ADOLESCENT EGOCENTRISM AND PSYCHOSIS

By

Aimee Marie Harvey

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Abstract

Research has noted the onset of psychosis during adolescence and the influence of childhood adversity on the risk for psychosis. Prior social and self-construction difficulties contributory to psychosis and theorised to impinge upon adolescent development have also been highlighted. However, despite these links little empirical research has investigated this. This thesis aims to investigate the contributions of disruptions and exaggerations to adolescent egocentrism suggested by Harrop and Trower (2001).

This thesis investigated the relationship between psychosis and adolescent egocentrism in healthy adolescents, young people at high risk of psychosis and those with a first episode of psychosis. These relationships were tracked across the adolescent period and finally examined in clinical samples. It was found that a rise in psychotic-like experiences in mid-adolescence was linked to a rise in egocentric thinking suggesting that adolescent egocentrism contributes to psychotic-like experiences in healthy adolescents. At the clinical psychosis level, adolescent egocentrism was not contributory; however findings suggested that early emotional trauma and insecure attachment were moderated by adolescent egocentrism difficulties influencing the persistence of psychotic-like experiences into psychosis. These findings support the critical importance of adolescent development and developmental risk factors within the genesis of psychosis.

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CHAPTER 1:

ADOLESCENCE

1.1 Social and self-development

Adolescence is a time of great change not only on a physiological level with pubertal changes (Brooks-Gunn & Petersen, 1984) but also along cognitive and social developmental lines as individuals move from childhood to meet the social demands, expectations and responsibilities of adulthood. Increasing metacognitive abilities allow the individual to think about their own mental representations against those of others and reason hypothetically about abstract notions (Keating, 1990). The changing social scenery of the adolescent in which peers and the development of an identity rank amongst the most important is reflected in the importance attached to peers (Giordano, 2003) and the focus of attention on the self (Elkind, 1967; Eccles et al., 1993). According to developmental literature, adolescence is a time in which an individual most importantly develops and consolidates social relationships and establishes an identity with both crucial to goals of adolescent development and progression into adulthood (Zarrett & Eccles, 2006; Collins & Steinberg, 2006; Erikson, 1968).

Identity development is achieved through membership of a peer group where the adolescent can contextualise their developing identity with others (Steinberg & Morris, 2001). This is seen in the separation and individuation processes of adolescence in which the individual moves away from reliance on parental attachment relationships towards peer attachments and forms an identity which stands apart from parents (Lapsley, Rice & Shadid, 1989). The significance of peer relationships in adolescence is emphasised in much empirical literature (Prinstein & Dodge, 2008; Corsaro & Eder, 1990) and comprises many complex peer

influence processes (Hartup, 2005). For example, negative peer encounters was a predominate feature in the fears of a sample of adolescents such as fear of rejection, separation and looking foolish in front of peers (Bamber, 1979). Experiences with and an understanding of others allows the adolescent to develop social skills and behaviour learned through the assimilation of social interaction, experience and peer influence (Brown, et al., 2008). This is evidenced in findings of the consolidation of social skills in late adolescence (Newman, 1976). Such a process, based in social learning theory (Bandura & Walters, 1963) is known as socialisation (Prinsten et al., 2008) and explains how adolescents learn about and from others such as the similarities in behaviour of adolescent groups. It is suggested that socialisation serves both social and individual functions with the former leading to a sense of belonging or integration and the latter a sense of differentiation and identity (Adams & Marshall, 1996).

Adams and Marshall (1996) suggest that identity is intertwined with experience of peer relationships through socialisation processes. They argue that identity is actively and socially constructed, a position which stands in contrast to traditional psycho-analytic theories of the self as a separate developing entity (Erikson, 1968). Kroger (1989) also agrees with this conceptualisation of identity and integrates some of Erikson's earlier stages of identity development in infancy and childhood with the qualitative changes in identity development that occur in adolescence as self and other become distinct. This view has been corroborated by empirical studies such as the study by Brown, Eicher & Petrie (1986) in which peer groups are interpreted as a 'way station' (Brown et al., 1986, pg 95) for identity development. For example, in younger adolescents, peer groups served social functions such as establishing friendships but in late adolescence when identity becomes more emergent (Marcia, 1980) interfered with their sense of individuality due to conformity demands. Further to this Enright

and colleagues (1983) found that an instructional programme on perspective-taking lead to higher ego development scores.

An unstable sense of self and using one's peer group to establish an identity leads adolescents to become aware of their social self and focus their attention on themselves (Adams, Markstrom & Abraham, 1987). Reports of self-absorption in adolescence have frequently been used to describe the typical adolescent including narcissistic behaviour, self-consciousness, self-esteem issues and self-image disturbances (Conger, 1975).

The often difficult negotiation of these crucial social tasks with parents, peers and the self have precipitated descriptions of this time as stressful (Siddique & D'arcy, 1984; Casey et al., 2010) as seen in the conflict that often occurs between teenagers and parental figures during separation and individuation processes as the teenager begins to de-idealise their parental figures and delineate a separate self (Rice, Cole & Lapsley, 1990).

A social-cognitive process thought to assist with socialisation and self-construction is adolescent egocentrism (Lapsley & Murphy, 1985; Lapsley, 1993).

1.2 Adolescent egocentrism

Piaget's stage theory described the adolescent period as marking the progression from concrete operations to formal operations (Inhelder & Piaget, 1958). Piaget's stage theory proposes that new cognitive abilities are mastered at each stage of development in order to progress to the next through interactive experiences with others and the environment and growing intellectual maturity (Huitt & Hummel, 2003). Piaget suggests that progression is only achieved through this set sequence of stages which is closely matched to age with increasingly complex cognitive capacities seen in older children and adolescents (Sigelman &

Rider, 2003). For instance, earlier, preoperational capacities of younger children to develop their use of language (Piaget, 1952) are built upon in the concrete operations stage by more developed mental abilities in seven and eight year olds (Elkind, 1961).

The achievement of formal operational thought in adolescence marks the highest level of cognitive sophistication demanded for adulthood where metacognitive abilities enable the adolescent to reason, hypothesise, mentally manipulate thoughts and objects and, crucially, to think about the thoughts of others leading to adolescent egocentrism (Elkind, 1967). Unlike earlier infantile forms of egocentrism in children characterised by an inability to understand the perspectives of others and a focus on one's own (Rubin, 1973) *adolescent* egocentrism is thought to involve the immature misattribution of the thoughts or perspectives of the self with those belonging to others (Elkind, 1967).

Following on from the work of Piaget there was a surge of research interest in adolescent egocentrism between the 1960's and 1980's. Elkind (1967) suggested that adolescent egocentrism emerges during early adolescence and starts to decline at mid-adolescence around fifteen to sixteen years and into late adolescence (Elkind & Bowen, 1979; Enright et al. 1979; Lapsley et al., 1988) and is linked to the coinciding of the new mental and cognitive capacities of formal operations in adolescence. However, under-developed metacognitive capacity (Elkind, 1978) and the strong self-focus of adolescent egocentrism misinterpretations of the social world are made as the self-other view is distorted (Enright, Shukla & Lapsley, 1980). This is seen in the two components of adolescent egocentrism proposed by Elkind (1967): the Imaginary Audience and the Personal Fable. Through socialisation, a more mature understanding of others and the self is mastered, consolidating adolescent egocentrism (Elkind, 1967).

1.2.1 The Imaginary Audience

The Imaginary Audience is first described in detail in Elkind's (1967) work. He describes the Imaginary Audience as being governed by a self-focus, a watchful and personal audience imagined by the teenager that shares the same concerns and preoccupations as the individual. It consists of a differentiation failure between the adolescent's perspective and the perspective of others and it is this failure to differentiate between the self and others Elkind argues is the crux of adolescent egocentrism. This translates to actual social situations in which the adolescent anticipates the responses of others in social situations in line with their own concerns (Elkind, 1967 & 1985). Examples of Imaginary Audience behaviour include socially sensitive behaviours such as self-consciousness (Elkind et al., 1979; Lechner & Rosenthal, 1984), shame (Lynd, 1961), self-admiring behaviours, expressions of identity, the need for privacy and a preoccupation with one's demise (Elkind, 1967). These behaviours are so engrained in the concept of the Imaginary Audience that measurements designed to capture them have also been utilised as measurements of self-consciousness (Lapsley et al. 1985). It can therefore be said that the Imaginary Audience captures the typical social behaviours of adolescence.

1.2.2 The Personal Fable

The Personal Fable is again first described in Elkind's 1967 paper and follows from the Imaginary Audience as being the centre of a personal audience the individual regards their experiences and feelings as special and unique. Elkind explain that the individual over-differentiates their own thoughts and feelings from those of others believing that their experiences are set apart and very different to the experiences of others. In other words the adolescent fails to appreciate that the feelings and experiences they encounter are also

common to others. The Personal Fable is said to account for the feelings of invincibility common to adolescence (Gershenson & Handler, 1985). Manifestations of this are the notorious sensation-seeking and risk-taking behaviours in adolescence such as drug and alcohol abuse and unprotected sex (Irwin & Milstein, 1991). In addition, narcissism and feelings of grandiosity have also been linked to Personal Fable ideations (Aalsma, Lapsley & Flannery, 2006). This subsequent component of adolescent egocentrism is also thought to support identity development in adolescence (Lapsley et al., 1989).

1.2.3 Social Sensitivity

Although most strongly associated with the Imaginary Audience, self-consciousness has been researched alongside both adolescent egocentrism components considered to be intrinsic to such processes resulting from the strong self-focus of adolescent egocentrism (Enright, Lapsely & Shukla, 1979; Enright et al., 1980; Ryan & Kuczkowski, 1994). Consistent correlations have been found between adolescent egocentrism and self-consciousness across the adolescent period (Enright et al., 1980; Elkind, 1978) suggesting that self-consciousness is a by-product of adolescent egocentrism. Indeed it can be understood as a developmental marker of the presence of adolescent egocentrism (Enright et al., 1980; Fox, 2007). Indeed, public self-consciousness has been found to show a curvilinear decrease with age across adolescence (Rankin, Lane & Gibbons, 2004) a time when adolescent egocentrism is thought to have consolidated (Elkind, 1967). However, it has also presented its own developmental pathway through adolescence (Davies & Franzoi, 1991; Rankin et al., 2004) and into adulthood possibly due to its more general application (Frankenberger, 2000).

1.2.4 The social cognitive nature of adolescent egocentrism

Whilst cognitive theories describe how the accomplishment of specific cognitive tasks serve to overcome egocentric behaviours in childhood they do not accommodate for *adolescent* egocentric processes which do not have a higher developmental stage to progress to and are overcome by social rather than cognitive development (Lapsley et al., 1985). Further to this empirical findings have disputed whether adolescent egocentrism should be contextualised within cognitive theories, as formal operational thought does not appear to be a necessary precursor. For instance, studies have found examples of higher levels of adolescent egocentrism in the concrete operations stage and a reduction in adolescent egocentrism as a result of formal operations (Riley, Adams & Nielsen, 1984). Others have found only partial (Gray & Hudson, 1984) or no relationship at all between formal operations and adolescent egocentrism (Peterson, 1982). Lapsley and colleagues (1986) also failed to detect the expected developmental covariation between components of adolescent egocentrism and formal thought that should illustrate, according to Elkind's theory (1967) a rise in both factors during early adolescence with a lull during mid and late adolescence.

Lapsley et al. (1985) suggests that adolescent egocentrism is less to do with egocentricity and cognitive capacities and more to do with a growing sophistication and fine-tuning in perspective-taking and interpersonal understanding and distinguishes adolescent egocentrism from the more cognitive descriptions bestowed by Elkind (1967; 1978; 1985) by arguing that cognitive differentiation failures are not characteristic of actual adolescent capacities and behaviours as teenagers have already reached fairly advanced levels of perspective-taking ability by this stage. This incongruence is also highlighted by Vartanian (2001) who argues that adolescent egocentrism represents an example of growing interpersonal understanding that undergoes fine-tuning through social experience. Indeed, adolescent egocentrism

components are described as a product of increasing social-cognitive capacities (Lapsley et al., 1985; Lapsley et al. 1988) and the Imaginary Audience relates to the imaginings of the adolescent rather than actual behaviour as argued by Elkind (1985). In fact Lapsley employs a much broader definition of adolescent egocentrism cognitions referring to them as ideations as in the object-relational ideations used to describe the Imaginary Audience (Vartanian, 2000).

Lapsley and colleague (1985) argue that Selman's (1980) stages of interpersonal understanding better explain the ontogenesis and presence of adolescent egocentrism. This stage theory demonstrates that individuals move from the immature perspective-taking abilities of childhood to much more sophisticated abilities seen in older adolescents as they have more solidly consolidated their understanding of others. Immature perspective-taking of childhood is characterised respectively by an initial lack of understanding of another's perspective, lack of reciprocity between self –other perspectives and restrictions to a two-person frame of reference. It is at level 3 perspective-taking that Lapsley et al. (1985) believes adolescent egocentrism emerges when the adolescent becomes able to assume group or third-party perspectives, can step outside social interactions to view themselves from such perspectives as both a subject and object of another's thoughts and reflect on their own self-observations. Likened to formal operational thought capacities Lapsley (1985, 1988) asserts that level three perspective-taking abilities go further in accounting for the cognition and behaviour typical of adolescent egocentrism. In particular he argues that it is the self-observing ego within level three which accounts for Imaginary Audience and Personal Fable ideations as it allows adolescents to step out of dyadic encounters to self-reflect and take third-party perspectives. For instance, to be able to view one's social exchanges from a third-

party would simulate an audience perspective and to monitor one's self experiences within social exchanges would lead to a heightened sense of personal-control or agency.

By the time adolescents reach the level four perspective-taking stage the older adolescent is able to take account of all perspectives as well as the societal perspective and understand that certain mental processes such as unconscious processes are not accessible for self-observation (Lapsley et al., 1985). It is at this level that he suggests adolescent egocentrism becomes consolidated; the adolescent has experienced and comprehended the viewpoints of others and acquired a more sophisticated social understanding echoing the socialisation processes Elkind (1967) refers to, to reduce adolescent egocentric ideations.

Lapsley (1988) has provided empirical support for the ontongenesis of adolescent egocentrism within Selman's stages of perspective-taking demonstrating downward linear trends from early to late adolescence in level 3 self-observing ego behaviours. Later research has also provided support for adolescent egocentrism as part of growing social-cognitive capacities (Vartanian, 2000; 2001) as well as offering support for Lapsely's 'New Look' approach which identifies the role of adolescent egocentrism within identity development.

1.2.5 The 'New Look' at adolescent egocentrism: Identity development

Separation-individuation involves the de-idealisation of parents and the psychological move away from childhood identities and the re-establishment of a new, separate identity (Blos, 1962). Adolescents de-idealise their parental figures and by losing such relational ties the adolescent must balance a sense of belonging with a sense of autonomy and independence (Sabatelli & Mazor, 1985). Psychoanalytic theories argue that this is done through object relational ideation to maintain connectedness and the generation of strong, internal self-perceptions to establish ego boundaries or a sense of self (Blos, 1962).

Within Lapsley's (1993; Lapsely et al., 1989) ego-development theory he argues that object relational ideation and strong self-perceptions are synonymous with the Imaginary Audience and Personal Fable and that they therefore compensate a sense of belonging and autonomy during separation-individuation. Lapsley et al. (1989) suggest that separation-individuation processes are activated once adolescents reach level three perspective-taking in which the self-observing ego engages Imaginary Audience and Personal Fable cognitions.

The study carried out by Lapsley et al. in 1989 was supportive of these arguments with object relational concerns of separation-individuation relating to Imaginary Audience ideation and dependency denial and self-centredness dimensions of separation-individuation relating to Personal Fable ideation. Age-related differences in these separation-individuation variables also followed typical age-related declines in adolescent egocentrism offering support for the role of adolescent egocentrism in self-development in adolescence. Correlations between separation-individuation and adolescent egocentrism were also found by Vartanian in 1997. This study used more measurements of the Imaginary Audience and Personal Fable and suggested that those that operationalised the Imaginary Audience as object-relational ideation, as seen in Lapsley's (1993) conceptualisations and not as self-consciousness as traditionally thought, related best to separation-individuation concerns.

As well as the protective functions of the Imaginary Audience and Personal Fable Lapsley (1993) also suggests that they are preparatory mechanisms for social and self-construction, advancing socialisation behaviour as seen in the interpersonal imaginings of the Imaginary Audience and priming the adolescent, through a strong self focus for experimentation with their sense of identity.

The different roles of Imaginary Audience and Personal Fable in adolescent development is seen in an earlier study by Enright et al. (1979) in which the Imaginary Audience and Personal Fable were found to decline at different rates across adolescence. Vartanian and Powlishta in 1996 also highlight the roles of adolescent egocentrism components in social and self-construction by pointing to their responsiveness to the social environment. This lead Vartanian to suggest that due to the variable nature of the social environment (quality of peer and parental relationships) this then influences individual differences in how much one endulges Imaginary Audience and Personal Fable ideations (Vartanian, 2000). For instance, a highly critical peer group may prompt greater Imaginary Audience ideation as the individual engages more interpersonal daydreaming to compensate for real social relationships. Evidence that adolescent egocentrism may be responsive to the social environment and contains individual differences is seen in the continuation of adolescent egocentrism into late adolescence and adulthood (Frankenberger, 2000; Goossens, Seiffge-Krenke & Marcoen, 1992) and gender differences in the reporting of Imaginary Audience and Personal Fable cognitions (Elkind et al., 1979; Hudson & Gray, 1986; Aalsma et al., 2006; Galanaki, 2012) in which females generally report higher levels. Vartanian (2000; et al. 1996) also argued that adolescent egocentrism is fluid and multi-dimensional as the Imaginary Audience can be perceived as either critical or admiring and the Personal Fable can manifest in different ways either in feelings of uniqueness, risk-taking and sensation-seeking behaviours (Goossens et al., 1992; Vartanian, 2001).

1.2.6 Summary of adolescent egocentrism

To summarise, the re-conceptualisation of adolescent egocentrism has received empirical support and is suggested to assist the social and identity development goals of adolescence. Research suggests that adolescent egocentrism may be a fluid process that plays an integral

part in adolescent development and is influential upon behaviour as evidenced by findings of self-consciousness during this time.

1.3 Adolescent egocentrism or theory of mind

Another social-cognitive process which shares much in common with adolescent egocentrism is theory of mind. This is seen in the associations both constructs have with perspective-taking and a preference for one's own perspective (Lapsley, 1985; Ritter, 1979; Gallese & Goldman, 1998; Birch & Bloom, 2007), social development (Hughes & Leekam, 2004) and the developing capacities of both processes through adolescence. For instance, it is hypothesised by Choudhury, Blakemore and Charman (2006) that the two main cellular processes that occur in adolescence of synaptic pruning and axonal myelination may be influencing neural structures important to social cognitive functioning such as theory of mind and this was evidenced in decreasing reactions times with chronological age in adolescence to first and third person perspective-taking. It was concluded in this study that perspective-taking abilities and psychosocial development such as adolescent egocentrism progress in parallel across adolescence. Another study by Blakemore and colleagues in 2007 suggested that adolescents used different neural structures to adults when reasoning about intentions indicating a refinement of this ability with age. Therefore, due to their similarities it could mean that it is theory of mind refinement and not adolescent egocentrism that underlies social development. However, this thesis considers theory of mind abilities to consist of more basic perspective-taking abilities than adolescent egocentrism. For instance, theory of mind is typically said to be achieved at the age of five years where children are thought to understand the concept of a false belief (Barressi & Moore, 1996) and has been consistently referred to as the ability to understand another's perspective or infer their mental state (Vogeley et al., 2001;

Harris, 1989; Frith & Frith, 2006). Understanding another's perspective is a given within adolescent egocentrism processes (Lapsley, 1985) and a reason for misattribution errors between the self's perspective and others (Elkind, 1967). It may therefore be that theory of mind as a basic perspective-taking skill is subsumed within the more sophisticated social-cognitive processes of adolescent egocentrism highlighting the need to distinguish these different processes and their behavioural manifestations from each other.

The following chapter will now consider social and self-development in psychosis which typically onsets during adolescence (Galdos, van Os & Murray, 1993).

CHAPTER 2:

SOCIAL AND SELF-DEVELOPMENT IN PSYCHOSIS

2. 1 Social functioning and self-construction difficulties in psychosis

Difficulties with the social environment have been observed in psychosis samples. This ranges from social communication difficulties (Dickinson, Bellack & Gold, 2007) to difficulties maintaining work placements (Lehman, 1995). Individuals with psychosis also have very restricted friendship networks (Randolph, 1988) and tend to have single marital status (Farina, Garmezy & Barry, 1963).

Research also indicates that disturbances to the development of a self are at a basic level (Nelson et al., 2009) in those with psychosis which include anomalous experiences such as derealisation and reduced self-affection. These experiences relate to a separation or alienation of the self from one's social reality and a diminished sense of oneself as capable of subjective awareness. The richest accounts of self-disturbance in psychosis have been described by Laing in his work on 'The Divided Self' in 1960. Themes of dissociation and feeling disconnected from the self or having fragmented selves in the sense that the self had been lost, stolen or murdered (Laing, 1960) formed part of the phenomenological descriptions of patients.

2.1.1 Issues of causation

It may be that social and self-construction difficulties are simply an artefact of the symptoms of psychosis. For example paranoia may prevent the establishment and maintenance of social relationships. Psychotic symptoms (Thorup et al., 2006) as well as periods of hospitalisation (Liberman, 1982) may also interfere with access to the social environment and the

development of social skills. For instance, Kohler and colleagues (2003) found that facial emotion recognition correlated with chronicity of symptoms and Sass and Parnas (2003) and early work by Laing (1960) highlighted how self-disturbances are intertwined with the symptoms of psychosis.

However, arguments have been put forward that social difficulties have a long-standing history (Bellack et al., 1990) and may be separate to symptoms of psychosis (Addington, Saeedi & Addington, 2006a; Addington & Addington, 1998; Sergi et al., 2007). Studies suggesting this have found social difficulties in earlier childhood and adolescent periods (Tarbox & Pogue-Geile, 2008) which have been found to relate to later psychosis (Cannon et al., 1997, Carter et al., 2002 and Tarbox et al., 2008). These include a range of social difficulties within pre-schizophrenic adolescents including social withdrawal and internalising behaviours (Barthell & Holmes, 1968) and poor sociability behaviour (Schiffman et al., 2004). In fact the prodromal periods of psychosis are thought to extend back into adolescence (Poulton, 2000) where such wide-reaching interpersonal difficulties feature, including abnormal self-experiences and self-awareness (Parnas & Handest, 2003). For instance, retrospectively, Hollis in 2003 found a variety of premorbid social impairments such as deviant social communication and poor adaptation to peer relationships within the childhood period. Strong evidence that social difficulties can be considered causal to psychosis are findings that premorbid adjustment in adolescence is much poorer in psychosis in comparison to other psychiatric disorders such as bipolar and shares a linear relationship with the risk for psychotic onset (Cannon et al., 1997). Literature has also suggested that social functioning difficulties during adolescence and their relationship to cognitive impairments become more significant and contribute to psychotic outcome (Asarnow, 1988; Cornblatt & Keilp, 1994)

where important social development objectives are met by a shortfall in social-cognitive resources (Carter & Flesher, 1995; Cornblatt et al., 1994).

Disruptions to the consolidation of a self may relate to the social functioning difficulties seen in psychosis (Laing, 1960). For instance, Lysaker, Timothy and Lysaker (2001) suggest that personal narratives which appear to be disorganised in individuals with schizophrenia are built from interpersonal experiences and are important in forming one's sense of identity. Trower and Chadwick's (1995) model of the self emphasises that in order for the self to be completely constructed it must be recognised and accepted by others through social relationships. Recent research has demonstrated that self-development difficulties can be traced back to adolescence. For instance, problematic identity development during the adolescent period has been retrospectively found in psychosis. Cuervo-Lombard and colleagues in 2007 used a technique in which auto-biographical memories representing a time period important to identity development (between the ages of ten to thirty) were compared between patients with schizophrenia and controls. Differences were found between the groups with schizophrenic patients recalling less specific and private memories and recalling earlier memories than controls. Interpretations of these results included explanations that individuals with schizophrenia are impaired and show abnormalities for memories that are associated particularly with the latter stages of personal identity development which suggests inconsistencies in self-development.

Harrop and Trower (2001) have also suggested from anecdotal evidence gathered that stages of identity development akin to adolescence may remain present in individuals with schizophrenia such as conflicting relationships with parents in an attempt to individuate a separate identity and independence. In addition, work by Parnas and Sass (2001) argues that

self-disturbances within pathways to psychosis are characterised by a lacking stable sense of self which are suggested to directly lead to psychotic symptoms.

It appears therefore that social and self-construction difficulties may be found *prior* to the onset of psychosis, become significant *during* the adolescent period and are predictive of later psychotic illness.

2.1.2 Social-cognitive impairments

Possible explanations for the social and self-construction difficulties seen in psychosis may have a social cognitive foundation.

Much research has found social cognitive impairments in psychosis. Social cognitive impairments are described as 'hallmark' (Penn et al., 1997, pg.118) features of psychosis with research supporting their role in the development of psychosis (Penn et al., 1997; Dworkin et al. 1993) and not merely an epiphenomenon of symptoms (Meltzer et al., 1996; Hughes et al., 2003). They have been linked to more general forms of cognition such as executive functioning, memory and attention which have all been found to be impaired in psychosis samples (Corrigan, Gren & Toomey, 1994; Kupperberg & Heckers, 2000; Green, 1996) with links between social cognitive deficits and positive and negative symptoms of psychosis (Penn et al., 1997). Lysaker, Carcione & Dimaggio (2005) also found that measurements of meta-cognition linked to symptoms of psychosis, and other studies have found that certain impairments in facial emotion recognition are associated with particular symptoms of psychosis such as the poorer identification of negative emotions in individuals with persecutory delusions (Combs, Michael & Penn, 2006). This may be due to differences in the way faces are processed in psychosis as research has found restricted scanning of facial features in happy and neutral poses in schizophrenia (Loughland, Williams & Gordon, 2002)

and reduced attention to threatening facial expressions in those with delusions (Green, Williams & Davidson, 2003). Although, the results of this last study may however be driven more by symptoms of paranoia rather than any social-cognitive deficit to threatening facial expressions.

In a methodological review by Edwards, Jackson and Pattison in 2002 general impairments in both affect recognition and prosody were highlighted. This review concluded that specific emotional recognition impairments were not generally observed in psychosis despite the methodological weaknesses of small sample sizes and lack of control groups seen in this area of research. However, a few studies have observed facial expression recognition difficulties for fear (Archer, Hay & Young, 1994; Green, Williams & Davidson, 2003) and sadness (Schneider et al., 1995) and difficulties identifying sadness in prosody tasks (Murphy & Cutting, 1990) in psychosis.

As an integral component of social cognition, deficits in facial emotion recognition are suggested to relate to difficulties with interpersonal functioning (Kerr & Neale, 1993) and have been found to associate with general social functioning as well as partially mediating the relationship between cognition and social functioning in psychosis samples (Addington, Saeedi & Addington 2006b). More general cognitive impairments in psychosis have also been found to be predictive of social functioning difficulties such as deficits in memory and language (Kuperberg et al., 2000; Addington & Addington, 2000). A study by Green (1996) found that deficits in verbal memory and vigilance were the strongest predictors of social functioning difficulties. The links between these more general cognitive impairments and social functioning difficulties are intuitive. For instance social communication and understanding such as social conversations, the giving of instructions or the expression of feelings and beliefs would depend on linguistic (Newman, 1976), attentional and working

memory skills suggesting that such cognitive processes also play an important part in social cognition.

It appears therefore, that without the appropriate social-cognitive architecture to successfully deal with and understand social environments difficulty with social functioning ensues. This would also impact on self-construction as identity is consolidated through social experiences (Lysaker et al., 2005). It may be therefore that social and self-construction difficulties form part of the pathway from social cognitive deficits to psychosis.

For instance, social cognitive impairments and associated social difficulties have been found to occur prior to the onset of psychotic symptoms strengthening their causal role in pathways to psychosis (Asarnow, 1988; Hans et al., 1992). This is seen in a study by Dworkin and colleagues (1993) who found adolescents at high risk for schizophrenia had affective and social deficits. A review by Couture, Penn and Roberts in 2006 attributed the relationships between neurological deficits and social functioning in psychosis to difficulties with social cognition and longitudinal evidence has found receptive language, cognitive development impairments and interpersonal difficulties in children who went on to develop schizophreniform disorder (Cannon et al., 2002) .

Therefore it seems that social-cognitive impairments may demonstrate an interference with the natural development of an individual's social understanding and self-construction and that these impairments and related difficulties can be seen during adolescence, prior to the emergence of psychosis.

2.1.3 Childhood trauma

However, it may not only be through social-cognitive routes that social functioning and identity difficulties result. The quality of one's environment as seen in findings of childhood trauma in psychosis may also impact on social development in psychosis.

The experience of trauma is understood to lead to psychiatric outcome (Read et al., 2005). A study by Spence et al. (2006) found that childhood trauma was more common among individuals with schizophrenia than other non-psychotic psychiatric groups. Indeed, a strong body of evidence exists linking physical and sexual abuse in childhood with symptoms of psychosis and poor social skills (Read, et al., 2005; Bebbington et al., 2004; Spence et al., 2006). Specifically, sexual and physical abuse has been consistently linked to paranoid delusions and hallucinations (Read et al., 2003; Ross, Anderson & Clark, 1994; Romme & Escher, 2006). In terms of emotional abuse and neglect which is associated with poor mental health outcomes (Spataro et al., 2004; Shevlin, Dorahy & Adamson, 2007) less research attention has been paid, however, associations have been made with psychosis. For instance strong links have been found between emotional abuse and hallucinations in comparison to physical and sexual abuse (Whitfield et al., 2005). In a study by Holowka and colleagues (2003) it was childhood emotional abuse rather than physical abuse which most strongly correlated with dissociative symptoms in psychosis. In addition, retrospectively, Compton, Furman and Kaslow (2004) found ratings of previous emotional abuse and neglect to be the highest in first episode schizophrenic inpatients. Although observations of childhood trauma have been found in other psychiatric disorders and mental health outcomes (Hill, 2003; Manning & Stickley, 2009) and in their critical review caution has been recommended by Morgan and Fisher (2007) due to the methodological weaknesses of research and lack of specificity found between trauma experiences and psychotic symptoms, generally, a dose-

response relationship is suggested (Larkin & Read, 2008; Janssen et al., 2004; Spauwen et al., 2006). In addition, in a current meta-analysis by Varese and colleagues (2012) strong associations between childhood adversity and risk for psychosis were found.

A number of mechanisms have been used to explain this relationship. Primarily, biological mechanisms have been put forward suggesting that chronic glucocorticoid release from repeated stressors affect permanent changes in the hypothalamic-pituitary-adrenal axis and dopamine release which is thought to underlie psychotic symptoms (Read et al., 2001). This is supported by van Os and McGuffin in 2003 and van Os and colleagues in 2005 who argue for the relationship between genetic vulnerabilities and environmental risk within pathways to psychosis. This was built upon by, van Os, Linscott & Myin-Germeys (2009) whose proneness-persistence-impairment model integrated environmental with biological and developmental factors illustrating how within pathways to psychosis environmental stressors may interact with genetic variability to result in the persistence of the developmental expression of subclinical psychotic experiences. The influence of environmental adversity on psychotic-like experiences during adolescence have also been corroborated by other studies (Lataster, van Os & Drukker, 2006; Mackie, Castella-Ryan & Conrod, 2011) demonstrating relationships between the number of environmental risks and persistence of psychotic experience leading to an increased likelihood of psychotic illness (Cougnard et al., 2007). Other mechanisms have highlighted the impact childhood trauma may have on social and self construction. For instance, cognitive models have argued for the influence of early trauma on schemas of the self and others priming an individual to threat (Bak et al., 2005). The pathway from socially adverse experiences to social functioning and self-construction difficulties was also considered by Garety and colleagues (2001) within their cognitive model of psychosis.

Here negative environmental experiences creating chronic stress lead to dysfunctional self and other schemas. Other studies have also proposed that the effects of emotional abuse in childhood are detrimental to self-construction leading to psychopathy (Finzi-Doltan & Karu, 2006).

These accounts are consistent with the concept of sensitisation which suggest that through prolonged and repeated exposure to environmental risks, greater responses are facilitated over-time to subsequent stressors leading to lasting changes in response amplitude (Collip, Myin-Germeys & van Os, 2008). Collip and colleagues (2008) suggest that exposure to adverse life events negatively impact social and self schemas leaving individuals socially defeated and feeling subordinate to others. Future stressful events triggering affective and cognitive responses and maladaptive appraisals are interpreted in line with these cognitive biases facilitating the formation of psychotic symptoms such as persecutory delusions. Alternatively, Collip argues that individuals prone to psychosis are behaviourally and emotionally over reactive to minor stressors possibly as a result of early trauma. This has been corroborated elsewhere with similar reactions found in the stressed responses of those with psychosis to everyday hassles who had experienced early trauma (Myin-Germeys & van Os, 2007).

In line with the suggestion of the impact of childhood trauma on social and self-development in pathways to psychosis, research has found relationships between such adverse experiences and social and self-construction difficulties. For instance Perry in 2002 suggested that emotional neglect impacts a sense of care for others which has the potential to restrict social experiences and the construction of a self. Cole and colleagues in 1992 demonstrated the effects of incest on an individual's ability to achieve developmental tasks, particularly social

functioning and consolidation of identity. This study highlighted how an understanding of the self and others through metacognitive reflection and the achievement of a unified self from the multiple selves that adolescents experiment with (Erikson, 1968) are hindered by sexual abuse as security, trust and self-regulation are undermined. The impact that trauma has on social development was also echoed in a study by Perry and colleagues in 1995 who looked at the cognitive, affective and behavioural responses of children when interacting with the social environment. It was suggested that deprivation of or encounters of aversive experiences can mean that neurological frameworks necessary for brain development do not develop fully and social functioning is compromised. In terms of affective and behavioural responses it was illustrated that more primitive, threat-driven behaviour is observed in individuals who have suffered trauma consisting of low level fear, hyper-arousal and dissociation. Such responses would not facilitate effective social communication and may work to prevent an individual from establishing social relationships. Within psychosis, the Spence et al. (2006) study found that experience of childhood trauma related to poor communication skills and a study by Lysaker and colleagues (2001) found a relationship between earlier experiences of sexual abuse and difficulties with psychosocial functioning in adults with schizophrenia including role functioning difficulties and difficulties with intimacy in relationships. Another study (Schenkel et al., 2005) also found that not only did higher rates of childhood maltreatment correlate with symptoms of psychosis they also related to poorer peer relationships in childhood.

2.1.4 Attachment security

Attachment security is a developmental variable often researched alongside childhood trauma (Van der Kolk, Perry & Herman, 1991; Lyons-Ruth & Block, 1996) and has been found to be significantly related to childhood adversities (Mickelson, Kessler & Shaver, 1997). Indeed, psychosocial models of psychosis have used attachment theory to trace pathways from early trauma to psychosis elucidating the factors contributory to pathways to psychosis (Read & Gumley, 2008). Within psychosis samples, high levels of insecure attachment in comparison to other psychiatric diagnoses have been observed (Dozier, 1990; Dozier et al., 1991).

More specifically, relationships have been found between avoidant attachment styles and psychosis whereby attachment insecurity is thought to be contributory to psychosis in the way it impacts interpersonal functioning (Berry, Barrowclough & Wearden, 2008). In addition, this study found that it was attachment anxiety which related to interpersonal problems, with changes in this attachment dimension relating to changes in psychotic symptoms. Other studies have also found relationships between attachment insecurity and specific symptoms of psychosis. For instance, Berry and colleagues (2006) found that attachment anxiety related to positive symptoms and attachment avoidance to negative symptoms such as social anhedonia whereas Pickering, Simpson and Bentall (2008) found that insecure attachment predicted persecutory paranoia but not hallucinations. Even more specifically, Macbeth, Schwannauer and Gumley (2008) found a relationship between attachment anxiety and paranoia, attachment avoidance and hallucinations. The relationship between avoidant and anxious attachment styles and psychosis was again found in a large sample study by Mickelson and colleagues in 1997. However, this study used Hazan and Shaver's (1987) three-category attachment

measure which does not include dismissing avoidance which was found at higher levels in the schizophrenia group in the Dozier study (1991).

The conflicting findings of the Berry and Pickering studies as well as findings of a non-significant relationship between dismissive avoidance and psychiatric outcome (Dozier, 1990) perhaps reflect methodological weaknesses within attachment research such as small sample sizes, reliance on self-report measures and a lack of clarity and understanding of the exact attachment mechanisms within pathways to psychosis (Berry, Barrowclough & Wearden, 2007).

As well as this, findings that attachment insecurity can relate to an array of psychiatric outcomes and are not therefore specific to psychosis further illustrates that caution should be taken when assessing the influence of attachment variables. For instance, the Mickelson study like in other studies (Dozier, 1990; Rosenstein & Horowitz, 1996) found that anxious and avoidant attachment styles were also found in other psychiatric groups.

However, as indicated by the Berry et al. study (2008; Berry et al., 2007) it may be that the relationships between insecure attachment and psychosis are mediated by the impact an insecure style may have on social and self-construction during development. For instance, according to Bowlby's (1969; 1973 & 1980) theory of attachment, early caregiver-infant experiences provide an internal working model of perceptions of the self and others. This model which emerges around the second year of life frames and guides the individual's subsequent social interactions. Traumatic interpersonal relationships may lead to the development of a less secure and trusting framework to guide future social interactions.

Indeed Tait, Birchwood and Trower (2004) found that abuse and lack of care from parental figures significantly correlated with rejection and anxiety in adult relationships. More specifically, Simpson (1990) found that in romantic relationships insecurely attached individuals display more negative emotions and Feeney and Noller (1990) found that they report more distrust of others. Also a study by Kobak and Screery (1988) found differences in identity development in insecurely attached compared to securely attached individuals in late adolescence. For both dismissing and preoccupied insecurely attached groups, ego-resilience was lower. Dismissive types were also found to display more hostility towards peers and experience higher levels of loneliness and preoccupied types more anxiety towards peers and higher levels of personal distress. In a later study by Allen, Marsh and Farland (2002), more extreme anti-social behaviour such as delinquency was found in adolescents with preoccupied insecure attachment styles suggesting difficulties with social skills.

2.1.5 Summary of social and self-construction difficulties in psychosis

The research reviewed in this chapter suggests that social and self-construction difficulties are found prior to the onset of psychosis. Social-cognitive impairments, childhood trauma and attachment insecurity within pathways to psychosis are suggested to be impact social and self-development. In light of these difficulties, the following chapter will now examine how these may impact social development in adolescence, namely in regard to adolescent egocentrism and following Harrop and Trower's (2001) theory of blocked adolescent development, lead to the emergence of psychotic symptoms.

CHAPTER 3:

ADOLESCENT EGOCENTRISM AND PSYCHOSIS

3.1 Social and self-construction difficulties and adolescent development

Referring to the rise in psychotic-like experiences and onset of psychosis in adolescence (Verdoux et al., 1998, Collip et al., 2008), Harrop and Trower (2001; 2003) suggest that social and self-construction difficulties in vulnerable individuals may be significant factors which contribute to onset of psychosis. In particular they argue that social and self-construction difficulties work to block adolescent development interfering with the psychological maturation of the primary drives of adolescence, namely; individuating away from parents and attaching to peer groups. In effect the individual is suggested to be stuck within the adolescent stage whereby adolescent drives become overwhelmed or exaggerated, remaining online and directly contributing to the emergence of psychosis.

An aspect of adolescent development that is given particular emphasis in this theory is adolescent egocentrism. Social and self-construction and the drives to individuate and attach to peers are observed and supported within adolescent egocentrism processes (Lapsley, 1985; 1993, Lapsley et al., 1989; Vartanian, 1997). Difficulties with individuating away from parents and attaching to peers therefore would be directly relevant to adolescent egocentrism, blocking and exaggerating immature cognitions and leading to psychosis. This has been pointed out by Harrop et al. (2001), who suggest that social difficulties such as social withdrawal mean that the individual never learns about others remaining egocentric. Harrop et al. (2001) also referred to adolescent egocentrism as a feature of adolescence which more than any other 'define(s)' (pg.250) psychosis, with extreme versions of adolescent egocentrism

closely resembling psychotic symptoms. Also suggestions have been made by Vartanian et al. (1996) that the concept of adolescent egocentrism would be usefully applied to individuals experiencing difficulties with social development and mental health issues.

Other examples of community research such as that conducted by Aalsma et al. in 2006 have also offered support for the role of adolescent egocentrism in mental health. Including measures of the Personal Fable and various measures of mental health such as depression, differential relationships were found. For instance, omnipotence and to an extent invulnerability protected against internalising symptoms promoting positive mental health and personal uniqueness was found to strongly relate to depression and suicidal ideation. Omnipotence and invulnerability were interpreted as adaptive coping mechanisms for the social and self-construction goals of adolescence and personal uniqueness as a vulnerability factor for poor mental health outcomes. Thus the Personal Fable appears to have a key role in supporting the separation-individuation process and mental health. Consistent with previous research, (Lapsley et al., 1989) strong sex differences were also found in the Aalsma study with males displaying more agentic qualities of the Personal Fable whilst females reported more personal uniqueness. This suggests that the role of adolescent egocentrism processes may be more significant for females than males in terms of mental health outcome.

Further than this Fox (2007) found relationships between Personal Fable dimensions of adolescent egocentrism and measures of psychopathy particularly paranoid ideation and psychoticism in a student population. As well as this, Fox also found higher adolescent egocentrism scores in comparison to a matched healthy control group on one particular dimension of the Personal Fable concerning beliefs about uniqueness in a psychosis sample. These findings to date and as far as the author is aware, are the only source of empirical evidence for the relationship between aspects of adolescent egocentrism and psychotic-like

experience and higher levels of adolescent egocentrism in clinically psychosis. They give direct support for Harrop et al.'s (2001) theory indicating the importance of adolescent egocentrism in pathways to psychosis and the possibility of further avenues of exploration.

Thus, in light of Harrop's suggestions of blocked adolescent egocentrism processes in psychosis and the research reviewed in the previous chapter of social-cognitive impairments, childhood trauma and an insecure attachment, this chapter will consider research highlighting their role in psychosis and how they may serve to disrupt adolescent egocentrism processes, blocking maturation and leading to psychotic symptoms.

3.1.1 Social-cognitive impairments and adolescent egocentrism

Occurring prior to onset (Cannon et al., 2002) and underpinning the social difficulties found in psychosis (Liddle, 2000; Green, 1996; Williams et al., 2008) it may be that social-cognitive impairments contribute to the development of psychosis via impacting adolescent egocentrism processes. For instance, an inadequate social cognitive architecture in which to learn about one's social environment and in turn the self, may leave the maturation of adolescent egocentrism processes vulnerable, frustrating social and self-construction. Following Harrop et al.'s (2001) theoretical position adolescent egocentrism processes may then become more extreme as these immature cognitions remain on-line outside of the adolescent period and contribute to psychotic outcome.

3.1.2 Childhood trauma, attachment and adolescent egocentrism

However the crucial role of variables such as childhood trauma in psychosis (Varese et al., 2012; Read et al., 2001; 2003; 2005) and the shared social context of both environmental risks and adolescent egocentrism may mean that their contributions to psychosis are mechanised via social and self-construction difficulties impacting adolescent egocentrism processes.

The lasting social and psychological impact of early childhood trauma and an insecure attachment may have implications for the way one interacts their social environment (Perry et al., 1995; Berry et al., 2008) which may mean that the consolidation of adolescent egocentrism processes, supportive of the development of an understanding of others and the self (Lapsley, 1993, Vartanian 2000; 2001) become problematic. For instance, the self and other biases resulting from exposure to childhood trauma (Collip et al., 2008; Garety et al., 2001) together with an anxious or dismissive attitude from an insecure attachment style may foster a more cautious or uninterested approach to social interaction precipitating social and self-construction difficulties described in the preceding chapter. Such difficulties may prevent successful socialisation and individuation impacting the internal framework of adolescent egocentrism, blocking its maturation and leading to psychotic symptoms.

Attachment insecurity may be particularly relevant to adolescent egocentrism due to the overlap between these variables. For instance, both are part of adolescent social development as seen in the parts they play in separation-individuation. Separation and individuation away from caregivers signifies part of adolescent attachment processes (Rice et al., 1995; Blum, 2004) as the individual breaks from early attachment ties to parents to form new attachment relationships with peers and romantic partners informed by their internal blueprint of prior

attachment experiences (Bowlby, 1980; Main, Kaplan & Cassidy, 1985). To compensate for

attachment losses and to enable new relationships to form, adolescent egocentrism is thought

to offer protective and guiding functions during separation and individuation (Lapsley, 1993).

This intimacy between both attachment security and adolescent egocentrism based on forming

new relationships means that an insecure attachment may have direct implications for

adolescent egocentrism processes.

3.1.3 Summary

To summarise the above sections, adolescent egocentrism forms an important part of

adolescent social development. The possible role of adolescent egocentrism within pathways

to psychopathology has been highlighted by a small sample of empirical studies.

Theoretically, it is suggested that social and self-construction difficulties may impact

adolescent egocentrism development leading to psychotic symptoms. Such difficulties may be

the result of social cognitive impairments, childhood trauma and attachment insecurity found

within pathways to psychosis. In particular, research points to the relevance of environmental

variables to psychosis and adolescent egocentrism processes.

3.2 Theory of mind and adolescent egocentrism

In considering the role of adolescent egocentrism in psychosis pathways it is also important to consider other possible confounding variables. For instance, the growing cognitions of adolescent egocentrism have been likened to developments in perspective-taking (Lapsley, 1985) and the concept of the Imaginary Audience in particular is synonymous with the notion of a developing theory of mind. Both adolescent egocentrism and theory of mind abilities are social cognitive processes associated with understanding the intentions and perspectives of others (Lapsley, 1985; Birch et al., 2007). The similarities between these two social cognitive components could mean that such impairments in theory of mind may impact on adolescent egocentrism. However, they could also mean that theory of mind impairments are driving what is thought to be exaggerated adolescent egocentrism and the persistence of psychotic symptoms. For instance, without an adequate theory of mind an immature understanding of others and the self similar to the Imaginary Audience and Personal Fable components of adolescent egocentrism may ensue. Being unable to predict the behaviour of others would also foster a sensitivity to and awareness of others which would drive self-conscious behaviour. A lack of social understanding may also have implications for identity construction (Adams et al., 1996). Although theory of mind and adolescent egocentrism can be thought of as different processes where unlike the latter the former involves an impaired appreciation of the perspectives of others, disentangling theory of mind difficulties from adolescent egocentrism processes would need to be a methodological priority to understand the relative contributions of adolescent egocentrism to psychosis.

There is a body of research pointing to the importance of theory of mind in psychosis. In a meta-analysis by Sprong et al. (2007) significant and stable impairments were found in

individuals with schizophrenia and this was seen across all symptom groups, those in remission and across types of mentalising tasks such as first and second order false belief, intention referencing and hinting tasks. Such impairments are also independent of other general cognitive impairments seen in psychosis such as IQ (Pickup & Frith, 2001). Frith (1992) suggested that certain symptoms of psychosis can be understood as a disorder of theory of mind or an impaired ability to understand the mental states of others (Frith & Corcoran, 1996). A study by Craig and colleagues (2004) noted the relationship between paranoia and theory of mind ability in psychosis and Corcoran, Mercer and Frith (1995) found that difficulties on a hinting task were most strongly related to negative symptoms and paranoia. Theory of mind impairments have also been found in high risk groups (Chung et al., 2008). However, their causal role in psychosis is brought into doubt with theory of mind difficulties varying with symptom type and phases of psychotic illness (Drury, Robinson & Birchwood, 1998). Indeed, Sprong et al. (2007) found that mentalising impairments were more severe in those individuals with symptoms of disorganisation.

The following sections will now discuss how blocked adolescent egocentrism processes lead to psychotic symptoms as put forward by Harrop and Trower (2001).

3.3 From adolescent egocentrism to psychotic symptoms

Harrop et al. (2001) argued that blocks to adolescent development caused by social and self-construction difficulties exaggerate individuation and attachment processes so that they remain on-line and immature. This is similar to Piaget's stages of development and psychoanalytic stage theory that suggests that resolution of one stage is necessary in order to move on to the next (Elkind, 1967). In other words the inability to resolve the adolescent stage means that the individual becomes stuck within adolescence in which individuation and attachment drives govern one's perceptions and behaviour which become elevated to the level of a psychotic episode.

This was exemplified by anecdotal evidence offered by Harrop and Trower (2001) of individuals who had progressed part-way through the separation-individuation process and who either continued to idealise their parents or have regular conflicts with them in order to assert a sense of autonomy and attempting to establish friendships. Similarities between adolescent development and psychotic symptoms were also drawn. For instance, it was illustrated extreme adolescent egocentrism may look like symptoms of psychosis suggesting that auditory hallucinations such as voice-hearing and delusions of grandeur may be the psychotic equivalent of the Imaginary Audience and Personal Fable respectively. Indeed within psychotic symptoms themselves such as grandiose delusions, identity themes are embedded as the self is experienced as superior and invincible (Lucas, Sainsbury & Collins, 1962; Smith et al., 2006) which is akin to the cognitions and feelings of uniqueness invincibility conjured by the Personal Fable. In persecutory delusions, which feature amongst some of the most common delusions seen in psychosis (Freeman, 2007), the suspiciousness of others plotting against the self, is similar to the imaginary audience.

It can be argued that whereas the components of adolescent egocentrism would have guided the self-focused conclusions of adolescents, delusions provide the same function in psychosis. Indeed descriptions have been made of the distorted ideas individuals with psychosis have of others and what they are thinking (Laing, 1960).

Finally, similarly to adolescent egocentrism, specific types of delusions such as Capgras, Cotard's and Fregoli delusions contain themes of identity and social reference (Coltheart, Langdon & Mckay, 2007; Metzinger, 2003) which also indicate identity construction difficulties and bizarre content.

3.3.1 Support for a theory of exaggerated adolescent egocentrism in psychosis

In response to the dominance of the medical model, theories which also consider developmental and psychological factors present an appealing alternative being able to describe possible pathways to psychosis. A focus on the adolescent period itself acknowledges the typical onset of psychosis observed in adolescence (Tarbox et al., 2008 and Myin-Germeys, Krabbendam & van Os, 2003) and that this developmental period may play a crucial role in the development of psychosis. Harrop and Trower's findings in 1999 (cited in Harrop et al., 2001) that psychotic experience in healthy teenagers was positively related to attachment and individuation drives indicates that adolescent processes such as adolescent may be contributory to psychosis.

These relationships combined with continuum arguments relating psychotic-like experiences with psychotic symptoms adds more weight to Harrop's theory of exaggerated adolescent egocentrism in psychosis. For instance, van Os et al. (1999) gave convincing empirical support of continuum arguments in psychosis finding that only quantitative and not qualitative differences were evident when comparing scores from measures of delusional ideation and

hallucinatory experiences between healthy controls and psychosis patients. Myin-Germeys et al., (2003) also argued that commonly found psychotic-like experiences in community samples are on the same continuum as psychotic symptoms, playing a causal role in onset. Van Os et al.'s (2009) psychosis proneness-persistence model also highlights pathways from psychotic-experiences in adolescence to those at a clinical level.

That adolescent egocentrism may be an underlying contributory processes to both psychotic-like experiences in adolescence and clinical psychosis was seen in Fox's (2007) findings in which relationships between the Personal fable components of adolescent egocentrism and psychotic-like symptoms in healthy adolescents were found as well as higher levels of one of the Personal Fable dimensions measured in individuals with psychosis.

Similarly to Harrop and Trower's (2001) work, a focus on social and self-construction is also seen in other psychosis research. Cognitive models of psychosis also refer to social and self themes. For instance Bentall, Kinderman and Kaney's (1994) cognitive model of psychosis focusing on discrete symptoms of psychosis such as paranoid delusions explains that impaired social-cognition, poor social skills and faulty beliefs about the self form key contributions. Dysfunctional beliefs about the self and a lacking social-cognitive architecture misguide the interpretations of social information forming the content of paranoid delusions. Another cognitive model by Garety et al. (2001) includes how disrupted self-construction or personal agency seen in source-monitoring difficulties is a central cognitive fault in psychosis. Again, these schemas influence the interpretation of subsequent information forming psychotic symptoms. In both models social and self construction difficulties appear to contribute to the onset of psychosis highlighting how adolescent processes such as adolescent egocentrism may mediate this pathway.

3.3.2 Further contributions to the theory of exaggerated adolescent egocentrism in psychosis

Previous research has focused upon the relationships between the Personal Fable component of adolescent egocentrism and mental health (Fox, 2007; Aalsma et al., 2006). To fully examine adolescent egocentrism within psychosis the Imaginary Audience component should also be included.

Another variable to consider is social sensitivity. Adolescence is a time when individuals feel a stronger social presence due to the importance of social status and new experiences believed to be unique to only them (Prinstein et al., 2008; Elkind, 1967). Typically then, adolescents feel self-conscious around this time (Elkind, 1978; Enright et al., 1980). Similarly, within psychosis social sensitivity is also observed but at a more acute level. For instance, a feature of psychosis is interpersonal sensitivity characterised by a sense of personal inadequacy, marked discomfort with interpersonal interactions and acute self-consciousness (Derogatis, Rickells & Rock, 1976; Derogatis & Melisaratos, 1983). The similarities between the constructs of self-consciousness and interpersonal sensitivity are apparent within psychometric measurements. For instance, measures of self-consciousness include concepts of private and public self-consciousness (Scheier & Carver, 1985) which is mirrored in the self-other components that make up measurements of interpersonal sensitivity (Boyce & Parker, 1989) such as the belief that the self is fragile and others are critical of them. Indeed, the self-conscious concerns of the adolescent are thought to be a result of critical others (Elkind, 1967).

Other forms of social sensitivity found in psychosis such as shame, low social rank and social anxiety (Birchwood et al., 2006) also share an interpersonal element. Indeed, shame has been

found to directly relate to the experience of psychotic illness (Miller & Mason, 2005) and together with feelings of low social rank, is argued to be entwined with the symptoms of psychosis (Birchwood et al., 2004; Birchwood et al., 2000). Relationships between positive and negative symptoms of psychosis and social anxiety have also been found (Penn et al., 1994) with this particular form of social sensitivity occurring comorbidly (Michail & Birchwood, 2009). Similarly to the Michail et al. study (2009) Pallanti, Quercioli and Hollander (2004) found that social anxiety was common among schizophrenic outpatients but was unrelated to clinical symptoms. Social anxiety from an awareness of one's position within a peer-group, and establishing and new friendships is observed in adolescence (Vernberg et al., 1992). In particular shame has also been observed and thought to be related to the effects of a perceived watchful environment created by the Imaginary Audience (Lynd, 1961). In light of these similar social sensitivities and evidence that self-consciousness is a potential developmental marker of adolescent egocentrism (Enright et al., 1989; Fox, 2007) it may be that blocked and exaggerated forms of adolescent egocentrism are marked by these more acute forms of social sensitivity in psychosis. In other words, more acute forms of social sensitivity in psychosis may be marking exaggerated adolescent egocentrism processes.

Although Harrop et al. (2001) acknowledges that the social environment may lead to difficulties with social and self-construction thus effecting the maturation of adolescent processes like adolescent egocentrism this has not been empirically investigated. Therefore, in light of research highlighting the strong presence of childhood trauma in psychosis and its potential relevance to adolescent egocentrism processes, it would be important to look at whether such environmental risks and associated attachment insecurity are related to adolescent egocentrism.

Finally, due to paucity of research of the contributions adolescent development makes to pathways to psychosis it is necessary to include both systematic and rigorous methodological designs. This would include large sample sizes in using both community and clinical samples ranging across the adolescent and early adulthood period.

3.4 Conclusions

The review included within these three chapters has illustrated that adolescent egocentrism is a social-cognitive process that supports social and identity development. Social and self-construction difficulties identified within pathways to psychosis may obstruct this process during adolescence, exaggerating its course to lead to psychosis as argued by Harrop et al. (2001). A number of possible causes of social and self-construction difficulties in psychosis have been considered with a particular focus on environmental adversity such as childhood trauma and related attachment insecurity due to their importance within psychosis and impact upon adolescent egocentrism processes.

This thesis will therefore investigate and explore the relationship between adolescent egocentrism processes and psychosis to see whether exaggerated forms of this aspect of adolescent development are present in individuals with psychosis.

CHAPTER 4:

INTRODUCTION TO EMPIRICAL CHAPTERS

4.1 Background

The rise in psychotic-like experiences and emergence of psychosis during adolescence (Lataster, et al., 2006, Collip et al., 2008; Verdoux 1998) indicate the importance of closer scrutiny of this developmental period. Harrop and Trower's (2001; 2003) findings of a relationship between adolescent development and transient psychotic-like experiences in adolescence suggest that disturbances to social development may play an influential part in the development of psychosis.

Current research suggests that social and self-construction difficulties seen in psychosis occur prior to onset (Asarnow, 1988; Penn et al., 1997; Hollis, 2003) and may interfere with adolescent social development goals. Indeed, Harrop et al. (2001) suggests that psychosis may directly emerge from problems achieving social and self-construction crucial to adolescence. Failure to achieve these developmental goals block the individual within adolescence overwhelming social and identity drives, disturbing the natural course of social development and elevating it to the level of a psychotic episode. Harrop's theoretical discussion of the compelling similarities between adolescent social development and psychotic symptoms provides insight into the hypothesis that disturbed developmental processes may be implicated in psychosis and are worthy of further investigation. Specifically it was adolescent egocentrism which was highlighted in Harrop's theory as an area of adolescent development most akin to psychotic symptoms and is highlighted by research as important to social and self-construction (Vartanian, 2000; Lapsley, 1993).

Harrop (2001) argues that social and self-construction difficulties impacting adolescent egocentrism processes and leading to the onset of psychosis are due to mainly environmental variables. This is seen elsewhere in studies that have shown that childhood trauma and attachment insecurity relate to social and self-construction difficulties within pathways to psychosis (Schenkel et al., 2005; Berry et al., 2008). However, such variables have also been found to make their own contributions to psychosis such as the study by Van Os et al. (2009) whereby social risks impacted the developmental expression of subclinical psychotic-like experiences resulting in their persistence and particularly in those prone to psychosis, transition to psychotic illness.

4.1.1 Adolescent egocentrism

Adolescent egocentrism is a social-cognitive, developmental process (Lapsley et al., 1985). It guides social development and the construction of a self (Lapsley et al., 1989). In early adolescence, it is composed of crude and socially immature cognitions based on an unrefined understanding of the self and others whereby the adolescent posseses a strong self-focus and sense of self-importance and often misattributes the thoughts of others for those of their own (Elkind, 1967). The Personal Fable and Imaginary Audience respectively and metaphorically describe the above cognitions and are the key cognitive components of adolescent egocentrism.

Adolescent egocentrism plays a key role in social and self development, operating in much the same way as stabilisers allow for the development of skills to ride a bike, responding to the social environment presented (Vartanian et al., 1996). The components of adolescent egocentrism allow the teenager to sample and prepare in a safe way, for their own social and self development (Lapsley et al., 1989). Gradually, through increased exposure to social

experiences, a matured understanding of the self and others is achieved and the reliance upon Imaginary Audience and Personal Fable cognitions declines (Elkind, 1978). This maturation is observed during late adolescence (Enright et al., 1979) when social and self-construction objectives such as making friends and establishing an identity are thought to have been developed (Meeus, 1996). This is also described in Selman's stages of interpersonal understanding (1988) where the final stage involves a greater social understanding and in which Lapsley advocates adolescent egocentrism should be contextualised (Lapsley, 1985). The individual then moves into adulthood (Zarrett et al., 2006), as the social and self development objectives of adolescence and the supporting processes of adolescent egocentrism are now resolved.

4.1.2 Adolescent egocentrism and psychosis

According to Harrop's theory, being unable to resolve social and self-construction demands may block the individual in developmentally immature adolescent egocentrism. Without the experience and understanding of others and the self, adolescent egocentrism fails to mature as it becomes the only means of understanding the social world. This blocked adolescent egocentrism therefore, remains online as the individual continues to rely upon and experience Imaginary Audience and Personal Fable cognitions. In contrast to normal social development, which sees an eventual reduction in adolescent egocentrism, Harrop et al. (2001) suggests that such processes then elevate to the level of psychotic episode. This suggests that exaggerated adolescent egocentrism is part of the developmental pathways to psychosis. This was considered by Harrop and Trower (2003) who illustrated how extreme forms of adolescent egocentrism are, indeed, similar to the diagnostic criteria for schizophrenia. For instance, the belief that one is unique or special to others seen in the Personal Fable if exaggerated may resemble the delusions of grandeur seen in psychosis. In terms of the Imaginary Audience it is

thought that this may be echoed in the voice-hearing phenomena of psychotic symptoms (Gilbert et al., 2001).

Support for a theory of exaggerated adolescent egocentrism in psychosis stems from developmental findings (Harrop et al., 2001; Fox, 2007) and cognitive models which incorporate dysfunctional self – other schemas (Garety et al., 2001; Bentall et al., 1994) and continuum models (van Os et al., 1999). Specific findings and suggestion of the role of adolescent egocentrism in mental health outcomes (Fox, 2007; Aalsma et al., 2006) also offer promising indications that exaggerated forms may be seen in psychosis.

Another indication that exaggerated adolescent egocentrism may still be at work in psychosis is the presence of social sensitivity. Social sensitivity is described within a subset of interpersonally sensitive behaviours in psychosis that are characterised by a sense of personal inadequacy, marked discomfort with interpersonal interactions and acute self-consciousness (Derogatis et al., 1976). Interpersonal sensitivity is also captured by measures designed for the general population such as the Interpersonal Sensitivity Scale (Boyce et al., 1989) which describe it as an excessive awareness and sensitivity to others and fear of rejection. Social sensitivity or self-consciousness in adolescence, acts as a marker of developing adolescent egocentrism (Elkind, 1967; 1978) as it is thought to be a consequence of the self-focus, feeling of a watchful audience and personal uniqueness of adolescent egocentrism. In much the same way, this may be occurring in psychosis where the presence of these more acute social sensitivities may be marking blocked and elevated adolescent egocentrism.

Reflected in both self-consciousness and interpersonal sensitivity is the emerging sense of self and social understanding of adolescent egocentrism. For example, both include self and other components such as a preoccupation with or focus on the self and an awareness of others in

social situations. This is reflected in measures of self-consciousness that include concepts of private and public self-consciousness (Scheier et al., 1985) and the self-other references of measures of interpersonal sensitivity (Boyce et al., 1989). The self-other components that make up interpersonal sensitivity in psychosis are characterised by negative beliefs and feelings (Derogatis et al., 1983). This consists of beliefs of inadequacy and inferiority about the self and an uneasy form of social sensitivity described above. Similar to this are the self-critical concerns of the self-conscious adolescent (Elkind, 1967). Other forms of social sensitivity found in psychosis such as, low social rank/social subordination (Birchwood, 2003; Birchwood et al., 2006; Miller et al., 2005) and social anxiety (Michail et al., 2009) also share this interpersonal element and due to their presence in healthy adolescents (Vernberg et al., 1992; Lynd, 1961) may also be relevant to adolescent egocentrism processes.

As adolescent egocentrism is known to be influential upon socially sensitive behaviour such as self-consciousness (Elkind & Bowen, 1979) it may be that elevated forms of adolescent egocentrism are relating to more acute forms of social sensitivity in psychosis. Also, social cognitive theories have demonstrated adolescent egocentrism involves a growing interpersonal understanding (Lapsley et al., 1985). This is supported by its naïve and developing social and self-concepts (Lapsley, 1993). If adolescent egocentrism were to become elevated this naivety and shortfall in the understanding of the self and others may leave an individual particularly sensitive to social exchanges potentially producing the more marked interpersonal sensitivity observed in psychosis. In addition, in accordance with normally developing patterns of adolescent egocentrism which eventually subside due to social experience and reduce the self-conscious responses of adolescents (Elkind, 1967), continued social sensitivity in psychosis may indicate the influences of blocked adolescent egocentrism.

Despite these intuitive links all of this remains largely hypothetical as despite the identification of adolescence a sensitive time for psychosis and critical to social development, little research has investigated disturbances to adolescent egocentrism within psychosis. At the time of writing only one piece of research has examined this relationship. This was Fox's (2007) investigation of adolescent development and psychopathology. Following Harrop's theory of elevated adolescent egocentrism Fox looked at the relationship between this, psychosis and anorexia nervosa. However, the inclusion of anorexia nervosa and a focus on only the self-construction goals of adolescence meant that only the Personal Fable and public self-consciousness represented measures of adolescent egocentrism. Within healthy samples strong relationships were found between dimensions of adolescent egocentrism and sub-clinical psychosis. However, in clinical groups, individuals with psychosis only rated more highly than controls on one dimension which involved 'feeling different to others'. Similar to the stigma individuals with psychosis may feel, higher levels of this dimension may not necessarily be reflecting elevated adolescent egocentrism. In sum, the limited findings of Fox's study particularly the relationship between adolescent egocentrism and psychosis may be due to the narrow choice of measurement and the relatively small sample sizes.

4.2 Overview of the thesis

Therefore, the aim of this thesis is to draw inspiration from Harrop's theory of exaggerated adolescent egocentrism to investigate the relationship between adolescent egocentrism and the emergence and early phase of psychosis. This will add to what has already been done by Fox (2007) as well as provide a more thorough investigation including large sample sizes and systematic design. A pilot study will focus on the adolescent period allowing for an initial exploration of adolescent egocentrism, social sensitivity and subclinical psychotic-like experiences. Study one will then systematically track these processes across the adolescent period from thirteen to eighteen. In study two, a comparison between levels of reported adolescent egocentrism will then be conducted with healthy and clinical psychosis groups. This will include an investigation of the relationships between adolescent egocentrism, social sensitivity and psychosis whilst controlling for the potentially confounding effects of theory of mind capacity in psychosis. This will also include an examination of other known forms of social sensitivity in psychosis such as shame, social defeat and social anxiety in relation to adolescent egocentrism. The impact of childhood trauma and attachment security on psychosis and their relationship to adolescent egocentrism will also be examined.

CHAPTER 5:

METHODOLOGY

5.1 Aims

The overall aim of this investigation is to examine the relationship between adolescent egocentrism, and psychotic experience. The exploration of other factors relevant to this relationship will also be included such as a consideration of social risks and attachment security and social-cognitive variables like theory of mind.

As adolescent egocentrism processes within the context of psychosis have not been thoroughly researched a systematic approach to the research questions seems important. In addition, general methodological considerations to ensure rigour and validity will follow this. This will include reference to the threats to validity identified by Shaddish, Cooke and Campbell (2002) which are relevant to this investigation such as: matching for age, educational achievement, gender and ethnic diversity as far as possible. In addition it will be important to adhere to recruitment criterion for age, uniform testing conditions for participants and ensuring the order of measures is consistent to prevent differential order effects.

In light of the lack of research in this area the overall approach of the investigations of the thesis will be exploratory and systematic consisting of three discrete studies. An initial pilot study using both healthy adolescent and adult samples formed the primary exploration of the relationship and differences of adolescent egocentrism, social sensitivity and subclinical psychotic-like experiences between adult and adolescent groups. The findings of the pilot investigation will be used as a basis for the further two studies to extend upon.

A brief methodological description of each of the three studies is provided below. A more detailed description is included within each of the studies in the following chapters.

5.2 Pilot study

5.2.1 Sampling

Participants were recruited from the undergraduate and postgraduate student population of the University of Birmingham, staff and students from the Early Intervention Service, Birmingham and Solihull mental health NHS foundation Trust and a Staffordshire comprehensive secondary school. The study inclusion criteria limited the adolescent group to between the ages of fourteen to nineteen and the adult group between ages twenty to thirty-five.

5.2.2 Design

This study included a within-subjects comparison of adolescent and adult groups.

5.2.3 Procedure

Adolescents

Adolescents recruited from the Staffordshire secondary school were given parental invitation letters whereby parental consent was assumed if after two weeks no contact was made with the school (See Appendix A). These individuals then completed a series of four self-report questionnaires en-masse, individually and independently under exam-like conditions. Adolescents recruited from the University of Birmingham were recruited through an on-line advertisement posted on the university Research Participation Scheme website. This online scheme allows students to participate in research in exchange for research credits which count

towards the completion of their undergraduate degree. These individuals completed the four self-report questionnaires individually and independently in study booths.

Adults

Adults recruited from the University of Birmingham were recruited through the Research Participation Scheme website and completed the four self-report questionnaires individually and independently in study booths. Staff and students recruited from Early Intervention Services received packs containing the four questionnaires and collected after completion.

All participants completed the four measures in the same order and were issued information sheets (see Appendix B: version for the University of Birmingham students), signed written consent (see Appendix C: version for the University of Birmingham students) and were given debriefing sheets at the end of the study (see Appendix D: version for the University of Birmingham students).

5.2.4 Measures

Adolescent Egocentrism:

- *Adolescent Egocentrism Sociocentrism scale (AES) (Enright, Shuckla & Lapsley, 1980):* A widely used self-report measure of adolescent egocentrism. It is a forty-five-item scale consisting of subscales of egocentrism, non-social and sociocentrism/political subscales. The latter subscales involve everyday tasks and the gradual decentering of attention on the self. The egocentrism subscale (see Appendix E) which is the only subscale used from this measure consists of fifteen items and has demonstrated good levels of reliability (α = 0.83) (Enright et al., 1980). This subscale is split equally between Personal Fable items (eg. 'Accepting the fact that others don't know what it's like being me'), Imaginary

Audience items (eg. 'When walking in late to a group meeting trying not to distract everyone's attention') and Self items (eg. 'Thinking about my own feelings'). Answers are rated on a five-point scale where a rating of 1 is 'no importance' and a rating of 5 is 'great importance'. Egocentrism scores are obtained by summing the values of the fifteen items. Higher scores reflect higher egocentrism. The range of scores is between fifteen and seventy-five.

Social sensitivity:

- *The Self Consciousness Scale (Revised) (SCSR) (Scheier & Carver, 1985)* This is a self-report, twenty-two-item scale that measures self-consciousness. Subscales include Private Self-consciousness (nine items), Public Self-consciousness (seven items) and Social Anxiety (six items). Only the Private (eg. 'I think about myself a lot') and Public Self-consciousness (eg. 'I'm concerned about what other people think of me') subscales were used (see Appendix F) totalling sixteen items. The Private Self-consciousness subscale has demonstrated reasonable levels of reliability ($\alpha = 0.75$) and the Public Self-consciousness subscale ($\alpha = 0.84$) (Scheier et al., 1985). Answers are given on a four-point likert scale of 0 = 'not like me at all' to 3 = 'a lot like me'. Total scores are collected by adding all the scores of each subscale together. Higher scores indicate more self-consciousness with minimum scores of zero and maximum scores of forty-eight.

- *The Interpersonal Sensitivity Scale (IPSM) (Boyce & Parker, 1989).* This self-report scale is designed to measure interpersonal sensitivity defined as excessive sensitivity to and awareness of others with a particular sensitivity to perceived or actual criticism/rejection.

It is a thirty-six item self-report measure, completed on a four-point Likert-type scale which includes subscales of Interpersonal Awareness (seven items), Separation Anxiety (eight items), Fragile Inner-Self (five items), Timidity (eight items) and Need for Approval (eight items). Only the first three subscales were included in this study, totalling twenty items and chosen to resemble the interpersonal sensitivity domains observed in psychosis (Derogatis et al., 1976) (see Appendix G). All of the three subscales have good reliability (Boyce et al., 1989, Interpersonal Awareness $\alpha = 0.76$ and 0.79, Separation Anxiety $\alpha = 0.67$ and 0.80 and Fragile Inner-Self $\alpha = 0.58$ and 0.74). Items are rated as 1= 'Very unlike' to 4= 'Very like' by the participant. Scores can therefore range between twenty and a maximum of eighty and are obtained by summing the total score of each subscale. Higher scores relate to higher levels of Interpersonal sensitivity.

Psychosis

- *Community Assessment of Psychotic Experience (CAPE) (Stefanis, et al., 2002).* The CAPE is a forty-two-item, self-report scale that has been used widely to assess psychotic experiences in the general population. It includes two subscales, one to measure the Frequency of such experiences and the other to measure the level of associated Distress (see Appendix H). Both subscales are rated on a four-point scale. For the Frequency subscale answers are rated as 1 = 'never' to 4 = 'nearly always'. For the Distress subscale answers are given as 1 = 'not distressed' to 4 = 'very distressed' therefore, scores can range between forty-two and one hundred and sixty-eight for Frequency and Distress. As well as the subscales, questions are also grouped into three dimensions that are positive (eg. 'Do you ever feel as if people seem to drop hints about you or say things with a double meaning?'), depressive (eg. 'Do you ever feel sad?') and negative (eg. 'Do you

ever feel that you experience few or no emotions at important events?'). Total scores for Frequency and Distress are obtained by adding all scores from Frequency and Distress subscales. Higher scores indicate higher levels of psychotic experience and distress. Levels of reliability for the scale are reported to be good, ranging from $\alpha = 0.79$ to $\alpha = 0.82$ (Brenner et al., 2007).

5.3 Study one

5.3.1 Sampling

Participants were recruited from a Staffordshire comprehensive secondary school. Adolescents were included if they fell between thirteen and eighteen years of age.

5.3.2 Design

This study design was a within groups comparison between three groups of adolescents defined as early (thirteen to fourteen years of age), mid (fifteen to sixteen years of age) and late adolescents (seventeen to eighteen years of age) as utilised by previous research (Lammers et al., 2000; Brooks, 1985; Dishion, Nelson & Bullock, 2004; Dishion et al., 1997 & Gallander Wintre, Yaffe & Crowley, 1995) and inclusive of the age-range recruited to enable cross-sectional comparisons. To control for the potentially confounding effects of theory of mind development across healthy adolescence (Blakemore, 2007) those participants with the highest and lowest adolescent egocentrism scores taken from the top and bottom twenty percent within the range of scores will also complete False Belief stories (see below).

5.3.3 Procedure

Participants were given parental invitation letters whereby parental consent was assumed if after two weeks no opt-out slips were returned to the school (see Appendix A). These individuals then completed a series of four self-report questionnaires en-masse, individually and independently under exam-like conditions. For those within the top and bottom twenty percent of adolescent egocentrism scores they also completed a False Belief measure which was completed on a separate occasion.

All participants completed the four measures in the same order and were issued information sheets (see Appendix I), signed written consent (see Appendix J) and were given debriefing sheets (see Appendix K) at the end of the study.

5.3.4 Measures

Adolescent Egocentrism:

* *Adolescent Egocentrism Sociocentrism scale (AES) (Enright et al., 1980)*

Social sensitivity:

* *The Self Consciousness Scale (Revised) (SCSR) (Scheier et al., 1985)*

* *The Interpersonal Sensitivity Scale (IPSM) (Boyce et al., 1989)*

Psychosis:

* *Community Assessment of Psychotic Experience (CAPE) (Stefanis et al., 2002)*

Theory of Mind (ToM):

- *First Order False Belief Stories (Apperly et al., 2004).* This consists of three first-order false belief stories based around simple six-line plots followed by four self-report questions (See Appendix L). The questions ask about belief, a counterfactual question, a memory question and a reality-control question. Correct scores indicate an adequate ToM. An answer is marked as correct if the belief question is answered correctly. If either the memory or reality control questions are incorrect answers are discarded for that question. Scores are calculated on a percentage basis where the number of stories in which questions have been correctly answered are divided by the total number of stories. The stories were based on typical measurements of false belief in neurological patients (Apperly et al., 2004). Standard false belief tasks have been found to show good test-retest reliability (Hughes et al., 2000).

5.4 Study two

5.4.1 Sampling

Clinical participants were recruited from the Early Detection and Intervention team and first episode psychosis teams within the Birmingham Early Intervention Service. Controls were recruited from Birmingham City College. Participants were matched on age, gender and educational attainment as far as possible and following the inclusion criteria participants were included between the ages of sixteen and twenty-five years.

5.4.2 Design

This within-subjects study design compared three groups: two clinical groups (high risk for psychosis and first episode psychosis) and a healthy control group.

5.4.3 Procedure

Clinical groups

Participants were given initial invitations via telephone followed by invitation letters (see Appendix M) and a week to decide to participate. After deciding to take part, home visits were arranged to complete the nine self-report questionnaires. For those participants that were under eighteen years of age an additional parental invitation letter was sent (see Appendix N) as well as a written parental consent form (Appendix O).

Control group

An initial short presentation was delivered to the students at Birmingham City College along with invitation letters (see Appendix P). Students were given a week to decide using the opt-out slips at the bottom of the invitation letter. For those individuals under the age of eighteen parental invitation letters were also distributed whereby parental consent was assumed if no opt-out slips were returned within a week to the college (se Appendix Q).

All participants completed the nine measures in the same order individually and independently and were issued information sheets (see Appendix R: clinical group version), signed, written consent (see Appendix S: Clinical group version) and were given debriefing sheets at the end of the study (see Appendix T: clinical group version).

5.4.4 Measures

Adolescent Egocentrism:

- *Adolescent Egocentrism Sociocentrism scale (AES) (Enright et al., 1980):*

Social sensitivity:

- *The Self Consciousness Scale (Revised) (SCSR) (Scheier et al., 1985)*

- *The Interpersonal Sensitivity Scale (IPSM) (Boyce et al., 1989).*

Psychosis:

- *Community Assessment of Psychotic Experience (CAPE) (Stefanis et al., 2002).*

Social Anxiety:

- *Social Interaction Anxiety Scale (SIAS) (Mattick & Clarke, 1998).* This is a 20-item self-report scale measuring anxiety in interpersonal contexts ('I get nervous if I have to speak to someone in authority'). These items are rated on a 5-point scale (0= Not at all characteristic or true of me, and 4= Extremely characteristic or true of me). Higher scores relate to higher levels of social interaction anxiety with a cut-off of 36 denoting clinical levels. The SIAS has been used successfully in community samples and is a valid and reliable measure (Peters, 2000) with a Cronbach's alpha of .91 (Osman et al., 1998). See Appendix U.

Social rank and shame:

- *Social Comparison scale (Allan & Gilbert, 1995).* This 11-item self-report, scale taps into global comparisons to others in attractiveness, rank and group fit (feeling similar or different to others). Participants respond on a scale of 1 to 10 to a number of ways they see themselves within an interpersonal context ('Inferior…Superior, Different…Same'). Lower scores reflect higher levels of unfavourable social comparison. The Cronbach alpha reported by Allan et al. (1995) was 0.91 showing a good level of reliability. See Appendix V.

- *Other As a Shamer Scale (Goss, Gilbert & Allan, 1994).* This scale consists of 18 items and is a measure of external shame ('I think others are able to see my defects'). It consists of three subscales looking at inferiority, emptiness and mistakes. Answers are given on a five-point scale from (0) Never to (4) Almost Always. Higher scores relate to higher levels of external shame. The reliability of this scale has been found to be high ($\alpha = 0.93$) (Gilbert et al., 2003). See Appendix W.

Social risks

- *Childhood Trauma Questionnaire (CTQ) (Bernstein & Fink, 1998).* The CTQ is a 28-item retrospective self-report questionnaire designed to assess five types of negative childhood experiences: (1) emotional neglect (e.g., "I felt loved"), (2) emotional abuse (e.g., "I felt that someone in my family hated me"), (3) physical neglect (e.g., "I didn't have enough to eat"), (4) physical abuse (e.g., "People in my family hit me so hard that it left me with bruises or marks"), and (5) sexual abuse

(e.g., "Someone molested me"). These five types of experiences are each assessed by five items; three additional items assess tendencies of respondents to minimize or deny abuse experiences. Respondents rate the truth of each statement on a 1–5 scale, from *Never true* to *Very often true*. Higher scores mean higher levels of childhood abuse. The CTQ has demonstrated reliability and validity, including test-retest reliability (Scher et al., 2001). See Appendix X.

Attachment security

- *The Revised Adult Attachment Scale (Collins & Read, 1990)* This self-report measure of attachment in samples other than children consists of 18 items with three subscales of closeness ('I find it relatively easy to get close to people'), dependency ('I am comfortable depending on others') and anxiety ('I often worry that other people don't really like me'). Each item is rated on a 5-point scale (1 = not very characteristic of me to 5 = very characteristic of me). Higher scores represent greater confidence to depend on others, higher anxiety, and greater comfort with closeness. These are then turned into attachment styles in which higher scores represent more insecure attachments. Reliability for this scale is very good with all of the sub-scales ranging between α =0.86 and α =0.91 (Tait et al., 2004). See Appendix Y.

Theory of Mind (ToM):

- *First Order False Belief Stories (Apperly et al., 2004).* This consists of six first-order false belief stories based around simple six-line plots followed by four self-report questions. The questions ask about belief, a counterfactual question, a memory question and a reality-control question. Correct scores indicate an adequate theory of mind. An answer is

marked as correct if the belief question is answered correctly. If either the memory or reality control questions are incorrect answers are discarded for that question. Scores are calculated on a percentage basis where the number of stories in which questions have been correctly answered are divided by the total number of stories. The stories were based on typical measurements of false belief in neurological patients (Apperly et al., 2004). Standard false belief tasks have been found to show good test-retest reliability (Hughes et al., 2000) See Appendix L.

5.5 Ethics

For both the pilot study (see Appendix Z) and study one (see Appendix A2) ethics was obtained from the University of Birmingham's Institute of Research and Development and for study two ethics was obtained from the South Birmingham Research Ethics Committee (see Appendix B2). This forms part of the National Health Service, National Research Ethics Service. Prior to commencing data collection, a favourable ethical opinion was given for each of these studies.

CHAPTER 6:

A PILOT STUDY: ADOLESCENT EGOCENTRISM AND PSYCHOTIC-LIKE EXPERIENCES IN AN ADOLESCENT AND ADULT HEALTHY SAMPLE

6.1 Introduction

Social and self-construction difficulties preceding psychosis and within adolescence have received a lot of research attention (Hollis, 2003). Adolescence is a highly sensitive time for social development (Petersen, 1988), the natural rise in psychotic-like experiences (Wigman et al., 2011, Cougnard et al., 2007 & Verdoux et al., 1998) and the onset of psychosis (Harrop et al., 2001), the adolescent period offers scope to explore possible relationships between these factors. Research suggests that such difficulties may be the result of social-cognitive impairments (Addington et al., 2000; Kerr et al., 1993) trauma (Lysaker et al., 2001; Cole et al., 1992) and related attachment variables (Feeney et al., 1990) and are risk factors for psychotic outcome (Penn et al., 1997; Varese et al., 2012; Berry et al., 2008). However, little empirical research has considered whether social cognitive factors associated with social and self-construction in adolescence are contributory to the development of psychosis. Theoretically this has been suggested by Harrop and colleague (2001) who focusing on the adolescent period hypothesised that social and self-construction difficulties blocks and disturbs processes designed to assist with these objectives such as adolescent egocentrism, elevating them to the level of a psychotic episode.

6.1.1 Adolescent egocentrism

An important social development process in adolescence is adolescent egocentrism. Thought to increase in early adolescence, plateau and reduce into middle and late adolescence (Enright et al., 1979) it represents the gradual consolidation of social development objectives. Traditionally, adolescent egocentrism has been included within cognitive development theories (Elkind, 1967). More recently adolescent egocentrism has been described as a social-cognitive developmental construct which involves a growing understanding of the interpersonal environment (Lapsley et al., 1985) and supports the social and self construction goals of adolescence (Harrop et al., 2001, Lapsley et al., 1988 & Lapsley, 1993) which allows individuals to proceed into adulthood. It consists of two main cognitive components; the Imaginary Audience and Personal Fable. These components represent the naive and immature perspectives of the adolescent about others and the self and metaphorically describe the behaviours that belong to them. For instance, the Imaginary Audience involves a misattribution of the thoughts of others for those of the adolescent's. Mistakenly, the teenager believes that others are just as preoccupied with them as they are about themselves (Elkind, 1967). This creates a feeling of a watchful, albeit imaginary audience. This error in accounting for the thoughts of others is what has been described as the crux of adolescent egocentrism (Elkind, 1967, 1985; Lapsley, 1985; Lapsley et al., 1985). The Personal Fable leads on from the Imaginary Audience and consists of the idea that the adolescent is special and unique and the strong self-focus running through both the Imaginary Audience and the Personal Fable is thought to be a consequence of the physical changes of adolescence (Elkind, 1967).

Adolescent egocentrism also leads to socially sensitive behaviour such as self-consciousness (Elkind, 1978 & Enright et al., 1980). Characteristic of the adolescent period self-

consciousness is considered a marker of adolescent egocentrism (Fox, 2007) particularly the Imaginary Audience (Lapsley et al., 1985). Through a process known as socialisation where the individual experiences and learns about others (.i.e. the actual thoughts and intentions of others) and in-turn themselves (Markus & Wurf, 1987) the distorted self-other views of adolescent egocentrism (Vartanian, 2001), matures and declines along with self-consciousness (Elkind, 1967). This decline in adolescent egocentrism is seen in late adolescence (Enright et al., 1979) when social relationships and a sense of identity are thought to have been achieved (Meeus, 1996). This is also where social cognitive abilities are thought to be more advanced (Lapsley et al., 1985).

6.1.2 Adolescent egocentrism and psychosis

The social (Tarbox et al., 2008) and self-construction difficulties (Cuervo-Lombard et al., 2007) present in periods prior to the onset of psychosis linked to childhood trauma (Perry 2002; Cole et al., 1992) or attachment (Tait et al., 2004; Kobak et al., 1988) could have implications for adolescent egocentrism which supports social and self-construction processes. As suggested by Harrop et al. (2001) such difficulties could block the individual within this developmentally immature process. In other words, without the experience and knowledge of others and the self, adolescent egocentrism becomes blocked and remains online so that the individual continues to rely on and experience Imaginary Audience and Personal Fable cognitions. It is then suggested that adolescent egocentrism cognitions elevate to the level of a psychotic episode. The resemblance between extreme forms of adolescent egocentrism and the diagnostic criteria for schizophrenia is pointed out by Harrop and Trower (2003) to illustrate this. Specific symptoms such as persecutory delusions and delusions of grandeur which respectively involve attribution biases and beliefs about personal importance and invincibility echo the cognitions and behaviours of adolescent egocentrism.

Relationships between adolescent egocentrism and psychotic-like experiences in adolescence have not previously been empirically explored and could indicate whether adolescent egocentrism is influential in pathways to psychosis. The concurrent rise in both adolescent egocentrism and psychotic-like experiences suggests there is a relationship between these factors. In-line with Harrop at al's (2001) theoretical position that blocked adolescent egocentrism relates to psychotic symptoms, psychotic-like experiences during adolescence may relate to the healthy maturation of adolescent egocentrism processes. Psychotic-like experiences are explained as contributory to psychotic outcome or the persistence of symptoms by van Os and colleagues (2009). It is suggested that the existence of psychotic-like experiences in adolescence is a necessary part of the journey for those individuals who make transition to psychosis. This forms van Os's persistence hypothesis of psychotic symptoms which states that earlier psychotic experiences if combined with environmental adversity persist to clinical levels of psychosis which only differ from psychotic-like experiences in quantitative ways (van Os et al., 1999). Therefore if relationships were found between adolescent egocentrism and psychotic-like experiences in adolescence this could imply that adolescent egocentrism is influential in the transition to and persistence of psychotic symptoms. Following Harrop and colleague's theory (2001) the contribution of adolescent egocentrism to the persistence of psychosis may be understood as a form of exaggerated adolescent egocentrism. The environmental adversity identified by van Os (2009) as instrumental in leading to the persistence of psychotic experiences may be impacting on the social and self-construction objectives of adolescent egocentrism as previously discussed with regard to childhood trauma. Resulting in a block to adolescent egocentrism, such adverse experiences are suggested to work to exaggerate such processes to the level of a psychotic

episode thus providing a mechanism for the persistence of symptoms identified by van Os (2009).

6.1.3 Social sensitivity

A possible indication of exaggerated adolescent egocentrism in psychosis is the presence of social sensitivity which is thought to mark this process in adolescence (Enright et al., 1979; Enright et al., 1980). As well as heightened self-consciousness, interpersonal sensitivity is also present in psychosis and similar to the construct to the self-other dimensions of self-consciousness. For instance, interpersonal sensitivity consists of personal inadequacy and a marked discomfort with interpersonal interactions (Derogatis et al., 1983). It also involves acute self-consciousness and negative expectations of social encounters (Derogatis et al., 1976).

However, interpersonal sensitivity appears to be a more acute and broader form of social sensitivity than self-consciousness as seen in Boyce et al.'s (1989) Interpersonal Sensitivity Scale in which it is conceptualised as excessive awareness and sensitivity to others with a strong negative theme. Therefore, if a self-conscious form of social sensitivity marks healthy adolescent egocentrism it may be that blocked and exaggerated adolescent egocentrism is marked by these more acute forms of social sensitivity in psychosis. Particular subscales of the Boyce et al. (1989) Interpersonal Sensitivity Scale offer a close match to the descriptions of interpersonal sensitivity described in psychosis (Derogatis et al., 1983; Derogatis et al., 1976).

6.1.4 Aims of the study

In this study an initial exploration of the relationship between adolescent egocentrism and the rise in transient psychotic experiences in healthy adolescence will be conducted. In addition the relationship between social sensitivity behaviours seen in adolescence such as self-consciousness and its counterpart in psychosis interpersonal sensitivity will also be investigated. For the purposes of clarity the term social sensitivity will refer to both self-consciousness and interpersonal sensitivity.

6.1.5 Hypotheses

1- The adolescent group will score higher than young adults on measurements of adolescent egocentrism, social sensitivity (self-consciousness and interpersonal sensitivity) and psychotic-like experience.

2- Adolescent egocentrism will be related to psychotic experience.

3- Adolescent egocentrism will be related to social sensitivity.

6.2 Method

6.2.1 Sampling

Participants were recruited from the undergraduate and postgraduate student population of the University of Birmingham, staff and students from Early Intervention Services in Birmingham and a Staffordshire comprehensive secondary high school.

Early Intervention Services is part of the Birmingham and Solihull Mental Health Trust and is a mental health team consisting of multidisciplinary staff members and students from other Birmingham Universities, with a focus on young people experiencing psychosis. The secondary school was established as a community school in 1978 for eleven to eighteen year olds. It serves a challenging catchment with low parental educational attainment and social economic status.

6.2.2 Design

This study included a within subjects design. See the Methodology chapter for full explanation.

6.2.3 Procedure

Adolescents:

Younger adolescents (fourteen year olds, $N = 13$) were recruited from a Staffordshire secondary comprehensive school via parental invitation letters given out during school time. Invitation letters were distributed via the school office to classes of children within each year group. For adolescent participants below the age of consent (eighteen years of age) parental consent was assumed if, after two weeks parents/guardians did not complete opt-out slips.

The fourteen year old participants then completed a series of four self-report questionnaires (see measures section for details) en-masse, individually and independently in exam-like conditions. Older adolescents (eighteen to nineteen year olds, N = 25) were recruited through an online advertisement posted onto the Research Participation Scheme website at the University of Birmingham. The completion of the four self-report measures was done in the same order and in individual study booths.

Adults:

Staff and students were recruited from Early Intervention Services (Birmingham and Solihull Mental Health Foundation Trust) (N = 7) and through the Research Participation Scheme (N = 31). For the Early Intervention staff and students, packs were given containing the questionnaires which were collected after completion. Those recruited through the Research Participation Scheme again completed the questionnaires in individual study booths.

The order of completion remained the same for all groups. All participants were given an information sheet and consent form before completing the measures and a debriefing sheet at the end.

6.2.4 Measures

Four questionnaires were used in this study including the Adolescent Egocentrism Sociocentrism scale (AES) (Enright et al., 1980), The Self Consciousness Scale (Revised) (SCSR) (Scheier et al., 1985), The Interpersonal Sensitivity Scale (IPSM) (Boyce et al., 1989) and the Community Assessment of Psychotic Experience (CAPE) (Stefanis, et al., 2002). See the Methodology chapter for a full description of the measures used in this study.

6.3 Results

6.3.1 The sample

Eighty-eight participants were originally recruited; however this reduced to seventy-six due to incomplete or missing data. Participants were divided into two groups of thirty-eight: an adolescent group of fourteen to nineteen years of age, (M= 16.9, SD= 2.23) and an adult group of twenty to thirty-five years of age (M= 24.15, SD= 3.55). Fifty-seven females and nineteen males took part in the study and in terms of ethnicity the sample was predominantly white British.

6.3.2 Preliminary analysis

A normality analysis of the data revealed significantly non-normal distributions across the two groups for the interpersonal sensitivity scores (D (76) = .11, $p<0.05$) and the psychotic experience scores (D (76) = .13, $p<0.05$). Adolescent egocentrism scores (D (76) = .08, p=ns) and self-consciousness scores (D (76) = .09, p=ns) were normally distributed. A Log-transformation failed to correct the distribution of the data therefore both parametric tests and non-parametric tests were used.

6.3.3 Statistics

All analyses were conducted using SPSS for windows (version 16.0). All significance test results quoted as one-tailed probabilities. Group differences were examined using both t-tests and Mann Whitney U tests due to parametric and non-parametric data. A Spearman's Rank correlation coefficient examined relationships between variables.

Hypothesis one: The adolescent group will score higher than young adults on measurements of adolescent egocentrism, social sensitivity (self-consciousness and interpersonal sensitivity) and psychotic-like experience.

In line with the hypothesis, AES scores were significantly higher for adolescents than adults (t (74) = 2.01, $p<0.05$).

Adolescents had significantly higher CAPE scores than adults (U (76) = 528.5, z = -2.01, r = -.23, $p<0.05$) as well as significantly higher IPSS scores than adults (U (76) = 558.00, z = -1.71, r = -.20, $p<0.05$). No differences were found between the SCSR scores of adolescents and adults (t (74) = -.01, p = ns). See Table 6.1.

Table 6.1: Mean and standard deviation scores for adolescent egocentrism, social sensitivity and psychotic-like experience in adolescents and adults

Measure	Adolescents Mean (Sd)	Adults Mean (Sd)
AES	48.32, (8.74)	44.53, (7.68)
SCSR	28.42, (6.92)	28.58, (7.31)
IPSS	48.92, (9.67)	45.11, (10.09)
CAPE	64.97, (13.12)	60.42, (10.23)

Note: Sd = Standard Deviation score.

Hypothesis two: Adolescent egocentrism will be related to psychotic experience.

Across the groups, the AES was positively correlated with psychotic experience (r (76) = .324, p<0.01).

Due to the differences found on the AES and CAPE between the groups another examination within the groups revealed a positive relationship between the AES and CAPE that was confined to the adolescent group (r (38) = .339, p<0.05).

Hypothesis three: Adolescent egocentrism will be related to social sensitivity.

Across the groups the AES was positively associated with the SCSR: r (76) = .576, p<0.001 and the IPSS: r (76) = .504, p=.001).

A further examination within the groups of the relationships between the AES, SCSR and IPSS revealed interesting associations.

Adolescent group

Positive correlations were found between the AES and SCSR (r (38) = .593, p<0.001) and between the AES and IPSS (r (38) = .628, p<0.001).

Adult group

Positive correlations were found between the AES and IPSS (r (38) = .325, p<0.05) and between the AES and SCSR (r (38) = .602, p<0.001).

A Fisher r-to-z transformation revealed significant differences between the adolescent and adult group correlations on the IPSS (z = 1.8, p<0.05) but not on the SCSR (z = -0.06, p=ns).

6.4 Discussion

6.4.1 Adolescent egocentrism and psychotic experience

The findings of this study are largely supportive of the experimental hypotheses. As predicted, adolescent participants displayed higher levels of adolescent egocentrism, social sensitivity and psychotic experiences compared to adult participants. However, in terms of self-consciousness, no differences between the groups were found. The relationships found between adolescent egocentrism and social sensitivity and adolescent egocentrism and psychotic experiences supported hypotheses two and three.

In this study higher levels of adolescent egocentrism in adolescence are consistent with findings in the literature. Adolescent egocentrism is a construct thought to be largely restricted to the adolescent period explaining adolescent behaviours (Elkind, 1967, 1978) and facilitating social development (Lapsley, 1985). Once the objectives of understanding others and the self are achieved adolescent egocentrism diminishes in later adolescence (Enright et al., 1980).

The finding of higher levels of psychotic-like experiences in adolescence is supportive of research noting a rise in psychotic-like experiences and thinking during the teenage years (Verdoux et al., 1998). This has been widely noted and accepted as illustrated by phrases that refer to psychotic-like experiences as a 'developmental expression' (van Os et al., 2009, p.179) or normal occurrence of subclinical psychotic experiences.

The central finding of the relationship found between adolescent egocentrism and psychotic-like experiences only within the adolescent group adds meaning to the coincidental co-occurrence of adolescent egocentrism and psychotic experience in the adolescent period. In

particular the positive relationship between these two variables is consistent with the hypothesis that blocked and exaggerated adolescent egocentrism is one pathway for the persistence of psychotic experience in adolescence. This offers preliminary support for the suggestion by Harrop and colleagues (2001) that extreme adolescent egocentrism is involved in the pathways to psychosis. This builds upon some of the findings of Fox (2007) in which the Personal Fable component of adolescent egocentrism using the Adolescent Invulnerability Scale and the Personal Uniqueness Scale predicted ratings in the paranoid ideation and psychoticism subscales of the Brief Symptom Inventory in a student sample. However, to the author's knowledge this is the first demonstration of a link between the complete construct of adolescent egocentrism and psychotic-like experiences.

6.4.2 Adolescent egocentrism and social sensitivity

Across the groups, the relationships found between adolescent egocentrism, self-consciousness and interpersonal sensitivity support theory and empirical findings that adolescent egocentrism is marked out by social sensitivity (Enright et al., 1980; Fox, 2007). As such relationships were positive these findings are consistent with the idea that higher or exaggerated levels of adolescent egocentrism may drive higher levels of social sensitivity and those forms found in psychosis.

However, an interesting pattern of differences and relationships amongst adolescent egocentrism and social sensitivity behaviours of self-consciousness and interpersonal sensitivity were seen in the adolescent and adult groups. For instance, in comparison to the adult group, the adolescent group exhibited higher levels of interpersonal sensitivity rather than self-consciousness. Stronger, positive correlations between adolescent egocentrism and interpersonal sensitivity rather than self-consciousness were also found for the adolescent

group suggesting that higher levels of adolescent egocentrism during adolescence may contribute to higher levels of interpersonal sensitivity. Contrary to what would be expected, levels of self-consciousness in the adolescent group were no different to the adult group. In addition the relationship between adolescent egocentrism and self-consciousness in the adolescent group was no stronger than the adult group. This may mean that higher levels of adolescent egocentrism in adolescence are only associated with and may not actually lead to feelings of self-consciousness. Although a similar behaviour to self-consciousness, the relationship between adolescent egocentrism and interpersonal sensitivity is not completely consistent with theory suggesting that adolescent egocentrism is characterised by self-consciousness (Elkind, 1967). These results may be due to similarities between the concepts of self-consciousness and interpersonal sensitivity, implying that ratings of interpersonal sensitivity are merely dimensions or forms of self-consciousness and vice versa. Alternatively, such relationships may imply that adolescent egocentrism relates to wider social sensitivity behaviours than just self-consciousness and may extend to more pathological, acute and broader forms such as the interpersonal sensitivity behaviours of psychosis. Higher levels of interpersonal sensitivity in adolescence could also be because of the changing and more demanding social objectives of adolescence (Petersen & Hamburg, 1986) which may temporarily foster this broader form of social sensitivity. It may have been that the adolescent group was unusually higher on interpersonal sensitivity than self-consciousness. This is conceivable due to research that has pointed out conflicting findings of patterns of self-consciousness across adolescence (Rankin et al., 2004) and divergent pathways of adolescent egocentrism and self-consciousness during this time (Enright et al., 1980).

In terms of the adult findings the comparable levels of self-consciousness to the adolescent group may suggest that self-conscious behaviour is not unique to adolescents and that they score in similar ways to adults. This is not particularly controversial considering that self-consciousness is a general and recognisable term with common application triggered by an awareness of one's social context (Sigelman et al., 2003). Alternatively such results could be consistent with research that has found adolescent egocentrism extends into early adulthood (Frankenberger, 2000). This is supported by the finding within this study of a relationship between adolescent egocentrism and self-consciousness in the adult group that was similar to the adolescent group. Such interpretations are supportive of Lapsley's theoretical position of adolescent egocentrism which suggests that such processes are part of social interaction and arise out of social contexts (Lapsley, 1985; Vartanian, 2000).

6.4.3 Strengths and limitations

To the author's knowledge this study is the first to find relationships between psychotic-like experiences in adolescence and adolescent egocentrism, building on Fox's (2007) findings of a relationship between the Personal Fable and ratings of psychoticism and paranoid ideation in healthy adolescents. This paves the way for a larger study and systematic exploration of these variables across the adolescent age-range and within clinical samples.

However, there were some weaknesses to consider. Some of the participants, as a result of the inclusion criteria for the adolescent and adult groups were close in age such as those at the end of the adolescent age criteria (eighteen to nineteen years of age) and those at the beginning of the adult age criteria (twenty years of age). As the same social-cognitive demands as adolescence extend into early adulthood such identity consolidation and romantic relationships (Pals, 1999) the lack of a clear distinction in age between the groups may have

accounted for the absence of a significant difference in self-consciousness between the age groups. However, Enright et al. (1979) found that self-consciousness did not accompany social and academic ambitions in young adults during college years and in light of differences found between the groups for the remaining variables, the close proximity in age between the groups cannot solely be used to explain this finding.

Another weakness involved sample characteristics which may have affected the higher levels of adolescent egocentrism in the adolescent group. For instance, only participants from the early and late adolescent period were included in the adolescent group potentially restricting the diversity of responses to the beginning and end points of this period. As research has shown, during middle adolescence, adolescent egocentrism starts to decline (Elkind, 1967; Enright et al., 1980; Lapsley et al. 1988; Enright et al., 1979). Therefore by not including participants from the middle-adolescent age-range it may have inflated the adolescent egocentrism scores of the adolescent group. However, this recruitment style does still allow a balance of adolescent responses and previous studies have used this method of recruitment including adolescents from early and late adolescence within their sample (Enright et al., 1979).

Secondly proportionately more females were recruited than males. Sex differences seen in the higher levels of adolescent egocentrism reported by females, especially for the Imaginary Audience have previously been found (Enright et al., 1980; Elkind et al., 1979; Hudson et al., 1986). Therefore the higher number of females included may have driven the higher levels of adolescent egocentrism in the adolescent group. However, as there were a higher number of females within the entire sample, the higher proportion of females in the adolescent group would have been matched against a higher proportion of females in the adult group meaning that control was afforded to counter-act the effects of gender on adolescent egocentrism

scores in the adolescent group. In addition, higher levels of adolescent egocentrism in females have not been consistently found with studies interpreting higher scores as an indication of higher levels of self-consciousness (Galanaki, 2012; Elkind et al., 1979). Indeed Galanaki (2012) found that males generally reported higher levels of Imaginary Audience and Personal Fable ideation.

Finally, participants were recruited from a variety of contexts varying in social economic status, education level and expertise. For instance, within the adult group some participants were recruited from post-graduate populations or were part of the staff and students based at Early Intervention Services. Their higher levels of psychological knowledge and attendance on mental health training courses may have skewed their scores if psychological concepts were recognised. This may have resulted in adults answering more conservatively resulting in lower adolescent egocentrism and psychotic-like experience scores. Such factors are an important consideration for future research which should endeavour to control for such extraneous variables through stricter matching criteria based on level of educational achievement.

On the whole the potential of such weaknesses to confound did not appear to be actualised as the results largely corroborated with age-related findings of adolescent egocentrism, social sensitivity and psychotic experience in the literature.

6.4.4 Conclusion

The central prediction of this study that higher levels of adolescent egocentrism correlate with psychotic-like experiences in adolescence was supported. Secondly indications have been provided within the results that adolescent egocentrism is marked by social sensitivity behaviours of self-consciousness and particularly interpersonal sensitivity. These results now

enable this thesis to explore these factors more rigorously in a larger, cross-sectional sample of adolescents.

CHAPTER 7:

STUDY ONE: ADOLESCENT EGOCENTRISM AND CHANGES IN PSYCHOTIC-LIKE EXERIENCE ACROSS ADOLESCENCE

7.1 Introduction

Previous chapters have highlighted the rise in psychotic onset around adolescence (Verdoux et al., 1998; Cougnard et al., 2007) and social and self-construction difficulties in those who go on to develop psychosis (Cannon et al., 1997). Adolescence is an important time for social development including developing a social understanding and the construction of a stable self (Zarrett et al., 2006; Erikson 1968) which consolidates over the adolescent period. Therefore it may be that developmental factors supportive of these adolescent goals are affected by such difficulties found in psychosis and in-turn contribute to symptoms.

7.1.1 Adolescent egocentrism

An understanding of one's social environment and the construction of a self is facilitated by adolescent egocentrism processes (Hudson et al., 1986; Lapsley 1993; Vartanian, 2000). Exposure to childhood trauma leading to attachment insecurity has been found to cause social and self-construction difficulties which contribute to psychotic outcomes (Finzi-Doltan et al., 2006; Garety et al., 2001; Berry et al., 2008). Within this pathway to psychosis then it may be that such difficulties impact adolescent egocentrism processes. Difficulties maturing through adolescent egocentrism processes have been described within pathways to the emergence of psychotic symptoms by Harrop and Trower (2001). They suggested that normal processes such as adolescent egocentrism become blocked during the adolescent period due to difficulties constructing an understanding of the self and others and are influential in

transitions to psychosis. Such blocks are suggested to prevent the resolution or maturation of adolescent egocentrism processes, exaggerating them to the level of a psychotic episode. References are made to the similarities between the Personal Fable and Imaginary Audience components of adolescent egocentrism and psychotic symptoms such as delusions of grandeur and persecution (Harrop et al., 2001).

A further aspect of the continued and elevated levels of adolescent egocentrism in psychosis is social sensitivity. Self-consciousness is typically associated with adolescent egocentrism in the teenage years (Elkind, 1967; Enright et al., 1980). Similarly, in psychosis what is termed as interpersonal sensitivity has been found (Hodges et al., 1999). Including acute self-consciousness it also shares the same self-other awareness as self-conscious behaviours in adolescence (Derogatis et al., 1983). Whereas self-consciousness is thought to mark typical adolescent egocentrism processes (Fox, 2007; Enight et al., 1980), the broader and more acute form of interpersonal sensitivity detected in psychosis may be representing the more exaggerated levels of adolescent egocentrism in such individuals.

The rise in early adolescence and the reduction during middle and late adolescence (Elkind 1967; Lapsley et al., 1988; Vartanian et al., 1996) demonstrates the presence of adolescent egocentrism in social development during this time. The concurrent rise in psychotic-like experiences during adolescence which is also thought to be curvilinear in pattern (Collip et al., 2008) suggests a relationship with adolescent egocentrism. Following Harrop's theory whereby psychotic symptoms are the result of blocked adolescent egocentrism, the sub-clinical and developmental expression of psychotic-like experiences may relate to the healthy maturation of developing adolescent egocentrism processes in adolescents. Thus, links between adolescent egocentrism and developmental psychotic-like experiences may be ultimately suggestive of the role of adolescent egocentrism in clinical psychosis. This is

supported by arguments for an 'aetiological continuum' between psychotic-like experiences in adolescence and clinical, psychotic symptoms (Myin-Germeys et al., 2003, pg. 443).

The pilot study of this thesis offered empirical support for this as a relationship between adolescent egocentrism and sub-clinical psychotic experience was found. In particular, the positive correlations between adolescent egocentrism and psychotic experience supported Harrop's theory (2001). These results, alongside Harrop's theory tie in with van Os et al's. (2009) persistence hypothesis in which subclinical psychotic experiences are suggested to persist to psychotic symptoms as the main mechanism of psychosis transition. In effect, adolescent egocentrism may be one mechanism underlying such persistence.

In the pilot study both self-consciousness and interpersonal sensitivity were found to relate to adolescent egocentrism suggesting that these behaviours may act as markers of adolescent egocentrism if found in psychosis samples. Although this study pointed to the potential importance of the adolescent egocentrism in psychosis, the study was small and only looked at early and late periods of adolescence whereas changes within adolescent egocentrism occur throughout the adolescent period (Lapsley et al., 1988; Enright et al., 1980; Enright et al., 1979). Therefore, a robust, systematic investigation of the changes and relationships between egocentrism and psychotic experiences across adolescence is needed to more securely understand the contributions of adolescent egocentrism to psychosis.

7.1.2 Theory of mind

However, in addition to changes in adolescent egocentrism other, potentially related cognitive processes such as theory of mind occur across the adolescent period (Choudhury et al., 2006). The similarities between theory of mind and adolescent egocentrism lie in the ability to understand the perspectives of others. It appears that theory of mind ability refines across

adolescence with the fine-tuning of this cognitive ability observed in neurological changes (Blakemore et al., 2007). Therefore it is essential that any relationships found between adolescent egocentrism and psychotic experience are not merely a manifestation of the relationship between subtle changes in theory of mind during adolescence and psychotic-like experiences. Accordingly, testing whether differences in adolescent egocentrism are a by-product of differences in theory of mind is essential. This will also be an important consideration when the thesis moves on to consider clinical samples as theory of mind difficulties and impairments have been observed in psychosis (Sprong et al., 2007).

7.1.3 Aims of the study

The aims therefore of this study are to build on the findings of the pilot study in terms of the relationships found between adolescent egocentrism and psychotic experience using a large sample of adolescents that span the entire adolescent period. Early, middle and late periods of adolescence as previously defined by research (Dishion et al., 1997; Lammers et al., 2000; Gallander Wintre et al., 1995) and inclusive of the age-range recruited, will be included to systematically track both changes and relationships between adolescent egocentrism, psychotic experience and social sensitivity over the adolescent period. Finally, the relationship between adolescent egocentrism and social sensitivity will also be explored across adolescence. In order to rule out the potential confounding effect of theory of mind this will also be examined.

7.1.4 Hypotheses

1) Young people during early-adolescence will show the highest levels of adolescent egocentrism, social sensitivity and psychotic experience compared to young people in middle and late adolescence.

2) Adolescent egocentrism will be related to psychotic experience and will follow the temporal changes in line with hypothesis one.

3) Adolescent egocentrism will be related to social sensitivity

7.2 Method

7.2.1 Sampling

Participants were recruited from a Staffordshire comprehensive secondary high school for eleven to eighteen year olds. Inclusion criteria included healthy participants that were within an age range of thirteen to eighteen years.

From the January 2010 School census, the school is attended by a total of 1085 pupils with 102 in the sixth form. This is inclusive of 545 girls and 540 boys. From the School Census in 2001 it serves a catchment in which 37.3% of the local community have no qualifications. According to school statistics in 2010 through Raiseonline, 21.6% of their students were eligible for free school meals. Attainment at GCSE level is also below local and national averages and 30% of students are on the Special Educational Needs register. The ethnic breakdown is overwhelmingly white British (95%) with a low representation of other ethnic groups (5%).

7.2.2 Design

The study included a within-subjects, cross-sectional design. See the Methodology chapter for a full explanation of the design used in this study.

7.2.3 Procedure

Initial invitation letters were sent to parents or guardians giving two weeks notice of the commencement of the study. Consent was presumed if parents did not return the opt-out slip accompanying this letter within the two week period. After reading Information about the study, participants signed a further consent form. The study was then conducted within the school in year groups, en-masse and in exam conditions. All participants completed a series of four self-report questionnaires individually and independently. For adolescents aged fourteen, sixteen, seventeen and eighteen, whose adolescent egocentrism scores fell within the top and bottom twenty percent they also completed a theory of mind measure which included a first – order False Belief, story-based comprehension task consisting of a story and some questions (see methodology chapter for measures). The order of the questions was different for each age-group to address order effects. The order of completion remained the same for each group and once they were complete, participants were issued with a debriefing sheet.

7.2.4 Measures

Four questionnaires were used in this study including the Adolescent Egocentrism Sociocentrism scale (AES) (Enright et al., 1980), The Self Consciousness Scale (Revised) (SCSR) (Scheier et al., 1985), The Interpersonal Sensitivity Scale (IPSM) (Boyce et al., 1989) and the Community Assessment of Psychotic Experience (CAPE) (Stefanis et al., 2002). In addition, a first order false belief measure including three stories (Apperly et al., 2004) which were a reading comprehension based task were included. See the Methodology chapter for a full description of the measures used in this study.

7.3 Results

7.3.1 The sample

A total of two hundred and seventeen participants took part in the study. Participants were divided into age-groups representing predetermined stages of early, middle and late adolescence and the age-range parameters of the sample recruited. Early adolescence was defined as between the ages of thirteen and fourteen years, middle adolescence between the ages of fifteen and sixteen years and late adolescence between the ages of seventeen and eighteen years. See table 7.1 for a breakdown of age and gender for the early, middle and late adolescent groups.

7.3.2 Preliminary analysis

A normality analysis of the data suggested a significantly non-normal distribution for scores of adolescent egocentrism (D (195) = .09, p<0.01) self-consciousness (D (195) = .07, p<0.05), and psychotic experience (D (195) = .07, p<0.05). The Interpersonal sensitivity measure was normally distributed (D (195) = .04, p=ns). A Log-transformation failed to correct the distribution of the data, therefore non-parametric tests were used.

Theory of mind and Adolescent Egocentrism

As a check that adolescent egocentrism is not a manifestation of developments in theory of mind across the adolescent period, differences between the first-order false belief stories scores of adolescents rating in the top vs. bottom twenty percent the adolescent egocentrism distribution were explored.

No differences were found in the first-order false belief stories scores between those participants who scored in the highest twenty percent on the adolescent egocentrism scale (M= 24.04) and those that scored in the lowest twenty percent on the adolescent egocentrism scale (M= 25.00), (U (48) = 276.00, z = -.96, p=ns).

7.3.3 Statistics

All analyses were conducted using SPSS for windows (version 16.0). All significance test results quoted as one-tailed probabilities. All analysis consisted of non-parametric tests. Group differences were examined using Kruskal-Wallis and Mann Whitney U tests. A Spearman's Rank correlation coefficient examined relationships between variables. Significance levels are quoted at the one-tailed level.

Table 7.1: Age and gender of the early adolescent, middle adolescent and late adolescent groups.

Age group (in years)	N	Mean Age (Sd)	Gender	
13-14	91	13.59 (0.52)	38 M	53 F
15-16	89	15.43 (0.50)	36 M	53 F
17-18	37	17.16 (0.37)	19 M	18 F

Note: N = number of participants, Sd = Standard Deviation

For the majority of the analysis groups were split according to these stages of adolescence except for theory of mind. The top and bottom twenty percent on the distribution of AES scores for each of the age groups were included to investigate differences in theory of mind.

Hypothesis one: Young people during early-adolescence will show the highest levels of adolescent egocentrism, social sensitivity and psychotic experience compared to young people in middle and late adolescence.

Significant differences were revealed between the age groups on the AES ($H(4) = 10.93$, $p<0.05$) and CAPE ($H(4) = 9.36$, $p=0.05$). No differences were found between the age groups on the SCSR ($H(4) = 5.21$, p=ns) or the IPSS ($H(4) = 4.94$, p=ns). (See table 7.2)

Table 7.2: Mean scores of adolescent egocentrism, psychotic experience and social sensitivity behaviours across early, middle and late adolescence.
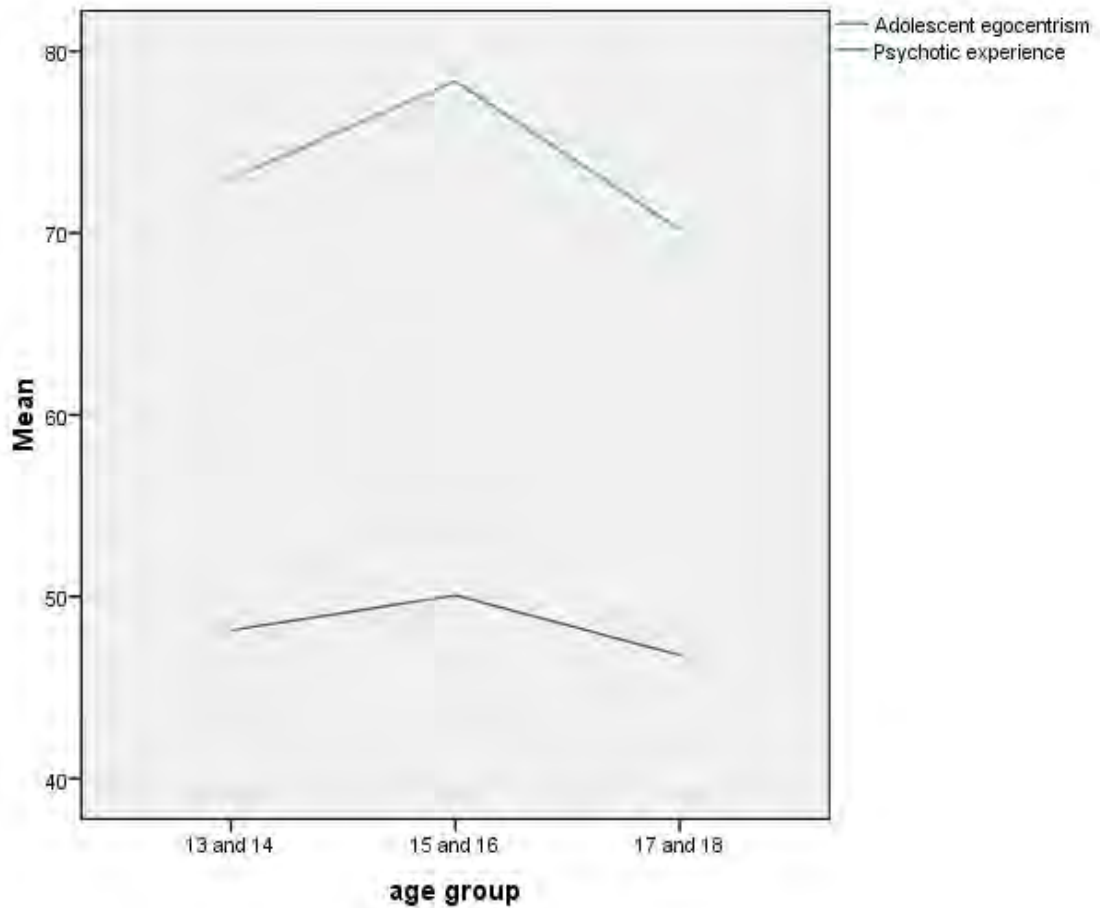
Age group	Early adolescence Mean (Sd)	Middle adolescence Mean (Sd)	Late adolescence Mean (Sd)
Adolescent egocentrism (AES)	48.04, (10.20)	50.08, (9.88)	46.78, (7.67)
Psychotic experience (CAPE)	73.35, (20.13)	78.42, (17.79)	70.19, (13.71)
Self-consciousness (SCSR)	24.03, (7.67)	25.26, (8.74)	26.62, (7.78)
Interpersonal sensitivity (IPSS)	46.13, (10.69)	47.87, (10.48)	48.49, (12.96)

NB: Sd = Standard deviation

Further examination of these findings between the age groups revealed differences between early and middle adolescence (U (177) = 3359, z = -1.64, p= 0.05) but not early and late adolescence (U (126) = 1446.5, z = -1.07, p= ns) on the AES.

For the CAPE, significant differences between early adolescence and mid-adolescence were found (U (173) = 3059.50, z = -2.07, $p<0.05$) but not between early and late adolescence (U (122) = 1500, z = -.404, p= ns). Interestingly between mid-adolescence and late adolescence a significant reduction was detected in AES scores (U (125) = 185.50, z = -2.4, $p<0.01$) and CAPE scores (U (125) = 1203.50, z = -2.30, $p<0.05$). In other words, for both the AES and CAPE scores a peak was observed in mid-adolescence (see figure 7.1).

Figure 7.1: Illustration of the pattern of adolescent egocentrism and psychotic experience scores across the adolescent age groups.

<u>Hypothesis two:</u> Adolescent egocentrism will be related to psychotic experience and will follow the temporal changes in line with hypothesis one.

Positive and significant relationships were also found between the AES and CAPE (r (207) = .33, $p<0.001$) across the groups.

Due to the differences found on the AES and CAPE across the groups and the positive relationship predicted, a further examination within the groups was required. Stronger, positive correlations between the AES and the CAPE were found for middle adolescence

(r (87) = .39, *p*<0.001) followed by early adolescence (r (83) =.26, *p*<0.01). However, these were not significantly different from each other (z = 0.96, *p* = ns). No relationship was found between adolescent egocentrism and psychotic experience in late adolescence (r (37) = .20, *p* = ns).

Hypothesis three: Adolescent egocentrism will be related to social sensitivity

Across the age groups positive and significant relationships were found between the AES and the SCSR (r (211) = .55, *p*<0.001) and IPSS (r (210) = .47, *p*<0.001).

7.4 Discussion

Overall the data supported the hypotheses of this investigation. In line with the first hypothesis, differences were found in adolescent egocentrism across adolescence. However only partial support is given to the first hypothesis as early adolescence did not demonstrate higher levels of adolescent egocentrism in comparison to middle and late adolescence. In comparison to early and late adolescence, significantly higher levels of adolescent egocentrism were found in middle adolescence; in other words there was a clear mid-adolescent 'peak'. Similar results were found for psychotic experience. Early adolescence did not reveal higher levels of psychotic experience in comparison to middle and late adolescence. Again it was middle adolescence which had significantly higher levels of psychotic experience in comparison to the other time points. The absence of any differences between levels of social sensitivity across early, middle and late adolescence was however, unsupportive of the first hypothesis.

Hypothesis two was also confirmed, revealing a strong correlation between adolescent egocentrism and psychotic experience across the age groups. This, combined with the coincidence of peak scores in each of these variables in mid-adolescence, strongly supports the proposed link between adolescent egocentrism and the tendency to experience psychotic experience.

Relationships were also found between adolescent egocentrism and social sensitivity (self-consciousness and interpersonal sensitivity) supported hypothesis three.

The results of the theory of mind false belief task scores revealed no difference between those scoring in the top vs. bottom 20% of the AES distribution showing clearly that theory of mind is a separate construct to adolescent egocentrism and cannot account for the present findings.

These findings will now be discussed in terms of what has generally been found in the adolescent period in the literature and then in terms of the more specific findings of this investigation.

7.4.1 Adolescent egocentrism and social sensitivity

Generally adolescent egocentrism begins to rise early in adolescence to drop off in middle and late adolescence, as knowledge about the social environment and the self is matured (Enright et al., 1980; Elkind 1967; Newman, 1976). This pattern however, has not been completely replicated in this study as higher levels were not found during the early adolescent period but rather in middle adolescence. In fact, levels of adolescent egocentrism in early adolescence were found to be comparable to levels in late adolescence. Such a result does concur with literature that has highlighted conflicting findings of patterns of adolescent egocentrism across adolescence (Frankerger, 2000; Buis & Thompson, 1989). It appears that a rise in adolescent egocentrism in early adolescence is not a robust finding.

The typical research findings of a relationship between adolescent egocentrism and self-consciousness (Enright et al., 1980) are supported in this investigation and within the pilot study. The positive relationship between these two variables suggests from the outset that higher levels of adolescent egocentrism are associated with higher levels of self-consciousness. However, the lack of any differences in self-consciousness alongside differences in adolescent egocentrism across adolescence mitigates this and provides evidence against the role of self-consciousness in marking out adolescent egocentrism processes. As in earlier studies and the pilot study, such results suggest that despite the apparent relationships, self-consciousness has a separate developmental pathway in adolescence to adolescent egocentrism (Enright et al., 1980). Another similarity to the pilot study was the additional,

positive relationship found between adolescent egocentrism and interpersonal sensitivity again suggesting that adolescent egocentrism is also marked by other forms of social sensitivity which are found in psychosis. However, similarly to self-consciousness no systematic differences were seen in interpersonal sensitivity across the adolescent period with adolescent egocentrism limiting the suggestion that higher levels relate to higher levels of adolescent egocentrism and that this social sensitivity behaviour is a marker of adolescent egocentrism.

The relationship found between adolescent egocentrism and both self-consciousness and interpersonal sensitivity but a lack of any differences across the age groups in social sensitivity; a finding that echoes the pilot study, suggests that rises in adolescent egocentrism are associated with self-conscious or interpersonally sensitive feelings but not necessarily higher levels of such behaviours. It may be that the relationships between adolescent egocentrism and social sensitivity are just a signal of the similarities between the constructs such as a growing understanding and awareness of the self and others.

7.4.2 Adolescent egocentrism and psychotic experience

Similarly to adolescent egocentrism, the developmental expression of sub-clinical psychotic experiences is also thought to generally follow a curvilinear pattern (Collip et al., 2008) as psychotic experiences naturally rise after puberty during early adolescence (Lataster et al., 2006) and fall thereafter towards early adulthood (van Os et al., 2000; Cougnard et al., 2007). The mid-adolescent peak in both adolescent egocentrism and psychotic experience found in this study although contrary to the first experimental hypothesis and the suggestion of earlier adolescent egocentrism findings (Vartanian, 1996; Lapsely et al., 1988) corroborates literature suggesting that within the community, healthy adolescents experience a transient rise in the

developmental expression of psychotic experiences which for the majority of teenagers declines over time (Cougnard et al., 2007).

The positive relationships found between adolescent egocentrism and psychotic experience indicate that changes in one variable echo changes in the other with higher levels in adolescent egocentrism relating to higher levels in psychotic experience. Such relationships support findings from the pilot study of a relationship between adolescent egocentrism and psychotic experiences in healthy samples.

From these results, it may therefore be that psychotic experiences in adolescence are marking maturing adolescent egocentrism processes as such cognitions and concurrent experiences rise to a peak during mid-adolescence and are consolidated and reduce during later adolescence.

These results, together with continuum arguments between psychotic-like experiences in adolescence and psychotic symptoms (Myin-Germeys et al., 2003) offer empirical support for Harrop et al.'s (2001) theory of extreme forms of adolescent egocentrism in psychosis. They also contribute to the paucity of research on the influence of adolescent factors in the rise in psychotic-like experiences at this time. In addition, it adds to work done by Fox (2007) whose focus was primarily on the relationship between the Personal Fable and psychotic experience. Although very related to the Imaginary Audience (Elkind, 1967), the Personal Fable is more allied with self-construction objectives as seen in cognitions that one is unique or invincible and the assertive function it is thought to play in ego or self-construction (Aalsma et al., 2006; Goossens et al., 1992; Vartanian et al., 1996). Within this study and the previous pilot study, relationships found between psychotic-like experiences and the Imaginary Audience, a crucial component of social-cognitive development and social understanding in adolescence

(Vartanian, 2001; Lapsley, 1985) suggests that not only is the maturation of self-constructs related to psychotic experience but also a growing understanding of others.

7.4.3 Theory of Mind

The non-significant differences observed between levels of false belief for adolescents scoring within the top and bottom twenty percent of the adolescent egocentrism scale demonstrates this is a separate form of social-cognition to adolescent egocentrism. The phenomenon of adolescent egocentrism is not a result of the identified refining of theory of mind cognitions across adolescence. Reasons why they may be separate cognitions is due to the fact that they do delineate from each other. For instance, although each concern perspective-taking this basic ability is needed in order to result in adolescent egocentrism (Lapsley, 1985). A lacking theory of mind ability however relates directly to difficulties in perspective-taking or mentalizing the thoughts of others (Frith et al., 2006; Gallagher & Frith, 2003). In other words, adolescent egocentrism is caused by the presence of basic perspective-taking abilities and theory of mind difficulties are caused by a lack of such ability.

7.4.4 Strengths and limitations

The main strength of this investigation lay in the large sample recruited and the spread of age groups included across the adolescent period. This large cross-section allowed for prospective inferences to be made for the pathways of adolescent egocentrism and psychotic experience during adolescence. However, as not a truly prospective study, a longitudinal design with follow-up samples would have allowed firmer conclusions to be drawn and would be an important consideration for future studies.

The lack of any difference between early and late adolescents in terms of adolescent egocentrism and psychotic experience creating a mid-adolescent peak could be due to the

smaller number of participants included in the late adolescent group. This may have reduced the variance within that group so that differences could not be detected. In addition, a mid-adolescent rather than an early adolescent peak in adolescent egocentrism may have been due to the fact that the youngest adolescents included in the study were thirteen years of age. In previous research in which higher levels are found in early adolescence, adolescents have been included as young as ten and eleven years old (Lapsley et al., 1988; Enright et al., 1980). This was due to their central focus to disprove a relationship between formal operations and adolescent egocentrism. Although this was not a concern of this study it may have been beneficial to include younger adolescents. However, at a cross-sectional level it would appear that this may have been unnecessary due to the lower levels of adolescent egocentrism detected for younger adolescents as well as findings of different adolescent egocentrism pathways across adolescence (Frankenberger, 2000).

However, in light of the inconsistent findings of patterns of adolescent egocentrism across adolescence this result may not have been due to unequal samples or the absence of a younger adolescent group.

It is also important to highlight that psychotic experience across the group differences were at marginal significance levels. This may have been due to an unusually high level of psychotic experience being reported. Research has shown and argued that in urbanised areas (Krabbendam & van Os, 2005; van Os, Kenis & Rutten, 2010) of social deprivation (Castle et al., 1993) similar to the catchment area in which the participants were recruited, higher levels of psychosis are associated. However, the significant differences in psychotic experience detected between the groups can allay some of these extraneous variables.

The lack of significant differences across the stages of adolescence for social sensitivity may have been due to the insensitivity of the self-consciousness and interpersonal sensitivity measures to detect such changes. Feeling self-conscious is common to all age-groups and such a generic measure of social sensitivity may not be specific enough to pick up subtle changes in this dimension across adolescence. Alternatively this could be due to the use of non-parametric tests which may not have been powerful and sensitive enough to detect small differences between the groups. However, self-consciousness has, despite being related to adolescent egocentrism, its own pattern across the adolescent period (Enright et al., 1980). Interpersonal sensitivity may also fail to highlight changes in social sensitivity across healthy samples of adolescents as it is descriptive of social sensitivity in psychosis (Deogatis et al., 1976).

Finally, the theory of mind measure involved a basic measurement of first order false belief. Such a basic test, especially in light of the more subtle changes in theory of mind across healthy adolescence may be the reason for the lack of any difference in theory of mind scores. Perhaps a more thorough and systematic exploration of changes in theory of mind across adolescence would have revealed different results and would be recommended for suture studies interested in the development of such abilities in adolescence.

Although encouraging of adolescent egocentrism processes within psychosis, the findings of this study should also be treated with caution due to its cross-sectional design. To understand whether adolescent egocentrism is causal in psychotic experience during adolescence, tracking of longitudinal changes across the adolescent period should be conducted in future studies.

7.4.5 Conclusion

In a large sample of adolescents a strong cross-sectional and longitudinal relationship between adolescent egocentrism and psychotic experience offers strong support for the central tenet of Harrop's theory, namely exaggerated adolescent egocentrism in psychosis. As anticipated, strong relationships between adolescent egocentrism, self-consciousness and interpersonal sensitivity were found. Results of this study corroborates findings from the pilot study and enable this thesis now to examine the key prediction: whether adolescent egocentrism is found at a higher level in psychosis samples compared to controls and whether similar cross-sectional relationships between adolescent egocentrism and psychotic experience are found in established psychosis.

CHAPTER 8:

STUDY TWO: ADOLESCENT EGOCENTRISM AND PSYCHOSIS: AN INVESTIGATION IN EARLY PHASE PSYCHOSIS

8.1 Introduction

Adolescence has been identified as a time in which psychotic onset typically occurs (Cougnard et al., 2007; Collip et al., 2008). Exposure to adverse environmental factors causing social and self-construction difficulties in adolescence have been indentified in pathways to psychosis (Garety et al. 2001). It has been suggested that such difficulties are contributing to psychosis during this time as they impact important social cognitive processes of adolescence such as adolescent egocentrism which support social and self-construction, catalysing the pathway to psychosis (Harrop et al., 2001).

8.1.1 Exaggerated adolescent egocentrism

In line with Harrop's theory (2001) 'blocked' (pg. 241) adolescent egocentrism as a result of social and self-construction difficulties leads to more exaggerated forms of this process. Within psychosis Harrop hypothesised that more extreme manifestations of the developmental expression of the Imaginary Audience and Personal Fable behaviours will be seen. Harrop suggests such behaviours or cognitions are similar to persecutory ideation and grandiose behaviour in psychosis. The implications therefore are that exaggerated forms of adolescent egocentrism lead to psychotic symptoms. It is a further suggestion of this investigation that social sensitivity behaviour such as self-consciousness which marks the growing social-cognitive capacities of adolescent egocentrism in healthy adolescents is also present but at higher levels in psychosis. Higher levels of self-consciousness in psychosis would mark out

the exaggerated levels of adolescent egocentrism theorised to be present in psychosis. Other examples of social sensitivity such as interpersonal sensitivity, which forms part of the symptoms of psychosis (Derogatis et al., 1976; 1983) may be indicative of exaggerated adolescent egocentrism.

Support is offered for Harrop's theory and the influence of adolescent egocentrism in pathways to psychosis from the results of the pilot study and school study. In the former study a positive relationship was found between higher levels of adolescent egocentrism and psychotic-like experiences within the adolescent group as opposed to the adult group and in the latter study levels of adolescent egocentrism across the adolescent age-range of thirteen to eighteen were both positively correlated with and tracked psychotic experience. Consistent with Harrop's theory that blocked adolescent egocentrism underlies psychotic symptoms, these results suggest that the developmental expression of psychotic-like experiences in adolescence relate to the development of maturing adolescent egocentrism processes. In light of these results and following van Os et al.'s (2009) persistence of subclinical psychotic experience hypothesis we might then predict that higher levels of adolescent egocentrism may play a role in the persistence of psychotic-like experiences and the clinical expression of psychosis.

Thus, both theoretical and empirical evidence points to the need to investigate the relationship between adolescent egocentrism and clinical levels of psychosis. It is also however important to consider other relevant factors within clinical samples such as factors impacting social and self construction, other examples of social sensitivity behaviour and theory of mind.

8.1.2 Factors impacting social and self-construction: childhood trauma and attachment insecurity

It has been suggested that social-cognitive impairments may be contributing to pathways to psychosis (Penn et al., 1997). Due to their impact on social and self-construction (Addington et al., 2006a; 2006b) it may be the case that they disrupt adolescent egocentrism processes within pathways to psychosis.

However, perhaps more relevant to adolescent egocentrism processes and forming the focus of this study are environmental factors such as childhood abuse and related attachment insecurity. Childhood trauma has been strongly associated with psychosis in a dose-response manner (Janssen et al., 2004; Spauwen et al., 2006) and has been found to play a role in pathways to psychosis through the impact they may have upon social and self-development (Perry 2002; Lysaker et al., 2001; Cole, 1992). For instance, exposure to social risks interacting with genetic predispositions creating psychological and cognitive biases and sensitivity to social stressors through a process known as sensitisation have been suggested to lead to psychotic symptoms (Collip et al., 2008) perhaps by biasing one's social experiences and understanding and ability to consolidate a self. Such experiences have also been associated with other developmental processes underlying the formation of social relationships (Bowlby, 1969; Collins et al., 1990) and identity development (Lapsley et al., 1990) such as attachment. In particular, insecure attachment styles have been linked to psychosis (Dozier et al., 1991; Macbeth et al., 2008) and social and self-construction difficulties (Berry et al., 2008; Kobak et al., 1988). Environmental influences have also been considered in van Os's (2009) persistence theory whereby external risk factors impact on the expression of psychotic experiences in adolescence, leading to psychotic symptoms. This makes such factors worthy of investigation in clinical samples and also highlights the

potential relevance they may have to the maturation of adolescent egocentrism processes which are both related to psychotic experiences in adolescence as seen in the previous two studies of this investigation and elsewhere (Fox, 2007), and are considered important to social and self-construction (Lapsley et al., 1989; Lapsley, 1994).

8.1.3 Social sensitivity

Another cluster of factors to consider involves other examples of social sensitivity in psychosis such as shame, negative social comparison and social anxiety. As social sensitivity appears to accompany adolescent egocentrism (Enright et al., 1980) it is worth exploring whether these forms of social sensitivity also relate to the hypothesised exaggerated levels of adolescent egocentrism in psychosis.

8.1.4 Theory of mind

Finally, due to the presence of theory of mind difficulties in psychosis and its similarities with adolescent egocentrism (Lapsley, 1985; Frith et al., 2006), it will be important to investigate theory of mind capability alongside the hypothesis of exaggerated adolescent egocentrism in established and emerging psychosis groups.

8.1.5 Aims of the study

Therefore, the aims of this study are to build upon the foundations set by the earlier two of the positive relationships found between adolescent egocentrism, social sensitivity and psychotic experience by investigating such factors in clinical psychosis samples. In addition, relationships between adolescent egocentrism and other examples of social sensitivity found in psychosis, social risks and attachment security will also be investigated. Finally, to thoroughly and systematically examine Harrop's theory of more extreme forms of adolescent

egocentrism in psychosis underpinning the persistence of symptoms, both a high risk and a first episode group will be included in the clinical sample.

8.1.6 Hypotheses

1) Greater levels of adolescent egocentrism, self-consciousness and interpersonal sensitivity will be seen in those with a first episode of psychosis compared to high risk and healthy controls.

2) Adolescent egocentrism will be most strongly related to psychotic symptoms within the first episode group compared to high risk and healthy controls.

3) Adolescent egocentrism will be most strongly related to self-consciousness and interpersonal sensitivity within the first episode group compared to high risk and healthy controls.

4) Adolescent egocentrism will be related to shame, social comparison and social anxiety within first episode and high risk groups.

5) Higher levels of childhood trauma and insecure attachment will be observed in the first episode and high risk groups compared to healthy controls.

6) Adolescent egocentrism will be related to childhood trauma and insecure attachment in the first episode and high risk groups.

8.2 Method

8.2.1 Sampling

Participants were recruited from the Early Detection and Intervention team and first episode psychosis teams within the Birmingham Early Intervention Service, Birmingham and Solihull mental health NHS foundation Trust. This service serves the Birmingham area which covers a diverse population. In 2009, The Office for National Statistics (Davis, Baker & Singh, 2011) reported that Birmingham had a white British community of 67.7% (compared to 87% across England) and a black and minority ethnic community of 32.3% (compared to 13% across England). Hospital admissions for mental health in Birmingham between the ages of eighteen and sixty-four are also higher than the England average in 2008/2009 (Davis et al., 2011). Controls were recruited from students enrolled on Access to Higher Education courses in psychology and Higher National Diploma in business courses at Birmingham City College. The college is mainly situated within Bordsley Green with campuses extending to Handsworth. These respective eastern and western parts of Birmingham are multicultural areas, with pockets representing the highest levels of deprivation according to the Index of Multiple Deprivation in 2010 (Davis et al., 2011). Participants were matched on age and gender and educational attainment as far as possible. Following the inclusion criteria, participants were included between the ages of sixteen and twenty-five.

8.2.2 Design

This study included a cross-sectional, within-subjects design. See the methodology chapter for a full description.

8.2.3 Procedure

After liaising with clinical staff at Early Intervention Services, initial telephone calls were made to participants inviting them to the study together with an invitation letter. After a week to decide, participants were telephoned a second time to invite to participate in the study. Home visits were then arranged to complete the questionnaires. The procedure for recruiting the students (healthy controls) involved a short introductory presentation of the research and the distribution of invitation letters. Students were given a week to decide to participate using the opt-out slip at the bottom of the invitation letter. A second session was then arranged at the college in which the questionnaires were completed. In all cases, at the time of completing the study participants gave written, personal and informed consent and following the questionnaires, participants were debriefed. For both the clinical and healthy groups some of the participants were below the age of eighteen and therefore also required parental/guardian consent.

8.2.4 Measures

A series of nine, self-report questionnaires were included. These were the Adolescent Egocentrism Sociocentrism scale (AES) (Enright et ak, 1980), The Self Consciousness Scale (Revised) (SCSR) (Scheier et al., 1985), The Interpersonal Sensitivity Scale (IPSM) (Boyce et al., 1989), Community Assessment of Psychotic Experience (CAPE) (Stefanis et al., 2002), Social Interaction Anxiety Scale (SIAS) (Mattick et al., 1998), Social Comparison scale (Allan et al., 1995), Other As a Shamer Scale (OAS) (Goss et al., 1994), Childhood Trauma

Questionnaire (CTQ) (Bernstein et al., 1998) and The Revised Adult Attachment Scale (RAAS) (Collins et al., 1990) were used in the study. In addition, a theory of mind measurement including first order false belief stories (Apperly, et al., 2004) which were a reading comprehension-based task were included. See Measures chapter for a full description of the measures used in this study.

8.3 Results

8.3.1 The sample

A total of eighty-five participants took part in the study. This included first episode, high risk and control groups. Following Early Intervention criteria individuals recruited to the first episode group had, had an acute phase of psychotic illness conforming to ICD-10, F20-29, F30.2, F31.2, F31.5 and F32.3 (WHO, 1992), was aged between sixteen and thirty-five, had been allocated a key worker from one of the Early Intervention Teams. Criteria for the high risk for psychosis group followed the Early Detection and Intervention Team criteria which included the presence of brief and limited or attenuated psychotic symptoms, a family history of psychosis (Yung, Phillips & Yuen, 2004) and current help-seeking. See table 8.1 for the sample demographics.

8.3.2 Preliminary analysis

A normality analysis revealed a normal distribution for adolescent egocentrism ($D (85) = .07$, $p=$ ns), social sensitivity (Self-consciousness: $D (85) = .07$, $p=$ ns and Interpersonal Sensitivity: $D (85) = .07$, $p=$ ns) and Social Comparison ($D (85) = .08$, $p=$ ns).

Non-normal distributions were found for the following variables: Psychotic experience ($D (85) = .12$, $p<0.001$), Childhood Trauma ($D (85) = .16$, $p<0.001$) the Attachment dimensions

(Closeness, Dependency and Anxiety) (D (85) = .09, *p*= ns), Social anxiety (D (85) = .11, *p*<0.05) and Shame (D (85) = .15, *p*<0.001).

Due to their robustness and the fact that the majority of the main variables were normally distributed, parametric tests were used. Occasions where all variables were non-normally distributed, non-parametric tests were utilised.

Theory of Mind

To control for the confounding effects of theory of mind difficulties in the clinical groups an analysis between adolescent egocentrism and false belief scores was conducted. No differences were found between the groups in false belief ability (f (84) = .36, *p*= ns).

In addition, no correlations were found across the groups between false belief stories and adolescent egocentrism (r (85) = -.09, *p*= ns). Additionally, within the groups no correlations were found between adolescent egocentrism and false belief for high risk for psychosis (r (25) = .3, *p*= ns), first episode (r (30) = .17, *p*= ns) or controls (r (30) = .13, *p*= ns).

8.3.3 Statistics

All analyses were conducted using SPSS for windows (version 16.0). All significance test results quoted as one-tailed probabilities. To examine relationships between variables Pearson correlations were used. To compare between groups on normally distributed variables, ANOVAs were used with t-tests in a planned contrast analysis. To compare between non-normally distributed variables a Kruskal-Wallis analysis was used together with Mann-Whitney tests. Hypotheses were tested at the one-tailed level of significance.

Table 8.1: Age, gender and ethnicity of clinical and control groups

Participant group	N	Mean Age (Sd)	Gender	Ethnicity
First episode psychosis	30	21, (2.23)	20 (M) 10 (F)	White: 53% Asian: 17% Black: 23% Mixed: 7% Other: 0%
High risk of psychosis	25	18.8, (2.12)	14 (M) 11 (F)	White: 72% Asian: 12% Black: 23% Mixed: 12% Other: 0%
Healthy controls	30	18.63, (1.88)	17 (M) 13 (F)	White: 7% Asian: 50% Black: 30% Mixed: 3% Other: 10%

Note: N = number of participants, SD = Standard Deviation

Hypothesis one: Greater levels of adolescent egocentrism, self-consciousness and interpersonal sensitivity will be seen in those with a first episode of psychosis compared to high risk and healthy controls.

Adolescent egocentrism

Contrary to the hypothesis, no differences were found between the groups on the AES (F (2, 82) = .856, p= ns). However, significant differences were found between the groups for both the SCSR (F (2, 82) = 3.46, $p<0.05$) and the IPSS (F (2, 82) = 8.43, $p<0.001$).

Self-consciousness

Differences in SCSR scores were found between the high risk group and the control group (t (82) = -2.27, $p<0.05$) with the high risk group exhibiting significantly higher scores. Differences were also detected between the high risk group and first episode groups (t (82) = 2.35, $p<0.05$). Again, the high risk group exhibited higher SCSR scores.

Interpersonal Sensitivity

Differences were found between the high risk and control groups (t (82) = -4.03, $p<0.001$) with higher IPSS scores seen in this clinical group. Differences were also found between the high risk and first episode groups (t (82) = 2.88, $p<0.01$). Again, the high risk group demonstrated higher IPSS scores.

See table 8.2 for the mean scores of these variables across the groups.

Table 8.2: Mean and standard deviation scores in adolescent egocentrism, social sensitivity and psychotic experience in the clinical and control groups

Variables	First episode psychosis Mean, (Sd)	High Risk psychosis Mean, (Sd)	Control Mean, (Sd)
Adolescent egocentrism (AES)	49.07, (10.11)	51.72, (9.36)	49.07, (5.52)
Self-consciousness (SCSR)	25.9, (8.5)	30.64, (7.75)	26.07, (5.91)
Interpersonal Sensitivity (IPSS)	47.83,(14.81)	57.64, (11.51)	43.93, (10.88)
Psychotic experience (CAPE)	77.37, (24.85)	91.21, (24.12)	73.83, (16.20)

Note: Sd = Standard deviation score

Hypothesis two: Adolescent egocentrism will be most strongly related to psychotic symptoms within the first episode group compared to high risk and healthy controls.

Within the clinical groups a positive relationship was seen between the AES and CAPE in the first episode group (r (30) = .47, $p<0.005$) but, contrary to expectations, a stronger relationship was revealed for the high risk group (r (25) = .62, $p<0.001$), although this was not a significantly stronger correlation (z = -0.75, p =ns). Interestingly, correlations between the

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AES and CAPE were only seen in the clinical groups as no relationship was found between these variables in the control group (r (30) = .15, p= ns).

Hypothesis three: Adolescent egocentrism will be most strongly related to self-consciousness and interpersonal sensitivity within the first episode group compared to high risk and healthy controls.

In line with the hypothesis, positive and strong relationships were found between the AES and SCSR (r (30) = .64, $p<0.001$) and the AES and IPSS (r (30) = .45, $p<0.05$) in the first episode group. In the high risk sample positive and fairly strong relationships were found between the AES and SCSR (r (25) = .40, $p<0.05$) and the AES and IPSS (r (25) = .51, $p<0.05$).

A Fisher r-to-z transformation revealed no significant differences between the clinical groups for SCSR ($z=1.16$, $p=$ns) or the IPSS ($z=-0.27$, $p=$ns).

Controls:

A positive and fairly strong relationship was found between the AES and SCSR (r (30) = .41, $p<0.05$). Again, a Fisher r-to-z transformation revealed no significant differences with the first episode ($z=1.19$, $p=$ns) or the high risk group ($z=-0.04$, $p=$ns). No relationship was found between the AES and the IPSS (r (30) = .19, $p=$ ns).

Hypothesis four: Adolescent egocentrism will be related to shame, social comparison and social anxiety within first episode and high risk groups.

The AES was positively related to the OAS (r (30) = .33, $p<0.05$) and the SIAS (r (30) = .4, $p<0.05$) but not the SCS (r (30) = .01, $p=$ NS) within the first episode group. Within the high risk group AES scores were positively related to OAS scores (r (25) = .37, $p<0.05$) and SCS scores (r (25) = .34, $p<0.05$) but not SIAS scores (r (25) = .16, $p=$ ns).

Controls:

As a comparison, the AES was positively related to the SCS (r (30) = .42, *p*<0.05) but not the OAS (r (30) = -.06, *p*= ns) or the SIAS (r (30) = -.05, *p*= ns).

Hypothesis five: Higher levels of childhood trauma and insecure attachment will be observed in the first episode and high risk groups compared to healthy controls.

Childhood Trauma

Scores on the CTQ were significantly different across the three control and clinical groups (H (2) = 6.81, *p*<0.05). In line with the hypothesis, differences were only located between the control group and high risk for psychosis group (U = 224.5, *p*<0.05, r = -.34). No significant differences in total scores were found between the first episode and control group (U = 347.5, *p*= ns) or the high risk and first episode psychosis groups (U = 303.5, *p*= ns) (Table six).

For the subscales of the CTQ, no differences were found between the clinical and control groups on the Physical Abuse (H (2) = 1.33, *p*= ns), Physical Neglect (H (2) = 4, *p*= ns) or Sexual Abuse (H (2) = 2, *p*= ns). Differences were however found between the groups on both Emotional Abuse (H (2) = 8.04, *p*<0.05) and Emotional Neglect (H (2) = 8.04, *p*<0.05).

Emotional Abuse

No differences were found between the clinical groups (U= 296.5, *p*= ns) however in line with the hypothesis, higher levels were found in the first episode (U = 341.5, *p*= 0.05, r = -.21) and high risk group (U = 215, *p*<0.01, r = -.37) in comparison to the controls.

Emotional Neglect

Again, no differences were found between the clinical groups (U = 317.5, *p*= ns). In line with the hypothesis, higher levels were however observed in the first episode (U = 318.5, *p*<0.05, r = -0.25), and high risk groups (U = 217, *p*<0.01, r = -0.36) compared to the controls.

See table 8.3 for the mean trauma scores across the groups.

Table 8.3: Mean and standard deviation scores for the total scores, Emotional Abuse and Emotional Neglect subscales of the Childhood Trauma Questionnaire in the clinical and control groups

Groups	CTQ total scores Mean, (Sd)	Emotional Abuse Mean, (Sd)	Emotional Neglect Mean, (Sd)
First Episode for psychosis	42.93, (16.23)	10.1, (5.55)	11.13, (5.51)
High Risk for psychosis	49.72, (21.69)	12.12, (5.74)	13.16, (6.13)
Healthy control	37.3, (14.86)	7.87, (4.65)	9.07, (3.84)

NB: CTQ = Childhood Trauma Questionnaire, Sd = Standard deviation score

Attachment

Overall, significant differences were found between the three control and clinical groups on the RAAS attachment Anxiety dimension (H (2) = 23.3, *p*<0.001) and the Closeness dimension (H (2) = 6.67, *p*<0.05); the Dependency dimension (H (2) = 5.15, *p*=ns) did not produce significant group differences.

Attachment Anxiety

In line with the hypothesis, the high risk group showed higher levels of attachment anxiety than the control group (U = 102, $p<0.001$, r = -.62). Higher levels of attachment anxiety were also found in the high risk group in comparison to the first episode group (U = 157, $p<0.001$, r = -.5). Contrary to the hypothesis, for the anxiety dimension, no differences were found between the first episode group and the control group (U = 392.5, $p=$ ns).

Closeness

A significant difference was observed between the high risk group and the controls (U = 209.5, $p<0.05$, r = -0.38). This difference was characterised by higher levels of the closeness attachment dimension in the control group. Again, contrary to the hypothesis, no differences were found between the first episode group and the controls (U = 418.5, $p=$ ns). No difference was detected between the clinical groups (U = 284, $p=$ ns).

See table 8.3 for mean attachment dimension scores across the groups.

Table 8.4: Mean and standard deviation scores on the Anxiety and Closeness subscales of the Revised Adult Attachment Scale across the clinical and control groups

Groups	Anxiety Mean, (Sd)	Closeness Mean, (Sd)
First episode psychosis	17, (6.71)	19.4, (6.74)
High risk psychosis	23.6, (4.74)	17.12, (5.49)
Healthy controls	15.67, (5.32)	20.77, (3.62)

NB: Sd = Standard deviation scores.

<u>Hypothesis six:</u> Adolescent egocentrism will be related to childhood trauma and insecure attachment in the first episode and high risk groups.

Childhood trauma and insecure attachment

First episode group:

In support of the hypothesis, a positive relationship was observed between the AES and the emotional abuse subscale of the CTQ (r (30) = .41, *p*<0.05) and a negative relationship was found between the AES and the Closeness attachment dimension (r (30) = -.31, *p*<0.05). Contrary to the hypothesis, no relationships were found between the AES and total CTQ scores (r (30) = .27, *p*= ns) or the Emotional Neglect subscale of the CTQ (r (30) = .18, *p*= ns) and no relationships were found between the AES and the remaining Anxiety (r (30) - .27, *p*= ns) and Dependency (r (30) = -.16, *p*= ns) dimensions of the RAAS.

High risk group:

Again, supportive of the hypothesis, a positive relationship was found between the AES and the Anxiety attachment dimension of the RAAS (r (25) = .57, *p*<0.05) and a negative relationship was found between the AES and the Dependency attachment dimension of the RAAS (r (25) = -.44, *p*<0.05). Contrary to the hypothesis, no relationships were found between the AES and total CTQ scores (r (25) = .26, *p*= ns), Emotional Abuse (r (25) = .22, *p*= ns) or Emotional Neglect (r (25) = .02, *p*= ns) CTQ subscales or the Closeness attachment dimension of the RAAS (r (25) = -.04, *p*= ns). However, a positive relationship was found between the AES and the Physical abuse CTQ subscale (r (25) = .37, *p*<0.05).

Controls:

In line with the hypothesis, no relationships were found between the AES and total CTQ

scores (r (30) = .-09, *p*= ns) or the Emotional Abuse (r (30) = -.04, *p*= ns) and Emotional

Neglect (r (30) = -.12, *p*= ns) subscales of the CTQ or between the AES and the RAAS

Anxiety (r (30) = .18, *p*= ns), Closeness (r (30) = -.09, *p*=ns) and Dependency (r (30) = -.20,

p= ns) dimensions.

8.4 Discussion

This study has provided some support for our experimental hypotheses and has led to some surprising findings.

Hypothesis one, the central prediction, was not supported as no differences were observed in adolescent egocentrism between the clinical and control groups. Differences were however found for social sensitivity variables: self-consciousness and interpersonal sensitivity with the high risk group and not the first episode group as predicted, exhibiting the highest levels in comparison to the controls.

For hypothesis two, support was given by the relationship found between adolescent egocentrism and psychotic-like experiences *within* the clinical groups. However, rather than stronger correlations within the first episode group, similar correlations were found in both clinical groups with the high risk group showing a more positive correlation between these variables.

In the third hypothesis the relationship between adolescent egocentrism and social sensitivity variables was not found to be statistically stronger in the first episode group with similar correlations across the groups. However, more positive correlations were found between adolescent egocentrism and self-consciousness in the first episode group followed by the controls and then the high risk group. For interpersonal sensitivity, more positive correlations with adolescent egocentrism were found in the high risk group followed by the first episode group. Interestingly, no relationship was found between interpersonal sensitivity and adolescent egocentrism in the control group.

Hypothesis four was partially supported as adolescent egocentrism was found to differentially relate to shame, social anxiety and social comparison within the clinical groups. Within the first episode group, adolescent egocentrism correlated positively with only shame and social anxiety. In the high risk group relationships between adolescent egocentrism, shame and social comparison were found.

Mixed support was offered for hypothesis five. For total childhood trauma, greater levels of childhood trauma were observed in the high risk group in comparison to the control group. At the sub-scale level differences were found between the two clinical groups and the controls in emotional abuse and emotional neglect. In terms of attachment, differences were observed between the clinical and control groups but only for the dimensions of anxiety and closeness. The high risk group exhibited greater levels of attachment anxiety in comparison to both the first episode group and the controls and lower levels of the desire for closeness in comparison to the controls.

The differential relationships between adolescent egocentrism, childhood trauma and attachment dimensions within the clinical groups offers some support for hypothesis six. Here, positive relationships were found between adolescent egocentrism and emotional abuse in the first episode group and adolescent egocentrism and physical abuse the high risk group. A negative relationship was found between adolescent egocentrism and the closeness attachment dimension in the first episode group. In the high risk group, a positive relationship between adolescent egocentrism and attachment anxiety and a negative relationship between adolescent egocentrism and the dependency attachment dimension were found.

In terms of theory of mind, no differences between answers given on the False Belief task were detected between the clinical groups and healthy controls. In addition, the lack of a

relationship between adolescent egocentrism and false belief across and within the groups indicates that theory of mind processes may be considered separate to adolescent egocentrism processes and did not present a confound to this study and adds validity to the adolescent egocentrism findings.

8.4.1 Adolescent egocentrism, psychotic experiences and social sensitivity

The core prediction of this study that the clinical groups would show greater levels of adolescent egocentrism than the control group was unsupported. In comparison to the control groups and with reference to Harrop et al.'s (2001; 2003) theory, greater levels of adolescent egocentrism are expected in high risk groups and even greater levels in the first episode groups. The lack of difference between the levels of adolescent egocentrism reported by the clinical and control groups is in contrast to the findings of Fox (2007) in which individuals with psychosis scored higher than controls on a dimension of egocentric beliefs as measured by the Personal Uniqueness Scale. This suggests that as a construct adolescent egocentrism may not be entirely relevant to psychosis either relating very specifically or not at all. The data within this study does not therefore appear to support Harrop's theory of exaggerated adolescent egocentrism in psychosis whereby blocked adolescent egocentrism contributes to the persistence of psychotic symptoms. The lack of differences suggests that adolescent egocentrism processes may, in fact, have been resolved within the clinical groups and that individuals at high risk and first episode stages of psychosis are no different to healthy controls in their social understanding and self construction as expressed in adolescent egocentric cognitions.

However, the positive and strong correlations found between adolescent egocentrism and psychotic experience in the clinical groups suggests an on-going relationship. This finding

suggests that earlier disruptions to adolescent egocentrism processes through social and self-construction difficulties contribute to psychosis at the subclinical stage, not presently. This is consistent with findings of social and self-construction difficulties prior to onset and Harrop et al.'s theory (2001) that such difficulties may impact adolescent egocentrism processes. These results also echo the findings of the pilot study and study one which noted the positive and systematic relationships between adolescent egocentrism and psychotic-like experiences possibly due to the developing maturity of adolescent egocentrism. Taking these results together they highlight the difficulties individuals with psychosis may have had with adolescent social and identity development and the active influence of adolescent egocentrism within pathways to psychosis at subclinical, developmental stage. For instance, adolescent egocentrism may be affecting the pathway to psychosis, through, for example the persistence of psychotic-like experiences, but other factors intervene to mediate the final transition to psychosis. This agrees with van Os and colleagues (2009) who state that the persistence of psychotic-like experiences as a result of social risks are instrumental in leading to psychotic outcome.

The more positive correlation between adolescent egocentrism and psychotic experience in the high risk group is however interesting. Although it could be explained by the higher levels of psychotic experience reported in this group or the relative closer position of high risk groups along on the continuum of psychosis to subclinical levels in which adolescent egocentrism is influential, the association does suggest that earlier disruptions to adolescent egocentrism processes were influential in this group at a subclinical level. It may be for instance, due to the younger age of the high risk group that the high correlation seen in this sample (0.62) is indicative of a relatively recent process whereby egocentrism difficulties

elevated psychotic experience, but other factors then intervened following the resolution of adolescent egocentric thinking.

The suggestion that higher levels of social sensitivity should accompany higher levels of adolescent egocentrism was primarily undermined by the lack of any differences in adolescent egocentrism between the groups. Secondly, the pattern of social sensitivity behaviours suggests a different explanation. The pattern of differences in social sensitivity found across the groups demonstrated that higher levels of both self-consciousness and interpersonal sensitivity are a feature of the high risk group whereas levels of social sensitivity in the first episode group were comparable to the control groups. It was suggested in hypotheses one and three that increased levels of interpersonal sensitivity and self-consciousness mark exaggerated adolescent egocentrism and we would, therefore, given their clinical status, expect higher levels in the first episode group. However, this was not found and with greater levels of social sensitivity most apparent in the high risk group this suggests that such behaviours do not mark exaggerated adolescent egocentrism and may just be artefacts of either rising psychotic symptoms in this group, undifferentiated distress or other co-morbid developmental disorders within this group.

The positive relationships between social sensitivity and adolescent egocentrism across both the clinical and control groups calls for consideration of whether social sensitivity is involved in marking prior disruptions to adolescent egocentrism in the clinical groups. For instance, the relationship between adolescent egocentrism and self-consciousness generally revealed increasingly more positive correlations as predicted from control to clinical groups. This pattern suggests that self-consciousness may be indicating earlier disturbances in adolescent egocentrism in clinical groups. Alternatively, due to very similar correlations between adolescent egocentrism and self-consciousness observed in both the high risk and control

group and its association with typically developing adolescent egocentrism (Enright et al., 1980; Elkind, 1967; Fox et al., 2007) it could be that self-consciousness is just more sensitive to adolescent egocentrism processes whether in healthy or psychosis samples.

For interpersonal sensitivity, a more positive correlation was observed in the high risk group followed by the first episode group. With no relationship between adolescent egocentrism and interpersonal sensitivity in the control groups the suggestion is that interpersonal sensitivity behaviour is restricted to clinical groups and in particular high risk groups and may also mark out disturbed, prior adolescent egocentrism processes.

Overall then, the relationships found between adolescent egocentrism and social sensitivity suggest that self-consciousness and interpersonal sensitivity may be relating to earlier disruptions to adolescent egocentrism processes.

8.4.2 Childhood trauma

Higher levels of childhood trauma seen in the clinical groups in comparison to the control group, is an observation that is confirmed by a substantial literature regarding the links between psychotic outcome and aversive life events such as childhood trauma (Varese et al., 2012). The exposure to adverse events in development and their influence on psychotic processes is modelled by a mechanism referred to as sensitisation in which exposure to social risks interacting with genetic predispositions creates psychological and cognitive biases leading to increasing sensitivity to day to day social stressors and to the onset of symptoms (Collip et al., 2008). Such a mechanism is consistent with social and self-construction difficulties seen in psychosis as a result of exposure to such experiences (Finzi-Doltan et al., 2006; Garety et al., 2001).

Rather interestingly in this study, it was the high risk group that exhibited the highest levels of total childhood trauma as both the first episode and control groups had comparable levels. This goes against earlier findings of high levels of trauma in first episode groups (Spence et al., 2006; Varese, 2012). However, for the individual subscales of Emotional Abuse and Emotional Neglect on the Childhood Trauma Questionnaire the significantly higher levels reported in both the high risk and first episode groups supports previous research of emotional trauma in psychosis (Compton et al., 2004).

8.4.3 Attachment security

Relationships between the experiences of childhood trauma and attachment insecurity have been consistently found (Mickelson et al., 1997; Cassidy & Mohr, 2001). Unlike previous studies of first episode groups which found evidence of insecure attachment (Berry et al., 2008) the first episode group was comparable to the control group on the attachment dimensions. Instead, significantly higher levels of attachment anxiety and lower levels of the need for closeness were found in the high risk group in comparison to controls suggesting an avoidant attachment style within this group which corroborates earlier findings of such attachment styles in psychosis (Berry et al., 2008; Mickelson et al., 1997; Macbeth et al., 2008). An implication of this finding is that emotional trauma and an avoidant attachment style may be particularly instrumental in driving the level of psychotic experiences near to the transition point of a first episode of psychosis. To drive psychotic experiences to the level of a first episode however, other impacting factors as well as emotional trauma may be necessary. However, these results may be a reflection of the findings within the Berry et al. study (2008) that attachment ratings changed with changes in symptoms. In other words, the perhaps more acute symptoms experienced by the high risk group may have driven responses of a more insecure attachment style.

To summarise these findings, the higher levels of emotional trauma found in the clinical groups implies that environmental adversity of this kind is influential in the persistence of symptoms. The additional higher levels of attachment insecurity found in the high risk group agree with previous research findings in psychosis (Dozier, 1990), suggesting a lasting negative impact of childhood trauma on the individual and that emotional trauma and an avoidant attachment style may lead to the social and self-construction difficulties which are predictive of high risk status within the pathways to psychosis.

8.4.5 Adolescent egocentrism, childhood trauma and insecure attachment

The First Episode Group

In the first episode group, relationships within the data indicate that emotional abuse and a dismissive attachment style characterised by low levels of the closeness attachment dimensions, create earlier difficulties for adolescent egocentrism processes.

A possible interpretation of these results is that within the first episode group, the experience of emotional abuse and a more dismissive attachment style creates difficulties with social relationships and identity development which may have disrupted adolescent egocentrism processes. It may be that emotional abuse is particularly disruptive to adolescent egocentrism processes as verbal insults may have a more powerful psychological impact upon constructs of the self and others.

Whilst the significance of such aversive experiences may carry forward social and self-construction difficulties leading to the transition to psychosis as indicated by the higher reported levels of emotional abuse, the relationship with adolescent egocentrism suggests that difficulties with this process moderate this pathway, contributing to the persistence of psychotic-like experiences and catalysing symptoms of psychosis.

The fact that the relationship between emotional abuse and adolescent egocentrism was confined to the first episode group indicates that this particular combination of factors makes important contributions to the clinical transition to psychosis. This may have been due to the fact that emotional abuse occurred in this group simultaneously with adolescent egocentrism processes in early to mid adolescence.

The High Risk group

Within this group it appears that experiences of physical abuse and an avoidant attachment style characterised by high levels of attachment anxiety and low levels of the attachment dependency dimension, may be responsible for earlier difficulties with adolescent egocentrism processes. This is supported by research that has found a relationship between physical abuse history in childhood and poor social relationships with peers (Salzinger et al., 1993). It is also intuitive to conclude that such aversive and fear-provoking early social experiences and a desire to avoid interpersonal contact would not facilitate the establishment of social relationships in which the individual could learn about others and consolidate a self influencing the consolidation of adolescent egocentrism processes. Unlike the first episode group the reported levels of emotional abuse in this group failed to relate to adolescent egocentrism. This may have been because such aversive experiences happened more recently for this group and thus not as impingent upon adolescent egocentrism processes.

In particular, it appears that an avoidant attachment style, as seen in the higher levels of attachment anxiety reported within this group may influence social and self-construction in leading to a high risk psychosis status. However, similarly to the first episode group, the relationship between attachment anxiety and adolescent egocentrism suggests that again

difficulties with this process moderate this pathway affecting the persistence of psychotic-like experiences towards psychotic symptoms.

It is interesting to note that in both clinical groups variables in which no group differences were found, correlated with adolescent egocentrism such as the closeness attachment dimension in the first episode group and physical abuse and the dependency attachment dimension in the high risk group. Reasons for these relationships may be due to the influence of experiences similar to physical abuse and an insecure attachment on adolescent egocentrism processes or that these factors are important to adolescent egocentrism maturation but not necessarily symptom progression.

In light of these findings the impact of childhood trauma and insecure attachment on adolescent egocentrism which was found in the pilot study and study one to be associated with psychotic-like experiences, agrees with van Os et al.'s (2009) persistence hypothesis. The interaction of these variables in pathways to psychosis adds more detail to this hypothesis suggesting that difficulties with adolescent egocentrism as a result of social risks and their psychological impact underlies the persistence of psychotic experiences progressing pathways to psychotic symptoms which are crucially influenced by emotional trauma and attachment insecurity.

Taking the findings of both clinical groups therefore it appears that the role of adolescent egocentrism processes within pathways to psychosis is largely to do with the persistence of psychotic-like experiences. In terms of pathways to clinical psychosis this is mechanised by emotional trauma and attachment variables which is moderated by adolescent egocentrism. We may propose therefore that adolescent egocentrism is necessary but not sufficient to lead to the persistence of psychotic symptoms.

8.4.5 Shame, social anxiety and social comparison

The associations found between shame, social anxiety, perceptions of low social rank and adolescent egocentrism within the clinical groups illustrate further examples of how additional social sensitivity behaviour observed in psychosis may be related to earlier disruptions to adolescent egocentrism processes at the subclinical level.

Differential relationships were found across the clinical groups between adolescent egocentrism and the social sensitivity behaviours of shame, social anxiety and low social rank. This suggests that within the groups different social sensitivity behaviours are relevant to earlier disrupted adolescent egocentrism processes.

Shame

Previous research has found high levels of shame in those with psychosis (Miller et al., 2005) and has been suggested as a possible outcome of adolescent egocentrism (Lynd, 1961), with others suggesting that shame may also be an outcome of the social stigma associated with psychosis (Birchwood, 2003; Birchwood et al., 2006). The relationship between adolescent egocentrism and shame in both the first episode and high risk groups agrees with these previous findings and demonstrates how the focus on the self in earlier adolescent egocentrism processes and possible difficulties with this process may be marked by self-criticism and inadequacy in the eyes of others.

Social anxiety

The higher levels of social anxiety in the first episode group support existing research (Michail et al., 2009; Pollanti et al., 2004). The relationship found with adolescent egocentrism implies that social anxiety could be a marker of earlier disturbances to

egocentrism processes that is seen in first episode groups. Here, earlier difficulties with adolescent egocentrism such as establishing friendships with peers may have frustrated the consolidation of the Imaginary Audience component leading to a social anxiety from the mistaken imaginings that one is the focus of others' concerns.

Social Comparison

The relationship between adolescent egocentrism and low social rank in the high risk group was also seen in the control group. This suggests that social sensitivity behaviours which mark healthy adolescent egocentrism may mark disrupted adolescent egocentrism processes in high risk groups. The relationship between these variables can be explained with reference to the adolescent egocentrism framework underpinning social development and identity (Vartanian, 2000). For instance, within the control group the new interpersonal and self-construction demands of adolescence and young adulthood may mean that they feel an acute awareness of their social surroundings (Westernberg et al., 2004) which may foster temporary feelings of subordination and social inadequacy. Within the high risk group it may be that difficulties with adolescent egocentrism processes and new social demands also leads to feelings of subordination but in-line with findings in the literature, feelings of low social rank may also persist and feature as part of their psychotic symptoms (Birchwood et al., 2004).

These findings suggest that different socially sensitive behaviours may mark earlier adolescent egocentrism processes and accumulate, becoming more severe with different stages of psychosis. For instance it appears that within healthy stages low social rank is the only marker of adolescent egocentrism processes but within high risk groups both low social rank and shame relates to early adolescent egocentrism which is built upon by social anxiety behaviour in the first episode group. These additional social sensitivity behaviours may

therefore be representative of the difficulties the clinical groups may have had with adolescent egocentrism processes at an earlier stage. However, it is important to note that shame and low social rank are related to symptoms of psychosis (Birchwood et al., 2004; Birchwood, 2003) and as such maybe a result of these rather than similar adolescent egocentrism processes. In terms of social anxiety; a significant comorbidity in psychosis (Michail et al., 2009; Birchwood et al., 2006), relationships here may be more strongly suggestive that this social sensitivity behaviour is a marker of disturbed adolescent egocentrism processes in psychosis.

8.4.6 Alternative explanations

Psychotic experiences drive adolescent egocentrism

Due to the presence of distress (Mawson, Cohen & Berry, 2010) and the similarity between psychotic experiences and adolescent egocentrism already discussed it could be said that the experience of psychotic symptoms would lead to higher levels of adolescent egocentrism suggesting that the latter is not contributory to but consequential of psychosis. However, adolescent egocentrism scores cannot have been a consequence of psychotic symptoms as no systematic differences in adolescent egocentrism and psychotic experience were found across the clinical and control groups. Thus, it cannot be said that reports of adolescent egocentrism are an artefact of higher levels of psychotic experiences and that the relationship between these variables is a result of their similarities.

Ethnicity effects

Although not a central variable of the study it is important to note the possible effects of ethnicity differences across the groups. It may be that the different ethnic make-up of the control group against the more similar ethnicity groupings of the clinical groups may have been responsible for the non-significant differences between the levels of adolescent egocentrism reported between the groups. However, little research evidence exists to support this. There has been suggestion (Vartanian, 2000) within the literature of possible cultural effects on adolescent egocentrism processes in that eastern cultures may not have the same social cognitions or behaviours due to less of an emphasis on the self and more importance attached to being part of a collective community. However, as far as the author is aware no known research evidence or indeed arguments for ethnic differences in adolescent egocentrism processes within a culture exists. It also seems unlikely and presumptuous to stipulate that the proportions of ethnicity in the control group such as the larger proportion of Asian individuals would drive levels of adolescent egocentrism so that they are similar to that of individuals with a clinical diagnosis of psychosis. A more likely explanation is that individuals with psychosis present with developmentally normal levels of adolescent egocentrism.

8.4.7 Strengths and limitations

A key strength of this study was the inclusion of two clinical groups within increasing symptom severity to systematically test the hypothesis of exaggerated adolescent egocentrism. Although cross-sectional, this allowed for longitudinal inferences to be made about the experimental variables from high risk to first episode psychosis groups. Another strength was the relatively large sample sizes of the clinical groups in this study building upon Fox's

(2007) study who to date is the only other study to use psychosis samples to test exaggerated adolescent egocentrism. However, despite these strengths some limitations of the study need to be considered.

False Belief measurement reliability

Although the absence of differences between the clinical and control groups on false belief scores and no relationship found between adolescent egocentrism and theory of mind suggests that theory of mind is a separate social-cognitive processes, alternative interpretations can be given. For instance, a lack of any differences between the groups may be due to the fact that the false belief measure used was too basic. The false belief stories included only measured first-order false belief and although this more basic mentalizing ability has been found to be impaired in psychosis (Sprong et al., 2007) studies have also found that second-order rather than first-order false belief difficulties are more evident in psychosis (Pickup et al., 2001). Thus it may be that the use of a first-order false belief measure was insensitive to the particular theory of mind difficulties in psychosis. Alternatively the lack of differences may be due to the clinical status of the groups. Neither the high risk or the first episode group were experiencing an acute phase of psychosis which has been found to relate to theory of mind difficulties (Drury et al., 1998).

The lack of differences between the groups if caused by these scale and clinical status factors could have implications for the relationship between adolescent egocentrism and theory of mind and any conclusions drawn as they would be based on faulty evidence. To overcome this in future studies, the recruitment of clinical samples who are experiencing an acute psychotic phase may be more desirable as well as the use of second-order measures.

However, we cannot definitely determine whether such scale and clinical status factors would present confounds. It could be that theory of mind difficulties were present within the clinical groups and picked up by first-order measures but that such scales did not detect any *significant* differences between the clinical and control groups. This pattern of theory of mind scores then discriminated from adolescent egocentrism as seen in the lack of any relationships between these variables. Thus it is reasonable to assert with some confidence whilst at the same time being aware of the limitations, that theory of mind can be considered a separate social-cognitive process to adolescent egocentrism.

Sensitivity of scales

The absence of any differences between the clinical and control groups on adolescent egocentrism may be reflecting the concerns raised by Vartanian (2000; 2001) that such measurements do not accurately capture these social cognitions and behaviours. It may also be that the Adolescent Egocentrism Scale used in this study was not sensitive to responses in clinical groups. Alternative measures such as the New Imaginary Audience and New Personal Fable (Lapsley et al., 1989) or the Adolescent Invulnerability and Personal Uniqueness scales (Duggan, Lapsley & Norman, 2000) which include more items may have captured higher levels of adolescent egocentrism within the clinical groups. However, such measures do not have such an extensive evidence base (Vartanian et al., 1996) and have been found to show only acceptable levels of reliability (Fox, 2007). The Adolescent Egocentrism Scale has been used extensively in healthy populations showing good levels of reliability and validity and is sensitive to changes in this healthy process across the adolescent period (Enright et al., 1979; 1980). Due to the lack of an adolescent egocentrism measure designed for clinical samples which would prove challenging in terms of establishing a baseline in healthy samples for

comparison, it was appropriate to use this measure to explore the presentation of the same healthy process in clinical samples.

Group characteristics

The broad inclusion of individuals at high risk and first episode stages of psychosis was a result of the exploratory nature of this investigation and paucity of research on adolescent egocentrism and psychosis. Also in light of ethical considerations such as informed consent more 'recovered' individuals in the first episode group were recruited. However, the implications of wider inclusion criteria may have affected the results of this study.

For instance, due to the proximity of the high risk group to transitioning to psychosis this may have driven the higher reported levels of psychotic experience, self-consciousness and interpersonal sensitivity. It is also important to consider the heterogeneity of the high risk group. Much data has illustrated that Ultra-High risk groups have high levels of emotional dysregulation (Yung & McGorry, 1996) with high rates of co-morbid developmental disorders (McGorry, Yung & Phillips, 2003) with only a minority actually developing psychosis (Sprong et al., 2004; Yung et al., 2004). In particular Autism Spectrum Disorder which has been found to be co-morbid with psychosis (Stahlberg et al., 2004) is also characterised by social and communication difficulties (Lord et al., 2000; Wing, 1996). These additional confounds within the high risk group may have contributed to higher levels of psychotic experience and social sensitivity observed and may also be responsible for the presentation of more avoidant attachment styles. Alternatively it may have been that the high risk group in this study was a particularly heterogeneous group resulting in these findings. However, this can be confidently ruled out as other studies using ultra high risk groups have found similar profiles (Niendam et al., 2007).

The 'recovered' status of the first episode group may have accounted for the lack of any differences with the control group in the attachment dimensions. It may have been that as a result of therapy and support to establish social relationships and work, the resolution of past traumatic experiences may have taken place. Although relatively unchanged over the life-span, internal working models have been found to adapt to environmental changes such as more positive social relationships later in life so that previously insecure attachment styles learn to become more secure (Grich, 2002). However, the 'recovered' status of the first episode group should not be overstated as, they still exhibited higher levels of psychotic experience than controls and were at the time of data-collection service-users of the Early Intervention Service.

To ensure higher levels of experimental control and to build on the initial findings of this investigation future research of adolescent egocentrism processes in psychosis may seek to eliminate some of these extraneous variables, focusing instead on those high risk individuals who actually go on to develop psychosis and hospitalised first episode groups. This may assist a clearer understanding of the influences of adolescent egocentrism and how other variables may be impacting psychotic processes to lead to persistence.

In light of the relationships and differences between the high risk and first episode groups it would be important for future studies to investigate the transition period to psychosis. This would involve a longitudinal and systematic tracking of adolescent egocentrism, psychotic experience, social sensitivity and social risks and attachment during the adolescent and young adult period to understand their pathways, interactions and relationships with psychosis.

8.4.8 Conclusion

These findings offer a significant challenge to Harrop's (2001) theory: exaggerated adolescent egocentrism was not observed in the psychosis groups. However, the psychosis groups, but not the controls, continued to show an ongoing relationship between adolescent egocentrism and psychotic experiences illustrating the crucial role of adolescent development in psychosis pathways. It is proposed that earlier social and self-construction difficulties via childhood trauma and insecure attachment variables may lead to disturbances to adolescent egocentrism processes which then affect the likelihood of persistence of psychotic experience which moderates and catalyses pathways to psychosis. The contribution of childhood emotional trauma and insecure attachment styles are however more directly relevant and crucial to psychotic transition, perhaps via the ongoing sensitisation process described by Collip and colleagues (2008). Within the psychosis groups, the different links between adolescent egocentrism and forms of social sensitivity suggests that such behaviours may be marking out earlier developmental difficulties.

CHAPTER 9:

GENERAL DISCUSSION

9.1 Aims and hypotheses

The rationale for this thesis was to investigate whether factors relevant to the adolescent period were contributory to pathways to psychosis. This was inspired by findings that have consistently pointed to the emergence of psychosis around adolescence and observations of the developmental expression of subclinical psychotic experience during the teenage and young adult years (Verdoux, 1998; Cougnard et al., 2007; Collip et al., 2008). A strong indication of factors relevant to adolescent development that may be important within pathways to psychosis was given by research highlighting the social and self construction difficulties experienced and contributory to psychosis. Much research has investigated these points in isolation either within the psychosis or the adolescent literature (Fox, 2007) with little research existing that makes links between them. Such links were however pointed out by Harrop and Trower (2001) suggesting that difficulties with social and self-construction effecting psychological maturity block adolescent development exaggerating attachment and individuation drives allowing for the onset of psychosis.

Therefore an over-arching aim was to utilise the principles behind Harrop and Trower's (2001) theory of blocked adolescent development to explore the possibility of processes of adolescent development in psychosis. Supportive of social and self-construction and the strong similarities with psychotic symptoms in particular, the relationship between adolescent egocentrism and psychosis was investigated. This necessitated further examinations of associated social-sensitivity behaviours of adolescent egocentrism such as self-consciousness

found in adolescence and the psychotic equivalent of interpersonal sensitivity, shame, social comparison and social anxiety. The exploration of such was done with the idea in mind that they may mark out exaggerated adolescent egocentrism in psychosis. To address more completely the implications of a theory of exaggerated adolescent egocentrism in psychosis, differences between the levels of adolescent egocentrism and social sensitivity of both clinical and community samples were also explored.

It was therefore predicted that adolescent egocentrism would be related to psychotic experience at subclinical and clinical levels and show ever-more exaggerated levels from healthy to high risk to first episode psychosis. Secondly hypotheses stated that social sensitivity variables of self-consciousness and interpersonal sensitivity relating to adolescent egocentrism would also be seen at higher levels in psychosis samples with adolescent egocentrism also relating to other forms of social sensitivity previously observed in psychosis such as shame, social comparison and social anxiety. Finally, leading on from the theory that social and self-construction difficulties are responsible for blocks to adolescent development another intention of this thesis was to examine whether environmental risks and an insecure attachment impact maturation of adolescent egocentrism or directly lead to psychotic outcome. Thus hypotheses predicted that higher levels of childhood trauma and an insecure attachment will be seen in clinical as opposed to healthy control groups and that adolescent egocentrism would be related to such experiences and processes. Due to the similarities between adolescent egocentrism and theory of mind, care to disentangle these variables within the methodology of the studies and interpretations of the results was ensured.

9.2 Summary of results

In general the results of the first two studies supported the hypotheses however the results of the final study were less supportive adding qualifications to the theory exaggerated adolescent egocentrism. Following are brief summaries of the results of each study.

Pilot Study: Adolescent egocentrism and psychotic-like experiences in an adolescent and adult healthy sample

It was found that adolescent participants displayed higher levels of adolescent egocentrism and psychotic experiences compared to adult participants as predicted. For social sensitivity findings offered partial support for predictions as only levels of interpersonal sensitivity were found to be higher in the adolescent group in comparison to the adult group. No differences were found between the groups for self-consciousness. The relationships found between adolescent egocentrism and social sensitivity variables and adolescent egocentrism and psychotic experiences completely supported the experimental hypotheses.

Study one: Adolescent egocentrism and psychotic experience across the adolescent period

In line with the first hypothesis, differences were found in adolescent egocentrism across adolescence but these differences did not follow the pattern predicted across adolescence of a rise in early adolescence followed by a decline in mid and late adolescence. Higher levels of adolescent egocentrism were instead seen in mid-adolescence suggesting a clear mid-adolescent 'peak'. A similar pattern was revealed for psychotic experience, with significantly higher levels of psychotic experience in middle adolescence in comparison to the other time points. No differences were found between levels of social sensitivity across early, middle and

late adolescence contrary to predictions that higher levels would be seen in early adolescence in comparison to other time-points.

Strong relationships between adolescent egocentrism and psychotic experience across the adolescent age groups supported predictions and combined with the coincidence of peak scores in each of these variables during mid-adolescence to give convincing support of the proposed link between adolescent egocentrism and subclinical psychotic experience. Consistent with the hypothesis made, relationships between adolescent egocentrism and social sensitivity variables of self-consciousness and interpersonal sensitivity were found.

Finally, it was demonstrated that theory of mind was a separate construct to adolescent egocentrism as no systematic differences were found in measures of False Belief alongside high and low scores of adolescent egocentrism.

Study two: Adolescent egocentrism and psychosis: an investigation with clinical groups

The central hypothesis predicting higher levels of adolescent egocentrism in clinical groups was not supported as no differences were found across the groups. Differences were however found for social sensitivity variables: self-consciousness and interpersonal sensitivity with the clinical groups, especially the high risk group.

Support was given to the hypothesised relationship between adolescent egocentrism and psychotic-like experiences but this was limited to the clinical groups with the high risk group showing more positive correlations between adolescent egocentrism and psychotic experience.

For the hypothesised relationship between adolescent egocentrism and social sensitivity this was not found to be statistically stronger in the first episode group, with similar correlations

across the groups. However, more positive correlations were found between adolescent egocentrism and self-consciousness in the first episode group followed by the controls and then the high risk group. For interpersonal sensitivity, more positive correlations with adolescent egocentrism were found in the high risk group followed by the first episode group. Interestingly, no relationship was found between interpersonal sensitivity and adolescent egocentrism in the control group.

Adolescent egocentrism was found to differentially relate to shame, social anxiety and social comparison within the clinical groups offering partial support for the hypothesised relationships between adolescent egocentrism and all of these social sensitivity behaviours in psychosis. For instance, adolescent egocentrism correlated positively with only shame and social anxiety within the first episode group whereas in the high risk group relationships between adolescent egocentrism, shame and social comparison were found.

For social risks, predictions of higher levels of childhood trauma and attachment insecurity in the clinical groups were partially supported. In terms of childhood trauma overall differences were only seen between the high-risk and control groups. At subscale level however this difference was limited to emotional abuse and emotional neglect with both high-risk and first episode groups reporting higher levels than controls. For attachment, only the dimensions of attachment anxiety and need for closeness showed differences between the groups with the high risk group exhibiting higher levels of attachment anxiety than both the controls and first episode group and lower levels of the need for closeness than controls.

In the first episode group a positive relationship was found between adolescent egocentrism and emotional abuse and a negative relationship between adolescent egocentrism and the need for closeness attachment dimension. In the high risk group a positive relationship was found

between adolescent egocentrism and physical abuse and between adolescent egocentrism and attachment anxiety. A negative relationship between adolescent egocentrism and the dependency attachment dimension was found.

Finally, theory of mind was again found to discriminate from adolescent egocentrism as no relationships were found between these variables or differences between the groups on false belief measurements.

9.3 A theory of exaggerated adolescent egocentrism in psychosis

The results of the three studies offer some interesting qualifications to Harrop's theory of exaggerated adolescent egocentrism as a result of blocks to adolescent development. The positive and systematic relationships found between adolescent egocentrism and psychotic-like experiences in healthy adolescents within the pilot and school study offer strong suggestions that adolescent egocentrism is influential at subclinical levels of psychosis and ultimately within pathways to psychosis. These results were particularly encouraging in light of the fact that they were, to the author's knowledge the first and more explicit indication of adolescent egocentrism cognitions relating to psychotic-like experiences in community samples as whilst Fox's (2007) work looked at Personal Fable dimensions these studies built on this to also include the Imaginary Audience and social sensitivity. However, the absence of any differences found between the levels of adolescent egocentrism reported in the clinical and control groups in the final study demonstrates that adolescent egocentrism does not become exaggerated and contribute to clinical psychosis. Individuals with psychosis therefore, present developmentally normal levels of adolescent egocentrism. Although, unlike the control groups, in the clinical groups an ongoing relationship between adolescent egocentrism and psychotic experiences was observed. These findings suggest that at the

subclinical stage, difficulties maturing through adolescent egocentrism processes were present within the clinical groups contributing at a developmental level perhaps through the persistence of psychotic-like experiences, to present symptoms of psychosis. Thus within pathways to psychosis it is not *exaggerations* but *disruptions* of earlier adolescent egocentrism processes that are suggested to be contributory to psychosis. This still accommodates the suggestions within Harrop et al.'s (2001) theory that social and self-construction difficulties impact adolescent egocentrism processes and would also accommodate the similarities they pointed out between the healthy behavioural manifestations of the adolescent egocentrism constructs and symptoms of psychosis. For instance, it may be that difficulties maturing through the Imaginary Audience leave an individual more prone to relying on the immature and self-focused social-cognitions which may feed into paranoid or persecutory delusions.

The suggestion that social sensitivity is a developmental marker of adolescent egocentrism processes was supported by the strong relationships observed between these variables in the pilot study and study one. Also, the higher levels of interpersonal sensitivity observed in the adolescent group of the pilot study is encouraging that social sensitivity behaviour typically found in psychosis relates to adolescent egocentrism and that such processes may influence a wider spectrum of behaviours than self-consciousness in healthy teenagers. However, it was also found in these studies that both social sensitivity variables exhibited different patterns to adolescent egocentrism across adolescence suggesting that social sensitivity cannot be used as a reliable marker of adolescent egocentrism. This has been previously pointed out by research (Enright et al., 1989; Rankin et al., 2004) making it important to bear in mind that relationships between social sensitivity and adolescent egocentrism do not necessarily imply that because an individual is experiencing adolescent egocentrism that they will also be

experiencing social sensitivity. From these results it can only be speculated that they are more likely to experience social sensitivity. The different routes of adolescent egocentrism and social sensitivity may be due to the broad application of feeling self-conscious or interpersonally sensitive which may be relevant to many social and life experiences not just adolescent egocentrism.

Building on these relationships found in the pilot study and study one, the hypothesis followed that exaggerated adolescent egocentrism would be marked by higher levels of self consciousness in clinical groups and may also relate to other forms of social sensitivity previously observed in psychosis such as interpersonal sensitivity, shame, social rank and social anxiety. Indeed, heightened levels of social sensitivity were observed in the clinical groups, particularly the high risk group. The more positive relationships between adolescent egocentrism and self-consciousness and interpersonal sensitivity seen in the clinical groups as opposed to the control groups suggests that socially sensitive behaviours may be relating in specific ways to earlier disrupted adolescent egocentrism processes in psychosis. Intriguingly, the differential relationships between adolescent egocentrism, shame, social anxiety and social comparison between the clinical and control groups may be illustrating more specific social sensitivity outcomes of earlier disruptions to adolescent egocentrism dependent upon the stage of clinical risk for psychosis. They may also be illustrating a continuum of severity in social sensitivity across the healthy and clinical groups as the reported levels of low social comparison in the control group are built upon with low social comparison and shame scores in the high risk group and then shame and social anxiety in the first episode group. However the absence of any differences in the levels of adolescent egocentrism between the groups falsified attempts to connect heightened social sensitivity findings in the clinical groups with heightened adolescent egocentrism. Instead what might have been driving heightened levels

of social sensitivity in psychosis may have been the psychotic symptoms themselves and symptom-related distress (Mawson et al., 2010; Startup, Freeman & Garety, 2007). Research has also pointed out that the social stigma of psychosis itself can make an individual feel exposed and sensitive in the presence of others (Birchwood et al., 2006; Lee, Chiu & Kleinman, 2005).

9.3.1 Childhood trauma and attachment

The higher levels of emotional trauma reported by both clinical groups suggest that these variables rather than other examples of childhood trauma are contributory to persistence of psychotic symptoms. These results have been found elsewhere in the research (Compton et al., 2004; Ucok & Bikmaz, 2007). The attachment results however suggest that this variable is more influential in leading to a high risk status for psychosis. In particular it appears that insecure attachment styles characterised by higher levels of anxiety and a lower desire for closeness are contributory to a high risk status for psychosis. It may be that an insecure internal working model perhaps as a result of earlier childhood experiences of emotional abuse and neglect in high risk groups is further impacting one's social functioning and concept of the self to contribute to more raised levels of psychotic experience.

9.3.2 Relationships between adolescent egocentrism, childhood trauma and insecure attachment

The differential relationships shared between the above variables, at different stages of psychosis suggests three things. Firstly, that childhood trauma and attachment may through social and self-construction difficulties, have a disruptive influence on processes of adolescent egocentrism. Secondly that difficulties with adolescent egocentrism processes moderate childhood trauma and attachment variables in pathways to psychosis through the persistence

of psychotic-like experiences. Thirdly, that different childhood trauma and attachment dimensions are important to high risk and first episode psychosis status.

As stated in study two, the relationships between childhood trauma, insecure attachment and adolescent egocentrism supports and adds to van Os et al.'s (2009) persistence hypothesis, identifying adolescent egocentrism as a developmental factor impacted by social risks which moderates their relationship with symptom onset through its catalysing influence upon subclinical psychotic-like experiences. These relationships also agree with van Os et al.'s (2010) other assertions that early adversity impact the development of the 'social brain' (pg. 203) during adolescence.

9.4 Theory of mind

In light of the findings of study one and two it can be concluded that theory of mind processes are separate to adolescent egocentrism. Although it was considered in the previous study that the inclusion of a basic false belief scale to measure theory of mind may not have accurately detected difficulties with theory of mind this cannot be definitively proved as first order false belief difficulties have been observed in psychosis. This adds validity to the data and interpretation of the results but also suggests the use of more sophisticated theory of mind measurements in future research.

9.5 Summary

Overall it can be said that adolescent egocentrism makes significant contributions to subclinical levels of psychotic-like experiences and that this thesis is the first to demonstrate this. In terms of clinical psychosis, these findings demonstrate how emotional trauma and insecure attachment supported by earlier research are significant. Such variables, which

impact adolescent egocentrism are then moderated by it in pathways to psychosis illustrating the importance of adolescent development in psychosis. Thus it is earlier difficulties with rather than exaggerations of adolescent egocentrism processes and additional emotional trauma and attachment insecurity variables that are contributory to psychosis. Although caution is recommended, social sensitivity may be an indicator of disrupted adolescent egocentrism in psychosis.

9.6 Critique of the main findings

To highlight the contribution of a number of variables within pathways to psychosis acknowledges the complexity of this psychiatric disorder. A combination of factors analysis seems appropriate in light of the different pathways to psychosis identified in the literature. Although, this does not make psychosis any dissimilar to other psychiatric outcomes and as a result one has to consider whether this is useful information in terms of understanding specific pathways and mechanisms of psychosis as opposed to, for instance bipolar disorder which also has multiple contributory variables from neurobiological (Soares, 2003) to genetic (Lichtenstein et al., 2009) to environmental (Agid et al., 1999). However, the contribution of other variables to psychosis such as an insecure attachment should be viewed cautiously. As previously found in research attachment style may not be causal to outcomes of psychosis in light of findings of systematic changes in attachment dimensions with symptoms (Berry et al., 2008). Although this may be reflecting the effects of self-report it warrants further research attention of the relative contributions of attachment as opposed to other factors known to contribute to psychosis such as childhood trauma.

The inclusion of adolescent egocentrism within a universal and comprehensive theory of psychosis also needs consideration due to its potential variability. For instance, Vartanian and

associates (2000) highlight problems of incongruence between the traditional conceptualisation of adolescent egocentrism as a cognitive distortion which dominates research, and the subsequent measurement and actual adolescent behaviour observed. Vartanian (2000; Vartanian et al., 1996) also acknowledged the differing definitions other research groups have developed of adolescent egocentrism, the conceptual confusions this may cause and the inadequate levels of validity of measurements, particularly for the Imaginary Audience. If there are fundamental issues relating to definition and measurement of adolescent egocentrism this may threaten the accurate identification and understanding of such processes within pathways to psychosis.

Vartanian (2000; 2001) also suggests that adolescent egocentrism may be more multidimensional than first thought necessitating a broader conceptualisation of the Imaginary Audience and several Personal Fable components (Aalsma et al., 2006). Supportive of social and self-development Vartanian et al. (1996) also emphasises that adolescent egocentrism is responsive to the social environment with different social experiences underlying individual differences in the engagement of the Imaginary Audience and Personal Fable ideations. For instance, peer group influences may drive more self-critical Imaginary Audience cognitions for one individual but more self-admiring Imaginary Audience cognitions for another. Alternatively a supportive social environment may encourage higher Personal Fable cognitions as the individual's sense of self importance and omnipotence boosted (Vartanian et al., 1997). Gender differences are another example of individual differences in adolescent egocentrism reflecting perhaps, the different social environments and socialisation pathways of males and females (Galanaki, 2012). Following these individual differences in healthy samples in psychosis, difficulties with adolescent egocentrism may be dependent upon the social environment that contextualises the individual. Disrupted adolescent egocentrism in

one individual may look very different to another. For instance, in psychosis it may be that a supportive peer group in adolescence leads to particular difficulties with the Personal Fable as this cognition is more frequently engaged but is not able to be consolidated due to social and self-construction difficulties caused by previous traumas. It may therefore be advisable for future research to employ qualitative measurements that are more exploratory of the social context and gender differences to consider a number of difficulties with adolescent egocentrism processes in pathways to psychosis.

Vartanian (2000) has also highlighted cross-cultural factors when considering adolescent egocentrism. For instance, it may be that in collective cultures, adolescent egocentrism may not be as relevant to social development. It has been argued that within Chinese culture social development does not follow the same self-focusing and separation-individuation processes as Western cultures, placing more emphasis upon community rather than individual worth and autonomy (Lam, 1997). In this sense adolescent development is more contextualised within the mastery of social relationships in which an individual's sense of self is more intrinsically embedded. This raises important questions for the concept of adolescent egocentrism as just a product of Western society's knowledge of adolescent behaviour. If this is the case this would have implications for the use of adolescent egocentrism within a universal theory of psychosis.

9.7 Further research

Following the relationships found within this thesis between adolescent egocentrism, childhood trauma, insecure attachment and psychosis it would be interesting to track these within a large scale study and longitudinally from childhood to early adulthood to clarify the role of these variables within psychosis. Alternatively, a longitudinal investigation of

adolescent egocentrism processes in high risk groups against matched controls may yield a greater understanding of such processes in terms of the duration of adolescent egocentric thought and behaviour and possible difficulties and individual differences.

Also, in light of the powerful influences of the social environment on adolescent egocentrism (Vartanina et al., 1996; Vartanian, 1997) and the changing context in which social interaction takes place due to the modern electronic era consisting of emails, forums and short message services reducing the diversity of socialisation experiences, it would be interesting to see whether this would be one way in which difficulties with adolescent egocentrism processes may arise in pathways to psychosis. One way of testing this empirically is to look at the effects of social media on adolescent egocentrism and their relationship with prevalence rates in psychosis longitudinally. It may be that adolescent egocentrism processes can adapt to these different forms of social exchanges so that an understanding of the self and others still matures. However, by only conversing via emails rather than face to face in which more instant social-emotional feedback is received, it is possible that the understanding of others becomes far more within the imaginings of the adolescent. However, it could be that the more anonymous nature of emails may mean that the adolescent still learns about others through online socialisation without the 'on stage' (Vartanian et al., 1996, pg. 175) feelings that are part of the Imaginary Audience, easing the consolidation of this process. Alternatively, by choosing when and with whom they will converse with via electronic media this could foster a more acute self-focus and sense of self importance than originally anticipated of Personal Fable cognitions precipitating a longer developmental trajectory for adolescent egocentrism processes.

9.8 Limitations of the findings

Although there were a number of strengths within the studies of this thesis there were a few limitations that warrant consideration.

By employing a cross-sectional design within the studies no claims can be made about the causal nature of the relationships found between the experimental variables and psychosis. Thus it cannot be said conclusively that difficulties with adolescent egocentrism are causal or contributes to psychotic outcome and the same can be said for emotional trauma and attachment insecurity. However, research has suggested the causal role of emotional trauma (Whitfield et al., 2005; Holowka et al., 2003) and the influences of insecurity of attachment in psychosis (Berry et al., 2008; Macbeth et al., 2008). In addition, prospective and causal inferences were enabled by the design of the school study and to a degree the final, clinical study as ages across the adolescent period and different stages of psychosis were included. Also, the prospective pattern of adolescent egocentrism processes rising in early to mid-adolescence and declining into later stages implied that these processes would be occurring either simultaneously with or before the onset of psychotic symptoms in adolescence suggesting its contributory influence within psychosis pathways.

The heterogeneity of the high risk group and the 'recovered' status of the first episode group was also problematic. Such extraneous variables may have impacted some of the findings such as the absence of attachment insecurity in the first episode group as therapeutic intervention and a reduction in symptoms may have influenced their responses to the questionnaires. However, this seems unlikely seeing as attachment is a relatively fixed, lifetime, cognitive-behavioural variable from infancy (Waters et al., 2000). In terms of the high risk group individuals were included with differential co-morbidities and

undifferentiated distress which again may have influenced their responses but also made it difficult to know whether adolescent egocentrism, social risks and attachment insecurity are influential in pathways to psychosis and not other disorders. Although, psychosis was their main diagnosis meeting the relevant criteria and receiving care through the Early Detection and Intervention Team, the inclusion of another psychiatric group similar sharing the co-morbid disorders found in the high risk group would have added more control.

Finally, in light of the gender differences previously found in the adolescent egocentrism literature (Elkind et al., 1979; Hudson et al., 1986) it may have been both desirable and interesting to have looked at the effects of gender in the healthy and clinical groups. For instance, as females tend to report higher levels of adolescent egocentrism the higher proportion of female participants in pilot study and study one may have driven the higher levels of adolescent egocentrism reported in the adolescent groups and during mid-adolescence. Conversely in the clinical study the smaller number of females may have worked to reduce the levels of adolescent egocentrism contributing to the lack of differences between the control and clinical groups. However, the gender split in the clinical study was fairly equal with fewer females in all of the clinical and control groups therefore making it unlikely that gender effects accounted for this result. In addition Galanaki (2012) found that males reported higher levels of adolescent egocentrism than females suggesting that gender differences may not be a robust finding and that individual differences in adolescent egocentrism may be more strongly determined by environmental factors.

9.9 Theoretical implications

Harrop et al.'s (2001) theoretical position and findings that psychological development during adolescence in attaching to peers and individuating away from parents relates to transient psychotic-like experiences in adolescence was strengthened by the pilot study and study one findings. However, in terms of clinical psychosis, the results of this thesis qualify Harrop's theoretical assertions of exaggerated adolescent egocentrism in psychosis suggesting instead that it is earlier difficulties with adolescent egocentrism which moderate emotional trauma and insecure attachment in pathways to psychosis. Although these findings offer adjustments to Harrop's theory they still highlight difficulties with social and self-construction, the role of developmental processes within psychosis and the importance of the adolescent period which was central to Harrop's position.

In addition the significance of emotional trauma and attachment insecurity to psychosis is also congruent with other work by Harrop, Trower and Mitchell (1996) which highlights the interdependent presence of other factors within psychosis. In particular, they suggest that for factors to be contributory to psychosis they should precede onset and not merely describe psychotic experiences and the central role that may be played by psychological factors in the development of symptoms. The early experiences of trauma and insecure attachment found within the clinical groups and suggestions that they impinge upon the psychological maturation adolescent egocentrism which moderate their contributions to psychotic symptoms reflect their position.

The relationship between trauma, adolescent egocentrism and the contributions they make to psychosis offers adolescent egocentrism processes as a possible mediator of trauma and symptom onset highlighted by cognitive models (Garety et al., 2001; Bentall et al., 1994). For

instance, the effect of trauma on the individual producing cognitive biases of the self and others may be mediated by or even reflected in difficulties with adolescent egocentrism which then catalyses symptom onset.

In addition, these relationships are consistent with van Os et al.'s persistence theory (2009). As suggested in this theory, exposure to environmental risks impacts the developmental expression of subclinical psychotic experiences to create persistence of symptoms contributing to the onset of psychosis. The higher levels of emotional trauma and attachment insecurity within the clinical groups agree with this hypothesis. However, further than this, the relationship found between these environmental factors and adolescent egocentrism gives an indication of the possible mechanisms that may be involved in the persistence of psychotic-like experiences. As adolescent egocentrism processes are related to subclinical psychotic-like experiences, through interactions with social risks and an insecure attachment they may provide a catalysing effect on symptom progression.

Finally, this thesis is supportive of continuum models in psychosis. The suggestion of such models is that the experiences of psychiatric populations are not qualitatively different to those within the healthy community (van Os et al., 1999) that they are grounded within healthy development. This is most clearly seen in the progression from transient psychotic-like experiences in adolescence to the clinical symptoms of psychosis investigated in this thesis and the contributions adolescent egocentrism makes to both these subclinical experiences and clinical symptoms of psychosis.

9.10 Clinical implications

In terms of the clinical implications of this thesis the findings add to the role of early intervention approaches. For instance, current Early Intervention services in psychosis support individuals soon after a first episode of psychosis through therapeutic means. Therapy could incorporate an exploration of possible trauma experiences and attachment style on adolescent egocentrism processes. To understand the particular difficulties with adolescent processes experienced by the individual both quantitative and qualitative measures could be employed. This information could then be used to tailor therapeutic work and occupational support in which the resolution and practice of social skills (Fox, 2007) may provide access to their social environment, an understanding of others and progression towards a more secure sense of identity (Enright et al., 1983).

Finally, this thesis also highlights the need for even earlier detection approaches which deliver targeted, clinical and multi-agency support for young adolescents with emerging adolescent egocentric thought particularly for those at risk of developing psychosis and have a history of childhood trauma and insecure attachment. Youth mental health services, family support workers, educational psychologists and secondary schools could collaborate, support and monitor social development outcomes of teenagers and the maturation of adolescent egocentrism processes with a view to achieving healthy emotional wellbeing.

9.7 Conclusion

In conclusion, adolescent egocentrism makes significant contributions to subclinical levels of psychotic-like experiences. At the level of clinical psychosis, emotional trauma and insecure attachment styles provide more significant contributions. Disruptions to earlier adolescent egocentrism processes within clinical groups may have been caused by emotional trauma and attachment insecurity. Suggestions are made that these variables are moderated by adolescent egocentrism processes which through the persistence of psychotic-like experiences, catalyses the progression to psychotic symptoms. Finally, socially sensitive behaviour in a variety of forms may be acting as markers of earlier disruptions to adolescent egocentrism within different stages of psychosis.

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List of Appendices

Psychology Department,
University of Birmingham,
Edgbaston,
Birmingham,
B15 2TT.

Dear parent/guardian,

Study Title: Healthy socio-developmental processes and emotional well-being.

Your son/daughter is invited to take part in a study at ------ school between June and October, 2009 by a PhD student from Birmingham University. The study aims at investigating healthy factors and emotional well-being. The study itself will take between 45 and 60 minutes to complete and consists of several questionnaires which ask about relationships, thoughts, emotions and experiences. Some children may be asked to take part in a follow-up which includes a brief comprehension-based task. The answers your child will give will be kept confidential. Although the questionnaires contain topics of an everyday nature, some of the questions include more sensitive issues relating to negative thinking and may be distressing, particularly for children with pre-existing emotional or mental health difficulties. These questionnaires have been used successfully in population studies involving many thousands of young people. On the whole, children do find them interesting; however, due to the slight chance that some children find the procedure uncomfortable the child will be asked if they wish to withdraw from the session. The questionnaires will be distributed during school-time. Your child will be given information about the study and opportunities to discuss and ask questions before and after completing the questionnaires.

Your child will also be given a consent form and a discussion with the researcher to confirm that they are happy to participate in the study. If your child is 18 years of age they may give personal consent. If your child is below the age of 18, parental consent is required. If you **do not** wish your son/daughter to take part in the study please tear off the slip below and return to the school office within two weeks of this letter. You will also be invited to attend a question and answer meeting at the school with the researcher to raise any questions you may have prior to the study. Please note that you or your child are free to withdraw without reason from the study after providing consent and at any point before, during or after

the study has taken place. To do this and if you or your child have any questions at any point, please contact the school office or the researcher using the contact details below.

When the study is complete, you will be invited to attend a short assembly in which pupils and teachers will also be invited. The assembly will be delivered by the researcher and a member of a Health team and will cover information about the study and emotional well-being.

I look forward to hearing from you.

Yours faithfully

Aimee Harvey (BSc Dunelm, PGCE)

PhD Researcher

University of Birmingham
Edgbaston
Birmingham
B15 2TT

PLEASE
TEAR:_____

I **do not** wish for my son/daughter_____(name) to take part in the study:

'Healthy socio-developmental processes and emotional well-being.'

Signature_____(parent/guardian)

Date_____

Participant Information Sheet

Research title: A pilot investigation of the relationship between adolescent egocentrism and psychosis in non-clinical adolescent and adult groups.

You are invited to participate in the above study, the purpose of which is to investigate whether there is a relationship between egocentric thought (social sensitivity) in adolescence and psychotic experiences (delusions and hallucinations) in social environments as well as to account for common findings of the links between emotion, attachment and psychosis. By investigating this relationship this study hopes to determine appropriate measurements of adolescent egocentric thought to use in later investigations of the relationship explained above. The final aim of this investigation is to embed the development of psychosis in normal adolescent egocentric development.

You have been recruited for this study by signing up for it through the Research Participation Scheme. You will be awarded the credits advertised as compensation for your time. However, you are entitled to exercise your right of withdrawal at any point before, during, or after the study without giving reason to the investigator.

This study requires that you independently answer questions from nine questionnaires which should take you no more than an hour to complete. The questionnaires will ask about everyday experiences, emotions and thoughts. The questions require tick responses and some will prompt for further tick response answers. Please try not to think too much about your answers. Try to be as honest as you can throughout all the measures and try not to let your responses to one set of questions influence your responses to others. There are no right or wrong answers.

The data you give will be treated confidentially. You will be given a unique participant number that relates to your data. In the event that you wish to withdraw your data you may contact the investigator using the details below quoting your participant number.

Finally, the benefits of this study are three-fold. Firstly, if a relationship is found it will add strength to the hypothesised links between egocentric thought in adolescence and psychotic experience. This will allow for further investigations into psychotic experience in social contexts and the influences of egocentrism. Finally, on a broader level, the identification of relevant and important factors to the development of psychotic experience is useful to early intervention services, the identification of psychotic onset and cognitive behavioural therapies.

Participant Consent Form

Study title: A pilot investigation of the relationship between adolescent egocentrism and psychosis in non-clinical adolescent and adult groups.

Please Initial box

1. I confirm that I have read and understood the information sheet dated February 2009 for the above study and have had the opportunity to ask questions.

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason.

3. I agree to take part in the above experiment (Investigation of the relationship between adolescent egocentrism and psychosis in non-clinical adolescent and adult groups)

4. I would like a summary of the research findings at the end of the project.

Name of participant   **Date**
Signature

……………………………   ……………….…………   ……..……...…………

Researcher   **Date**
Signature

Aimee Harvey

……………………………   ……………….…………   ……..……...……………

Please tick:

Gender:

Male ☐   **Female** ☐

Age:

18 – 19 years of age ☐   **Over the age of 19 years** ☐

UNIVERSITY OF BIRMINGHAM

Participant debriefing Sheet

Research title: A pilot investigation of the relationship between adolescent egocentrism and psychosis in non-clinical adolescent and adult groups.

Purpose:

The purpose of the study you have just participated in was to investigate the relationship between adolescent egocentrism and psychotic experience within an interpersonal context as well as to account for common findings of the links between affect, attachment and psychosis. By investigating this relationship this study hoped to determine appropriate measurements of adolescent egocentric thought to use in later investigations of the relationship between adolescent egocentric thought and psychotic experience in interpersonal contexts. The final aim of this investigation was to embed the development of psychosis in normal adolescent egocentric development.

Background to the study:

It is intuitive to assert that egocentric thought as a normal maturational change in adolescence which has been found to make adolescents sensitive or vulnerable to psychotic experiences due to neurological changes at this time (Spauwen, 2003) could contribute towards psychotic outcomes within a social context. They are both similar concepts. It consists of the Imaginary Audience and the Personal Fable (Elkind, 1967), both of which emulate psychotic experiences and symptoms (Conger, 1975) and are socially interpersonal constructs. For instance, in terms of the Imaginary Audience, adolescents typically misattribute their own perspectives, thoughts and opinions for those of others (Conger, 1975) and believe in the uniqueness of their own feelings and situations as seen in the Personal Fable. It is important therefore to identify the presence of such sensitive self-other (interpersonal) thought in adolescent egocentrism and ascertain whether this has some part to play in the development of psychosis and psychotic experiences in interpersonal contexts.

In addition, attachment and depression (affect) and any relationships to the expression or development of psychosis are important considerations. The relationship between both factors to the onset and presence of psychosis have been found in previous literature (Berry, Barrowclough & Wearden, 2008 and Verdoux, van Os, Maurice-Tison, Gay, Salamon & Bourgeois, 1999) indicating their importance in psychotic processes. In addition, attachment as a psychological construct is to do with the perceived quality of relationships based on ideas about the self and others. The interpersonal element of attachment indicates its possible relevance to psychotic experience to social stimuli. Depression highlights a permeation of low-mood and thinking about the self, world and others. Again, this is interpersonal and dove-tails with the research aims. As depression often co-occurs with psychosis and indeed makes up much of the symptoms of psychoses (Chadwick & Birchwood, 1994) it is important to consider and control for its effects.

If you would like to receive further information about this study or to obtain a summary of the results please see the contact details below.

Thank you for your time and participation.

Researcher contact details:

Aimee Harvey

School of Psychology
University of Birmingham
Edgbaston
Birmingham
B15 2TT
UK

Sources of support:

Psychosis:

www.wheres-your-head-at.com

Depression:

http://www.depressionalliance.org/

www.Samaritans.org

Birmingham and Solihull Mental Health Trust:

http://www.bsmht.nhs.uk/patient&carer/depression.htm

CAMHS (Child and Adolescent Mental Health Services):

http://www.bch.org.uk/departments/camhs.html#4

AES

The following questionnaire concerns your opinions about a variety of everyday experiences. Please read each statement and rate it in terms of its importance for you personally.

	No importance	Little importance	Some importance	Much importance	Great importance
1) Becoming very good at being able to think through my own thoughts.	☐	☐	☐	☐	☐
2) When walking in late to a group meeting, trying not to distract everyone's attention.	☐	☐	☐	☐	☐
3) Accepting the fact that others don't know what it's like being me.	☐	☐	☐	☐	☐
4) Getting other people to better understand why I do things the way I do.	☐	☐	☐	☐	☐
5) Thinking about my own feelings.	☐	☐	☐	☐	☐
6) Trying to figure out how other people will react to my accomplishments and failures.	☐	☐	☐	☐	☐
7) Being able to day dream about great successes and thinking of other people's reactions.	☐	☐	☐	☐	☐
8) Becoming very good at knowing what others are thinking of me.	☐	☐	☐	☐	☐

	No importance	Little importance	Some importance	Much importance	Great importance
9) Explaining my unique feelings and viewpoints to others so they can get some idea about what I am like.	☐	☐	☐	☐	☐
10) Knowing my own thoughts and feelings.	☐	☐	☐	☐	☐
11) Being able to think about having a lot of money someday and how people will admire that.	☐	☐	☐	☐	☐
12) Trying to get other people to know what it is like being me.	☐	☐	☐	☐	☐
13) Thinking about myself.	☐	☐	☐	☐	☐
14) Trying and being able to figure out if two people are talking about me when they are looking my way.	☐	☐	☐	☐	☐
15) Coming to accept that no one will ever really understand me.	☐	☐	☐	☐	☐

SCSR

Please answer the following questions by indicating how much each statement is like you by using the following scale. Answer all the questions by ticking the appropriate box stating that it's 'not like me at all,' 'somewhat like me,' 'a little like me' or 'not like me at all.'

Please be as honest as you can throughout, and try not to let your responses to one question influence your responses to other questions. There are no right or wrong answers.

	Not like me at all.	A little like me	Somewhat like me.	A lot like me
1) I'm always trying to figure myself out				
2) I'm concerned about my style of doing things				
3) I think about myself a lot				
4) I care a lot about how I present myself to others				
5) I often daydream about myself				
6) I never take a hard look at myself				
7) I am self-conscious about the way I look				

	Not like me at all.	A little like me	Somewhat like me.	A lot like me
8) I generally pay attention to my inner feelings				
9) I usually worry about making a good impression				
10) I'm constantly thinking about my reasons for doing things				
11) Before I leave my house, I check how I look				
12) I sometimes step back (in my mind) in order to examine myself from a distance				
13) I'm concerned about what other people think of me				
14) I'm quick to notice changes in my mood				
15) I'm usually aware of my appearance				
16) I know the way my mind works when I work through a problem				

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IPSS

Instructions

A number of statements are listed below which relate to how you might feel about yourself and other people in your life. Please tick the box which applies to you – i.e. whether it is 'very unlike you,' 'moderately unlike you,' 'moderately like you' or 'very like you.' Respond to each statement in terms of how you are GENERALLY and not necessarily just at present. There are no right or wrong answers. PLEASE ANSWER EVERY QUESTION.

	Very unlike	Moderately unlike	Moderately like	Very like
1) I feel insecure when I say goodbye to people.				
2) I worry about the effect I have on other people.				
3) I feel uneasy meeting new people.				
4) If others knew the real me, they would not like me.				
5) I worry about being criticised for things I have said or done.				

	Very unlike	Moderately unlike	Moderately like	Very like
6) I worry about losing someone close to me.				
7) I can only believe that something I have done is good when someone tells me it is.				
8) I feel anxious when I say goodbye to people.				
9) I fear that my feelings will overwhelm people.				
10) If someone is critical of something I do, I feel bad.				
11) If other people knew what I am really like, they would think less of me.				
12) I always expect criticism				

	Very unlike	Moderately unlike	Moderately like	Very like
13) I can never be really sure if someone is pleased with me.				
14) I don't like people to really know me.				
15) If someone upsets me, I am not able to put it easily out of my mind.				
16) I feel others do not understand me.				
17) I worry about what others think of me.				
18) I don't feel happy unless people I know admire me.				
19) My value as a person depends enormously on what others think of me.				
20) I care about what people feel about me.				

The CAPE

Please tick the box that applies to you, either 'never,' 'sometimes,' 'often' or 'nearly always.'
You will be prompted to give more information about your answers. If this applies to you
please tick either 'not distressed,' 'a bit distressed,' 'quite distressed' or 'very distressed.'

Never	Sometimes	Often	Nearly always

1) Do you ever feel sad?

**If you ticked 'never,' please go to question 2. If you ticked 'sometimes,' 'often' or 'nearly always'
please put a tick to show how distressed you are by this experience:**

Not distressed	A bit distressed	Quite distressed	Very distressed

Never	Sometimes	Often	Nearly always

2) Do you ever feel as if people seem to drop hints about you or say things with a double meaning?

**If you ticked 'never,' please go to question 3. If you ticked 'sometimes,' 'often' or 'nearly always'
please put a tick to show how distressed you are by this experience:**

Not distressed	A bit distressed	Quite distressed	Very distressed

Never	Sometimes	Often	Nearly always

3) Do you ever feel that you are not a very animated person?

If you ticked 'never,' please go to question 4. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

Never	Sometimes	Often	Nearly always

4) Do you ever feel that you are not much of a talker when you are conversing with other people?

If you ticked 'never,' please go to question 5. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always

5) Do you ever feel as if things in magazines or on TV were written especially for you?

If you ticked 'never,' please go to question 6. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always

6) Do you ever feel as if some people are not what they seem?

If you ticked 'never,' please go to question 7. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

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	Never	**Sometimes**	**Often**	**Nearly always**
7) Do you ever feel as if you are being persecuted in some way?				

If you ticked 'never,' please go to question 8. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	**A bit distressed**	**Quite distressed**	**Very distressed**

	Never	**Sometimes**	**Often**	**Nearly always**
8) Do you ever feel that you experience few or no emotions at important events?				

If you ticked 'never,' please go to question 9. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	**A bit distressed**	**Quite distressed**	**Very distressed**

	Never	Sometimes	Often	Nearly always
9) Do you ever feel pessimistic about everything?				

If you ticked 'never,' please go to question 10. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
10) Do you ever feel as if there is a conspiracy against you?				

If you ticked 'never,' please go to question 11. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
11) Do you ever feel as if you are destined to be someone very important?				

If you ticked 'never,' please go to question 12. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

	Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
12) Do you ever feel as if there is no future for you?				

If you ticked 'never,' please go to question 13. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

	Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
13) Do you ever feel that you are a very special or unusual person?				

If you ticked 'never,' please go to question 14. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

	Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
14) Do you ever feel as if you do not want to live anymore?				

If you ticked 'never,' please go to question 15. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

	Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
15) Do you ever think that people can communicate telepathically?				

If you ticked 'never,' please go to question 16. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
16) Do you ever feel that you have no interest to be with other people?				

If you ticked 'never,' please go to question 17. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
17) Do you ever feel as if electrical devices such as computers can influence the way you think?				

If you ticked 'never,' please go to question 18. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
18) Do you ever feel that you are lacking in motivation to do things?				

If you ticked 'never,' please go to question 19. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
19) Do you ever cry about nothing?				

If you ticked 'never,' please go to question 20. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
20) Do you believe in the power of witchcraft, voodoo or the occult?				

If you ticked 'never,' please go to question 21. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
21) Do you ever feel that you are lacking in energy?				

If you ticked 'never,' please go to question 22. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
22) Do you ever feel that people look at you oddly because of your appearance?				

If you ticked 'never,' please go to question 23. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
23) Do you ever feel that your mind is empty?				

If you ticked 'never,' please go to question 24. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
24) Do you ever feel as if the thoughts in your head are being taken away from you?				

If you ticked 'never,' please go to question 25. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
25) Do you ever feel that you are spending all your days doing nothing?				

If you ticked 'never,' please go to question 26. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
26) Do you ever feel as if the thoughts in your head are not your own?				

If you ticked 'never,' please go to question 27. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
27) Do you ever feel that your feelings are lacking in intensity?				

If you ticked 'never,' please go to question 28. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
28) Have your thoughts ever been so vivid that you were worried other people would hear them?				

If you ticked 'never,' please go to question 29. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
29) Do you ever feel that you are lacking in spontaneity?				

If you ticked 'never,' please go to question 30. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
30) Do you ever hear your own thoughts being echoed back to you?				

If you ticked 'never,' please go to question 31. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	**Sometimes**	**Often**	**Nearly always**
31) Do you ever feel as if you are under the control of some force or power other than yourself?				

If you ticked 'never,' please go to question 32. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

	Not distressed	**A bit distressed**	**Quite distressed**	**Very distressed**

	Never	**Sometimes**	**Often**	**Nearly always**
32) Do you ever feel that your emotions are blunted?				

If you ticked 'never,' please go to question 33. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

	Not distressed	**A bit distressed**	**Quite distressed**	**Very distressed**

	Never	**Sometimes**	**Often**	**Nearly always**
33) Do you ever hear voices when you are alone?				

If you ticked 'never,' please go to question 34. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

	Not distressed	**A bit distressed**	**Quite distressed**	**Very distressed**

	Never	**Sometimes**	**Often**	**Nearly always**
34) Do you ever hear voices talking to each other when you are alone?				

If you ticked 'never,' please go to question 35. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

	Not distressed	**A bit distressed**	**Quite distressed**	**Very distressed**

	Never	Sometimes	Often	Nearly always
35) Do you ever feel that you are neglecting your appearance or personal hygiene?				

If you ticked 'never,' please go to question 36. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
36) Do you ever feel that you can never get things done?				

If you ticked 'never,' please go to question 37. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
37) Do you ever feel that you have only a few hobbies or interests?				

If you ticked 'never,' please go to question 38. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always
38) Do you ever feel guilty?				

If you ticked 'never,' please go to question 39. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

Never	Sometimes	Often	Nearly always

39) Do you ever feel like a failure?

If you ticked 'never,' please go to question 40. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

Never	Sometimes	Often	Nearly always

40) Do you ever feel tense?

If you ticked 'never,' please go to question 41. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always

41) Do you ever feel as if a double has taken the place of a family member, friend or acquaintance?

If you ticked 'never,' please go to question 42. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

	Not distressed	A bit distressed	Quite distressed	Very distressed

	Never	Sometimes	Often	Nearly always

42) Do you ever see objects, people or animals that other people cannot see?

If you ticked 'never,' please go to question 43. If you ticked 'sometimes,' 'often' or 'nearly always' please put a tick to show how distressed you are by this experience:

	Not distressed	A bit distressed	Quite distressed	Very distressed

Participant Information Sheet

Research title: Healthy socio-developmental processes and emotional well-being.

The University of Birmingham would like to invite you to take part in a research project that we are carrying out at your school over the next few months. Before you make the decision to participate in the study we would like you to understand why the research is being done and what it involves. Please take time to read the information carefully and discuss it with others if you wish. Please ask the researcher if there is anything that is unclear to you or if you would like further information.

What is the study and how have I been chosen?

The study involves an investigation of the relationship between healthy social and developmental factors in adolescence and emotional well-being.

You have been chosen to participate in this study as your age in within the age-boundaries of this study.

What will I have to do if I take part?

If you agree to take part in this study you will be asked to complete 6 questionnaires exploring your emotions, feelings, relationships and experiences. Although the questions are about everyday life issues, some of the questions ask about sensitive topics and can be distressing for some people These questionnaires have been used in population studies involving many thousands of people without problem with many finding them interesting. However, there is a slight chance that some people may find the procedure uncomfortable. Should this happen, the researcher will ask you if you wish to withdraw from the session. The questionnaires will be distributed to you through classroom sessions or small group meetings. The questionnaires will take around 45 minutes to complete and need to be completed individually and independently. The questions require tick responses and some will prompt for further tick response answers. Please try not to think too much about your answers. Try to be as honest as you can throughout all the measures and try not to let your responses to one set of questions influence your responses to others. There are no right or wrong answers. **If you are unsure about the meaning of any of the questions please raise your hand for assistance from the researcher who would be happy to help.**

Will my answers be kept confidential?

Any responses that you give will be kept confidential. As you are writing your full name, signature, gender and age on the consent form this will be kept separate to your questionnaires in a locked cabinet. This is to ensure that there is no way anyone can trace your answers back to you. You will be given a unique participant number which will be written on the questionnaires. Only you will know that this number relates to your answers. This way your answers are kept confidential.

You may be invited to complete further parts of the study based upon the overall pattern of answers everyone has given in the study. To do this your name will be recorded with your participant number on a computer file to which the researcher has the only password. Once this has been completed, the computer file will be deleted so that there is no way of identifying you.

What will happen to my results?

Your responses will be collected by the researcher and input into a statistical computer programme. Once this has been done and the data has been analysed, the hard copies of your answers will be disposed of confidentially. After the analysis has been used to inform any reports, the electronic data will also be deleted permanently from any computer files.

Do I have to take part?

It is entirely up to you whether you wish to take part. If you do decide to enter the study you will be given this information sheet to keep along with the debriefing sheet which will detail further sources of information and contact details of the researcher. Even after agreeing to take part you may withdraw from the study at any time without giving a reason and your responses will be disposed of confidentially. To do this you will need to contact the researcher quoting your unique participant number which has been written on your questionnaires. This way, the researcher can find your set of answers and discard of them confidentially. Alternatively, you can contact your school office with your participant number who will contact the researcher to withdraw your data from the study. There will be no negative consequences should you choose not to take part.

What are the benefits of taking part?

The main benefit in taking part is that the information you give can be used to understand why difficulties in emotional well-being happen. By comparing data from healthy people, we can understand what should be happening socially and developmentally and use this to give a useful context for therapies in the future which help to support emotional well-being.

Sources of information:

Emotional wellbeing website for young people:

www.wheres-your-head-at.org

Participant Consent Form

Study title: Healthy socio-developmental processes and emotional well-being.

Please Initial box

1. I confirm that I have read and understood the information sheet for the above study and have had the opportunity to ask questions.

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason.

3. I agree to take part in the above research (an investigation of healthy socio-developmental processes and emotional well-being)

Name of participant	**Date**	**Signature**
……………………………	………………	………...……………

Researcher	**Date**	**Signature**
Aimee Harvey		
……………...……………	....	....

Please tick:

Gender:

Male ☐   **Female** ☐

Please state your age: _____

UNIVERSITY OF BIRMINGHAM

Participant debriefing Sheet

Research title: Healthy socio-developmental processes and emotional well-being.

Purpose:

The purpose of this study was to investigate the relationship between healthy social and developmental factors in adolescence and emotional well-being.

Background to the study:

Healthy social and developmental factors common to adolescence play an important role in emotional well-being. Changes or fluctuations in these factors are temporary in the majority of cases. For those cases where additional help is needed, support is widely available and successful in assisting individuals back to a healthier state of emotional well-being.

If you would like to find out more information please go to the link below.

Thank you for your time and participation.

Researcher contact details:

Aimee Harvey
School of Psychology
University of Birmingham
Edgbaston
Birmingham
B15 2TT
UK

Sources of information:

Emotional wellbeing website for young people:

www.wheres-your-head-at.com

Below are 6 simple stories. Please read them carefully and answer all of the 4 questions below <u>each</u> story.

<u>Story 1</u>

Andrew and Susie live in a rural cottage outside of the tiny village of Ely

Andrew is in bed suffering with the flu

Susie decides to drive into the nearest town to get him some medicine

While she's away, the phone in the cottage rings

The burglar alarm is sounding in the village school where Andrew works

Reluctantly, Andrew walks to the school in the village

1) Where does Susie think Andrew is? In bed or at the

school?_____

2) What if the alarm had not gone off? Where would Andrew be? In bed or at the

school?_____

3) Where was Andrew at the beginning? In bed or at the

school?_____

4) Where is Andrew now? In bed or at the

school?_____

Story 2

Zack and Kim are students and share a house together

Zack has got up late and is making a cup of tea in the kitchen

He pours some milk into his cup of tea then puts the milk away in the fridge

He goes into the lounge to watch football

Zack's housemate Kim finally gets out of bed

In the kitchen, Kim pours herself some cereal into a bowl

She finishes the milk and throws the carton into the bin

1) Where is the milk carton now? In the fridge or in the bin?

_____

2) Where was the milk carton at the beginning? In the fridge or in the bin?

_____

3) What if Kim had not had cereal? Where would the milk carton be? In the fridge or in the

bin? _____

4) Where does Zack think the milk carton is? In the fridge or in the bin?

_____

Story 3

Dan lives with his daughter Jane

Dan has come home from work to have lunch

After eating a salad, Dan finishes the last piece of cake

He puts the tin back in the kitchen cupboard before heading back to work for the afternoon

His daughter, Jane comes home early from school

Jane finds the cake tin and takes it into the lounge, hoping there will be some cartoons on TV

1) What if Jane had not come home early from school? Where would the cake tin me? In the kitchen cupboard or in the lounge?

_____

2) Where was the cake tin in the beginning? In the kitchen cupboard or in the lounge?

_____

3) Where does Dan think the cake tin is? In the kitchen cupboard or in the lounge?

_____

4) Where is the cake tin now? In the kitchen cupboard or in the lounge?

_____

Story 4

Neil and Kelly are out at their favourite club.

As normal, the music is very loud and he dance floor is already getting busy.

Neil signs to Kelly, asking if she wants a drink.

Kelly nods, and carries on dancing while Neil dodges across the floor towards the bar.

The song changes to one that Kelly doesn't like.

She leaves the dance floor to find somewhere to sit down.

1) **What if the song hadn't changed? Where would Kelly be? On the dance floor or sitting down? _____**

2) **Where does Neil think Kelly is? On the dance floor or sitting down?**

   _____

3) **Where is Kelly now? On the dance floor or sitting down?**

   _____

4) **Where was Kelly in the beginning? On the dance floor or sitting down?**

   _____

Jeremy is eating out at a restaurant.

Inside the restaurant, Jeremy hangs his coat on the stand by the door and leaves his bag underneath.

The waitress shows Jeremy to his table and tells him about today's special dishes.

When she comes back, the waitress notices Jeremy's bag underneath the coat stand by the door.

She decides that it is unsafe for the bag to stay there as it would be easy for someone to steal.

Leaving the coat on the coat-stand, she locks the bag in the store-cupboard.

1) **Where was the bag at the beginning? On the chair or in the store-cupboard?**

_____

2) **What if the waitress had not noticed the bag? Where would the bag be? On the chair or in the store-cupboard?**

_____

3) **Where is the bag now? On the chair or in the store-cupboard?**

_____

4) **Where does Jeremy think the bag is? On the chair or in the store-cupboard?**

_____

<u>Story 6</u>

David's mother lives abroad and is coming to England on a visit.

She plans to fly directly into Manchester and says she will telephone when she lands.

David spends the morning tidying his house and then starts preparing food for dinner while he waits for his mother to ring.

Unfortunately though, it is very foggy at Manchester airport.

All flights are instructed to fly on to the next available airport in Birmingham.

1) **Where was David's mother supposed to arrive in the beginning? In Manchester or Birmingham?**

   _____

2) **Where will David's mother actually arrive? In Manchester or Birmingham?**

   _____

3) **Where does David think his mother is landing? In Manchester or Birmingham?**

   _____

4) **What if it had not been foggy? Where would David's mother be landing? In Manchester or Birmingham?**

   _____

Thank you for taking part! ☺

Psychology Department,
University of Birmingham,
Edgbaston,
Birmingham,
B15 2TT

Dear participant,

Study Title: Young people and social interaction.

You are invited to take part in a study at Birmingham University from January, 2010 by a PhD student from Birmingham University. The study aims at investigating healthy factors and social awareness. The study itself involves 2 parts. The first includes questionnaires asking about relationships, thoughts, emotions and experiences and takes just over an hour. This can be done at your home. The second part is a virtual reality simulator of a high street in Birmingham, a short tape-recorded interview and some questionnaires. This takes around 50 minutes.

Although the questionnaires contain everyday topics, some of the questions include more sensitive issues such as negative thinking. These questionnaires have been used successfully in studies involving many young people. On the whole, individuals do find them interesting; however, there is a slight chance that some individuals may find the procedure uncomfortable. In this event you will be asked if you wish to withdraw from the session.

You will be given information about the study and an opportunity to discuss and ask questions before and after completing the questionnaires. You will also be given a consent form to sign which, together with an information sheet and debriefing form will be given to you to take home. Any answers you give will be kept completely confidential.

A researcher will contact you about whether you have decided to participate in this study. Please note that you are free to withdraw from the study at any time without giving reason and without this affecting your care and legal rights.

Yours faithfully

Aimee Harvey (BSc Dunelm, PGCE)

PhD Researcher

University of Birmingham
Edgbaston
Birmingham
B15 2TT

Birmingham and Solihull NHS
Mental Health NHS Foundation Trust

Psychology Department,
University of Birmingham,
Edgbaston,
Birmingham,
B15 2TT

Dear parent/guardian,

Study Title: Young people and social interaction

.... is invited to take part in a study at Birmingham University from January 2010 by a PhD student from Birmingham University. The study aims at investigating healthy thought processes, emotions, social experiences and social awareness as part of emotional and mental wellbeing. The study itself involves 2 parts. The first includes questionnaires asking about relationships, thoughts, emotions and experiences and takes just over an hour. This can be done at home. The second part is a virtual reality simulator of a high street in Birmingham, a short tape-recorded interview and some questionnaires. This takes just around 50 minutes. Any answers given will be kept completely confidential.

Although the questionnaires contain everyday topics, some of the questions include more sensitive issues such as negative thinking. These questionnaires have been used successfully in studies involving many young people. On the whole, young people do find them interesting; however, due to the slight chance some may find the procedure uncomfortable they will be asked if they wish to withdraw from the session.

....will be given information about the study and opportunities to discuss and ask questions before and after completing the questionnaires. He/she will also be given a consent form to sign which, together with an information sheet and debriefing form will be given to them to keep.

As .... is below the age of 18, parental/guardian consent is required. You will be asked to sign your consent for them to participate in this research at the start of the study. Please discuss this study with them so that they can decide whether or not to participate in the study when a researcher contacts them. Please note that you or...are free to withdraw without reason from the study at any time without this affecting their care or yours or their legal rights. To do this and if you or... have any questions, please contact the researcher using the contact details below.

Yours faithfully

Aimee Harvey (BSc Dunelm, PGCE)

PhD Researcher

University of Birmingham
Edgbaston
Birmingham
B15 2TT

Consent Form

Study title: Young people and social interaction.

Name of researcher: _____

<div align="right">**Please Initial box**</div>

1. I...(name) have been consulted

    about ....(participant)

    participation in this research project. I have had the opportunity to ask questions about

    the study and understand what is involved.

2.   I understand that I can withdraw him/her from the study at
     any time, without giving any reason and without their care
     or legal rights being affected.

3. I understand that relevant sections of his/her care record and
    data collected during the study may be looked at by responsible
    individuals from Early Intervention Services Birmingham and
    Solihull Mental Health NHS Foundation Trust or from regulatory
     authorities where it is relevant to their taking part in this research.

4. I give my consent to have the answers they give in the
    interview tape recorded.

Name of parent/guardian **Date** **Signature**

....

Relationship to participant:

....

Researcher **Date** **Signature**

Aimee Harvey ....

Birmingham and Solihull **NHS**
Mental Health NHS Foundation Trust

Psychology Department,
University of Birmingham,
Edgbaston,
Birmingham,
B15 2TT

Dear participant,

Study Title: Young people and social interaction.

You are invited to take part in a study at ---- College, Birmingham by a PhD student from Birmingham University. The study will take place on _____.
The study aims at investigating healthy thought processes, emotions, social experiences and social awareness as part of emotional wellbeing. The study itself involves 2 parts. The first includes questionnaires asking about relationships, thoughts, emotions and experiences and takes just over an hour. The second part is a virtual reality simulator of a high street in Birmingham, a short tape-recorded interview and some questionnaires. This takes just around 50 minutes. However, only the first part will be taking place at the College at present. The study will take place during college time and any answers you give will be kept completely confidential.

Although the questionnaires contain everyday topics, some of the questions include more sensitive issues such as negative thinking. These questionnaires have been used successfully in studies involving many young people. On the whole, individuals do find them interesting; however, there is a slight chance that some individuals may find the procedure uncomfortable. You will therefore be asked if you wish to withdraw from the session.

You will be given information about the study and an opportunity to discuss and ask questions before and after completing the questionnaires. You will also be given a consent form to sign which, together with an information sheet and debriefing form will be given to you to take home.

If you **do not** wish to take part in the study please tear off the slip below and return to the college before_____. Please note that you are free to withdraw without reason from the study at any time without this affecting your legal rights. To do this and if you have any questions, please contact the college or the researcher using the contact details below.

Yours faithfully

Aimee Harvey (BSc Dunelm, PGCE)

PhD Researcher

University of Birmingham
Edgbaston
Birmingham
B15 2TT

Birmingham and Solihull **NHS**
Mental Health NHS Foundation Trust

PLEASE TEAR:

I _____(name) do not wish to take part in the study:

'Young people and social interaction'.

Signature_____

Date_____

Psychology Department,
University of Birmingham,
Edgbaston,
Birmingham,
B15 2TT

Dear parent/guardian,

Study Title: Young people and social interaction.

Your son/daughter is invited to take part in a study at ---- College, Birmingham by a PhD student from Birmingham University. The study will take place on _____.The study aims at investigating healthy thought processes, emotions, social experiences and social awareness as part of emotional wellbeing. The study itself involves 2 parts. The first includes questionnaires asking about relationships, thoughts, emotions and experiences and takes just over an hour. The second part is a virtual reality simulator of a high street in Birmingham, a short tape-recorded, interview and some questionnaires. This takes just around 50 minutes. However, only the first part will be taking place at the College at present. The study will take place during college time and any answers your child gives will be kept completely confidential.

Although the questionnaires contain everyday topics, some of the questions include more sensitive issues such as negative thinking. These questionnaires have been used successfully in studies involving many young people. On the whole, children do find them interesting; however, due to the slight chance that some children find the procedure uncomfortable they will be asked if they wish to withdraw from the session.

Your child will be given information about the study and opportunities to discuss and ask questions before and after completing the questionnaires. Your child will also be given a consent form to sign which, together with an information sheet and debriefing form will be given to your child to take home.

As your child is below the age of 18, parental consent is required. If you **do not** wish your son/daughter to take part in the study please tear off the slip below and return to the college before _____. Please note that you or your child are free to withdraw without reason from the study at any time without this affecting yours or their legal rights. To do this and if you or your child have any questions, please contact the college or the researcher using the contact details below.

Yours faithfully

PLEASE TEAR:

I **do not** wish for my son/daughter_____(name) to take part in the study: 'Young people and social interaction'

Signature_____(parent/guardian)

Date_____

Participant Information Sheet

Research title: Young people and social interaction

The University of Birmingham would like to invite you to take part in a research project that is taking place over the next few months. Before you make the decision to participate in the study we would like you to understand why the research is being done and what it involves. Please take time to read the information carefully and discuss it with others if you wish. Please ask the researcher if there is anything that is unclear to you or if you would like further information.

What is the study and how have I been chosen?

The study aims at investigating healthy thought processes, emotions, social experiences and social awareness as part of emotional and mental wellbeing. This involves asking questions about everyday emotions, thoughts and experiences and how social situations make you feel.

You have been invited to participate in this study from your experiences and treatment with mental health services.

Do I have to take part?

It is entirely up to you whether you wish to take part. You may withdraw from the study at any time without giving a reason and without this affecting your care and legal rights. If you decide not to take part any responses you gave will be disposed of confidentially.

To do this you will need to contact the researcher giving your participant number written on your questionnaires and debriefing form. The researcher can then find your set of answers and discard of them confidentially. Alternatively, you can contact your key/care worker who has regular contact with you. They will then contact the researcher to withdraw your data.

What will I have to do if I take part?

The study is made up of 2 parts. The first part takes just over an hour and the second part takes 50 minutes. You will be asked to complete some questionnaires and take part in a virtual reality (VR) simulator. The questionnaires include questions about emotions, feelings, relationships and experiences in social situations. The VR simulator is of a high street in Birmingham. Some questions will follow asking about your experience in the simulator.

Questionnaires need to be completed individually and independently. **However, if you are unsure about the meaning of any of the questions please ask for assistance from the researcher who would be happy to help.**

Where is the study being held?

It is up to you whether you wish to complete the study in one or two days. This can be done partly at your home address and the rest at Birmingham University. At least one part of the study will need to be completed at Birmingham University if you decide to take part.

Will my answers be kept confidential?

Any answers you give will be kept completely confidential. Some of your answers will be written and some will be recorded. If you consent to take part in the study, your name and personal information will be kept separate from the rest of your answers. You will also be given a unique participant number which will be written on the questionnaires and recorded along with any recorded answers. Only you will know that this number relates to your answers. This way your answers are kept confidential. Some of your recorded answers may be published along with the results of this study. This will not identify you as a participant in this study. Your name will not appear with your answers and any other personal references that could identify you will not be included.

What will happen to my results?

Your answers will be collected by the researcher and stored at the University. They will be input into a computer programme. Once the data has been analysed and results have been reported, your answers will be disposed of confidentially.

Who is organising and funding the research?

The research is by Early Intervention Services Birmingham and Solihull Mental Health NHS Foundation Trust and Birmingham University.

Who has reviewed the study?

All research in the NHS is looked at by an independent group of people called a Research Ethics Committee. This is to protect your safety, rights and wellbeing. This study has been reviewed by South Birmingham Research Ethics committee.

Expenses and payments

You will be reimbursed £15 for you time and travel when you have completed the study.

What are the benefits of taking part?

The main benefit in taking part is that the information you give can be used to understand what may contribute to mental health difficulties in young people. This will provide a useful context for therapies in the future.

What are the possible risks of taking part?

Although the questions are about everyday life issues, some of the questions ask about personal issues that can be distressing for some people. In the past lots of people have completed them without problem with many finding them interesting. However, there is a slight chance that some people may find the procedure uncomfortable. Should this happen, the researcher will ask you if you wish to withdraw from the session.

You will be given an opportunity to ask questions discuss the research before and after completing the study.

Further Information and contact details.

If you need more information about this study or more advice as to whether to participate please ask the researcher using the contact details below. Alternatively you can also visit

If you are willing to take part, what should you do next?

If you would like to take part in this study please ask any questions you may have and sign the Consent form.

Contact the researcher:

Thank you for taking the time to read this information.

You will be given a copy of this information sheet, the consent form and debriefing form if you decide to participate in the study.

Participant Consent Form

Study title: Young people and social interaction.

Name of researcher: _____

**Please Initial
box**

1. I confirm that I have read and understood the information
   sheet dated............................. for the above study. I have had the
   opportunity to consider the information, ask questions and have
   had these answered satisfactorily.

2. I understand that my participation is voluntary and that I am
   free to withdraw at any time, without giving reason, without my
   care or legal rights being affected.

3. I understand that relevant sections of my care record and
   data collected during the study may be looked at by individuals
   from Early Intervention Services Birmingham and Solihull Mental
   Health NHS Foundation Trust or from regulatory authorities where it is
   relevant to my taking part in this research. I give permission for these
   individuals to have access to my records.

4. I agree to take part in the above research
   (an investigation of young people and social interaction) and
   be reimbursed for my time spent completing the study.

5. I give my consent to have the answers I give in the interview tape recorded.

<div style="border: 1px solid black; width: 120px; height: 80px;"></div>

Name of participant   **Date**   **Signature**

....

Researcher   **Date**   **Signature**

Aimee Harvey   ....

SIAS

For each question, please circle a number to indicate the degree to which you feel the statement is characteristic or true of you. The rating scale is as follows:

0 = Not at all characteristic or true of me

1 = Slightly characteristic or true of me

2 = Moderately characteristic or true of me

3 = Very characteristic or true of me

4 = Extremely characteristic or true of me

	Not at all	Slightly	Moderately	Very	Extremely
1. I get nervous if I have to speak to someone in authority (teacher, boss).	0	1	2	3	4
2. I have difficulty making eye contact with others.	0	1	2	3	4
3. I become tense if I have to talk about myself or my feelings.	0	1	2	3	4
4. I find it difficult mixing comfortably with the people I work with.	0	1	2	3	4
5. I find it easy to make friends of my own age.	0	1	2	3	4
6. I tense up if I meet an acquaintance in the street.	0	1	2	3	4
7. When mixing socially, I am uncomfortable.	0	1	2	3	4

8. I feel tense if I am alone with just one person	0	1	2	3	4
9. I am ease meeting people at parties etc.	0	1	2	3	4
10. I have difficulty talking with other people.	0	1	2	3	4
11. I find it easy to think of things to talk about.	0	1	2	3	4
12. I worry about expressing myself in case I feel awkward.	0	1	2	3	4
13. I find it difficult to disagree with another's point of view.	0	1	2	3	4
14. I have difficulty talking to attractive persons of the opposite sex.	0	1	2	3	4
15. I find myself worrying that I won't know what to say in social situations.	0	1	2	3	4
16. I am nervous mixing with people I don't know well.	0	1	2	3	4
17. I feel I'll say something embarrassing when talking.	0	1	2	3	4
18. When mixing in a group I find myself worrying I will be ignored.	0	1	2	3	4
19. I am tense mixing in a group.	0	1	2	3	4

19. I am unsure whether to greet someone I know only slightly.	0	1	2	3	4

SCS

Please circle a number at a point which best describes the way in which you see yourself in **comparison to others**.

For example:

Short   1   2   3   4   5   6   7   8   9   10   Tall

If you put a mark at 3 this means you see yourself as shorter than others; if you put a mark at 5 (middle) about average; and a mark at 7 somewhat taller.

If you understand the above instructions please proceed. Circle one number on each line according to how you see yourself in relationship to others.

In relationship to others I feel:

Inferior	1	2	3	4	5	6	7	8	9	10	Superior
Incompetent	1	2	3	4	5	6	7	8	9	10	More competent
Unlikeable	1	2	3	4	5	6	7	8	9	10	More likeable
Left out	1	2	3	4	5	6	7	8	9	10	Accepted
Different	1	2	3	4	5	6	7	8	9	10	Same
Untalented	1	2	3	4	5	6	7	8	9	10	More talented
Weaker	1	2	3	4	5	6	7	8	9	10	Stronger
Unconfident	1	2	3	4	5	6	7	8	9	10	More confident
Undesirable	1	2	3	4	5	6	7	8	9	10	More desirable
Unattractive	1	2	3	4	5	6	7	8	9	10	More attractive
An outsider	1	2	3	4	5	6	7	8	9	10	An insider

OAS

Below is a list of statements describing feelings or experiences that you may have from time to time or that are familiar to you because you have had them for a long time. Most of these statements describe feelings and experiences that are generally painful or negative in some way. Some people will seldom or never have any of these feelings. Everyone has had some of these feelings at some time, but if you find that these statements describe the way you feel a good deal of the time it can be painful just reading them. Try to be as honest as you can in responding.

Read each statement carefully and circle the number to the right of the item that indicates the frequency with which you find yourself feeling or experiencing what is described in the statement. Use the scale below. PLEASE DO NOT OMIT ANY ITEM.

0 = Never   1=Seldom   2=Sometimes   3=Frequently   4= Almost always

1. (inf)	I feel other people see me as not good enough	0	1	2	3	4
2. (inf)	I think that other people look down on me	0	1	2	3	4
3. (oj)	Other people put me down a lot	0	1	2	3	4
4. (inf)	I feel insecure about others opinions of me	0	1	2	3	4
5. (inf)	Other people see me as not measuring up to them	0	1	2	3	4
6. (inf)	Other people see me as small and insignificant	0	1	2	3	4
7. (inf)	Other people see me as somehow defective as a person	0	1	2	3	4
8. (inf)	People see me as unimportant compared to others	0	1	2	3	4
9. (oj)	Other people look for my faults	0	1	2	3	4

10	People see me as striving for perfection but being unable to reach my own standards	0	1	2	3	4
11.(oj)	I think others are able to see my defects	0	1	2	3	4
12.(oj)	Others are critical or punishing when I make a mistake	0	1	2	3	4
13.(oj)	People distance themselves from me when I make mistakes	0	1	2	3	4
14.(oj)	Other people always remember my mistakes	0	1	2	3	4
15. (e)	Others see me as fragile	0	1	2	3	4
16. (e)	Others see me as empty and unfulfilled	0	1	2	3	4
17. (e)	Others think there is something missing in me	0	1	2	3	4
18. (e)	Other people think I have lost control over my body and feelings	0	1	2	3	4

CTQ

When I was growing up.....	never true	rarely true	sometimes true	often true	very often true
1. I didn't have enough to eat	●	●	●	●	●
2. I knew that there was someone to take care of me.	●	●	●	●	●
3. People in my family called me things like 'stupid', 'lazy' or 'ugly'.	●	●	●	●	●
4. My parents were too drunk or high to take care of the family.	●	●	●	●	●
5. There was someone in my family who helped me feel that I was important or special.	●	●	●	●	●
6. I had to wear dirty clothes.	●	●	●	●	●
7. I felt loved.	●	●	●	●	●
8. I thought that my parents wished I had never been born.	●	●	●	●	●
9. I got hit so hard by someone in my family that I had to see a doctor or go to the hospital.	●	●	●	●	●
10. There was nothing I wanted to change about my family.	●	●	●	●	●
11. People in my family hit me so hard that it left me with bruises or marks.	●	●	●	●	●
12. I was punished with a belt, a board, a cord, or some other hard object.	●	●	●	●	●

13. People in my family looked out for each other.	●	●	●	●	●
14. People in my family said hurtful or insulting things to me.	●	●	●	●	●
15. I believe that I was physically abused.	●	●	●	●	●
16. I had the perfect childhood.	●	●	●	●	●
17. I got hit or beaten so badly that it was noticed by someone like a teacher, neighbour or doctor.	●	●	●	●	●
18. I felt that someone in my family hated me.	●	●	●	●	●
19. People in my family felt close to each other.	●	●	●	●	●
20. Someone tried to touch me in a sexual way, or tried to make me touch them.	●	●	●	●	●
21. Someone threatened to hurt me or tell lies about me unless I did something sexual with them.	●	●	●	●	●
22. I had the best family in the world.	●	●	●	●	●
23. Someone tried to make me do sexual things or watch sexual things.	●	●	●	●	●
24. Someone molested me.	●	●	●	●	●
25. I believe that I was emotionally abused.	●	●	●	●	●
26. There was someone to take me to the doctor if I needed it.	●	●	●	●	●
27. I believe that I was sexually abused.	●	●	●	●	●
28. My family was a source of strength and support	●	●	●	●	●

RAAS

Please read each of the following statements and rate the extent to which it describes your feelings about relationships

	Not at all like me	Fairly unlike me	Unsure	Fairly like me	Very like of me
1)I find it relatively easy to get close to people					
2)I find it difficult to allow myself to depend on others					
3)I often worry that other people don't really like me					
4)I find that others are reluctant to get as close as I would like					
5)I am comfortable depending on others					
6)I don't worry about people getting too close to me					
7)I find that people are never there when you need them					
8)I am somewhat uncomfortable being close to others					
9)I often worry that other people won't want to stay with me					
10)When I show my feelings for others, I'm afraid they will not feel the same about me					
11)I often wonder whether others really care about me					

12)I am comfortable developing close relationships with others	☐	☐	☐	☐	☐
13)I am uncomfortable when anyone gets too emotionally close to me	☐	☐	☐	☐	☐
14)I know that people will be there when I need them	☐	☐	☐	☐	☐
15)I want to get close to people, but I worry about being hurt	☐	☐	☐	☐	☐
16)I find it difficult to trust others completely	☐	☐	☐	☐	☐
17)Other people often want me to be emotionally closer than I feel comfortable being	☐	☐	☐	☐	☐
18)I am not sure that I can always depend on people to be there when I need them	☐	☐	☐	☐	☐