bullied Child has health problem Health problem in the family Nothing in particular = **3** Don't know = **8** Not applicable = **9**
7. What kinds of things, if any, does your child do with their imaginary companion?	Talk to = **0** Play with just child and IC = **1** Play with IC & other children = **2** Play with IC & parents = **3** Daily chores = **4** Homework = **5** Eat meals = **6** Other = **7** Don't know = **8** Not applicable = **9**
8. Do you always know when your child's imaginary companion is present?	No = **0** Yes = **1**
9. How do you know?	They talk and/or play with the IC = **2** They tell me = **3** Their mood changes = **4** Other = **7** Don't know = **8** Not applicable = **9**

10. Does your child's imaginary companion have an impact on family life? (e.g. helps child to eat meals, go to bed etc).	No = **0** Yes = **1** Don't know = **8** Not applicable = 9

SECTION B. 11.I think the imaginary companion is very powerful.	**0** **1** **2** 8 9 Never/ Sometimes/ Always / DK / NA
SECTION C. CHILD'S RESPONSE TO THEIR IMAGINARY COMPANION 12. When they talk about their imaginary companion do you think they are:-	Happy = **1** Sad = **2** Angry = **3** Frightened = **4** No one specific feeling = **5** Other = **7** Don't know = **8** Not applicable = **9**
13. When their imaginary companion is present do you think they are:-	Happy = **1** Sad = **2** Angry = **3** Frightened = **4** No one specific feeling = **5** Other = **7** Don't know = **8** Not applicable = **9**
14. I find my child having an imaginary companion reassuring.	**0** **1** **2** 8 9 Never/Sometimes/ Always/ DK / NA
15. I find my child having an imaginary companion frightening.	**0** **1** **2** 8 9 Always/Sometimes/ Never/ DK / NA
16. My child having an imaginary companion makes me happy.	**0** **1** **2** 8 9 Never/Sometimes/ Always/ DK / NA
17. My child having an imaginary companion makes me feel down.	**0** **1** **2** 8 9 Always/Sometimes/ Never/ DK / NA
18. My child having an imaginary companion makes me feel angry.	**0** **1** **2** 8 9 Always/Sometimes/ Never/ DK / NA
19. My child having an imaginary companion makes me feel worried	**0** **1** **2** 8 9 Always/Sometimes/ Never/ DK / NA
20. My child having an imaginary companion makes me feel confident	**0** **1** **2** 8 9 Never/Sometimes/ Always/ DK / NA

21. Helps my child.	**0** **1** **2** 8 9 Never/Sometimes/ Always/ DK / NA
22. Picks on my child for no good reason.	**0** **1** **2** 8 9 Always/Sometimes/ Never/ DK / NA
23. Protects my child.	**0** **1** **2** 8 9 Never/Sometimes/ Always/ DK / NA
24. Seems to tell my child off for things they have done.	**0** **1** **2** 8 9 Always/Sometimes/ Never/ DK / NA
25. Is naughty.	**0** **1** **2** 8 9 Always/Sometimes/ Never/ DK / NA
26. Is helping to keep my child happy	**0** **1** **2** 8 9 Never/Sometimes/ Always/ DK / NA
27. Wants to harm my child.	**0** **1** **2** 8 9 Always/Sometimes/ Never/ DK / NA
28. Is helping my child to develop their abilities.	**0** **1** **2** 8 9 Never/Sometimes/ Always/ DK / NA
29. Wants my child to do naughty things.	**0** **1** **2** 8 9 Always/Sometimes/ Never/ DK / NA
30. To achieve their goals.	**0** **1** **2** 8 9 Never/Sometimes/ Always/ DK / NA
31. Did you have an imaginary companion when you were a child?	No = **0** Yes = **1** Don't know = **8** Not applicable = **9**

Is there anything else you would like to say about your child's imaginary companion?

.....

.....

.....

Appendix 9
Phenomenology questions & scales and Chi square Calculations

Eyes

	Option 1		Option 2		Option 3		Total	
	Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected
Current Data	22	23.14	4	2.21	0	0.52	26	26
Previous Data Aggernaes	42	40.05	1	3.38	2	0.90	45	45

PE for Yes=0.89
PE for No = 0.085
PE for DK = 0.02

$$\chi^2 = \frac{0-E^2}{E}$$

$$\chi^2 = \underset{\text{YES}}{\frac{22-23.14^2}{23.4}} + \frac{42-40.05^2}{40.05} + \underset{\text{NO}}{\frac{4-2.21^2}{2.21}} + \frac{1-3.83^2}{3.83} + \underset{\text{DK}}{\frac{0-0.52^2}{0.52}} + \frac{2-0.90^2}{0.90}$$

$$0.06 + 0.09 + 1.45 + 2.09 + 0.52 + 1.34$$

χ^2 = 5.55, 2 df >4.60, Significant at 0.10 level, 2 tailed.

Ears

	Option 1		Option 2		Option 3		Total	
	Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected
Current Data	16	20.28	9	4.68	1	1.04	26	26
Previous Data Aggernaes	42	35.10	1	8.10	2	1.8	45	45

PE for Yes = $\frac{0.62 + 0.93}{2} = 0.78$

PE for No = $\frac{0.34 + 0.02}{2} = 0.18$

PE For DK = 0.04

$\chi^2 = \frac{0-E^2}{E}$

YES NO DK

$\chi^2 = \frac{(16-20.28)^2}{20.28} + \frac{(42-35.10)^2}{35.10} + \frac{(9-4.68)^2}{4.68} + \frac{(1-8.10^2}{6.22} + \frac{(1+1.04)^2}{1.04} + \frac{(2-1.8)^2}{1.8}$

0.9 1.36 3.99 6.22 0.002 0.02

= 12.49, 2 df. > 9.21, Significant at 0.01 level, 2 tailed.

Publicness

	Option 1		Option 2		Option 3		Total	
	Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected
Current Data	9	8.32	17	17.16	0	0.52	26	26
Previous Data Aggernaes	13	14.4	30	29.7	2	0.90	45	45

PE for Yes $= \frac{0.35 + 0.29}{2} = 0.32$

PE for No $= \frac{0.65 + 0.67}{2} = 0.66$

PE for DK = 0.02

$$\chi^2 = \frac{0-E^2}{E}$$

$$\chi^2 = \left(\frac{9-8.32)^2}{8.32}\right)_{YES} + \frac{(13-14.4)^2}{14.4} + \frac{(17-17.16)^2}{17.16}_{NO} + \frac{(30-29.7)^2}{29.7} + \frac{(0-0.52)^2}{0.52}_{DK} + \frac{(2-0.9)^2}{0.9}$$

$$\chi^2 = 0.06 + 0.14 + 0.001 + 0.003 + 0.52 + 0.31$$

$$\chi^2 = 1.034 \text{ 2df}$$

Not significant at any level shown i.e. 1.034<3.22 (value for 2 tailed, 0.20 level)

Voluntarity

	Option 1		Option 2		Option 3		Total	
	Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected
Current Data	24	13.96	2	11.96	0	1.04	26	26
Previous Data Aggernaes	4	22.95	38	20.7	3	1.8	45	45

PE for Yes = $\frac{0.92 + 0.09}{2} = 0.51$

PE for No = $\frac{0.08 + 0.84}{2} = 0.46$

PE for DK = $\frac{0 + 0.07}{2} = 0.04$

$\chi^2 = \frac{0-E^2}{E}$

$\chi^2 = \frac{(24 - 13.26)^2}{13.26} + \frac{(4 - 22.95)^2}{22.95} + \frac{(2 - 11.96)^2}{11.96} + \frac{(38 - 20.07)^2}{20.07}$

$8.70 \qquad 15.65 \qquad 8.29 \qquad 14.46$

$+ \frac{(0 - 1.04)^2}{1.04} + \frac{(3-1.8)^2}{1.8}$

$1.04 \qquad 0.8$

$\chi^2 = 48.94$, 2df > 13.82, significant at 0.001 level, 2 tailed.

Reality

	Option 1 Unreal		Option 2 Part Real		Option 3 Completely real		Total	
	Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected
Current Data	4	2.47	20	17.94	2	5.72	26	26
Previous Data Miller	1	2.66	17	19.32	10	6.16	28	28

PE for Unreal = $\frac{0.15 + 0.04}{2} = 0.095$

PE for Part real= 0.69

PE for Complete real= 0.22

$\chi^2 = \frac{0\text{-}E^2}{E}$

$\chi^2 = \frac{(4 - 2.47)^2}{2.47} + \frac{(1 - 2.66)^2}{2.66} + \frac{(20 - 17.94)^2}{17.94} + \frac{(17 - 19.32)^2}{19.32}$

$0.95 \qquad 1.04 \qquad 0.24 \qquad 0.28$

$+ \frac{(2 - 5.72)^2}{5.72} + \frac{(10\text{-}6.16)^2}{6.16}$

$2.42 \qquad 2.40$

$\chi^2 = 7.33$, 2df > 5.99, significant at 0.05 level, 2 tailed