INTRA-INDIVIDUAL VARIATIONS IN THE MENTALIZING CAPACITY OF ADOLESCENTS

- AN EXPLORATORY STUDY -

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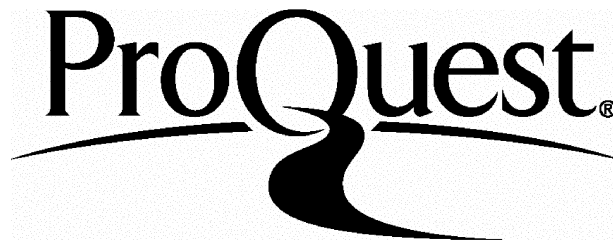Doctorate in Clinical Psychology

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ABSTRACT

Intra-individual variation in mentalising capacity was explored in a study of 39

adolescent school children. Representations of the self and others (liked and

disliked teachers and student peers) were assessed across a range of

conditions, using an experimental semi-structured interview. The relationship

between mentalising capacity and social functioning was also investigated

using measures of peer relations, academic self concept and depression.

Intra-individual variations in mentalising were observed, with adolescents

demonstrating higher levels of mentalising about a peer than about

themselves, in relation to a disliked teacher. In addition, adolescents

demonstrated higher levels of mentalising about a liked teacher, than a

disliked teacher in relation to themselves. Mentalising was found to be related

to levels of social functioning, with higher levels of mentalising correlating

with lower levels of depression and more positive peer relations. Conversely,

higher levels of mentalising were also found to be related to poorer academic

self concept. The results from the present study support the view that

metacognitive processes are influenced by the social relationships in which

interactions occur, and findings are discussed in relation to attachment and

social cognition literature.

CHAPTER ONE - INTRODUCTION

Overview

The present study aims to extend current understanding of mentalising capacity by exploring intra-individual variations in adolescents' representations of relationships. Intra-individual variability in representations of the self and others (teachers and students) are explored across a range of conditions, using an experimental semi-structured interview. Chapter one places the present study in context, by presenting an overview of related literature from attachment and social cognitive domains.

What is Mentalising Capacity ?

The concept of 'mentalising capacity' is derived from psychoanalytic literature, and in particular Freud's concept of "Bindung" or linking. In general, the term refers to the capacity to perceive and understand oneself and others in terms of mental states, as well as the ability to reflect upon one's own and others' behaviour, also in terms of mental states (Fonagy, Steele, Steele, & Target, 1997).

More recently, Main (1991) introduced the concept of 'metacognitive monitoring', defined as an individual's capacity to "understand the *merely* representational nature of their own (and others') thinking" (p.128), thereby distinguishing between appearance and reality, and separating immediate experience from the mental states that underpin it (Fonagy, Steele, Steele, Leigh, Kennedy, Matton, & Target, 1995). The concept of metacognitive capacity was subsequently operationalised as "reflective functioning" (RF) by Fonagy et al (1997) with the development of the Reflective-Functioning Manual, for use as a rating scale with the Adult Attachment Interview (AAI). RF is related to a number of concepts in cognitive and developmental psychology, including the concept of "theory of mind" (e.g. Premack &

Woodruff, 1978; Baron-Cohen, 1992) as well as the considerable research into social cognitive processing.

Why Study Mentalisation ?

Mentalisation is considered to be of significance for a number of reasons. Fonagy et al (1997) suggest that the attribution of mental states such as thoughts and feelings allows an individual to perceive another's actions as meaningful and therefore predictable. This, in turn, allows the child and parent to achieve increasing psychological and physical independence. In addition, mentalising has been found to promote and maintain attachment security and enhance self control and affect regulation (Fonagy, Steele, Steele, Moran, & Higgitt, 1991). Mentalising is also thought to enable a child to distinguish between appearance and reality, which, in cases of childhood maltreatment, may allow the child to separate or modify perceptions of the self from perceptions of the maltreating other, thereby reducing the likelihood of long-term injury to the child's sense of self (Fonagy et al, 1997). Finally, mentalising enhances communication with others, allowing for an individual's internal and external worlds to be connected, and belief to be endowed with meaning (Fonagy et al, 1997).

As noted above, the capacity for mentalisation may be of particular clinical importance for those individuals who experience trauma or emotional poverty during their upbringing. Fonagy et al (1991) found that mothers experiencing high levels of social stress and deprivation (identified risk factors for adverse childhood outcomes) were significantly more likely to have securely attached children if their level of reflective function was rated as high. They concluded that the capacity for metacognition serves a protective function, and reduces the likelihood of attachment insecurity being transmitted from parent to child.

How Does Mentalising Capacity Develop ?

Mentalising capacity develops through the experience of having one's mental states reflected on by another during childhood, primarily through repeated interactions with caregivers, and the experience of pretend play i.e. interactions with others that promote the integration of a child's internal and external reality. In support of this, Dunn, Brown, Slomkowski, Tesla, & Youngblade (1991) found significant differences in children's understanding of the beliefs and feelings of others as a function of mother-child interactions. Children growing up in families that were engaged in conversations about thoughts and feelings showed a more complex level of social understanding than those children in families in which such conversations were less frequent.

Bowlby's seminal work on attachment similarly emphasised the key role played by the parent-child relationship in the development of a child's mental world which he termed "internal working models" (e.g. 1979; 1982. See also Bretherton, 1987). Infants are thought to develop models of their attachment figures' likely behaviour during their first year of life on the basis of recurrent and characteristic patterns of interaction. They subsequently develop specific expectations about future interactions between themselves and their attachment figure, and these expectations are integrated with the emotional experiences associated with the interactions themselves. These expectations are embodied as mental representations, known as internal working models, which are able to aggregate past experiences (Bowlby, 1980). Concurrently, a closely intertwined representational model of the self develops, and these representational models are considered to guide beliefs, feelings and behaviour, as well as cognitive processes such as information processing (e.g. Bowlby, 1980). Thus, Fonagy et al (1995) suggest that attachment security is "indicated by "undistorted", free/autonomous cognitive and emotional processes, [whereas] insecurity, on the other hand, is indicated by significant interference with cognitive or affective aspects of mental representations of the self and other, including splitting, derogation, and denial" (p.236).

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Bowlby (e.g. 1980) also proposed that representational models, whilst remaining open to new input, become increasingly resistant to change, and in some instances guide an individual's behaviour at a pathological level. These models are similar to constructs such as 'schemas' and 'relational models' described within other theoretical perspectives. For example, Stern (1994) suggests that numerous "schemata-of-a-way-of-being-with" are the foundations of super-ordinate internal working models, which determine a child's interactions with their attachment figure and subsequently come to influence all significant relationships in that individual's life.

Attachment Representations & Peer Relationships

Although historically the study of attachment representations has been confined to the parent-child dyad, more recently a number of studies have also begun to examine representations of other key relationships. For example, there is considerable evidence linking infant-parent attachment and peer relations (e.g. Belsky & Cassidy, 1994) and securely attached children have been found to be better liked by peers (LaFreniere & Sroufe, 1995) and to be more competent with peers. They have also been found to have fewer behaviour problems (Erickson et al, 1985), and to be less aggressive with peers (Renken, Egeland, Marvinney, Mangelsdorf, & Sroufe, 1989) and to be less likely to be either a bully or a victim (Troy and Sroufe, 1987).

Mentalising & Social Functioning

Developmental researchers have also begun to explore the relationship between mentalising and maladaptive behaviours such as conduct disorder. Conduct disorder is characterised by "a repetitive and persistent pattern of behaviour in which the basic rights of others or major age-appropriate societal norms or rules are violated" (DSM-IV. APA, 1994). As Happe and Frith (1996) point out, such children, together with their less-formally labelled aggressive, problematic or peer-rejected peers, share a long-recognised

difficulty with social interaction. Happe and Frith (1996) studied theory of mind in primary school-aged children with conduct disorder and found that whilst none of the children failed the simple theory of mind tasks, they nevertheless exhibited deficits on more complex tasks requiring an understanding of other's minds in everyday situations. This is in line with findings that other populations with social impairments (e.g. autistic children) also display deficits in theory of mind (e.g. Happe, 1995). Once again it remains unclear whether such children show stable impairment across a range of conditions, or whether intra-individual variation in theory of mind performance can be observed.

Perspectives on Metacognitive Processes

To date, much of the research into mentalising capacity, theory of mind and social cognitions has focused on group differences in these metacognitive processes. Underlying much of this research is the assumption that these processes are stable, individual-based features of mental functioning that are accessed uniformly across a range of social contexts. However, the studies reviewed below indicate that this is an assumption that remains largely untested and additional research is required to assess its validity.

Attachment and Mentalising

Fonagy et al (1995) suggest that "metacognitive monitoring is biologically prepared and spontaneously emerges unless its development is inhibited by the dual disadvantage of the absence of a safe relationship and the experience of maltreatment in the context of an intimate relationship" (p.258). They propose that the presence of a single secure or understanding relationship may suffice for the development of reflective processes, and that each parent (or key attachment figure) "transmits" his or her own internal working model to their child, independently of the other parent. As a result, the child subsequently develops and maintains distinct expectations in relation to each

attachment figure. Critically, they emphasise that it is not yet known whether these independent working models are subsequently combined to form a more unified model which determines the child's general position with regards to future attachment relationships. However, on the basis of developmental constructs, Fonagy et al (1995) hypothesise that all earlier organisations or working models are retained, and subsequently integrated into later, more sophisticated structures. Furthermore, they suggest that the presence of contextual variables such as changed circumstances, conflict, new relationships, anxiety or acute stress, may activate these earlier structures, at a later stage in the child's development.

Whilst research into the nature and development of attachment working models and representations has significantly advanced our understanding of attachment theory and its relevance for clinical practice, further research is required in order to account for a number of unresolved issues. For example, it remains unclear how current theory accounts for the development of different representations for different attachment figures, or whether different contexts stimulate different representations or 'schemata-of-being-with'. To date, it has also not been established which parent (or indeed other attachment figure) might be expected to dominate the child's representations and subsequent behaviour towards a particular individual. Furthermore, how are we to understand the role of context in the "interference", outlined above in Fonagy et al's (1995) summary of attachment insecurity, and is the level or direction of "interference" somehow determined by which schemata or representations have been activated at any one time ? Whilst the present study does not claim to provide answers to such complex questions, it nevertheless makes a challenge to the assumption that mentalising is a fixed and stable mental process, and begins to explore the conditions under which intra-individual variations might reasonably be observed.

<u>Theory of Mind</u>

Whilst attachment-related research has a well-established history, the related concept of 'theory of mind' has come to the fore more recently, following Leslie's (1987; 1988) highly influential proposal that autistic children lack "metarepresentation". For example, Happe and Frith (1996) considered whether children with conduct disorder have an intact but distorted theory of mind, such as a "theory of nasty minds", and found that children with conduct disorder showed their mentalising ability most clearly in the antisocial behaviour domain. This is in line with findings in attributional studies that indicate that children with conduct disorder show hostile attributional bias (e.g. Dodge, 1993). However, as Happe and Frith (1996) point out misattribution cannot be considered an adequate explanation of conduct disorder, as it is non-specific to this population. For example it has also been demonstrated in depressed children (Quiggle, Garber, Panak, & Dodge, 1992) and paranoid personalities (Turkat, Keane, & Thompson-Pope 1990).

Happe and Frith (1996) suggest that a potential delay in the acquisition of higher order mentalising capacity, in combination with a hostile environment, may have a significant effect on a child's social cognition, and may lead to the development of a "default assumption of negative intention". They highlight the subsequent development of a negative cycle over time, whereby the child's aggressive behaviour will ensure that the social environment around him or her will continue to present an imbalance of negative over positive social experiences. Similar patterns have been observed and documented in studies by Dodge (e.g. 1980) and Arsenio and Fleiss (1996).

However, whilst Happe and Frith (1996) begin to consider the interactional role of cognitive and contextual factors in disruptive behaviour, intra-individual differences in theory of mind performance are not explored. Further research into context-bound variations in theory of mind would be of value in determining whether children who are assessed as impaired on specific theory

of mind tasks, are likely to show similar impairment across a range of conditions. In line with this, Brown, Donelan-McCall, & Dunn (1996) investigated contextual variations in young children's conversations with friends, siblings and mothers. Using unstructured observations of children in their own homes, Brown et al (1996) explored intra-individual variations in characteristics of mental state discourse. They found that children made significantly more references to mental state terms when interacting with siblings and friends than when interacting with their mothers. Brown et al (1996) noted that this difference occurred despite the fact that these mothers were observed to make frequent reference to mental state language with their children. In addition, Brown et al (1996) also observed that the relationship between mental state discourse and relatively invariant measures such as verbal ability and socio-economic status also differed as a function of the context in which the interaction took place. For example, language ability and maternal education were found to be more closely associated with the use of mental state language between siblings than between friends. In the light of these findings, further research into intra-individual variations in other metacognitive processes is clearly indicated.

Social Cognition and Attributions

Whilst the developmental pathway of behaviour problems has been the focus of much research, immense variation can be seen within this broad group of difficult-to-manage children, and there is an ongoing need to better understand such variability and identify its causes. Much of the social cognition research on aggression and social competence views delinquent behaviour as a function of global deficits in the child's functioning, either in the form of attributional biases (e.g. Dodge, 1980) or executive capacity (Moffitt & Silva, 1988). In particular, studies have focused on the search for stable 'cognitive architectures' that can account for the sequential processes by which individuals are proposed to hold information that may subsequently be accessed in the form of behavioural responses (Dodge, 1993). Perhaps the

most comprehensive and influential of these approaches is Dodge's social information processing model (e.g. Crick & Dodge, 1994). This model has incorporated essential features of this 'architecture', proposing that an individual's behavioural response to a situational stimulus occurs as a function of a sequence of processing steps. Select information is encoded, meaning is then applied through mental representation and behavioural or affective responses are elicited through response accessing. Accessed responses are then response evaluated before being selected for enactment and subsequently translated into behaviour (Dodge, 1993).

Social information processing theory has been used to account for general patterns of deviant behaviour and child psychopathology, and over the past decade a number of group comparison studies have provided support for such a model. An implicit assumption in this approach is that group differences in processing are stable across social situations. However, as with research in attachment and theory of mind domains, this basic assumption remains largely untested, and further research is required to clarify whether intra-individual variations in attributions and social cognitions can be identified.

On the basis of such assumptions, Dodge (e.g. 1980) employed social cognition concepts to develop a model for understanding persistent aggression in children. For example, in two of his earliest studies he compared group differences in aggressive and non-aggressive children's responses to a negative outcome instigated by an unseen peer acting with hostile, benign or ambiguous intent. In the first of these studies, he found that both aggressive and non-aggressive boys were able to integrate intention cues into their behaviour for both the hostile and benign conditions, reacting with aggression and relative restraint, respectively. However, under the ambiguous intent condition, the non-aggressive sample reacted with restraint from aggression, whereas the aggressive sample reacted as if the intent had been hostile (Dodge, 1980). Furthermore, the aggressive sample were also more likely to help the anonymous peer, when the situation required it, as in the benign

condition. Dodge's finding that the aggressive sample were in fact highly discriminating and showed "increased reactivity" (Dodge, 1980) to interpersonal cues is an important one, and again indicates the need for further research into contextual influences on mental processes. Are we to assume that such findings can be generalised across all social contexts, or is it possible that the group differences identified are related in some way to the specific relationship context in which they occur ? For example, do aggressive children show similar biases when interacting with a liked versus disliked other, and are there differences according to whether the attributions made concern themselves or another individual ? These are questions that as of yet remain unanswered.

Cognitive developmental models (e.g. Piaget, 1965) generally suggest that the ability to accurately differentiate and respond to another's intent is a developmental milestone. Consequently variations in defensive aggression responses in children may at least be partially explained by variations in cognitive development (e.g. Hartup, 1974). That is, aggressive children are subject to a 'cue-utilisation deficiency' that has developed as a result of their inability to integrate intentional cues into their behaviour. However, Dodge's (1980) findings do not support the hypothesis that aggressive boys are unable to integrate intentional cues into their behaviour, but rather lend support to a 'cue distortion' model. That is, under a condition of ambiguous intent, a process occurs whereby information is distorted and the intent is perceived as hostile rather than benign. However, it remains unclear whether this process of cue-distortion is context bound and therefore further research into intra-individual variation is indicated.

A series of additional findings attest to group differences in social cognition which, as we have seen, have to date largely been assumed to occur as a function of stable deficits in a child's functioning. For example, Dodge (1980) also found that aggressive boys were relatively more likely to expect ongoing aggression and show mistrust towards their peers. Furthermore, they found

that peers who had an aggressive reputation were more likely to have hostile intent attributed to them, were more likely to be objects of aggression themselves, and were expected to show continued aggression by the study participants (Dodge, 1980; Dodge and Frame, 1982). Dodge suggests that a cyclical relationship between aggressive behaviour and attributions may develop with such children, whereby a "self-perpetuating spiral of increased hostile attributions, aggressive behaviour, and social rejection [develops]" (Dodge, 1980), the impact of which increases with age. This spiral of negative reinforcement, although less extreme, is similar to the distorted interaction patterns observed by Fonagy et al (1995), and others, in borderline patients, that may ultimately lead to the 'de-activation' of an individual's mentalising capacity. Similar patterns have also been noted by Arsenio and Fleiss (1996) and Happe and Frith (1996). The influence of a hostile environment on the mental processes of some children is apparent from these studies, and further exploration of the relationship between social cognition and additional social contexts would be of benefit to this field of study.

Dodge & Frame (1982) attempted to examine the "nature and limits" of the hostile attributional biases apparent in Dodge's earlier studies, and found that attention to hostile cues is correlated with hostile attributions of intent and subsequent aggressive behavioural responses. In addition, they found that selective recall could not wholly account for differences between aggressive and non-aggressive boys, and that hostile attributional bias was restricted to attributions of a peer's behaviour towards themselves (i.e. when they are the 'recipient' of the outcome), but not towards a second peer (i.e. when they are the 'observer' of the outcome). This self-other distinction is further explored in a review of actor-observer research towards the end of the chapter. Although Dodge and Frame's (1982) findings are suggestive of contextual influences on social cognition, there has been no attempt to extend these studies to explore whether identified differences in attributions made about the self versus another are apparent across a range of social situations, such as with disliked versus favoured individuals, or whether they are in fact bound to

some extent by the context in which they occur.

Dodge and Frame (1982) propose two potential explanations for their findings. The first of these proposes that the act of participating in (as opposed to observing) an event interferes with the social information processing of the aggressive boys, which in turn results in distorted attributions. Alternatively, they suggest that when aggressive boys' are participants in such events, they expect to be the recipients of hostile behaviour from their peers, and respond accordingly. The results of Dodge and Frame's (1982) study do not lend support to the hypothesis that attributional bias in aggressive boys can be attributed to a deficit in "social-role taking skill" or a "general cognitive developmental lag". Indeed, if this were the case, one would expect to see deviant attributions in all conditions, with no strong relationship between their behaviour and their attributions (Dodge and Frame, 1982).

Arsenio and Fleiss (1996) similarly found that children who are behaviourally disruptive do not appear to have a general inability to make affect-related socio-moral distinctions, as might be expected according to skill-deficits models of disruptive behaviour, but rather show differences in their expectations of the emotional consequences for different events. In their study, behaviourally disruptive children were found to attribute more positive emotions to prosocial participants, and to make more references to the avoidance of harm and loss for prosocial participants than non-disruptive controls. The disruptive group also did not differentiate between the emotions of prosocial actors and recipients, and explained actors' emotions with fewer references to positive consequences. Arsenio and Fleiss (1996) concluded that children who are behaviourally disruptive do not have a general inability to make affect-related socio-moral distinctions, but rather that they "differ from their peers in the *specific* emotional consequences they expect for socio-moral events and participants" (p.183). The present study aims to build upon such findings examining the role of context in attributions, by extending the

exploration of intra-individual variation to mentalising capacity.

Clearly, if one considers the range of findings that aggressive boys are able to show flexibility in their attributional accuracy, including greater sensitivity than normal participants in benign conditions, together self-other effects and studies that suggest attributional biases are not due to a 'developmental lag', or a deficit in social role-taking skills, further research is indicated. There is a need to move away from simple skill-deficit models of disruptive behaviour, towards a more complex framework that can account for intra-individual variations in performance on a range of mentalising tasks across different conditions. Furthermore, there is a need for additional exploration of the range of factors which may influence performance on attributional and mentalising tasks. To date, research into related concepts such as reflective function and theory of mind has not addressed this issue, and it remains to be seen whether individuals who are observed to show deficits in metacognitive functioning in a given situation, show similar impairments across all social contexts.

Support for the need for further research into intra-individual variations in social cognition, can be found in Dodge and Newman's (1981) study. Their results indicated that a hostile attributional bias in aggressive boys was only present when participants responded quickly, and that there was no such bias evident when response rates were slower. Dodge and Frame (1982) speculate that if a hostile attribution is the most highly available response during an ambiguous situation, then children who show an inhibition deficit, such as aggressive boys, would be more likely to demonstrate a hostile attributional bias. Gorenstein and Newman (1980) have found that inhibition deficits are more likely to occur during arousal, and Dodge and Frame (1982) postulate that children are more likely to be aroused when they are participants, as opposed to observers, in a situation. Aggressive boys therefore, in accordance with Dodge and Frame's (1982) findings, are more likely to demonstrate hostile attributional bias when they are the targets as opposed to the

observers of a provocation. Once again additional research that directly compares the self-other moderator effect would be of value in further exploring this interesting intra-individual variation.

The issue of self versus other differences in social cognition is also taken up by Zakriski & Coie (1996). They found that whilst aggressive-rejected children were able to assess the social status of others as well as nonaggressive-rejected and average status controls, they inflated ratings of self-directed feedback and were more unrealistic in assessments of their own social status. They suggest that "this pattern of sensitivity to something negative in others and relative insensitivity to that same event or attribute in oneself" (p. 1066) supports a model of ego defensiveness and denial strategies in aggressive-rejected children.

Dodge and Somberg (1987) review findings in a number of studies that suggest that some children may be more vulnerable to the disruptive effect of threatening stimuli than others. In particular, children who are least skilled in a particular task have been found to be most vulnerable to impoverished performance under conditions of negative affect and arousal (Masters, Barden & Ford, 1979), and socially rejected, aggressive children appear to be least skilled in accurately determining others' intentions (Dodge et al, 1984). Subsequently, Dodge and Somberg (1987) postulated that such children are likely to be most vulnerable to the disruptive impact of threat. Furthermore, they suggest that children with impoverished social-learning histories are most likely to display these kinds of vulnerabilities, and that there is a likelihood that aggressive children are relatively likely to be included within this group. Finally, they emphasise that while all children may be considered vulnerable to threatening stimuli (Harris, & Siebel, 1975), the response to such stimuli is of particular relevance to findings in studies of aggressive children.

Clearly, whilst studies indicate that processing patterns in one situation can strongly predict specific behaviours within the same type of situation, they are

not able to similarly strongly predict behaviour patterns in other situations (Dodge, Pettit, & McClaskey, 1986). Indeed, by viewing patterns of delinquent behaviour as a function of global deficits within the child, these theoretical frameworks do not provide us with a model which adequately addresses the contextual, relationship-specific factors associated with the variability in mental processes that can be observed in naturalistic settings. Under such conditions, these children are not observed to consistently show stable deficits in relating to all others in all settings, but rather can be observed to form occasional positive, competent relationships under 'ideal' conditions. In other words, these patterns of delinquent behaviour do not so much appear to be a function of global, skill-deficits within the child, as widely assumed, but rather a function of the specific social context in which the behaviours occur. Clearly, greater understanding of the 'ideal' conditions that may facilitate positive communication in even the most difficult children, would be of considerable clinical importance.

Actor-Observer Effect

Distinctions between the way we think about ourselves and the way we think about others have an established research history. More than twenty-five years ago Jones and Nisbett (1972) proposed that 'actors' in a given situation tend to attribute their behaviour to situational causes, whereas 'observers' tend to attribute the same behaviour to personal dispositions. Termed the "actor-observer effect", this finding prompted a tentative move away from widely studied group differences in attributions, towards intra-individual variations in social cognitions. Robins, Spranca, & Mendelsohn (1996) summarise the actor-observer effect as "the notion that people's explanations for their own behaviour differ from their explanations for the behaviour of others". Although early researchers proposed that the effect "holds under a surprising range of conditions" (Jones, 1976. P. 304), subsequent studies argue the need for a more complex formulation to allow for a number of

additional key findings. For example, Ross (1977) describes the now generally recognised 'fundamental attribution error', whereby both actors and observers attribute greater causal force to dispositional as opposed to situational causes. Additionally, actors and observers have been found to typically differ only in their situational attributions (e.g. Kerber & Singleton, 1984; Watson, 1982) and in fact the actor-observer effect can be manipulated to such an extent that it can be both eliminated and indeed reversed, by a variety of factors (Robins et al, 1996).

Robins et al (1996) found that individuals attributed their own behaviour to the partner with whom they were interacting, whereas they attributed the behaviour of their partner to that person's personality. They also found that the actor-observer effect did not hold for mood, or for attributions to the situation (unlike previous studies) when the general situational context was disentangled from the interaction partner. In addition, Robins et al (1996) found that both actors and observers attributed less weight to the situational causes with each successive interaction, across repeated social interactions. Correspondingly, participants increasingly emphasised the importance of their partner in shaping their own behaviour, and the importance of their partner's personality when explaining the other's behaviour. From research to date it is unclear whether similar self-other variations can be observed in mentalising. The present study aims to clarify this issue by comparing mentalising about the self with mentalising about another student, across a series of imagined interactions with both liked and disliked teachers.

Attributional variations in relation to familiarity have also been explored in a number of studies and to date there remains some disagreement between earlier findings in this area. Whilst Jones and Nisbett (1972) propose that familiarity reduces dispositional attributions (Kerber & Singleton, 1984), Monson, Tanke, & Lund, (1980) suggest that familiarity both increases the probability of, and promotes the validity of trait attributions. More recently, Kerber and Singleton (1984) examined the relationship between trait

attributions, familiarity and liking and found that whilst familiarity did indeed seem to influence the process of attributions, its effect differed for dispositional versus situational attributions, and actor-observer differences versus observer variations in attributions. More specifically, they found that familiarity was negatively related to uncertainty responses, unrelated to situational attributions, and positively related to dispositional attributions. They suggest that "greater familiarity, and concomitantly, greater liking, increases the probability that the target will be described in a socially desirable manner" (p.214). The present study aims to extend current understanding of the role of relationships in mental processes, by moving beyond the level of attributions, and exploring the impact of both negative and positive relationships on mentalising capacity as a whole.

In line with findings by Watson (1982), Kerber and Singleton (1984) also found that the actor-observer effect held only for situational as opposed to dispositional attributions, although in their study, a preference for trait attributions was superimposed upon this dominant trend. Secondly, they also found that while familiarity was unrelated to situational attributions, it was positively related to attributions of a dispositional nature. In contrast to Monson et al (1980), Kerber and Singleton (1984) found no evidence of a relationship between familiarity and dispositional attributions, but did find support for a significant relationship between familiarity and the validity of situational attributions, as assessed by comparing an actor's self-ratings with those of an observer. The issue of familiarity has also been visited by Costin & Carlson Jones (1992), who found that in experimental settings, children are more emotionally responsive and more prosocial to a friend than an acquaintance.

In line with Robins et al (1996), Kerber and Singleton (1984) also propose the need for a more complex model of actor-observer attributions, in their case to account for the relationship between familiarity, dispositional and situational attributions made by both actors and observers. Additional

research is required to determine whether the intra-individual variations identified to date in actor-observer literature are themselves context-bound and therefore variable across different conditions. The present study goes some way to answering Watson's (1982) call to action, that future research should "clarify the factors that enhance, eliminate, or reverse" the basic effect (p.680), by seeking to further understanding of the conditions under which both actors and observers differ in the quality of their mentalising.

In an interesting variation of actor-observer research, Coslin (1997) also considers the contextual influence of relationships and familiarity on attributions, by attempting to distinguish adolescents' attitudes towards disruptive behaviour in school, from their attitudes towards the person being disruptive. Coslin (1997) proposes that "the social representation of disruptive behaviour is based not only upon the characteristics of the behaviour and one's personal attitudes towards it, but also on the characteristics of the person involved" (p. 708). He goes on to suggest that as a result, adolescents' attitudes towards disruptive behaviour will therefore vary, according to the relationship they have with the person acting out the behaviour i.e. the 'actor'. One again, relationship and contextual factors are being posited as influential in individuals' emotional understanding and mentalising across different conditions and clearly require further exploration. The present study may help to clarify this relationship further, by comparing adolescents' responses to events involving both liked and disliked individuals in interaction with themselves or another student.

The Present Study

In order to address the research gaps identified in this chapter, the present research aims to explore intra-individual variations in mentalising capacity and social attributions in adolescents, across a range of conditions. The bulk of research into metacognitive capacity and social cognition focuses on group differences in the search for stable mental processes, and the assumptions on

which these models are based remain largely untested. Contextual variations in mental processing have to date received little attention, and the present study aims to address this considerable research deficit. In addition, the present study also acknowledges the general paucity of literature and assessment measures relevant for research with adolescents, and hopes to contribute to this valuable field through its findings, and its development and exploratory use of the School-based Assessment of Mentalising Schedule (S.A.M.S).

Research Hypotheses

1. Participants will demonstrate intra-individual variation in mentalising capacity as measured by the S.A.M.S:-
a. Participants will demonstrate higher levels of mentalising when thinking about themselves, than when thinking about another student
b. Participants will demonstrate higher levels of mentalising when thinking about a liked teacher, than when thinking about a disliked teacher.

2. Participants will demonstrate intra-individual variation in incongruence/distortion scores as measured by the S.A.M.S:-
a. Participants will demonstrate lower levels of incongruence/distortion when thinking about themselves, than when thinking about another student
b. Participants will demonstrate lower levels of incongruence/distortion when thinking about a liked teacher, than when thinking about a disliked teacher

3. Participants will demonstrate intra-individual variation in representations of self and other as measured by the S.A.M.S:-
a. Participants will demonstrate more positive and fewer negative representations when thinking about themselves, than

when thinking about another student

b. Participants will demonstrate more positive and fewer negative representations when thinking about a liked teacher, than when thinking about a disliked teacher

4. Mentalising scores on the S.A.M.S will correlate with scores on the Harter Academic Self Concept Scale, the Friendship Quality Questionnaire, and the Short Moods and Feelings Questionnaire:-

a. Mentalising scores will be positively correlated with scores on the Harter Academic Self Concept Scale and the Friendship Quality Questionnaire

b. Mentalising scores will be negatively correlated with scores on the Short Moods and Feelings Questionnaire

CHAPTER TWO -METHOD

Setting

This study was carried out at a large, inner-city secondary comprehensive school in South London. The school is co-educational (mixed gender), serving a catchment area that includes a high proportion of children from ethnic minority backgrounds as well as families from poor socio-economic environments.

Participants

The 39 final participants for whom data is available consisted of a total of 17 girls and 22 boys from two randomly chosen school classes, one in year seven and one in year eight. Participants ranged in age from 12+ to 14+ years. This age range was selected to capture the span during which the majority of children develop concepts of relationships (e.g. Selman, 1980). Children with an identified learning difficulty were not included in the participant sample. The participant characteristics are summarised in Chapter Three: Results.

Ethical Approval

Ethical approval for the study was given by the Institute of Psychiatry and the school's board of governors, and permission for school involvement in the study was gained from the teaching staff at the school. Parental consent was gained through written contact, and examples of consent forms, together with ethical approval forms can be found in Appendix 1 and 2 of this document. Participants were informed that inclusion in the study was voluntary, that withdrawal from the study was possible at any time. It was additionally emphasised that participation or non-participation would not influence their academic status and that individual information gathered during the study would remain confidential. Of the 50 pupils approached to take part in the

study, only three pupils refused to participate, and four others were unavailable on the interview days, resulting in a participant sample of 43. Interview recordings for a further three pupils were insufficiently audible for inclusion, resulting in a reduced participant sample of 39 for inclusion in data analysis.

Procedure

All contact with participants took place in the school setting. Participants gave their consent to taking part in the study prior to being interviewed and agreement was obtained from teaching staff for each participant to be interviewed during an allocated school lesson. The School-based Assessment of Mentalising Schedule (S.A.M.S), vocabulary sub-test and verbal Fluency test was administered to each participant individually, by the same interviewer during a single school lesson. At the beginning of this interview, participants were asked to name their favourite and least favourite teacher for inclusion in the interview. Participants were assured that this information would remain confidential and would not affect their academic status in any way. Interviews were tape-recorded and subsequently transcribed for coding purposes.

The three measures of social functioning were administered in a group setting in a classroom allocated for the purpose of the study. These were the Short Moods and Feelings Questionnaire (SMFQ. Angold, Costello, Messer, & Pickles, 1995), the Friendship Quality Questionnaire (Parker & Asher, 1993) and the Harter Academic Self Concept measure (Harter, 1982). Participants were asked not to confer with each other when completing the measures, and two interviewers were available for assistance if required. Details of all the measures administered during the study are outlined below, in the order in which they were presented to participants.

Measures

1. Mentalising Capacity

School-based Assessment of Mentalising Schedule (S.A.M.S)

The S.A.M.S (O'Connor & Hirsch, in preparation) is a structured interview schedule specifically designed for use in the present study. The schedule consists of a series of six school-based vignettes, depicting two positive, two negative and two ambiguous interactions between a teacher and student. These events are considered to commonly occur in the school life of an average student. Each of the six scenarios is followed by a series of questions aimed at eliciting evidence of mentalising, and these are outlined below. The scenarios are repeated a total of four times during the interview, to correspond with the four interview conditions. These four conditions are outlined below, together with sample scenarios from the interview. A full copy of the interview schedule is provided in Appendix 3.

Conditions:
1. Pupil nominated liked teacher (A) with anonymous student
2. Pupil-nominated disliked teacher (B) with anonymous student
3. Pupil-nominated liked teacher (A) with self as student
4. Pupil-nominated disliked teacher (B) with self as student.

Scenario Questions:
"The student was yelled at in class by Teacher A:-
Why did this happen ?
What does the teacher think ?
What does the teacher feel ?
What does the student think ?
What does the student feel ?
What happens next ?"

Coding:

<u>Mentalising</u> - Participant interviews were coded for evidence of mentalising on three levels, with level one being the least complex and level three being the most complex. Each of these three levels was sub-divided to allow for more subtle differentiations in mentalising, such as the distinction between thoughts and feelings. A full copy of the mentalising coding scheme for the S.A.M.S is provided in Appendix 4.

<u>Attributions</u> - Participant interviews were also coded for a range of attributions, as follows:

i. *Initiator* - Attributions of responsibility for initiating the interaction, in response to the "why did this happen" question.

ii. *Representations* - Total number of positive and negative teacher and pupil representations in each question

iii. *Ending Theme* - The type of scenario ending described in response to the "what happens next" question were coded.

iv. *Incongruence/Distortion* - Evidence of incongruence or affective distortion in question responses was coded, such as incoherent information, or negative responses to positive events.

Due to the complexity of the S.A.M.S and the large number of codes generated by the coding scheme, attributional analyses were restricted to *representation* and *incongruence* codes. *Initiator* and *ending theme* codes were not included in the analyses for the purpose of this report.

Reliability

Given the experimental nature of the interview, and the complexity of the coding scheme, inter-rater reliability was assessed by random comparison of coding scores. Two raters independently coded interview schedules and scores were compared for reliability. Inter-rater reliability was calculated for levels one, two and three mentalising about both the teacher and the student in each scenario. The results are outlined in Table 1 below:

Table 1

Inter-rater Reliability For Mentalising Codes

	Agreement for Mentalising about the Teacher	Agreement for Mentalising about the Student
Level One	100 %	100%
Level Two	93%	93%
Level Three	94%	97%

2. Verbal Ability

Two measures of verbal ability were included in the research design for the purpose of establishing whether there was a general relationship between mentalising and verbal performance. In order to examine intra-individual variation in mentalising in the present study, it was considered important to first determine whether differences in mentalising could be accounted for by differences in verbal ability, as measured by the vocabulary sub-test and the verbal fluency measures detailed below.

i. Vocabulary Sub-Test from the WISC-III UK

The Wechsler Intelligence Scale for Children - Third edition UK (WISC-III UK. Wechsler, 1992) is a well standardised and widely used test which aims to assess intelligence in terms of verbal and performance functioning on a range of sub-tests. The full scale IQ score summarises overall performance on the WISC-III R and provides a broad assessment of general intellectual ability. The individual sub-tests indicate particular strengths and weaknesses that characterise the individual's functioning. The vocabulary sub-test is the most reliable sub-test in the WISC-IIIR and consists of thirty-two words arranged in increasing difficulty. Scores obtained indicate an individual's

knowledge of word meanings and the ability to express these meanings verbally. Performance on the vocabulary sub-test involves a range of cognitive functions including learning ability, memory and language development, and as such, provides an excellent estimate of intellectual capacity (Kaufman, 1994) .

ii. Verbal Fluency

Verbal fluency correlates strongly with intelligence (Miller, 1984) and tests of verbal fluency have a long history (e.g. Thurstone, 1938). A number of variations on the original Thurstone procedure have been developed, such as the oral production of words beginning with three different letters (e.g. Goodglas & Kaplan, 1972) and the naming of objects belonging to certain categories (e.g. Rosen, 1980). The score for verbal fluency tests is calculated from the sum of all acceptable words produced in the allocated trials. Scores can then be adjusted for age, gender and level of education. Existing verbal fluency measures were adapted for the present study, for use with adolescents. Participants were required to name words beginning with S, foods they could eat, and things they could do with a brick.

3. Measures of Social Functioning

Measures of social functioning were included in the research design for the purpose of establishing whether mentalising per se is of developmental significance. That is, questionnaires relating to peer relationships, depression

and self concept were used to explore whether mentalising performance is of significance in an individual's social and psychological development. For the purpose of this study, it was hypothesised that those individuals who demonstrated higher levels of mentalising overall would also demonstrate better peer relationships and self concept and fewer symptoms of depression, as assessed by the three measures of social functioning detailed below.

i. Short Moods and Feelings Questionnaire (SMFQ. Angold et al, 1995)

The SMFQ is a 35 item questionnaire assessing symptoms of depression on a three point scale, and originally designed for use in epidemiological studies of children and adolescents. The psychometric properties of the SMFQ have been examined with 8-16 year old children, and it has been found to correlate substantially with the Childhood Depression Inventory (CDI) and the Diagnostic Interview Schedule for Children (DISC). Messer, Angold, Costello, and Loeber (1995) found the SMFQ to have a high internal consistency and to successfully discriminate psychiatric subjects from paediatric controls. Participants receive a total score, with high scores corresponding with high levels of depressive symptomatology. Items include questions about somatic, behavioural, motivational, affective and cognitive symptomatology, and sample items are given below:

"I thought I was a bad person"

"I felt so tired I just sat around and did nothing"

"I did not enjoy anything at all"

ii. Harter Academic Self Concept Measure (Harter, 1982)

The Harter Academic Self Concept Scale is a 5 dual-item questionnaire

assessing an individual's concept of themselves in an academic setting. Items

are scored on a four point scale, with items two and four reversed for the

purpose of scoring. Items are presented as sentences, each containing dual

descriptions of an individual in the academic setting. Respondents are

required to circle the response that best describes them with respect to the

academic description. A sample item is outlined below:

"some teenagers feel that they are just as clever as others their age BUT other

teenagers aren't so sure and wonder if they are as clever".

iii. Friendship Quality Questionnaire (FQQ. Parker & Asher, 1993)

The FQQ is a 40 item questionnaire asking children to indicate on a five point

scale how true a particular quality is of their relationship with a specific

named best friend. Questionnaire items are designed to assess children's

perceptions of a range of qualitative aspects of their best friendship, including

validation and caring, conflict resolution, conflict and betrayal, help and

guidance, companionship and recreation, and intimate exchange. The sub-

scales were found to have good internal consistency indicating that children

can reliably describe features of their closest peer relationships (Parker &

Asher, 1993). For the purpose of the present study, participants received a

total score for overall friendship quality, with 7 of the 40 items reversed for

the purpose of coding. Sample items from the FQQ are outlined below:

"My friend tells me I'm good at things".

"We always tell each other about our problems".

"I can always count on my friend to keep promises".

CHAPTER THREE: RESULTS

Overview

The following chapter is divided into two main sections. Section one

outlines a series of preliminary analyses, including a summary of group

differences in the demographic characteristics of the participant sample,

and a series of steps taken for the purpose of data reduction. Section two

provides the results of more detailed data analyses of the data set,

including an exploration of intra-individual differences in mentalising

capacity and correlations between mentalising performance and scores on

measures of social functioning. This section is organised according to the

key research hypotheses outlined at the end of chapter one. Given the

directional nature of these hypotheses, 1-tailed significance values have

been used in the interpretation of the data in the present study, and the

methodological implications for this are discussed in Chapter Four:

Discussion.

Part One: Preliminary Analysis

Demographic Data

Preliminary analyses revealed that there were no significant differences in

the mean age of participants, when grouped according to gender. Mean

age overall was 162.59 months, with a standard deviation of 6.95 months.

Verbal ability in the two year groups was also explored, as measured by

the standardised vocabulary sub-test scores and scores on the verbal

fluency test. Table 2 below summarises the findings. No significant

differences in verbal ability were found when grouped by gender.

Table 2

Verbal Ability by Year Group

Year	Voc (stan)	VF B	VF F	VF S	VF Tot
Yr. 8					
Mean	6.47	5.6	10.2	10.3	8.7
(s.d.)	(2.8)	(2.06)	(3.72)	(5.07)	(2.8)
Yr. 7					
Mean	6.62	4.69	11.5	7.92	8.0
(s.d)	(2.99)	(1.75)	(2.50)	(2.69)	(1.6)
Total					
Mean	6.53	5.24	10.7	9.33	8.4
(s.d)	(2.81)	(1.97)	(3.31)	(4.39)	(2.4)

Data Reduction

In order to facilitate data analysis, a series of steps were taken to reduce

the data set, with particular respect to the large number of variables

elicited from the S.A.M.S. The aim of reducing the data was to streamline

data analysis, without losing the information contained in the original variables. The data reduction procedures carried out are outlined below.

Summarising Variables:

1. According to the scoring criteria of the S.A.M.S, each interview question was scored for evidence of mentalising about the teacher and about the student involved in each scenario. Mentalising statements were scored as either level one, level two or level three, with each level containing a series of sub-levels (e.g. 1a, 1b, 1c). Each participant received a summary score for mentalising on each of these levels per interview question (for a more detailed summary of the coding scheme, see Appendix 4). The process by which the large number of variables resulting from the complex coding scheme of the S.A.M.S were reduced is outlined below:

i.   Mentalising sub-levels were combined to provide single level scores per interview scenario (e.g. 1a, 1b and 1c scores combined to give an overall level one mentalising score). The decision to combine sub-level scores was taken on the basis of a priori theoretical grounds that individual sub-scores reflected varied expressions of a comparable level of mentalising.

ii. These single level mentalising scores for each interview scenario were

then combined to provide combined summary scores for each of the three

mentalising levels for the interview as a whole (i.e. each participant

received a summary interview score for level one, two and three

mentalising).

iii. This process was repeated for each person condition defined in the

S.A.M.S (i.e. mentalising about Teacher A, Teacher B, the Self and the

Other).

Assessing Distribution:

The computing procedure outlined above allowed for the distribution of

mentalising scores on each level to be assessed. This revealed that

mentalising scores were unevenly distributed across levels one, two and

three, with level one (low mentalising) occurring least frequently and level

two (intermediate mentalising) occurring most frequently.

Computing Mentalising Ratio Scores:

On the basis of uneven frequency distributions for the mentalising

summary scores, ratio mentalising scores were computed for use in the

main body of the analyses. In addition to providing a degree of natural

control for uneven distribution, the use of ratio scores allowed for data

analysis to occur at the level of mentalising 'quality' rather than simply

frequency of utterances . Ratio mentalising scores were computed from

the summary mentalising scores, using the following equation:

M Level 3/(M Level 1+ M Level 2 + M Level 3)

(where M = mentalising)

As in the computation of summary variables outlined in the section above,

this process was repeated for each teacher (liked vs. disliked) and student

(self vs. other) condition, with each participant receiving a ratio score for

mentalising about teacher A (liked), teacher B (disliked), the self and the

other. The means and standard deviations for the mentalising ratio scores

are outlined below in tables 3.1, 3.2, and 3.3. Comparative statistical

analyses of these scores can be found in tables 8.1 and 8.2, and tables 9.1

and 9.2.

Table 3.1

Mentalising Ratio Scores for the Liked & Disliked Teacher in the Self

and Other Student Conditions

	liked with other n = 37	disliked with other n = 37	liked with self n = 34	disliked with self n = 32
Mean	.23	.22	.24	.17
(s.d)	(.19)	(.20)	(.21)	(.20)

Table 3.2

Mentalising Ratio Scores for the Self in the Liked and Disliked Teacher

Conditions

	liked teacher n = 34	disliked teacher n = 32
Mean	.25	.19
(s.d)	(.21)	(.18)

Table 3.3

Mentalising Ratio Scores for the Other Student in the Liked and Disliked

Teacher Conditions

	liked teacher n = 37	disliked teacher n = 37
Mean	.25	.24
(s.d)	(.16)	(.21)

Correlating The Mentalising Ratio Scores With One Another:

Tables 4.1, 4.2, and 4.3 contain the correlations between scores for

mentalising about the teacher, in each of the teacher (liked vs. disliked)

and student (self vs. other) conditions.

Table 4.1

Correlations: Mentalising about the Teacher in the Self & Other Student

Conditions.

	liked with other n = 37	disliked with other n = 37	liked with self n = 34	disliked with self n = 32
liked with other	1.00			
disliked with other	.64*	1.00		
liked with self	.54*	.56*	1.00	
disliked with self	.76*	.72*	.66*	1.00

*p<0.05 (1-tailed)

Table 4.2 contains the correlations between scores for mentalising about

the self, in the liked (A) and disliked (B) teacher conditions with the self

as student.

Table 4.2

Correlations: Mentalising about the Self in the Liked & Disliked Teacher

Conditions

	liked with self n = 34	disliked with self n = 32
liked with self	1.00	
disliked with self	.50*	1.00

*P<0.05 (1-tailed)

Table 4.3

Correlations: Mentalising about the Other Student in the Liked &

Disliked Teacher Conditions

	liked with other n = 37	disliked with other n = 37
liked with other	1.00	
disliked with other	.64*	1.00

*P<0.05 (1-tailed)

Correlating Mentalising Scores With Verbal Ability:

In order to test the validity of the S.A.M.S and its three level coding

system for mentalising, the ratio mentalising scores were correlated with

the two measures of verbal ability. The results from these correlations are

presented in Table 5 below.

Table 5

Mentalising Correlated with Standardised Vocabulary & Verbal Fluency

Scores

Mentalising (M)	Vocab standardised	VF Total
M about Teacher **liked teacher with other** **n = 37**	.32*	.22
M about Teacher **liked teacher with self** **n = 34**	.05	.12
M about Teacher **disliked teacher with other** **n = 37**	.203	.40*
M about Teacher **disliked teacher with self** **n = 32**	.076	.08
M about Self **liked teacher with self** **n = 34**	.036	.05
M about Self **disliked teacher with self** **n = 32**	.20	.11
M about Other **liked teacher with other** **n = 37**	.17	.12
M about Other **disliked teacher with other** **n = 37**	.12	.19

* P<0.05 (1-tailed)

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Validating the S.A.M.S

In order to provide further evidence of validity for the S.A.M.S,

mentalising ratio scores were correlated with scores from the Harter

Academic Self Concept measure, the Friendship Quality Questionnaire

(FQQ), and the Short Moods and feelings Questionnaire (SMFQ). The

results from these correlations are presented in Tables 6.1, 6.2 and 6.3

below, for mentalising about the teacher, self and other respectively. High

scores on the Harter Self Concept and the FQQ indicate a positive self

concept and positive peer relations respectively, whereas high scores on

the SMFQ indicate a high level of depression.

Table 6.1

Correlations: Mentalising Scores about the Teacher with Measures of

Social Functioning

	FQQ	Self Concept	SMFQ
liked with other n = 37	.13	-.06	-.34*
disliked with other n = 37	.16	-.23	-.15
liked with self n = 34	.00	.12	-.33*
disliked with self n = 32	.09	.09	-.54*

P<0.05 (1 tailed significance)

Table 6.2

Correlations: Mentalising Scores about the Self with Measures of Social

Functioning

	FQQ	Self Concept	SMFQ
liked teacher with self n = 34	.36*	-.45*	.03
disliked teacher with self n = 32	.08	.10	-.16

*P<0.05 (1-tailed significance)

Table 6.3

Correlations: Mentalising Scores about the Other Student with Measures

of Social Functioning

	FQQ	Self Concept	SMFQ
liked teacher with other n = 37	.09	-.01	-.46*
disliked teacher with other n = 37	-.02	-.08	-.001

*P<0.05 (1-tailed significance)

Summary

The data set was reduced by a series of computing procedures to provide each participant with summary scores for three levels of mentalising across each condition. That is, level one, two and three mentalising about both the teacher and student, for the following conditions:

Liked Teacher (A) with Other Student

Disliked Teacher (B) with Other Student

Liked Teacher (A) with Self

Disliked Teacher (B) with Self

Q. Is there intra-individual variation in representations about the liked (A) vs. disliked (B) teacher ?

Using paired-samples T-Tests, representations of the student and teacher were also compared. The analysis focused on positive and negative representations in the self vs. other student conditions with the liked and disliked teacher. The results from these analyses are summarised below:

1. There were no significant differences in positive or negative teacher representations when compared across the self vs. other student conditions.

2. There were significant differences in positive representations about

the self compared to the other student, in the liked teacher condition.

These results are outlined in table 7.1 and Figure 1.1

3. There were significant differences in negative representations about

the self compared to the other student in both the liked and disliked

teacher conditions. These are outlined in table 7.2 and Figure 1.2

Figure 1.1

Positive Student Representations

Self vs. Other Student with the Liked & Disliked Teacher
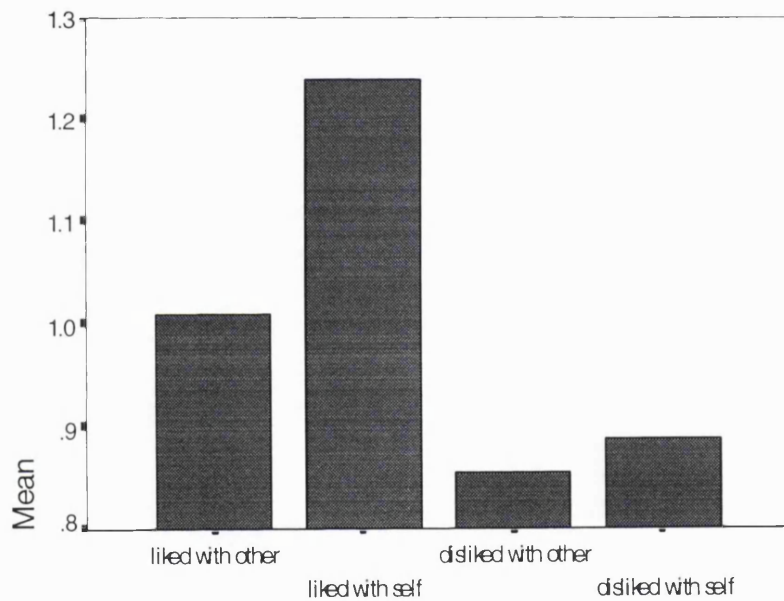
Table 7.1

Positive Representations about the Self vs. Other Student in the Liked &

Disliked Teacher Conditions

	Self mean (s.d)	Other mean (s.d)	t-value
Liked Teacher	1.26 (.54)	1.05 (.48)	-2.34*
Disliked Teacher	.89 (.40)	.85 (.42)	-.43

*P<0 .05 (1-tailed)

Figure 1.2

Negative Student Representations

Self vs. Other Student with the Liked & Disliked Teacher

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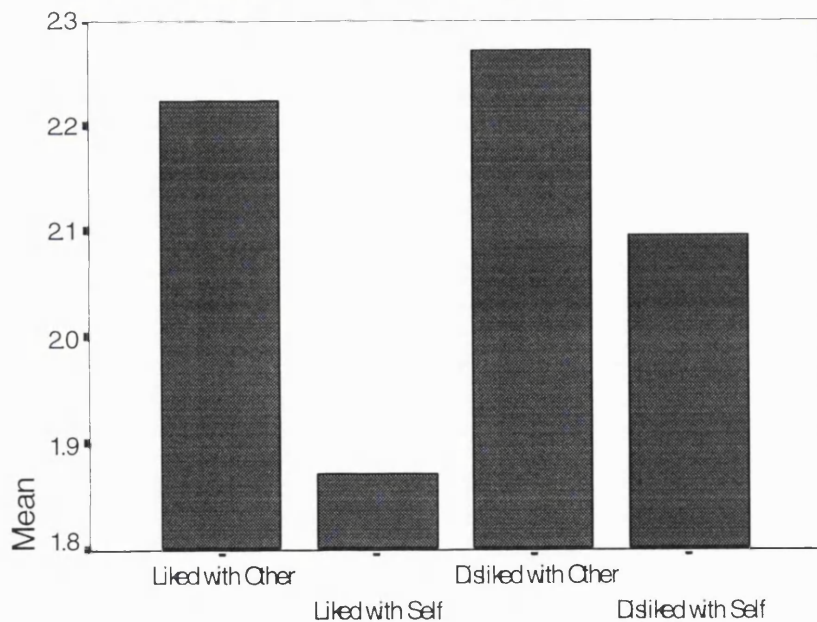
Table 7.2

Negative Representations about the Self vs. Other Student in The Liked

& Disliked Teacher Conditions

	Self mean (s.d)	Other mean (s.d)	t-value
Liked Teacher	1.86 (.57)	2.18 (.43)	3.31**
Disliked teacher	2.09 (.46)	2.27 (.39)	2.36**

**P<0.01 (1-tailed)

Part Two: Analysis of intra-individual variation

Year Group Effects

Multivariate Analyses Of Variance (MANOVA) were carried out to

determine whether there were significant differences in overall mentalising

ratio scores about the teacher, self and other by year group. The findings

from these analyses are outlined below:

1. Mentalising about the teacher did not differ by year group, $F_{(4, 27}$ =

   2.08 $P = .11$)

2. Mentalising about the self did not differ by year group, $F_{(2, 29}$ = .58

   $P = .57$)

3. Mentalising about the other student did not differ by year group, F (2,

 34 = .48 P = .62)

Gender Effects

Similar analyses were carried out with gender as the group variable, and

the results are summarised below:

1. Mentalising about the teacher did not differ by gender, F (4, 27 = 1.17

 P = .346)

2. Mentalising about the self did not differ by gender, F (2, 29 = .43 P =

 .657)

3. Mentalising about the other student did not differ by gender, F (2, 34

 = .38 P = .688)

Q. Is there intra-individual variation in mentalising about the self versus

the other ?

On the basis of the preceding analyses outlined above, together with recognition

of the small sample size, subsequent analyses were carried out at the level of

intra-individual variation in the participant sample as a whole, comparing scores

for mentalising about the teacher, self and student, in both the teacher (liked vs.

disliked) and student (self vs. other) conditions. Significance values at the 1-

tailed level have been quoted for all analyses, in keeping with the directional

nature of the research hypotheses outlined at the end of chapter one.

A series of paired sample t-tests were performed to compare mentalising

about the liked and disliked teacher, and mentalising about the self and

other student. Tables 8.1 and 8.2 below outline the results of this analysis.

Table 8.1

Mentalising (M) about the Student (Self and Other) in the Self vs. Other

Student Condition

	M about Self mean (s.d)	M about Other mean (s.d)	t-value
liked teacher	.25 (.21)	.23 (.16)	-.38
disliked teacher	.19 (.18)	.23 (.21)	2.06*

* P< 0.05 (1-tailed significance)

Table 8.1 above shows that there was a significant difference in

mentalising about the student (self vs. other) in the disliked teacher

condition. A comparison of the means for this analysis indicates that

participants were significantly more likely to show higher levels of

mentalising about the other student than about themselves, in the disliked

teacher condition. No further significant differences were found when

comparing mentalising about the self with mentalising about the other

student, in the liked and disliked teacher conditions.

Table 8.2

Mentalising about the Teacher (Liked & Disliked) in the Self vs. Other

Conditions

	Self Condition	Other Condition	t-value
M about liked teacher mean (s.d)	.24 (.21)	.21 (.17)	-.80
M about disliked teacher mean (s.d)	.17 (.20)	.20 (.19)	1.14

Table 8.2 above shows that there were no significant differences when

comparing mentalising about the teacher (liked and disliked) across the

self vs. other student conditions.

Q. Is there intra-individual variation in mentalising about the liked versus

disliked teacher ?

A second series of paired sample t-tests were performed to compare

mentalising about the teacher and student across the liked vs. disliked

teacher condition. Tables 9.1 and 9.2 below outline the results of this

analysis.

Table 9.1

Mentalising about the Teacher in the Liked vs. Disliked Teacher

Conditions with the Self & Other Student

	M about liked teacher mean (s.d)	M about disliked teacher mean (s.d)	t-value
Self	.22 (.19)	.17 (.20)	1.90*
Other student	.23 (.19)	.22 (.20)	.63

*P<0.05 (1-tailed significance)

Table 9.1 shows that there was a significant differences in mentalising

about the liked vs. disliked teacher in the self as student condition. A

comparison of the means for this analysis indicates that participants were

more likely to show higher levels of mentalising about the liked teacher

than the disliked teacher. No further notable differences were found in

mentalising about the teacher or the student in the liked vs. disliked

teacher condition

Table 9.2

Mentalising about the Student (Self & Other) in the Liked vs. Disliked

Teacher Conditions

	Liked Teacher	Disliked Teacher	t- value
M about self mean (s.d)	.24 (.21)	.19 (.18)	1.46
M about other student mean (s.d)	.25 (.16)	.24 (.21)	.42

Table 9.2 shows that there were no significant differences when

comparing mentalising about the student (self and other) across the liked

vs. disliked teacher conditions.

Q. Is there intra-individual variation in levels of congruence/distortion as

measured by the S.A.M.S ?

Paired-samples t-tests were used to compare means for

congruence/distortion scores in the teacher (liked vs. disliked) and

student (self vs. other) conditions. The results from this analysis are

presented in Tables 10.1 and 10.2 below.

Table 10.1

A Comparison of Congruence/Distortion Means for Self vs. Other in the

Liked & Disliked Teacher Conditions

	Self **mean (s.d)**	**Other** **mean (s.d)**	**t-** **value**
liked **teacher**	.01 (.13)	.17 (.21)	2.39**
disliked **teacher**	.22 (.20)	.29 (.28)	1.75

** $P<0.01$ (1-tailed significance)

Table 10.1 shows that there was a significant difference in

congruence/distortion scores in the self vs. other student condition with the

liked teacher. A comparison of the means for this analysis indicates that

participants were significantly more likely to give incongruent or distorted

responses when talking about the other student than themselves, in the

liked teacher condition.

Table 10.2

A Comparison of Congruence/Distortion Means for Liked vs. Disliked

Teacher in the Self & Other Student Conditions

	liked teacher mean (s.d)	disliked teacher mean (s.d)	t-value
Self	.01 (.12)	.22 (.20)	-3.90 **
Other	.16 (.21)	.27 (.28)	- 2.33*

* P<0.05 (1-tailed significance); ** P<0.01 (1-tailed significance)

Table 10.2 shows that there was a significant difference in

congruence/distortion scores in the liked vs. disliked teacher conditions

with the self and other student. A comparison of the means for this analysis

indicates that participants were significantly more likely to give incongruent

or distorted responses when talking about the disliked teacher in both the

self and other student conditions, than when talking about the liked

teacher.

CHAPTER FOUR - DISCUSSION

Summary of Results

The aim of the present study was to explore contextual influences on mental

processes, by assessing intra-individual variations in mentalising across a

range of conditions. By comparing the means for mentalising scores in each of

the teacher (liked vs. disliked) and student (self vs. other) conditions, two

examples of intra-individual variation in mentalising were observed.

Additional evidence for intra-individual variation in mental processes was also

demonstrated by comparing congruence/distortion ratings and positive and

negative representations across both the teacher and student conditions.

Correlational data for mentalising and measures of social functioning were

varied, with mentalising correlated negatively with scores on the SMFQ, and

Academic Self Concept, and positively with scores for peer relations on the

FQQ.

Overview of the Sample

From the demographic data outlined in Chapter Three, we can see that the

participant group was largely homogenous in age, with the mean age for

female (n = 17) and male (n = 22) participants at 163.8 and 161.6 months

respectively. Performance on verbal ability tasks showed similar consistency,

with year 7 and year 8 students performing comparably on the vocabulary

sub-test and on the verbal fluency test overall. Examination of the individual

verbal fluency sub-tests showed a greater degree of variability, with year 7

students performing better on the brick and letter s sub-tests, and year 8

students performing better than their younger peers on the foods category. It

is difficult to know how to interpret differences on the individual verbal

fluency sub-tests. However, given that no overall differences in verbal ability

occurred as a function of year group, and no significant variation in

mentalising was observed when scores were grouped by age, minor variations

in verbal sub-test scores would not appear to have influenced the data analysis

in any meaningful way. There were no notable differences in verbal ability

when performance was grouped by gender.

Whilst there were no significant variations in verbal ability in the participant

sample as a whole, it is important to note that overall performance on the

verbal tasks was poor, with the mean for both boys and girls falling below the

average range at approximately 6 ½ points on the vocabulary sub-test.

Similarly, mentalising performance on the S.A.M.S was also relatively poor.

In a study by Eder (1989), children as young as 3 ½ years were able to

produce basic descriptions of the inner states and emotions of themselves and

others, and showed a rudimentary understanding of the relationship between

emotions and other internal states, such as beliefs and attitudes. In contrast,

earlier studies have found psychological statements to be largely absent from

descriptions of self and others by pre-schoolers (e.g. Keller, Ford, &

Meacham, 1978). Eder (1989) suggests that this discrepancy in findings may

be explained by differences in methodology, where more recent research has employed naturalistic designs and the use of explicit probes for psychological information.

The reason for the low levels of mentalising and verbal ability observed in the present study remains unclear at this stage, particularly given that participants were randomly sampled across two different year classes. One possible explanation is that the combination of poor educational and socio-economic factors in the present sample resulted in a reduced performance that may not be representative of the wider population. It would be of interest in future research to explore mentalising capacity and intra-individual variability in a less disadvantaged population.

Mentalising and Verbal Ability

Investigation of the relationship between mentalising and verbal ability was considered important given that the use of mental state verbs has been shown to frequently involve the use of syntactically complex forms of language, such as predicate complements (e.g. Bloom, Rispoli, Gartner, & Hafitz, 1989). As such, it has been postulated that the frequency of mental verb use may simply reflect differences in children's language ability or educational background, rather than genuine differences in metacognitive capacity (Brown, Donelan-McCall, & Dunn, 1996).

In the present study, correlations between standardised vocabulary scores, verbal fluency and ratio scores for mentalising were largely non-significant. Mentalising about both the liked (A) and disliked (B) teacher in the other student condition was positively correlated with verbal ability, the former with standardised vocabulary scores, and the latter with verbal fluency total scores. The absence of further significant findings suggests that individual differences in mentalising were not strongly influenced by verbal ability.

Brown et al (1996) also noted contextual variation in the relationship between verbal ability and mental state discourse, in their study of children's conversations. They found that verbal ability was more closely associated with mental state language in conversations between siblings than friends, and note the importance of such findings in suggesting that relatively invariant measures such as verbal ability may be related to mental state processes in one relationship but not another. As with the present study, however, they indicate caution in generalising from this data to the wider population, given the small sample sizes used in their study.

In an interesting parallel to the present study, Happe (1995) explored the relationship between theory of mind task performance, age and verbal ability, with autistic, non-autistic learning disabled, and normal children. She found that the autistic children who were able to successfully pass the false belief task had a significantly higher verbal ability than their non-autistic peers. Happe (1995) suggests that success on theory of mind tasks is closely related

to verbal ability, as measured by vocabulary tests, and emphasises the role of

"reading minds" in language acquisition, in an attempt to account for the

relationship between theory of mind and verbal ability.

One possible hypothesis for the lack of significant findings correlating verbal

ability with mentalising capacity in the present study, is that a certain level of

verbal ability is required for higher levels of mentalising to occur, beyond

which no further effect is found. Further support for this hypothesis comes

from Dunn et al's (1995) study, where differences in young children's

conceptions of moral transgressions related to early verbal fluency

disappeared once the children reached first grade age.

Intra-individual Variations in Mentalising

Although there has been considerable research into the early development of

children's understanding of mental states, these studies have been largely

carried out from within a cognitive paradigm, where the key focus has been

on the development of representational understanding of mental states (e.g.

Wellman, 1990). As with related research in the attachment domain, the social

implications of the development of mental state understanding remains largely

under-explored. Given that children are thought to construct a theory of

human behaviour from their experiences in the social world, and that their

understanding of mental states is derived from social experience (Feldman,

1992), "it is somewhat paradoxical, therefore, that the social aspects of

developing a 'theory of mind' have received so little research attention"

(Brown et al, 1996).

In their study of children's conversations, Brown et al (1996) moved to

address this empirical imbalance, by exploring children's use of mental state

language in naturalistic interactions with their peers, siblings and mothers.

Brown et al (1996) found that children used significantly more mental state

terms when conversing with both peers and siblings than with their mothers,

despite the mothers' frequent use of mental state language when conversing

with them. However, it is important to note this intra-individual variance was

observed across different relationship levels, i.e. when comparing mother-

child discourse to child-child conversations. As Piaget (1963) emphasised,

one of the primary functions of the peer relationship is to facilitate

understanding of differing perspectives, through child-to-child conflict

resolution. One would therefore expect that interactions at this level of

relationship would be more likely to contain references to mental states and

the process of perspective-taking. It remains to be seen whether intra-

individual variation in mental state discourse can also be observed across a

range of other relationship contexts. The present study attempts to address

this issue by comparing mentalising about the self and others (a student peer

and a liked and disliked teacher).

The Influence of Age and Gender

From a developmental perspective, it was considered important to explore whether there were any significant differences in mentalising when participants were grouped according to age and gender. The results of the multivariate analyses of variance carried out on the ratio mentalising scores indicate that there were no significant age or gender effects for mentalising overall in the teacher and student conditions. That is, no significant differences in mentalising were observed as a function of the participant's gender or mean age.

The absence of significant gender differences in mentalising ability in the present study, differs from Dunn et al's (1991) findings that pre-school girls were more successful in affective understanding than pre-school boys. In addition to the significant difference in age between participants in the present study and Dunn et al's (1991) sample, this disparity in findings may also reflect a conceptual distinction. The present study explored the metacognitive process defined as mentalising capacity, whereas Dunn et al (1991) investigated the narrower concept of emotional understanding. In a number of studies, girls and women have been found to be more successful in decoding emotional expression than boys and men (e.g. Casey, 1993), and as adults, women have been found to be more inclined than men to express and discuss feelings (e.g. Block, 1983). Given this distinction, the affective understanding measure used in the Dunn et al (1991) study is more likely to be vulnerable to

influences of gender than the S.A.M.S, given the wider conceptual construct

of mentalising employed in the present study.

The absence of a significant age effect in mentalising is not surprising in the

light of studies describing the ages at which particular metacognitive abilities

are manifest (e.g. Dunn, 1988; Bretherton, McNew, & Beeghley-Smith, 1981;

Blum, 1987). Whilst there remains considerable disagreement about the

earliest age at which children are able to show various aspects of

metacognitive capacity, it is widely agreed that between three and five years,

children's ability to reflect upon another's mind and understand the

psychological bases for human action, undergoes considerable change (Dunn

et al, 1991).

Mentalising About Oneself and One's Peers

As we have seen in Chapter One, research to date has paid little direct

attention to the interpersonal context in which metacognitive processes occur.

It is widely acknowledged that emotions and the meaning we give to

interactions are embedded in social relationships. Indeed, "the 'same' event is

likely to have different meanings in different relationships and thus to result in

different emotional experiences as well as different types of emotional

expression" (Rumbaugh Whitesell & Harter, 1996, p. 1346). The nature of

personal relationships undergoes dramatic change during adolescence, and the

school and peer context form a large part of the adolescent's social

environment. The present study capitalised on this important developmental transition, considering the school environment to be an ideal forum from which to explore the influence of interpersonal contexts on mentalising and social cognition.

Piaget (e.g. 1932) highlighted the importance of children's interactions with their peers over sixty years ago, postulating that when children learn to resolve disputes with their peers, they are also learning to account for another's differing perspective (Brown et al, 1996). Data from the present study shows that there were significant differences in the disliked teacher condition, when comparing mentalising about the self with mentalising about the other student. Participants were more likely to show higher level mentalising about their peer than about themselves in an interaction with a teacher they did not like. Interestingly, this finding is not in the direction initially expected. One possible explanation for this somewhat counter-intuitive finding is that it is a statistical artefact. That is, it is possible that the finding is spurious and can be attributed to chance, rather than a genuine intra-individual variation in mentalising. Significant findings may in fact occur as a result of 'over-analysis', and this is of particular relevance to the present study, where one-tailed significance levels have been used and the majority of comparisons failed to reach statistical significance.

An alternative explanation for this counter-intuitive finding is that participants may be motivated to avoid conflict with teachers themselves, and therefore

showed an increased interest in understanding instances of conflict between

teachers and their peers. In addition, they may also have found it easier to

think about an interaction with a person they disliked, when they were not

directly involved in the interaction. That is, when participants were freed from

the personal meaning of a negative relationship with their teacher, they were

better able to move beyond simple attributional or mental state language (e.g.

"He's an idiot"; "She hates me") to more advanced mentalising (e.g. "Well,

maybe she feels that the student has really let her down, and she just can't

take no more of that, so she yells at him").

Tentative support for this hypothesis comes from findings by Kobak (1986)

that children who have been previously classified as avoidant on attachment

measures, may adopt a strategy of cutting off anger- or distress-related

affective displays. A potential method for testing out this hypothesis would be

to compare responses in the disliked teacher condition with the self and other

as student, for both positive and negative S.A.M.S scenarios. However, given

the small sample sizes involved in the present study, it was not possible to

carry out further analysis at this level. With larger sample sizes, one might

hypothesise that mentalising about the disliked teacher in the self as student

condition may be further reduced in the negative scenarios, where certain

children (e.g. those with avoidant attachment histories) may 'cut-off' from

mentalising about negative mental states. In contrast, when thinking about the

positive scenarios with a disliked teacher, it is possible that no such 'cut-off'

would occur.

In line with this hypothesis are findings by Main et al (1985) who similarly proposed that children classified as avoidant follow rules by which access to distress-related affects associated with attachment behaviours is restricted (Kobak and Sceery, 1988). However, children classified as securely attached are not thought to be similarly restricted, and indeed have "free-ranging access to affect, memory and plans relevant to attachment" (Main et al, 1985, p. 95). Fonagy et al (1995) also refer to the undistorted, free emotional and cognitive processes that delineate metacognitive processes in securely attached individuals, in contrast to the significant 'interference' in mental representations, thoughts and feelings that can be apparent in those with insecure attachment histories. The relationship between intra-individual variations in mentalising, as observed in the present study, and the impact of working models of attachment, as outlined above, cannot be inferred from findings to date. Nor can one assume that all participants from the present sample would be classified as avoidant on measures of attachment. Clearly, further research is required in order to explore these issues more fully.

Interestingly, analysis of the incongruence/distortion ratings on the S.A.M.S also revealed self-other variability, with participants more likely to give incongruent or distorted responses when talking about the other student than about themselves, when the interaction involved the liked teacher. In addition, participants were also more likely to give incongruent or distorted responses when talking about the disliked teacher, regardless of whether the interaction involved themselves or

the other student. Examples of incongruence/distortion observed during

interviewing included positive responses to negative events (e.g. "I'd

feel happy that she'd yelled at me because I'd managed to get to her,

make her angry"), and negative responses to a positive event (e.g. "I'd

be upset that he was talking to me in a friendly way because he might

start being too friendly to me after that").

The issue of incongruence or distortion in mental state discourse has

also been visited in both attachment and social cognition research. For

example, the rating scheme for the Adult Attachment Interview includes

a sub-scale measuring 'coherence of mind' which assesses whether an

interviewee is able to provide an organised and believable account of

their attachment experiences. Alternatively, examples of distortions in

information processing are widely documented in social cognition

literature where aggressive boys have been observed to interpret

ambiguous attributional cues as hostile (e.g. Dodge, 1980). Although

the incongruence/distortion rating used in the present study differs from

the 'coherence of mind' and 'hostile attributional bias' concepts

outlined above, findings from the present study suggesting intra-

individual variation at the level of speech congruence indicate the need

for further research, particularly at the level of relationships in which

such distortions are seen to occur. As the present study indicates, it is

not enough to assume that evidence of incoherence or attributional

distortion in one area is automatically indicative of similar impairments

in all other areas without exploring this issue further.

Self-other differences were also demonstrated in analysis of positive and negative representations about the self and other student. Participants made significantly more positive representations related to themselves than to the other student in interactions involving the liked teacher. In addition, participants made significantly fewer negative representations in relation to themselves than in relation to the other student, in interactions involving the disliked teacher. These findings are in line with those of Zakriski & Coie (1996) who observed that aggressive-rejected boys demonstrated a pattern of sensitivity to negative social attributes in others but relative insensitivity to similarly negative attributes in themselves, that was not apparent in non-aggressive rejected and average status peers. The presence of group differences in representations of the self and peers, however, does not adequately explain the presence of intra-individual variation in representations as observed in the present study. Further research is required in order to explore this phenomenon more fully.

Mentalising About Liked and Disliked Teachers

When comparing mentalising about the teacher in both the teacher (liked vs. disliked) and student (self vs. other) conditions, the present study found further evidence of intra-individual variation. Participants were significantly

more likely to show higher level mentalising about the liked teacher than the disliked teacher, when thinking about an interaction between the teacher and themselves. This intra-individual variation in mentalising is in the direction expected, with interactions between the liked teacher and self considered most 'ideal' for eliciting higher level mentalising. In interpreting this result, it is important to note once again that where multiple statistical comparisons are carried out, the risk of Type I error is raised.

Although the findings from the present study clearly need to be treated with some caution, they nevertheless appear to extend those of Costin & Carlson Jones (1992), who observed that in experimental settings, children are more emotionally responsive and more pro-social towards a friend than towards and acquaintance. Further support for findings that children use more mental state language in the context of a friendship comes from Brown et al's (1996) study of mental state discourse in social relationships. They found that in child-friend pairs, explicit reference to mental state processes was positively related to the quality and length of the children's' friendship as well as the frequency of their interaction. Similarly, distinctions between friends and casual acquaintances were drawn by Rumbaugh Whitesell & Harter (1996), in their study of the interpersonal context of emotion. They found that the reactions of adolescent and pre-adolescent children varied in their responses to anger-provoking actions according to whether they were precipitated by close friends or classroom acquaintances.

Similarly, Coslin (1997) found interpersonal differences when comparing

adolescents' judgements of the seriousness of disruptive school behaviour,

and their choice of sanctions appropriate for dealing with it. In particular,

adolescents' attitudes towards disruptive behaviour varied according to their

level of personal acquaintance with the individuals responsible for that

behaviour. When the person who performed the disruptive act was known to

the participant, they were more likely to identify with them, and as such found

it harder to make clear and definite judgements about the disruptive act and

appropriate sanctions. Clearly the importance of the relationship context

against which emotional experiences occur should not be underestimated, and

further research is required to extend current understanding of the role of

contextual factors in metacognitive processes.

Mentalising as a Skill

Although significant intra-individual differences in mentalising were limited in

the present study, the findings are particularly powerful given that

correlations between scores for mentalising in both teacher and student

conditions were also found to be significant. This suggests that an individual

who demonstrates the capacity to mentalise at a higher level in one condition,

is also likely to demonstrate similarly high levels of mentalising in other

conditions. Conversely, an individual who demonstrates lower level

mentalising skills in a specific context, is likely to show similarly poor

mentalising in other areas. The dual findings that mentalising would appear to

be both highly stable and yet vulnerable to context-bound variation is an interesting but complex one. Further research is required to better understand both the mental processes involved in the ability to mentalise, as well as the contextual factors that can influence an individual's performance. Several hypotheses for further research are explored below.

For example, it is possible that 'vulnerable' or 'at risk' children are more likely to show variation in mentalising. In line with Dodge et al's (1984) findings regarding the influence of threat or anxiety on deficits in social cognition, Sroufe (1989) suggests that during an individual's later development, earlier, less sophisticated internal working models may be activated by new relationships, acute stress or changed circumstances, potentially resulting in the disruption of otherwise 'in-tact' mental processes. Individuals who have experienced attachment-related emotional poverty or trauma during childhood may be considered more vulnerable to such disruption, and as a result may find their capacity for optimal mentalisation inhibited under certain 'non-ideal' conditions - for example when they are required to think about the motivations and mental states of another person with whom they have a negative relationship.

Further support for a 'vulnerability' hypothesis comes from Dodge and Somberg (1987) reviewing findings from a number of studies suggesting that some children, for example those who have experienced impoverished social learning histories, may be more vulnerable to the disruptive effect of

threatening stimuli than others (e.g. Masters et al, 1979). In addition, Dodge

and Somberg (1987) found that the behavioural responses of the aggressive

boys in their study were less predictable than those of their non-aggressive

peers, and that under conditions of threat and social anxiety, such differences

are intensified.

Whilst 'vulnerability' hypotheses may go some way to explaining inter-

individual differences in mentalising between groups, further thought is

required in order to account fully for intra-individual variations in mental

processes. Findings from the present study indicate that the relationship

context, that is the 'quality' of the relationship in which social interactions

occur, has a significant influence on an individual's capacity for mentalising.

For example, when thinking about an interaction between a teacher and

themselves, adolescents were less able to contemplate the mental states of a

disliked teacher than a teacher they liked. It is in this area of study that further

research is required.

The influence of the early social and emotional learning environment is

explored by Fonagy et al (1995) in their transgenerational model of the

transmission of internal working models. They surmise that each parent

'transmits' his or her own internal working model to the child independently

of the other parent, and that the child subsequently develops and maintains

distinguishable sets of expectations in relation to each of its primary

caregivers. Although little is currently known about whether these distinct

working models are combined to form the child's general stance towards other key relationships, Fonagy et al (1995) assume that all earlier structures are in some way retained. At this stage, it is difficult to draw conclusions or make inferences about the role of these early metacognitive structures on the examples of intra-individual mentalising observed in the present study. However, this field of research is clearly one that deserves greater attention from theorists in both attachment and developmental domains in the future.

Taken together, these findings would appear to suggest that under certain conditions, significant variations in mentalising capacity can be observed within an individual. The presence of intra-individual variation supports the call for further research in this area, as well as the need to develop models of metacognitive processes that can account for the contextual variation demonstrated in the present study. Coslin(1997) similarly calls for current research into disruptive behaviour at school to be extended in order to explore the individual and contextual processes involved. As we have seen, much of the attachment and developmental research to date, has rested on the assumption that the ability to reflect accurately on one's own and others' mental states is a developmental achievement, and as such impairments in these mental processes have been viewed as a function of stable deficits within the individual (e.g. Dodge, 1980). However, data from the present study challenges this assumption, and provides evidence that impairments in metacognitive functioning may need to be considered in the light of the context or relationship in which they occur. For example, traditional skill-

deficit models of disruptive behaviour may no longer suffice to explain observed deficits in mental processes. Rather, further research needs to explore individual performance on metacognitive tasks across different conditions, and to develop a model which can allow for contextual variations of the type observed in the present study.

Mentalising and Social Functioning

In a parallel of Brown et al's (1996) research into children's mental state conversations with peers, siblings and mothers, the present study also explored the relationship between children's ability to mentalise, with their self concept, levels of depression, and the quality of their social interaction and friendships with peers. Given that the capacity for understanding mental experiences in one's self and others has previously been related to children's ability to make sense of the behaviours of others, and engage in meaningful communication and joint activities (e.g. Fonagy et al, 1997), it was hypothesised that higher levels of mentalising would be associated with a more positive self concept, better peer relations, and lower levels of depressive symptomatology.

Mentalising and Depression

Analysis of the data from the present study revealed a number of significant correlations between mentalising and scores for depressive symptomatology

on the SMFQ. Mentalising about the liked teacher in interactions with the self

and other student, and mentalising about the disliked teacher in interactions

with the self, were negatively correlated with scores for depression on the

SMFQ. Mentalising about the other student in interactions with the liked

teacher was also negatively correlated with levels of depression. Thus in

general, the findings indicate that those children who were better able to think

about the mental states of their teachers were less likely to score highly on the

SMFQ and show evidence of depression.

On the basis of these findings, one might hypothesise that those children who

are unable to think in any meaningful way about the mental states of a person

they like or dislike are less likely to experience their social environment as

predictable and under their control, and are therefore more likely to be

vulnerable to higher levels of affective distress.

Mentalising and Peer Relations

In the present study, mentalising about the self in interactions with the liked

teacher was found to be positively correlated with successful peer

relationships. In other words, those children who were better able to reflect

upon their own thoughts and feelings in association with positive teacher

relationships, were also more likely to engage in positive friendships with

other children. These findings are in line with those of Brown et al (1996)

who observed that children whose friendship dyads were characterised by

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positive, co-operative interactions, were more likely to refer to their own, as

well as their friend's mental states during play.

However, on a more cautionary note, one must also consider the possibility

that the present study's finding is in fact spurious and occurred as a result of

chance or Type I error. Where multiple comparisons are made, the probability

of at least one test showing significance is substantially increased and care

must be taken in generalising from these findings to the wider population.

Mentalising and Self Concept

Correlational data for the relationship between mentalising and scores for

academic self concept is more difficult to interpret and once again the

possibility of Type I error is raised. Mentalising scores were largely negatively

correlated with scores on the self concept measure, although only the

correlation for mentalising about the self in interactions with the liked teacher

was statistically significant. At first appearance, this correlation may appear

counter-intuitive and difficult to explain. However, one possible explanation is

that those children who display poor levels of mentalising are 'self-defensive'

with regards to their self-esteem. That is, they are not able to consider

feedback from others that is potentially damaging to their self-esteem.

Support for this hypothesis comes from a study by Zakriski & Coie (1996)

that aggressive-rejected children were unrealistic in their assessments of their

own social status, and that they tended to make self-protective "errors" when

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assessing self-directed negative feedback from others.

One possible explanation for the negative correlation between mentalising and self-concept in the present study, may be found in research which suggest that adolescence is a period of marked 'egocentricism' (Elkind, 1967). During this time, adolescents become preoccupied with themselves and the way in which they appear to others, and as a result they may become painfully self-conscious. An alternative hypothesis for this finding is that those participants who showed high levels of mentalising about the self, in the liked (A) teacher with self condition, may have become adept in monitoring the mental states of those closest to them, such as their primary attachment figures, as a result of unpredictable and unstable emotional environments. If this was the case, then it would follow that such children would be more likely to hold a negative concept of themselves despite their ability for more advanced mental state monitoring. Support for this hypothesis comes from findings by Dunn et al (1995) suggesting that for some children, the ability to mentalise at a higher level, may be related to elevated levels of concern regarding the way in which they are perceived by others.

In relation to this, the coding scheme for the S.A.M.S included reference to negative self-reflective emotions, such as shame, embarrassment and guilt as evidence of higher level mentalising, and it is possible that those participants with lower scores on the Self Concept measure were more likely to select such emotions in their dialogue. Further research would be of value in

exploring this potentially interesting avenue and investigating whether the

inclusion of these affective states in level three coding (i.e. advance

mentalising criteria) may have skewed the results.

Methodology

In interpreting the results outlined above, a number of methodological issues

need to be considered, and these are outlined below. Methodological issues

are divided into 'strengths' and 'weaknesses', for the purpose of clarity.

'Strengths' considers the positive aspects of research with this adolescent

school population, together with the benefits of constructing a measure

specifically for use in the present study. 'Weaknesses' considers the

difficulties encountered during this study, including issues of measure design,

sample sizes and the complexity of the data set.

<u>Strengths</u>

The Sample:

Given the present study's focus on intra-individual variations in mentalising,

the adolescent school population provided a relatively homogenous and stable

participant sample. In particular, adolescents taking part in the study were

exposed to similar teaching environments, with the same teaching population.

In addition, participants from the two year groups shared similar time-tabled

school events such as exams and organisational changes. This homogeneity

provided a level of natural control for the confounding affects that can occur

as a result of disparity in the participant sample. Interviewing participants at

school also provided an opportunity to collect data in a natural environment

and it is hoped that this contributed to data that more reliably reflects

adolescents in the wider population.

Similarly, recruiting the sample from a single comprehensive school

population in south London ensured that the participant sample contained a

diverse ethnic mix, with a range of students from different socio-economic

backgrounds. Once again, this provided some degree of natural control for

the potential for socio-economic and educational bias to limit the

generalisability of the results.

The Measure:

Given the paucity of research literature on adolescents, and the absence of

studies into intra-individual variations in mentalising, the construction of a

measure specifically for use in the present study provided a number of

benefits. For example, the construction of an experimental interview for use

with an adolescent population, avoided the need to adapt existing measures

designed for much younger children. The scenarios and language chosen for

use in the interview was tailored to fit the adolescent school-based

participation sample, thereby providing a certain degree of face validity. In

addition, contextual variations of interest, such as self /other and

liked/disliked distinctions, could be easily included, further facilitating

subsequent data analysis and interpretation.

Weaknesses

The Sample:

The characteristics of the participant sample outlined above also require some

consideration in terms of weaknesses in the study. For example, Table 1.2

shows that the mean for verbal ability, as measured by the vocabulary sub-

test, falls below the average range at approximately 6 ½ points, with a

standard deviation of close to three points. It is likely that a number of social

factors, including socio-economic stress and family adversity, contribute to

below average educational attainment in a large proportion of the participant

sample. Although further research is required to determine the relationship

between verbal ability and mentalising capacity, Happe (1995) proposes a two

threshold model of theory of mind performance, whereby a minimal level of

verbal ability is required to pass certain metacognitive tasks, and an upper

threshold exists above which all normally developing subjects should be able

to perform adequately on such measures. It is possible that deficits in verbal

functioning in the participant sample of the present study may have influenced

the findings, and further research would be of use in clarifying this issue.

Additional weaknesses include the relatively small sample size included in the

final data analysis. Because of time restrictions, including concerns about

removing individual participants from the classroom for long periods of time,

a number of interviews that could not be concluded within a single lesson period remained incomplete, and were therefore excluded from some of the data analysis. This factor, combined with the lack of comparable research into intra-individual variations in mentalising, suggests the need for caution when interpreting any significant findings and generalising them to the wider population.

Finally, it is also possible that despite assurances to the contrary, participants remained concerned that information gathered within the interview, such as teacher preferences and descriptions of their thoughts and feelings, would not remain confidential, and would potentially influence subsequent academic assessment and student-teacher relationships. It is not clear how this could be remedied, but is possible that interviewing participants away from the school site may have produced differences in the results.

The Measure:

Once again, the benefits of creating a measure for specific use with the present study are tempered by a number of methodological weaknesses. In particular, given the experimental nature of the study, additional research is required to further determine the validity and reliability of the measure. For example, scores for mentalising using the S.A.M.S could be correlated with scores for similar constructs such as reflective function, using the Reflective-Functioning Scale (Fonagy et al, 1997).

Additional difficulties with the S.A.M.S also include the required student nominations for liked (A) and disliked (B) teachers. A number of participants expressed difficulty in discriminating between a liked and disliked teacher, reporting that they liked or disliked all their teachers equally. The absence of clear distinctions between teacher A and teacher B for some participants is likely to have confounded the test results, with the possibility that intra-individual differences were reduced in cases where teacher A and teacher B did not represent two distinct conditions, as expected. The present study would have benefited from the use of additional measures to control for this confounding effect, for example by asking participants to rate the liked and disliked teacher on a simple scale. Scores on this scale could then have been used in analysis of intra-individual differences in mentalising to clarify whether greater differences were observed in participants with clearer teacher preferences. This is particularly important, given the finding outlined in Chapter Three, Table 9.1, showing that participants were more likely to demonstrate higher levels of mentalising about the liked teacher than the disliked teacher, in the self as student condition.

In addition, it is also possible that the structure of the S.A.M.S itself also confounded the results of the data analysis, with each interaction scenario being repeated a total of four times, in order to incorporate the two teacher and two student conditions. The need for participants to mentalise about each scenario a number of times may have influenced mentalising levels during the course of the interview. For example participants may have displayed

increasingly less mentalising towards the end of the interview as participants

became bored with the scenarios, and had exhausted their store of mentalising

vocabulary. Further research into the design and structure of the S.A.M.S

would be of value, for example to compare and contrast the impact of

presenting scenarios in random order as opposed to fixed order according to

condition (e.g. teacher A with other, followed by teacher B with other, and so

on).

Clinical Implications

As we have seen, much of the research to date exploring mental processes has

suffered from a major omission - that of attention to intra-individual

differences and the role of context. Studies of metacognitive functioning,

including mentalising, theory of mind, reflective function and social cognition

have been largely based on the assumption that mental processes are

developmentally acquired and as such stable across a range of contexts. Little

attention has been paid to the nature of the social context in which these

processes occur, and children identified as impaired in these skills on specific

tasks or measures, have been assumed to show similar impairments across all

other contexts.

However, the present study provides evidence of intra-individual variations in

these metacognitive processes, in line with findings by Brown et al (1996)

suggesting that the social or relationship context in which an interaction

occurs, can have a significant impact on the level of mental state

understanding demonstrated by a particular individual. Such findings have

particular relevance for clinical interventions aimed at improving an

individual's emotional or mental state understanding, for example through the

use of interventions such as empathy training with disruptive children (e.g.

Feshbach, 1991) or indeed psychoanalytic psychotherapy with borderline

patients (e.g. Fonagy, 1995).

The presence of findings which suggest that performance on measures of

mentalising or mental state understanding in one context may not predict

performance on identical measures in different contexts is of particular clinical

importance. More specifically, such findings raises the possibility that

interventions which increase metacognitive capacity in one area (e.g. peer

relations) may not result in general gain across other areas (e.g. family

relations or self concept). That is, if metacognitive skills such as the ability to

mentalise are a function of the relationship in which they occur rather than

stable, trait-like features of mental processes as previously suggested, then

one would not expect interventions based on internal working models to have

global effects. Further exploration of this hypothesis would be of considerable

clinical interest, for example with the use of intervention studies.

Given that over recent years, disruptive behaviour within schools has become

of increasing concern to those involved, either directly or indirectly, in the

care and education of children, these findings hold particular relevance. If, as

the present study suggests, an individual's capacity to mentalise is mediated by the relationship context in which the mentalising occurs, then interventions with disruptive children need to be targeted at that level. That is, an intervention would need to maximise the child's capacity for mentalising by exploring, and potentially extending those relationship contexts in which higher level mentalising is observed to occur.

Conclusion

Disruptive behaviour has long been recognised within the field of psychological research as one of the most serious and pervasive of childhood problems, with potentially far-reaching consequences for both the individual child and family, as well as the wider community at large (Waldman, 1996). A recent report by the New Policy Institute (Guardian newspaper, 21.04.98) suggested that it cost education, health and social services approximately £81 million in 1997 to deal with pupils who had been permanently excluded from school. Clearly the time has now come to think again about disruptive behaviour, and move beyond traditional models of mental processes. There is a need to develop a theoretical framework which can account for the influence of social relationships on children's understanding of the mental states, and it is hoped that the present study goes some way to laying the foundations for further developments in this area.

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THE MAUDSLEY

Advancing mental health care

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ETHICAL COMMITTEE (RESEARCH)

Tel: (0171 919) 2892

26th February, 1997

Dr D Bolton
Department of Psychology
Institute of Psychiatry

Dear Dr Bolton

**Re: The role of attachment in emotional and behavioural disorders in early
and mid-adolescence: working models, genetics and differential experiences
(008/97)**

The Ethical Committee (Research) considered and approved the above study at its meeting on
21 February 1997.

Initial approval is given for one year. This will be extended automatically only on completion
of annual progress reports on the study when requested by the EC(R). Please note that as
Principal Investigator you are responsible for ensuring these reports are sent to us.
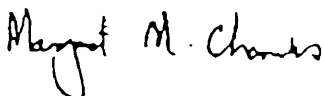
Please note that projects which have not been commenced within two years of original approval
must be re-submitted to the EC(R).

Please let me know if you would like to nominate a specific contact person for future
correspondence about this study.

Any serious adverse events which occur in connection with this study should be reported to the
Committee using the attached form.

Please quote Study No. 008/97 in all future correspondence.

Yours sincerely,

Margaret Chambers
Committee Administrator

APPENDIX 2

Permission to allow student to participate in project at
Informed consent

Dear Parent/Guardian

School was fortunate to receive support from Wandsworth to examine
details of student life at school. In particular, a project is about to begin that asks how
students think and feel about their experiences at   We are interested in
such things as classwork, getting on with teachers, homework and non-academic areas of
life at   Some students will be chosen at random to be interviewed about
their experiences. We hope that finding out more about students' perspectives and
experiences will help us to be more responsive to the academic and non-academic needs of
students.

The reason for sending you this letter is that your son/daughter was chosen to be one of
the students who will be asked about his/her experiences. The purpose of this letter is to
inform you that your son/daughter was chosen for the project and to ask your permission
for him/her to participate. It is important that you be aware of the activities at the school
and have the opportunity to ask any questions. Of course, students can choose not to
answer any question, and not participating in the project will in no way affect their
standing at

The project is being carried out by Dr. Tom O'Connor from the University of London.
Answers to the questions will be held in strict confidence by members directly involved
in the project. Teachers and school administration will not be directly involved and will
not be allowed access to the information collected. Only general information about what
was found out will be reported back to the school. The kinds of questions that will be asked
will relate to students' own thoughts and feelings. Although students may worry about
answering questions about their experiences, they will be told that they do not have to
answer any question and that they are free not to participate. The project is being carried
out with the approval of the school's Board of Governors. If you have any questions you
may contact Dr O'Connor on 0171 740-5121. Or, you may contact   at
                school

I do/do not give my permission for my son/daughter to participate.

Date_____ Signed _____

APPENDIX 3

School-based Assessment of Mentalising Schedule (S.A.M.S)

Name
Liked teacher (A)
Disliked teacher (B)

1. Imagine there is a student in your class. I am going to mention a few possible things that might happen with this student and Teacher A (liked) and Teacher B (disliked) and then ask you a few questions.

TEACHER A WITH STUDENT

I. (-)
The student in class has his/her name put on the board for detention by teacher A.

Why did this happen?

What does the teacher think?

What does the teacher feel?

What does the student think?

What does the student feel?

What happens next?

Anything else?

II. (-/+)
The student in class is asked to stay after class by teacher A

Why did this happen?

What does the teacher think?

What does the teacher feel?

What does the student think?

What does the student feel?

What happens next?

Anything else?

III. (+)
The student is praised by teacher A in front of the whole class

Why did this happen?

What does the teacher think?

What does the teacher feel?

What does the student think?

What does the student feel?

What happens next?

Anything else?

IV. (-/+)
The student is not called on by teacher A even though s/he had his/her hand up

Why did this happen?

What does the teacher think?

What does the teacher feel?

What does the student think?

What does the student feel?

What happens next?

Anything else?

V. (+)
The student and teacher A were talking, in a friendly way, in the hallway before school

Why did this happen?

What does the teacher think?

What does the teacher feel?

What does the student think?

What does the student feel?

What happens next?

Anything else?

VI. (-)
The student was yelled at in class by teacher A

Why did this happen?

What does the teacher think?

What does the teacher feel?

What does the student think?

What does the student feel?

What happens next?

Anything else?

TEACHER B WITH STUDENT

I. (-)
The student in class has his/her name put on the board for detention by teacher B

Why did this happen?

What does the teacher think?

What does the teacher feel?

What does the student think?

What does the student feel?

What happens next?

Anything else?

II. (-/+)
The student in class is asked to stay after class by teacher B

Why did this happen?

What does the teacher think?

What does the teacher feel?

What does the student think?

What does the student feel?

What happens next?

Anything else?

III. (+)
The student is praised by teacher B in front of the whole class

Why did this happen?

What does the teacher think?

What does the teacher feel?

What does the student think?

What does the student feel?

What happens next?

Anything else?

IV. (-/+)
The student is not called on by teacher B even though s/he had his/her hand up

Why did this happen?

What does the teacher think?

What does the teacher feel?

What does the student think?

What does the student feel?

What happens next?

Anything else?

V. (+)
The student and teacher B were talking, in a friendly way, in the hallway before school

Why did this happen?

What does the teacher think?

What does the teacher feel?

What does the student think?

What does the student feel?

What happens next?

Anything else?

VI. (-)
The student was yelled at in class by teacher B

Why did this happen?

What does the teacher think?

What does the teacher feel?

What does the student think?

What does the student feel?

What happens next?

Anything else?

That was great. Now we are going to change the story around. This time, imagine that you are the student. I am going to mention a few possible things that might happen with you and teacher A and teacher B and then ask you a few questions. Ready?

TEACHER A WITH SELF

I. (-)
Let's say you had your name put on the board for detention by teacher A

Why did this happen?

What does the teacher think?

What does the teacher feel?

What do you think?

What do you feel?

What happens next?

Anything else?

II. (-/+)
You are asked to stay after class by teacher B

Why did this happen?

What does the teacher think?

What does the teacher feel?

What do you think?

What do you feel?

What happens next?

Anything else?

III. (+)
You are praised by teacher A in front of the whole class

Why did this happen?

What does the teacher think?

What does the teacher feel?

What do you think?

What do you feel?

What happens next?

Anything else?

IV. (-/+)
You are not called on by teacher A even though you had your hand up

Why did this happen?

What does the teacher think?

What does the teacher feel?

What do you think?

What do you feel?

What happens next?

Anything else?

V. (+)
You and teacher A were talking, in a friendly way, in the hallway before school

Why did this happen?

What does the teacher think?

What does the teacher feel?

What do you think?

What do you feel?

What happens next?

Anything else?

VI. (-)
You were yelled at in class by teacher A

Why did this happen?

What does the teacher think?

What does the teacher feel?

What do you think?

What do you feel?

What happens next?

Anything else?

TEACHER B WITH SELF

I. (-)
Let's say you had your name put on the board for detention by teacher B

Why did this happen?

What does the teacher think?

What does the teacher feel?

What do you think?

What do you feel?

What happens next?

Anything else?

II. (-/+)
You are asked to stay after class by teacher B

Why did this happen?

What does the teacher think?

What does the teacher feel?

What do you think?

What do you feel?

What happens next?

Anything else?

III. (+)
You are praised by teacher B in front of the whole class

Why did this happen?

What does the teacher think?

What does the teacher feel?

What do you think?

What do you feel?

What happens next?

Anything else?

IV. (-/+)
You are not called on by teacher B even though you had your hand up

Why did this happen?

What does the teacher think?

What does the teacher feel?

What do you think?

What do you feel?

What happens next?

Anything else?

V. (+)
You and teacher B were talking, in a friendly way, in the hallway before school

Why did this happen?

What does the teacher think?

What does the teacher feel?

What do you think?

What do you feel?

What happens next?

Anything else?

VI. (-)
You were yelled at in class by teacher B

Why did this happen?

What does the teacher think?

What does the teacher feel?

What do you think?

What do you feel?

What happens next?

Anything else?

OK. Thank you, that was great. We're finished with the interview. Do you have any questions ?.

APPENDIX 4

CODING SCHEME FOR THE S.A.M.S - MENTALISING

Coding Principles

All of the codes below are frequency counts, i.e. the number of occurrence is simply counted up for each segment i.e. an interviewee should receive a maximum of four mentalising level codes per teacher, and per student, for each interview scenario. The object of the mentalising should also be distinguished, i.e., self vs. teacher vs. other student. Code the predominant mentalising code for each talk turn. Where the response contains multiple codes, award the highest level code and no other (definitions and examples of each type of mentalising are given below). All mentalising statements are coded unless they were additionally prompted. All references to behaviour are not coded (e.g., "all we do is write ... and my hands hurts and so then I get up but then he yells at me")

In addition, each talk-turn that pertains to the self, lesson or teacher receives a positive or negative or neutral rating. In most cases it is evident whether the description is positive, negative, or neutral, but this is not always the case. For example, code "OK" and "all right" as neutral because they are typically thought of in this way. If two or more distinct affects are expressed, code both: e.g., "he can get on my nerves but he's all right" is coded -T (negative teacher rating) and +/- T (neutral teacher rating).

<u>Summary</u> : For each talk-turn, specify: *code* (e.g., 1b) and *object* (i.e., self, teacher). Separately, code *affect* (i.e., positive, negative, neutral) and object of the affect (i.e., self, teacher, lesson).

Coding Levels

<u>Level One:</u>

<u>a. physical</u>: any reference to physical characteristics, e.g. age, height, size, etc.; this code does not refer to *activity or behaviour.*

<u>b. psychological/trait</u>: any reference to a psychological characteristic or psychological trait; the key here is that the reference must be monolithic and not contextualised in <u>any</u> way. Thus, grumpy, irritable, moany, good teacher, fair, nice would be counted; if there is a reference to a teacher being moany because of some occurrence (chatting), this would not be coded here because the student has gone beyond simply labelling a characteristic and providing some context in which it occurs (or causes it, etc.).

<u>c. general relationship code:</u> this code is for any reference to the relationship per se, e.g., "we get on well". It is always coded as teacher, e.g., "we get on fine" is coded 1cT, +T (Level 1c relationship code, positive teacher rating).

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Level Two:

a. belief/intention/desire/preference: any reference to an internal disposition, likes or dislikes (s/he likes us to work hard), wishes (e.g., s/he wants us to learn) or some other 'position' that is fundamentally internal to the individual and not discernible except through some speculation about the other's intentions or tendency.

b. feeling: any reference to a feeling state; feelings are coded separately from intentions and dispositions because they may provide unique information. It is sometimes difficult to differentiate between 2a and 2b. Code 2b only if there is a specific reference to a feeling and is clearly not just a preference. For example, "I like my teacher" is coded 2a; "geography is fun is 2a"; "he makes me mad" is a 2b.

c. 'two-dimensional' understanding: recognition of contrasting mental states, but without explanation or additional information to provide the interviewer with context. E.g. "he's annoying but he can be fun too".

Level Three:

a. recursive thinking: any reference to the "S/he thinks that I think X" pattern in which there is a second order example of internal state/mentalising reference. I think that she likes teaching is not coded here (it is a 2a) because there are not two levels of mentalising (it is assumed that all statements could be prefaced with "I think", in response to the interviewer's questions). Evidence of empathy towards another should also be included here. e.g. "The teacher understands that the student's had a hard day".

b. contextualising: any reference to an internal state that is tied to a particular event, or some indication that there is a cause-effect relationship between some environmental occurrence (chattiness) and an internal state (frustration; as opposed to yelling which would not be coded here). To score here the student needs to clearly demonstrate that s/he is aware of the other as a being who responds in her/his own way in response to some specific external event. The context must be specific, e.g., "I'm this way when X happens", "he is always telling me off when it's my friends that are talking, so that gets on my nerves". 'Dual-possibility' responses should also be included here. i.e. On the one hand X, but otherwise Y. e.g. "If it's a good student, then they will try harder to behave, but if it's a bad student, then they won't care".

c. reflective: any reference to thinking about one's own reaction or behaviour, or referring to the other's thinking about her/his own behaviour (in the latter case we have to assume that s/he is correct in the quality of the reflection), e.g., "I think I can be too chatty sometimes"; "I need to try harder to sit still in class", "she would like to do more that she is but the class is just too unruly".

d. atypicality: any reference to a behaviour or thought that is not typical of the individual, i.e., the subject is showing an appreciation that the 'object' is stepping 'out of character'.

e. self-reflective emotions: any reference to guilt, shame, embarrassment, pride.

CODING SCHEME FOR THE S.A.M.S -ATTRIBUTIONS

category	criteria	scale
Initiator Response to "why did this happen"	Who initiates, or whose actions precipitate, the interaction. Measured by degree of student involvement	0 = no response 1 = no student participation 2 = part student 3 = all student **coded by chunk**
Representations Valence of teacher and student representations	Positive/negative teacher Positive/negative student e.g. "Mr S is in a really bad mood" is scored as negative e.g. "The student is really proud of herself" is scored as positive	Maximum of 1 positive and 1 negative score per question segment for teacher and for child.
Ending Themes Response to "what happens next"	Interviewee receives a maximum of two score, to allow for combined endings. e.g. "Well, if it was a bad student, he might throw something at the teacher, but if it was a good student, he might just try and work harder to work his name off the board" - This would score 2 for escalation of conflict and 1 for compliance.	Frequency codes i.e. theme present or absent 1 = compliance 2 = escalation/maintenance of conflict 3 = positive resolution 4 = humiliation/guilt 5 = stand-off 6 = praise/reward/prosocial feeling 7 = fairy-tale ending 8 = don't know 9 = neutral 10= punishment/retribution
Incongruence/ distortion	Evidence of incongruence, incoherence or distortion of affect e.g. "If she praised me I'd be really suspicious and think she was trying to shame me in front of the class"	Score 1 for presence and 0 for absence of distortion Interviewee receives maximum of one score per question

S.A.M.S. INTERVIEW TRANSCRIPT

Name
Liked teacher (A)
Disliked teacher (B)

1. *Imagine there is a student in your class. I am going to mention a few possible things that might happen with this student and Teacher A and Teacher B and then ask you a few questions.*

TEACHER A WITH STUDENT

I. -
The student in class has his/her name put on the board for detention by +
teacher.

Why did this happen?
'cos they talk a lot, shout a lot and don't pay attention
What does the teacher think?
Shut up
What does the teacher feel?
Really angry. Upset
What does the student think?
They'll be just talking and laughing
What does the student feel?
Oh why did you put my name on the board, or angry
What happens next?
Everyone will go silent and Miss'll just talk about the work
Anything else?
No

II. -/+
The student in class is asked to stay after class by teacher +

Why did this happen?
Um, running around, shouting, giggling too much and talking back to the teacher..
same reasons
What does the teacher think?
Er, oh you're so difficult.. really the same things again. Just angry and upset
What does the teacher feel?
(nothing else)
What does the student think?
Angry and just start talking more, but more angry like oh why did she put my name on

the board, ahh, and not laughing no more, being moody and not doing any work
What does the student feel?
(nothing else)
What happens next?
Don't know
Anything else?
-

III. +
The student is praised by teacher + in front of the whole class

Why did this happen?
'Cos they've been good, helpful and not talking
What does the teacher think?
That's a good student, I would like to work with her or him more often
What does the teacher feel?
Very happy, proud that it's not noisy and everything again
What does the student think?
Very happy [other thoughts?] Oh I wonder if I got a merit or something
What does the student feel?
nothing else really
What happens next?
That friend will tell another friend and they'll start talking
Anything else?
Um, not really no

IV. -/+
The student is not called on by teacher + even though s/he had his/her hand up

Why did this happen?
Um, I don't know.. maybe 'cos she's talking to the rest of the class about something important, or maybe she didn't see them
What does the teacher think?
Don't know
What does the teacher feel?
Um... don't know
What does the student think?
Oh Miss, come over here, look at me [feelings?] Angry or maybe even upset.. until they give up and just put their hand down
What does the student feel?
(nothing else)
What happens next?
The student will just try and get on with their work or something
Anything else?
-

V. +

The student and teacher + were talking, in a friendly way, in the hallway before school

Why did this happen?
Um.. 'cos they're happy, or about what they're gonna do after, or something like that
What does the teacher think?
Um.. nice person, um, not shouting or backchatting or anything like that, just nice
What does the teacher feel?
Happy
What does the student think?
That's a nice teacher, not too strict, not too kind, just nice
What does the student feel?
Happy
What happens next?
Don't know.. the student goes to his class, or her, and just tells them what happened
Anything else?
No

VI. -

The student was yelled at in class by teacher +

Why did this happen?
Because he didn't do as he was told, or he kept on talking too much or just didn't pay attention
What does the teacher think?
Oh you've got a detention, blah blah blah, I wished I never knew you, or something like that
What does the teacher feel?
Angry, and maybe even upset
What does the student think?
Er, why are you yelling at me, what've I done wrong
What does the student feel?
Angry, upset
What happens next?
Erm, he'll get a detention, he'll have to stay behind, or come after school, something like that
Anything else?
No

TEACHER B WITH STUDENT

I. -

The student in class has his/her name put on the board for detention by - teacher.

Why did this happen?
'Cos they laughed too much, talked too much and just don't do their work and run around

What does the teacher think?
Right, shut up, dur dur dur (shouting/moaning noise), get on with your work, dur dur
What does the teacher feel?
Angry
What does the student think?
Why is my name on the board, I didn't do anything wrong
What does the student feel?
Angry, and they won't do their work at all
What happens next?
He'll start talking again and laughing, and Mr Jones will say you're doing it again, and he'll say doing what, and it'll just become a bit of an argument and he'll stumble out of the class, I didn't do anything wrong, all moody
Anything else?
No

II. -/+
The student in class is asked to stay after class by teacher -

Why did this happen?
Because they're talking too much or laughing, or maybe just not paying attention
What does the teacher think?
You're impossible
What does the teacher feel?
Angry
What does the student think?
For God's sake, why's my name on the board, leave me alone, go away
What does the student feel?
Upset and angry, and just start talking more
What happens next?
Um, ... he or she won't do their work, and they'll just stay behind after class
Anything else?
-

III. +
The student is praised by teacher - in front of the whole class

Why did this happen?
Because they didn't talk, or um they've done good work in their book, or something like that
What does the teacher think?
Nice student.. hope it carries on like this, or something
What does the teacher feel?
Happy this is a quiet good class, or.. they can go early
What does the student think?
Yeah, I've got a merit or credit, yeah, look at my book, d'you want a look
What does the student feel?
Happy
What happens next?
Everybody will just start working again until the pips go

Anything else?
No

IV. -/+
The student is not called on by teacher - even though s/he had his/her hand up

Why did this happen?
They're shouting too much or um.. or Sir just can't see them if he's on the other end of the room, something like that
What does the teacher think?
I'll be over to you in a minute, keep your hair on
What does the teacher feel?
Very angry
What does the student think?
Angry.. come on Mr Jones. Come over here now.. oh that's it , I give up on you dur dur dur. Look at me !
What does the student feel?
Upset, feeling upset
What happens next?
Um , the student will start waving their arms, or something like that, and Mr Jones will see them at last, and say, why, what do you want, and their like, hah, at last, you've come. And he's like what do you want? And the student will feel very relieved
Anything else?
-

V. +
The student and teacher - were talking, in a friendly way, in the hallway before school

Why did this happen?
Um, the teacher's happy about something, and the student's.. just happy.. 'cos there's no assembly
What does the teacher think?
This is a nice kid
What does the teacher feel?
Happy
What does the student think?
Feeling... I don't know.. happy. [other thoughts?] Um, don't know, it depends what question he's asking.. I don't know
What does the student feel?
(nothing else)
What happens next?
The student will have to go to his class and then Mr Jones will have to take another class
Anything else?
No

VI. -

The student was yelled at in class by teacher -

Why did this happen?
The usual things really, running around, laughing too much and not doing any work
What does the teacher think?
This is an impossible class, I can't look after them, they just won't take no for an answer, or something like that
What does the teacher feel?
Upset, angry, very angry
What does the student think?
He'll just be happily talking along
What does the student feel?
Some of them just don't care, they just laugh sometimes, but sometimes they just say OK I wont talk, but just start talking again
What happens next?
The pips will go, and everything, and put them in the bags and go
Anything else?
-

That was great. Now we are going to change the story around. This time, imagine that you are the student. I am going to mention a few possible things that might happen with you and teacher A and teacher B and then ask you a few questions. Ready?

TEACHER A WITH SELF

I. -

Let's say you had your name put on the board for detention by + teacher.

Why did this happen?
It has happened before, but, 'cos I was talking too much or just laughing too much
What does the teacher think?
Oh this isn't like you.. um angry
What does the teacher feel?
Moody and oh why is she in our lesson , why doesn't she do English somewhere else, or something like that
What do you think?
Look, look my name's on the board, why the hell is my name on the board, get it down
What do you feel?
Angry, very angry
What happens next?
Miss will put more names on the board, and she just gets angrier and angrier until she puts everybody's name on the board and she says all right, everybody's in detention
Anything else?
-

II. -/+
You are asked to stay after class by teacher +

Why did this happen?
Laughing too much - I laugh too much (in general)
What does the teacher think?
Um, don't know
What does the teacher feel?
Angry
What do you think?
I'll be wishing that the time just went flying by, just watch it spin spin spin, until it stops and then I can go
What do you feel?
Bored, no-one to talk too, and stuff like that
What happens next?
Miss will let us one by one go, until everyone's gone
Anything else?
No

III. +
You are praised by teacher + in front of the whole class

Why did this happen?
'Cos I've done a good piece of work, or haven't talked the whole lesson, which would be new!
What does the teacher think?
Good piece of work, you deserve something, or something like that-
What does the teacher feel?
Very happy, wants to show it to everybody
What do you think?
Thinking yes!, everyone's going to see my work, and something like that
What do you feel?
Happy, or if it's something I don't like, I just put my head on the table and hope that no-one notices me, until the pips go and we all go, and I'll go last and hope that no-one notices me
What happens next?
Everyone will get on with their work and the people who do know it's me might ask questions
Anything else?
No

IV. -/+
You are not called on by teacher + even though you had your hand up

Why did this happen?
Either I talk too much or I'm not the person to put my hand up, or I'm not the person nearest to come to, or talk too much
What does the teacher think?
Erm, right, she's too far away, I'll go to you next, or something like that

What does the teacher feel?
Don't know, just getting on with the work
What do you think?
Very angry, so when she does come I'm like.. I'm like oh God I don't understand this, dur dur dur, all grumpy
What do you feel?
(nothing else)
What happens next?
Um.. people start talking again, until the pips go and maybe some people will stay behind, until all of us will go, unless everyone stays behind and nobody goes, or everyone goes
Anything else?
No

V. +
You and teacher + were talking, in a friendly way, in the hallway before school

Why did this happen?
We're both in a happy mood, or we have something to talk about that's going to happen in the summer, or that's going to happen in a few days, or something like that
What does the teacher think?
Wow that's good, that's new to do on the weekend, or something like that
What does the teacher feel?
Happy, it's a new lesson, new day, just get on with it
What do you think?
Happy, yeah [other thoughts?] Um, where is everybody
What do you feel?
(nothing else)
What happens next?
She'll lay down the work and we'll do it
Anything else?
No

VI. -
You were yelled at in class by teacher +

Why did this happen?
'Cos I'm talking too much, or laughing too much
What does the teacher think?
Ahh, this is too annoying and hard, I want to get out, someone take over, something like that
What does the teacher feel?
Upset
What do you think?
Miserable old bag, something like that
What do you feel?
Grumpy
What happens next?
Um, I'll be silent and the pips will go, and we'll just go

Anything else?
No

TEACHER B WITH SELF

I. -
Let's say you had your name put on the board for detention by - teacher.

Why did this happen?
'Cos I'm laughing or not paying attention, something like that
What does the teacher think?
Very angry [other thoughts?] No-one's paying attention to me, why don't you pay attention, look at me when you pay attention to me, and just start putting names on the board
What does the teacher feel?
(nothing else)
What do you think?
You miserable old sod, leave me alone, get my name off the board
What do you feel?
Upset, angry
What happens next?
Everyone will leave after the pips
Anything else?
No

II. -/+
You are asked to stay after class by teacher -

Why did this happen?
Either 'cos I didn't do enough work, or I didn't do my homework, something like that
What does the teacher think?
Why didn't you do your homework, or something
What does the teacher feel?
Angry
What do you think?
What have I done wrong, or something like that
What do you feel?
Angry, bored, depressed
What happens next?
Um, we'll just do one by one to go, or set some work for us to do
Anything else?
No

III. +
You are praised by teacher - in front of the whole class

Why did this happen?
'Cos I've done a good piece of work, or I didn't talk for the whole of the lesson
What does the teacher think?

This is good work, I hope she keeps it up, or something like that
What does the teacher feel?
Happy
What do you think?
Um happy, um, I can't believe it, I've done good work for once, something like that
What do you feel?
Nothing else really.. surprised
What happens next?
I'll go to my seat, people will start talking again, and the pips will go
Anything else?
No

IV. -/+
You are not called on by teacher - even though you had your hand up

Why did this happen?
Um.. either because I'm talking too much, or he's up the other end of the room
What does the teacher think?
All right, who can I go to next, or something like that, who's the nearest that I could go to, or who had their hand up first, something like that
What does the teacher feel?
Er normal just relaxed and stuff, not happy not sad, just normal
What do you think?
Come on, come on sir, I want to ask you what this means, dur dur, something like that
What do you feel?
Miserable, a bit upset
What happens next?
Erm, he'll come to me after, and just ask him the question
Anything else?
No

V. +
You and teacher - were talking, in a friendly way, in the hallway before school

Why did this happen?
Dunno. I've never done it before
What does the teacher think?
That's good, I never knew you done that, or um.. really, that's good..
What does the teacher feel?
Surprised, happy
What do you think?
I don't know um.. please let the pips go.. I don't know
What do you feel?
Um.. I don't know
What happens next?
Pips'll go and I'll go to my next class, rushing!
Anything else?
No

VI. -
You were yelled at in class by teacher -

Why did this happen?
'Cops I talk too much, laugh too much, just don't pay attention
What does the teacher think?
This is an impossible class, I can't get to know it dur dur
What does the teacher feel?
Upset, angry
What do you think?
Angry [other thoughts?] Angry thoughts.. why don't you go and do that then, moany
old thing, and something like that
What do you feel?
(nothing else)
What happens next?
Everyone will go, go to break or next lesson or something
Anything else?
No

APPENDIX 6

WHAT AM I LIKE? (HARTER ACADEMIC SELF CONCEPT)

In this section we are interested in what kind of person you are like. There are no right or wrong answers, we are just interested in what you think. Below are some sentences. Each one describes two kinds of teenager, and you will decide which one is more like you. Then you will decide whether the description of that kind of teenager is really true for you or only sort of true for you. Please put a circle around the number that you think best describes you.

CIRCLE ONLY ONE NUMBER IN A ROW.

Really true for me	Sort of true for me				Sort of true for me	Really true for me
4	3	Some teenagers feel that they are just as clever as others	BUT	Other teenagers aren't so sure and wonder if they areas clever	2	1
4	3	Some teenagers are pretty slow in finishing their school work	BUT	Other teenagers can do their school work more quickly	2	1
4	3	Some teenagers do very well at their school work	BUT	Other teenagers don't do very well at their school work	2	1
4	3	Some teenagers have trouble working out the answers in school	BUT	Other teenagers can almost always work out the answers.	2	1
4	3	Some teenagers feel that they are quite intelligent	BUT	Other teenagers question whether they are intelligent.	2	1

Remember, circle only ONE number for each question.

WHAT I THINK AND FEEL QUESTIONNAIRE

(SHORT MOODS & FEELINGS QUESTIONNAIRE)

People are different in how they think and feel. In this questionnaire we are interested in what has been true for you in the **past 3 months.**
This time, if it was **never true about you in the past 3 months, circle the star in the Not True** box. If the sentence was only **sometimes true, circle the star in the Sometimes** box. If it was **true about you for most of the last 3 months, circle the star in the True** box.

	Not true	Sometimes true	Certainly true
1. I felt miserable or unhappy..............................	*	*	*
2. I did not enjoy anything at all............................	*	*	*
3. I was less hungry than usual............................	*	*	*
4. I ate more than usual.....................................	*	*	*
5. I felt so tired I sat around and did nothing..............	*	*	*
6. I was moving and walked more slowly than usual.....	*	*	*
7. I was restless...	*	*	*
8. I felt I was no good anymore............................	*	*	*
9. I blamed myself for things that were not my fault......	*	*	*
10. It was hard for me to make up my mind.................	*	*	*
11. I felt grumpy and irritable with my parents.............	*	*	*
12. I felt like talking less than usual........................	*	*	*
13. I was talking more slowly than usual....................	*	*	*
14. I cried a lot...	*	*	*
15. I thought there was nothing good for me in the future	*	*	*
16. I thought that life was not worth living.................	*	*	*
17. I thought about death or dying..........................	*	*	*
18. I thought that my family would be better off without me	*	*	*
19. I thought about killing myself..........................	*	*	*
20. I did not want to see my friends........................	*	*	*
21. I found it hard to think properly or concentrate.......	*	*	*
22. I thought that bad things would happen to me.........	*	*	*
23. I hated myself...	*	*	*
24. I thought I was a bad person...........................	*	*	*
25. I thought I looked ugly..................................	*	*	*
26. I worried about aches and pains........................	*	*	*
27. I felt lonely...	*	*	*
28. I thought nobody loved me..............................	*	*	*
29. I did not have any fun at school........................	*	*	*
30. I thought I could never be as good as the other kids..	*	*	*
31. I did everything wrong..................................	*	*	*
32. I did not sleep as well as I usually sleep...............	*	*	*
33. I slept a lot more than usual............................	*	*	*
34. I was not as happy as usual, even when I was praised or reward.......................................	*	*	*
35. I thought that bad things would happen to me.........	*	*	*

ME AND MY BEST FRIEND
(FRIENDSHIP QUALITY QUESTIONNAIRE)

In section the questions you will be asked are about your friendship with (your best friend) (write in your best friend's first name..........................).

How long have you known him/her?............. (how many months?)

The questions describe how you and your friend get along with each other. For each item, please indicate how true the descriptions are of your friendship with .... by ticking the appropriate box for each question.

	Not true at all	A little true	Somewhat true	Quite true	Really true
My friend and I live really close to each other	1	2	3	4	5
We sit together at lunch	1	2	3	4	5
We annoy each other a lot	1	2	3	4	5
We help each other with schoolwork	1	2	3	4	5
My friend tells me I'm good at things	1	2	3	4	5
If other people were talking behind my back, my friend would stick up for me	1	2	3	4	5
We make each other feel important and special	1	2	3	4	5
When one of us is angry about something that happened to us we can talk to each other about it	1	2	3	4	5
When we get angry with each other we talk about how to get over it	1	2	3	4	5
We care about each other's feelings	1	2	3	4	5
We always tell each other about our problems	1	2	3	4	5
We work things out easily when we're not getting along	1	2	3	4	5
I can think of some times	1	2	3	4	5

when my friend has said
unkind things about me
to others

We pick each other as partners for things	1	2	3	4	5
We argue a lot	1	2	3	4	5

	Not true at all	A little true	Somewhat true	Quite true	Really true
My friend would still like me even if all the others didn't like me	1	2	3	4	5
We hang out together at school	1	2	3	4	5
We make up easily when we have a fight	1	2	3	4	5
We talk about the things that make us sad	1	2	3	4	5
I can always count on my friend to keep promises	1	2	3	4	5

I often ask my friend for help and advice when I have trouble working something out	1	2	3	4	5
We fight	1	2	3	4	5
We see each other outside school	1	2	3	4	5
My friend makes me feel good about my ideas	1	2	3	4	5
We get over arguments really quickly	1	2	3	4	5
If I told my friend a secret, I would trust him/her not to tell anyone else	1	2	3	4	5
We count on each other ideas on how to get things done	1	2	3	4	5
We say hurtful things to each other	1	2	3	4	5
We tell each other that we're good at things	1	2	3	4	5
We irritate each other	1	2	3	4	5
We tell each other secrets	1	2	3	4	5
We have fun together a lot	1	2	3	4	5
My friend doesn't listen	1	2	3	4	5

to me

	Not true at all	A little true	Somewhat true	Quite true	Really true
I feel like I belong in this school	1	2	3	4	5
I feel like I am successful in this school	1	2	3	4	5
I feel like I matter in this school	1	2	3	4	5
I do not feel like I am important in this school	1	2	3	4	5
Understanding the work in school is more important than the grade I get	1	2	3	4	5
I like school work that I will learn from even if I make lots of mistakes	1	2	3	4	5
The main reason why I do my school work is that I like to learn	1	2	3	4	5
I like school work best when it makes me think	1	2	3	4	5
I feel more successful in school when I learn something I did not know before	1	2	3	4	5