

**Empathy and Theory of Mind in Offenders with  
Intellectual Disabilities**

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## **Declaration**

This work has not been submitted to any other institution  
or for any other qualification

## **Abstract**

### ***Section 1: Literature Review***

***Page 1***

This literature review considers the existing research on empathy and theory of mind in offenders with intellectual disabilities, beginning with definition of the terms and discussion of the importance of considering empathy in terms of its components. Due to a lack of research specific to this area, the review summarises and brings together findings from the separate fields of empathy and theory of mind in offenders and empathy and theory of mind in people with intellectual disabilities.. Existing findings are inconclusive, leaving uncertainty about whether offenders are more or less skilled than non-offenders in these areas and further research is therefore necessary.

### ***Section 2: Research Report***

***Page 41***

A quantitative comparison is carried out between a group of offenders with intellectual disabilities and a group of non-offenders with intellectual disabilities, on measures of empathy and theory of mind. Offenders performed significantly better than non-offenders on some sub-tasks, with all other comparisons showing no significant differences between groups. It is concluded that the present methodology and philosophy of considering empathy and theory of mind as composite concepts should be utilised in future research to clarify the issue.

### ***Section 3: Critical Appraisal***

***Page 80***

A critical appraisal of the research process, this section discusses both the personal and professional issues that affected the work and comments further on its methodological limitations and clinical implications.

## Acknowledgements

*Dedicated with love to Thomas Parsons, my Grandad  
and Billy's Great-Grandad. We will miss him.*

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# **Literature Review.**

**Empathy & Theory of Mind in Offenders with Intellectual Disabilities.**

## Literature Review Table of Contents

<b>Literature Review Table of Contents .....</b>	<b>2</b>
<b>Structured Summary .....</b>	<b>3</b>
<b>Introduction.....</b>	<b>4</b>
<b>Literature Relating to Offenders.....</b>	<b>10</b>
Empathy in Offenders	10
Theory of Mind in Offenders	15
<b>Literature Relating to People with Intellectual Disabilities .....</b>	<b>17</b>
Empathy in People with Intellectual disabilities	17
Theory of Mind in People with Intellectual disabilities	22
<b>Literature Relating to Offenders with Intellectual Disabilities.....</b>	<b>25</b>
<b>Discussion and Conclusions.....</b>	<b>26</b>
<b>References .....</b>	<b>30</b>
<b>Appendices .....</b>	<b>37</b>
Appendix 1: Author Guidelines	37

## Structured Summary

### *Background*

Research on the empathic and theory of mind abilities of offenders with intellectual disabilities is extremely limited. Until more is known this group of vulnerable adults may receive inadequate or inappropriate treatment. This paper aims to review the existing literature.

### *Methods*

Literature searches were conducted in the areas of empathy and theory of mind in offenders and those with intellectual disabilities.

### *Results*

Results were inconclusive, some showing offenders having impairments in aspects of empathy, some only in certain types of offender and some suggesting offenders may be *more* skilled. Those with intellectual disabilities appear to have impairments in some aspects of empathy as well as theory of mind but findings are extremely limited and often contradictory.

### *Conclusions*

The review has highlighted a need for well designed and controlled research into the abilities and needs of offenders with intellectual disabilities. In addition it has revealed a shortage of studies looking at these skills in either separate population.



## Introduction

Research on offenders with intellectual disabilities has undergone considerable development in recent years. In 2001 and 2002 three journals published special issues containing new research findings in this area (British Journal of Forensic Practice, Bates & Frankish, 2001; Journal of Applied Research in Intellectual Disabilities, Felce & Murphy, 2002; Journal of Intellectual Disability Research, Holland, 2002) and a book has just been published (Lindsay et al., 2004). There is existing interest in empathy in offenders (particularly sexual offenders) but this issue has only recently begun to be investigated in offenders who also have intellectual disabilities. This delay in transfer from the mainstream to intellectual disability services is echoed in treatment programmes, which often aim to increase empathy and evaluate victim empathy at outcome. However, this approach has only recently been applied to offenders who also have intellectual disabilities (Rose et al., 2002). Although it has become increasingly common to investigate theory of mind in people with intellectual disabilities, the concept of empathy has not received much attention. Theory of mind research is therefore important for extending the evidence base on empathy in those with intellectual disabilities.

This review aims to summarise the existing research on empathy and theory of mind in offenders with intellectual disabilities. Since little research has been carried out in this specific area, the review will establish what can be drawn from each of the appropriate research areas in turn, first looking at findings relating to offenders and then at those relating to people with intellectual disabilities. The aim is that knowledge about the empathy-related skills of offenders with intellectual disabilities will inform their treatment. Prior to this the problem of definition will be discussed.

## Defining Empathy and Theory of Mind

Empathy has been defined as sharing the emotional state or context of another (Eisenberg & Strayer, 1987) but in general the concept has not been used or measured consistently. The term has been used in a vague manner, often discussed and measured as a single concept without detailed consideration of exactly what it means. This problem was discussed by Marshall et al. (1995) who reviewed the literature and attempted to clarify the definition by reconceptualising empathy as a 4-stage process as follows:

**EMOTION RECOGNITION**



**PERSPECTIVE-TAKING**



**EMOTION REPLICATION**



**RESPONSE DECISION**

This model separates out various hypothesised components involved in sharing the emotional state of another person. It makes it clear that deficits could occur - and be measured - at any stage in the process. However, despite providing a useful framework for thinking about empathy, the components are rather simplistic. A number of similar attempts to operationalise the concept have also been published (Geer, 2000; Goldstein & Higgins D'Alessandro, 2001) but little empirical research has been carried out to formally clarify the components proposed.

In comparison, theory of mind is generally defined as the understanding that other people

have a mind separate to one's own, along with the capacity to understand their mental states (Yirmiya et al., 1998). It has been hypothesised as a key deficit in autistic spectrum disorders (e.g. Baron-Cohen, 1992). Early research focused on the measurement of theory of mind abilities in under-fives, and it is only more recent research that has looked at theory of mind in adults and in those with intellectual disabilities (Sullivan & Tager-Flusberg, 1999; Tager-Flusberg & Sullivan, 2000; Yirmiya et al., 1996) or mental health problems (Doody et al., 1998; Pilowsky et al., 2000). Findings that others have problems with theory of mind tasks have cast doubt on the early hypothesis that theory of mind deficits are specific to autism (the specificity hypothesis, see for example Dahlgren, Sandberg et al., 2003; Zelazo et al., 1996).

Figure 1 summarises a number of componential models of theory of mind, empathy and social skills and clarifies areas where different theories show common features. Four empathy models are considered (Davis, 1983; Geer, 2000; Goldstein & Higgins D'Alessandro, 2001; Marshall et al., 1995) along with a model of general social skills included in order to show how these fields overlap (Covell & Scalora, 2002) and two theory of mind models (Keenan & Ward, 2000; Tager-Flusberg & Sullivan, 2000; Ward et al., 2000). The aim of this tabulation is to draw together the strengths of existing models using the detail of some to elaborate on omissions in others, and to assemble a model with the highest level of detail presently available. In the construction of this table it has been necessary to interpret and clarify ideas expressed in various papers (i.e. Keenan & Ward, 2000; Ward et al., 2000) and to fit these in line with the ideas of other researchers. It should be noted that the authors of these original sources may disagree with the tabulated interpretation of their work and that this therefore represents only a preliminary attempt to combine theories.

Marshall et al. (1995) proposed an emotion recognition component, which would appear to be the earliest of all the suggested components and to be equivalent to McFall's (1990) 'reception and perception' aspects of decoding skills and the social-perceptual component of Tager-Flusberg & Sullivan (2000). These components have been labelled the 'perceptual component' in the final column of Figure 1, which attempts to integrate all the suggestions into one overarching model of empathy (subsuming theory of mind). The next common component is related to perspective taking (Davis, 1983; Goldstein & Higgins D'Alessandro, 2001; Marshall et al., 1995) or the ability to understand others' points of view (Geer, 2000). This may be the equivalent stage to theory of mind, since it could be broken down into the realisation that others have their own mental states, the comprehension of these states and being able to predict the person's behaviour based on these (Keenan & Ward, 2000; Ward et al., 2000). Figure 1 also shows that this understanding can then be used in a circular way to interpret further social information. The exact relationships between these components are not clear, so this part of the empathy model has been rather vaguely labelled 'cognitive comprehension' as it appears to be about the ability to understand the social information that comes in from the previous perceptual stage.

Next there is generally thought to be a component related to replicating or vicariously experiencing the other person's emotion (Geer, 2000; Goldstein & Higgins D'Alessandro, 2001; Marshall et al., 1995), which implies that there is then some level of personal emotional response (for example distress, if the other's emotional state is negative, Davis, 1983). This has been labelled the emotional component, but it is clear that it requires breaking down with further empirical research. Finally, an action component is often included in empathy models either in quite a vague manner (Geer, 2000) or broken down into a response decision aspect (Marshall et al., 1995; McFall,

1990) and the behaviour itself (McFall, 1990). The final column of Figure 1 describes these as a cognitive decision-making component and an action component.

The ideas summarised in Table 1 will now be used in a review of the literature relating to offenders and people with intellectual disabilities in order to address one of the main problems in the existing literature, that of poor definition of terms.

EMPATHY MODELS				SOCIAL SKILLS	THEORY OF MIND MODELS		SUMMARY OF EMPATHY COMPONENTS SUGGESTED
(Davis, 1983)	(Marshall et al., 1995)	(Geer, 2000)	(Goldstein & Higgins D'Alessandro, 2001)	(McFall, 1990) cited in (Covell & Scalora, 2002)	(Tager-Flusberg & Sullivan, 2000)	(Keenan & Ward, 2000; Ward et al., 2000)	
	EMOTION RECOGNITION			RECEPTION & PERCEPTION (ASPECTS OF DECODING SKILLS)	SOCIAL- PERCEPTUAL COMPONENT		PERCEPTUAL COMPONENT
PERSPECTIVE TAKING		ABILITY TO PERCEIVE ANOTHER'S POINT OF VIEW	PERSPECTIVE-TAKING: ABILITY TO IMAGINE OTHERS' THOUGHTS AND FEELINGS	INTERPRETA-TION (PART OF DECODING SKILLS)		4. USE TO INTERPRET NEW INFO.	COGNITIVE COMPREHENSION COMPONENT
FANTASY	PERSPECTIVE TAKING					1. REALISE MENTAL STATES EXIST 2. MENTAL STATE THEORY	
EMPATHIC CONCERN	EMOTION REPLICATION	ABILITY TO EXPERIENCE THE EMOTIONS OF OTHERS	VICARIOUS EXPERIENCING OF OTHER'S EMOTIONAL STATE			3. EXPLAIN PAST/FUTURE BEHAVIOUR	EMOTIONAL COMPONENT
PERSONAL DISTRESS	RESPONSE DECISION	ABILITY TO BEHAVE COMPASSION-ALY		DECISION SKILLS			COGNITIVE DECISION-MAKING COMPONENT
				ENACTMENT SKILLS			ACTION COMPONENT

Figure1: Theories of Empathy and Theory of Mind

## Literature Relating to Offenders

### *Empathy in Offenders*

Two recent reviews have been carried out on empathy in sex offenders (Covell & Scalora, 2002; Marshall et al., 1995) but relatively little research has been carried out on empathy in other categories of offender. Even with the interest in empathy in sex offenders, Marshall et al. (1995) point out that most of the existing evidence comes from treatment research rather than investigations into aetiology. In addition, the literature tends to consider a general ability to be globally empathic (i.e. empathic toward everybody, all of the time) rather than individual differences over time. Studies using global measures of empathy (e.g. Empathy Scale of California Personality Inventory, Gough & Bradley, 1996; Hogan's Empathy Scale, Hogan, 1969; The Emotional Empathy Scale, Mehrabian & Epstein, 1972) are described as having limited value due to reliability and validity problems with the measures themselves (Marshall et al., 1995).

The reviews mentioned above suggest that emotion recognition may be hindered in sex offenders, either globally or specifically when they are attempting to recognise emotions in abuse victims. It is important to make this distinction between 'trait-based' models (and measures) of empathy and those that are 'state-based'. The evidence suggests that empathy and its components are not necessarily stable in any one person over time and in different contexts. Although this has been pointed out more than once in the literature (Marshall et al., 1995; Smallbone et al., 2003) much of the existing evidence appears to consider empathy to be not just a single concept as described above, but also a permanent one.

Overall, the reviews suggest that sex offenders may have some deficits in certain aspects of empathy. However, such little evidence exists, and what little has been carried out

has such inconsistent findings (Smallbone et al., 2003) that there is a great need for more data to clarify these issues<sup>1</sup>.

No review currently exists on empathy in non-sexual offenders, but eight recent papers were found to address this topic by comparing non-sexual offenders with non-offenders<sup>2</sup> (Bovasso et al., 2002; Bush et al., 2000; Goldstein & Higgins D'Alessandro, 2001; Lewis et al., 2001; Lindsey et al., 2001; Loper et al., 2001; McGrath et al., 1998; Nussbaum et al., 2002). However, the broad range of measures used by these researchers makes it difficult to summarise their findings. The most commonly used empathy measure has been the Interpersonal Reactivity Index (IRI, Davis, 1983), which was used in four of the eight studies. Bovasso et al. (2002) found that low scores on the IRI perspective taking subscale predicted violence-related criminal charges (although not necessarily convictions) in a methadone maintenance treatment program. Lindsey et al. (2001) found that juvenile offenders scored significantly higher than non-delinquents on the personal distress subscale (whether or not their offences were sexual in nature). Counter-intuitively, this suggests that offenders of any kind become *more* distressed than non-offenders when observing the distress of others. The IRI subscales used in these studies appear to tap into the perspective taking and emotion-replication or own emotional response aspects of empathy respectively ( Figure1). However, neither Bush et al. (2000) nor Goldstein & Higgins D'Alessandro (2001) found any difference between offenders

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<sup>1</sup> There have been studies published on empathy in sex offenders since the reviews discussed here, but these require a literature review in their own right and cannot be summarised here. For the purposes of this paper, the findings of these most recent reviews will be sufficient.

<sup>2</sup> Searches looked for empath\* in the same study as crimina\* or offend\* or paedophil\* or pedophil\* or molest\* or rapis\* or incarcerat\* or assault in PsycINFO, EMBASE and Science Citation Index Expanded (SCI-EXPANDED) and Social Sciences Citation Index (SSCI).



and non-offenders on any of the IRI subscales regardless of whether or not the offences were violent in nature and despite large group sizes in the latter case ( $n_{\text{violent}} = 66$ ,  $n_{\text{non-violent}} = 112$ ,  $n_{\text{control}} = 130$ ). Findings are therefore inconsistent even within this one measure.

Studies using other questionnaires include Lewis et al. (2001) who used the Emotional Empathy Questionnaire (EEQ, Mehrabian & Epstein, 1972) and found no difference between stalkers and control participants (although the 'stalking' group could not strictly be classified as offenders). Several other studies used measures that do not allow specific aspects of empathy to be examined, making interpretation a problem. For example Nussbaum et al. (2002) found that violent offenders scored as less empathic than non-violent offenders on the Temperament and Character Inventory (TCI, Cloninger et al., 1993), indicating that violence might be an important distinction, but it is not clear which aspects of empathy this relates to. The study by Bush et al. (2000) mentioned above also used the Offer Self-Image Scale (Offer et al., 1992) and found that one aspect of empathy, emotional tone, was significantly different in offenders and non-offenders although it is not clear exactly what this is measuring. Loper et al. (2001) measured empathy in juvenile offenders using many items (that were unfortunately not analysed separately) including feelings of guilt, depression and shame after the offence, opinion of whether the victim deserved to be hurt as well as the more obviously empathy-related question of whether the participant felt they could imagine the victim's feelings and found that reduced empathy was related to high scores of antisocial behaviour. Finally, McGrath et al. (1998) used a newly developed measure aiming to assess both victim-based and general empathy but found no differences between non-sexual offenders and non-offenders. However, without further details of the scale it is impossible to interpret the findings relating to specific aspects of empathy.

Figure 2 shows a summary of the findings described above relating to empathy in non-sexual offenders. The existing studies offer little clarity on the subject. In some cases differences are shown but cannot be clearly interpreted. In general, it should be noted that there is a dearth of recently devised empathy measures, and a limitation of some is that they are designed to be used specifically with offenders (such as the victim empathy scale used by Rose et al. (2002)) and are therefore not useful in making comparisons of offenders and non-offenders. One recently developed scale that can be used for both offenders and non-offenders has yet to be translated into English (Roeyers et al., 2001). This lack of appropriate measures may be one reason for the lack of empirical research to be found.

A variation on the empathy deficit in offenders argument is the proposal that some sex offenders use their understanding of others to manipulate potential victims and that their understanding may actually be very good. However, this is discussed by Covell & Scalora (2002) who point out that while these individuals appear to demonstrate good emotion-recognition and perspective-taking skills, they do not appear to be replicating the emotions of the other themselves. In addition, but not pointed out by the authors, the appropriate response-decision or compassionate behaviour aspects of empathy are not being demonstrated. This may suggest a lack of ability in these very specific areas or applications of empathy, or that the offender has somehow 'switched off' these aspects. This could happen via a psychological defence mechanism (i.e. subconscious self-justification of actions) or via active choice (i.e. 'I know this will hurt the person but it's more important to me that I get what I want'). Therefore like all the other discussions of empathy here, the hypothesis that offenders actually have good empathy skills requires a breakdown of the concept of empathy into its components and to be assessed on this basis. The possibility that the offenders may have both strengths and weaknesses within

the area of empathy supports the need for research to look at components separately. Ultimately, theories about the underlying cause for offending behaviour must wait until more empirical data has been collected and analysed.

<b>Study</b>	<b>Findings</b>	<b>Differences in terms of empathy components shown in Figure1</b>
Loper et al. (2001)	Lower self-reported empathy related to higher scores of antisocial behaviour.	UNCLEAR (EMPATHY CONCEPT NOT BROKEN DOWN)
Lindsey et al. (2001)	Juvenile offenders scored higher than non-delinquents on personal distress subscale of IRI.	OFFENDERS SHOWED MORE PERSONAL DISTRESS THAN NON-OFFENDER
Nussbaum et al. (2002)	Violent offenders less empathic on TCI.	UNCLEAR (EMPATHY CONCEPT NOT BROKEN DOWN)
Lewis et al. (2001)	No differences between 'stalkers' and controls on the EEQ.	N/A
Goldstein & Higgins D'Alessandro (2001)	No difference between offenders and non-offenders on IRI.	N/A
Bovasso et al. (2002)	Low scores on Perspective Taking subscale of IRI related to violent charges.	POORER PERSPECTIVE TAKING IN OFFENDERS
Bush et al. (2000)	'Emotional Tone' lower in offenders than non-offenders but no differences on IRI.	DIFFERENCE UNCLEAR (EMPATHY COMPONENT NOT DEFINED)
McGrath et al. (1998)	No differences between offenders and non-offenders on new empathy scale.	NO DIFFERENCE, BUT NOT CLEAR WHICH ASPECT IS MEASURED

**Figure2: Summary of Empathy Differences between Offenders and Non-Offenders.**

## ***Theory of Mind in Offenders***

Despite the interest in empathy in offenders (221 references found in an initial search using 'empath\*' and 'offend\* or criminal' as keywords) there is very little literature making the link to theory of mind. A literature search focusing on theory of mind<sup>3</sup> identified only five citations including two review/ discussion papers (Keenan & Ward, 2000; Ward et al., 2000), a conference abstract (Haut et al., 2000) and one empirical comparison (Blair et al., 1996). One other empirical study looked at theory of mind in offenders with schizophrenia or personality disorder, but is not included here as it lacked a non-offender group (Murphy, 1998).

Both the review by Ward et al. (2000) and that by Keenan & Ward (2000) focus on sex offenders rather than an offending population in general and follow on from one another in the discussion of empathy and theory of mind in this group. The authors argue that inability to infer others' mental states may at some level underpin three primary features of sex offenders; cognitive distortions, deficits in empathy and deficits in intimacy. Ward et al. (2000) put forward that deficits may either be around inferring mental states in others generally or specifically in understanding or interpreting others only in certain situations. These two possibilities are termed problems with either a 'framework' or 'specific' theory and the authors suggest that problems with the overall framework would predict problems in all specific situations, but not vice versa. In this model, it is suggested that separate specific theories might develop for beliefs and desires for example. This suggestion represents a possible way to break down some of the components of empathy even further. A second possibility put forward by Ward et al.

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<sup>3</sup> PsycINFO, EMBASE and Science Citation Index Expanded (SCI-EXPANDED) and Social Sciences Citation Index (SSCI).

(2000) is that the theory of mind problems are state dependent. This means that individuals fail to apply an intact theory of mind due either to physical states (stress, strong emotion, drugs etc.) or lack of motivation. Despite making hypotheses and predictions, Ward et al. (2000) did not actually test these empirically. Support is drawn from a body of *related* work rather than studies testing these hypotheses specifically, which highlights a need for this empirical work to be carried out.

Blair et al. (1996) conducted one of the only identified studies directly looking at theory of mind in offenders. Specifically, the authors compared psychopaths and non-psychopaths on Happé's 'Strange Stories' theory of mind test. This test involves twenty-four stories describing social situations and interpreting or predicting actions of characters. Happé (1994) has found the test to correlate with results of standard false belief tasks and to discriminate those people with autism who pass those standard tests. Blair et al. (1996) found that psychopaths did not differ from non-psychopaths on this task. However, no non-offender control group was included in the study, since even the non-psychopaths were drawn from an incarcerated population. In an attempt to draw conclusions, Blair et al. (1996) state that '*psychopaths were significantly better on this task than even the most able of Happé's autistic group*' (p. 21) and conclude that psychopaths do not have a 'mentalizing' deficit. However, they do not show how this comparison was made, nor describe whether the test was administered in a comparable fashion in the two studies. Keenan & Ward (2000) also point out that the conclusion drawn by Blair (1996) may be premature, since the test used may not tap real-world theory of mind skills. These authors also appear to be under the misapprehension that a battery of theory of mind tests were used in this study, whereas in fact only Happé's (1994) strange stories were used. Although it has been suggested that this one task is more sensitive than standard false belief tasks when participants are able to pass those,

this lack of a variety of tests further supports the criticism that additional studies need to be carried out, using other (real-world) tests, before this conclusion can be confirmed. It is therefore clear that the evidence on theory of mind in offenders is sparse and inconclusive, with a need for more research.

The other paper found in the literature search was a conference abstract but since this also relates to people with intellectual disabilities it will be discussed later.

## **Literature Relating to People with Intellectual Disabilities**

### ***Empathy in People with Intellectual disabilities***

In order to identify relevant papers, search terms<sup>4</sup> necessarily included a large number of phrases for intellectual disability<sup>5</sup>, as well as the following: empath\* or emotion\* recog\* or emotion\* intellig\*. What little research has been carried out on empathy in people with intellectual disabilities often involves children rather than adults, so this review will necessarily cover both age ranges. As above, the variety of empathy measures used complicates the process and additionally when considering people with intellectual disabilities many standard measures have been thought inappropriate. Therefore the most common measure for people without intellectual disabilities (the IRI) does not appear in this section.

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<sup>4</sup> PsycINFO, EMBASE, Science Citation Index Expanded (SCI-EXPANDED) and Social Sciences Citation Index (SSCI).

<sup>5</sup> Wild-card characters were used to incorporate the terminology of as many cultures as possible ((ment\*subnorma\*) or (ment\*handica\*) or (intellectua\* disab\*) or (ment\* retar\*) or (ment\* deficien\*) or (intellectua\* deficien\*) or (developmen\* disab\*) or (learn\* disab\*) or (learn\* diffic\*))

Kasari, Freeman, & Bass (2003) compared aspects of empathy in normally developing children, children with Down's Syndrome and those with unspecified intellectual disabilities. Participants were asked how they felt after watching puppets communicating various emotions. Normally developing children were judged to have performed better than those with Down's Syndrome, but not better than those with non-specific intellectual disabilities. Also, in response to the (faked) distress of an experimenter children with non-specific intellectual disabilities showed significantly more positive affect than either those with Down's Syndrome or normally developing children while those developing normally showed significantly more negative affect. The measures in this study therefore appear to tap into the emotional aspects of empathy shown in Figure 1 (although as they actually relate to ratings of observed behaviour, it is unclear exactly which aspects are being measured). Findings suggest that those developing normally were able to more accurately reproduce the feeling of the experimenter or act more appropriately than the other groups. Finally, those with Down's Syndrome were significantly more likely to respond prosocially than either of the other groups. This appears to suggest that this group was *better* than normally developing children in this task, but there is the possibility that the children with Down's Syndrome may actually have shown 'too much' prosocial behaviour when social customs are taken into consideration.

A similar study found that those with intellectual disabilities were moderately impaired when it came to prosocial responses, although they appeared to be appropriately aware of the emotional situations simulated (Bacon et al., 1998). However, it is unclear at which level of empathy the apparent deficit is located. It could be that although these individuals are aware of the emotional distress, they are not replicating the others' emotions and therefore are not able to respond appropriately. Alternatively it could be

the response decision itself that is impaired. The difference between this finding and that of Kasari et al. (2003) may be due to aetiology of intellectual disabilities, since only the group with Down's Syndrome appeared to show increased prosocial behaviour in that case.

Dyck, Ferguson & Shochet (2001) considered aspects of empathy including emotion recognition, recognition of facial emotion cues, verbal emotion comprehension, an unexpected outcomes test (participants have to hypothesize why the emotion described in a story is not as would be expected) and an emotion vocabulary test (asking participants to define emotion words). Children with intellectual disabilities were found to have poorer emotional ability than normally developing children, even when intelligence was covaried. However, despite measuring the components of empathy individually, the authors analysed group differences in terms of a global 'empathic abilities' score, combining them all together. This makes it impossible to tell which aspects of empathy were found particularly difficult. Finally, Moffatt (1990) explored a number of aspects of empathy in participants with mild or moderate intellectual disabilities. Although results showed that those with moderate intellectual disabilities performed worse on measures of emotion recognition and replication than those with mild disabilities, no normally developing control group was included. In addition, no statistical analyses were carried out, so it is not possible to tell whether the differences described were significant.

Blair (1999) looked at psycho-physiological response to the distress of others, as measured by skin conductance response. Children with intellectual disabilities, children with autism and normally developing children all responded significantly more to distress and threat cues than to neutral ones, with no differences between the groups. However, additional analyses were carried out on the autistic group only, showing that



this group did not respond more to the threat cues than the neutral ones. These contradictory results are difficult to interpret, especially given that data from the other groups did not receive this re-analysis. Therefore the initial finding of no difference between groups appears to be the safest conclusion in the absence of further evidence. If this finding is valid, it suggests that children with intellectual disabilities experience the same level of internal arousal as normally developing children in response to others distress. This would appear to correspond to the emotion replication or personal distress aspects of empathy models shown in Figure1 and the methodology is strong since it bypasses the need to measure this via behavioural response.

Figure3 summarises the findings from this section and shows that while there are some useful findings, further research is necessary.

Study	Findings	Differences in terms of empathy components shown in Figure 1
Moffatt, 1990	Those with moderate intellectual disabilities worse than those with mild intellectual disabilities at various aspects of empathy - but no statistical analysis	UNCLEAR DUE TO LACK OF ANALYSIS
Blair, 1999	No difference in psychophysiological response to distress in others	NO DIFFERENCE IN THE EMOTIONAL EXPERIENCING ASPECTS OF EMPATHY
Kasari et al., 2003	Normally developing group better at emotional aspects than those with Down's Syndrome but not intellectual disabilities of unknown aetiology	DOWN SYNDROME GROUP POORER AT EMOTIONAL ASPECTS THAN NORMALLY DEVELOPING GROUP
	Those developing normally performed better than those with intellectual disabilities at emotional aspects	INTELLECTUAL DISABILITIES GROUP POORER AT EMOTIONAL ASPECTS THAN NORMALLY DEVELOPING GROUP
	Those with Down's Syndrome showed more prosocial behaviour than other groups	DOWN SYNDROME GROUP EITHER BETTER OR WORSE THAN OTHER GROUPS AT APPROPRIATE ACTION/RESPONSE
Dyck et al., 2001	Those with intellectual disabilities performed worse than normally developing group.	UNCLEAR (ALL EMPATHY COMPONENTS ANALYSED TOGETHER)
Bacon et al., 1998	Those with intellectual disabilities had good awareness of social situations but had impaired ability to respond prosocially.	INTELLECTUAL DISABILITIES GROUP ABLE TO PERCEIVE EMOTIONAL DISTRESS BUT POORER AT EMOTIONAL RESPONDING THAN NORMALLY DEVELOPING GROUP

**Figure 3: Summary of Empathy Differences in Those with and without Intellectual Disabilities.**

### ***Theory of Mind in People with Intellectual disabilities***

Yirmiya et al. (1998) conducted a meta-analysis of studies of theory of mind in people with autism, intellectual disabilities or typical developmental histories. They found that people with intellectual disabilities (regardless of aetiology) showed impaired theory of mind performance when compared to normally developing controls, although not to the same extent as those with autism. The effect size was bigger for people with intellectual disabilities who had a chronological age of over 17 than it was when chronological age was 12-16. Yirmiya et al. (1998) suggest that the difference between the abilities of those with and without intellectual disabilities may increase over time, as those who are developing normally continue to improve, while those with intellectual disabilities do not.

The type of theory of mind task appears to be important. Four studies used a first order false belief task and showed significant differences between groups (Benson et al., 1993; Reed, 1994; Yirmiya & Shulman, 1996; Yirmiya et al., 1996). All four used a comparison group aged 6-11, while the group with intellectual disabilities were 17 or above. The same is true for the one study that used a second order false belief task. In the three studies using the deceptive box (Smarties) task, the two studies comparing normally developing four to five year olds with 12 to 16 year olds with intellectual disabilities found no significant difference between groups. However, the study comparing people with intellectual disabilities aged 17 or over to 12 - 16 year olds without intellectual disabilities found a significant difference. These few findings suggest that 12-16 year olds with intellectual disabilities tend to perform *at least* at the level of normally-developing four to five year olds in theory of mind tasks, while those over 17 perform worse than 12-16 year olds who are developing normally. What is missing from the research are comparisons of people with intellectual disabilities aged 12-16 and 17

and over with normally developing children aged 6-11. This would clarify the age at which the performance of people with intellectual disabilities deviates from normal development on theory of mind tasks.

The current review aims to incorporate more recent research into the existing body of knowledge of theory of mind in people with intellectual disabilities. In order to compare like with like, only those studies employing classic theory of mind tasks (first order location change false belief, second order location change false belief, deceptive box false belief) will be included. In addition, in order to focus on people with intellectual disabilities, the abilities of this group will only be compared with normally-developing individuals, rather than those with autistic-spectrum disorders. Literature searches (using the same searches as before to detect intellectual disabilities terms) identified 21 relevant studies undertaken since the Yirmiya et al. review (1998). Keywords used to identify theory of mind research were 'theory of mind', 'Deceptive Box' and 'False Belief'<sup>6</sup>.

In research with children, several studies found no differences between those with and without intellectual disabilities. Both Bowler & Strom (1998) and Charman & Lynggaard (1998) compared children with intellectual disabilities aged around 13 to normally developing children of age 3 to 4. Neither found that the children with intellectual disabilities performed worse than the normally developing children. Unfortunately Bowler & Strom (1998) did not distinguish between those who failed on the reality/ control question and those who failed on the theory of mind question, meaning that any difficulties could be due to a general lack of task understanding rather than a specific theory of mind difficulty. In addition, since this study's aims were to

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<sup>6</sup> PsycINFO, EMBASE, Science Citation Index Exp. (SCI-EXPANDED) & Social Sci. Citation Index (SSCI).

attempt to improve theory of mind task performance with training, participants were selected on the basis that they failed a false belief task first time. The number of participants excluded due to passing is not stated in the paper, which makes it impossible to use these results as an overall measure of performance.

Peterson & Bowler (2000) also failed to find differences on the Sally-Anne location change task. However, this might be explained by the small group size with intellectual disabilities (N = 21 vs. 54 and 36 for the normally developing and autistic children respectively). Comparisons may not have had sufficient power to find the small difference predicted by the Yirmiya et al. meta-analysis (1998). However, Charman et al. (1998) did find differences with similar group sizes. They found that normally developing children performed significantly better than the children with intellectual disabilities on a deceptive box task. The evidence concerning theory of mind performance in children with intellectual disabilities therefore remains unclear.

In adult research, only two studies looked at differences between those with and without intellectual disabilities on theory of mind tasks since the Yirmiya et al. (1998) meta analysis (Charman et al., 1998; Doody et al., 1998). Although the study by Doody et al.(1998) was aimed at identifying theory of mind deficits in psychosis, a group of adults with intellectual disabilities was also included, as was a group with autism. They found a significant effect of intellectual disability and a significant effect of schizophrenia on theory of mind performance but no interaction between the two. However, once the participants who 'got lost' (i.e. could not follow the task, as evidenced by their failure to answer the reality/ control question) were omitted from the analysis, the effect of intellectual disability was no longer significant. This suggests that the effect was due to general problems understanding the tasks rather than theory of mind difficulties

specifically. However, the reduction in the comparative group size by removal of those who could not follow the task (the intellectual disabilities group decreased from 19 to 13) may have left insufficient power to detect differences. Charman et al. (1998) also found no difference between adults with intellectual disabilities and normally developing children with matched verbal mental age.

Overall, the evidence on theory of mind in people with intellectual disabilities is patchy. The most recent meta-analysis (Yirmiya et al., 1998) suggested that people with intellectual disabilities performed worse than those with normal development but not as poorly as those with autism. Research since then has failed to provide a consistent picture. Studies that do exist have often had differing aims such as investigating the effect of training on performance, meaning there is a need for research focusing specifically on the relative performance of those with and without intellectual disabilities.

## **Literature Relating to Offenders with Intellectual Disabilities**

As mentioned in the earlier discussion of theory of mind in offenders, Haut et al. (2000) published a conference abstract specifically entitled 'Theory of Mind in Sex Offenders with Intellectual Disability'. Although they found that sex offenders performed worse than non-offenders on first order theory of mind tasks this study has not been published in full, which limits any conclusions that might be drawn from its findings. Apart from this abstract, no other empirical research linking empathy or theory of mind to offenders with intellectual disabilities was found using the search strategies described in the previous sections.

## Discussion and Conclusions

The above review has shown that the evidence on empathy in offenders is limited. Some studies have found differences between offenders and non-offenders in global empathy measures, but the offenders' scores remain within normal limits. In other instances, global empathy differences have been found between violent and non-violent offenders. When more specific aspects of empathy are considered some differences have been found in areas such as emotion recognition, emotion replication, levels of distress and perspective-taking, but these findings have not been replicated. In addition, it may be important to draw the distinction between general empathy and victim empathy. There has been even less research on theory of mind in offenders.

In terms of empathy in people with intellectual disabilities, only two studies were clear enough to interpret. One found that people with intellectual disabilities differed from those without in both emotional and behaviour aspects of empathy, while the other study found no differences. Similarly, research on theory of mind in people with intellectual disabilities is limited, failing to provide conclusive results. In many cases, the failure on theory of mind task components is not separated from failure to comprehend the task, leaving doubt as to whether deficits are in theory of mind or general comprehension. Overall, studies on both empathy and theory of mind have a long way to go and are often difficult to interpret because of poor definitions of the concepts being measured.

Future research should measure individual aspects of empathy rather than attempting to measure a single unified concept. However, research on theory of mind would also benefit from this strategy. Researchers in either field should think carefully about exactly what skill is being measured by the tasks they are using and should present results accordingly, within a wider theoretical framework. At its most basic level this means

that theory of mind tasks should always use reality questions to ascertain whether it really is the theory of mind aspect of the task they are measuring rather than a general understanding. In addition, tasks should be carefully designed. For example, observed 'apparent' affect may not be a valid indicator of actual internal affect. Direct measures should be used wherever possible, perhaps drawing on methodology from other existing research areas such as emotion recognition. This is one benefit of breaking down the concept of empathy: some of the resulting components may already have been researched in their own right. Research now shows that those with intellectual disabilities are able to reliably self-report their internal states such as anger (Benson & Ivins, 1992; Rose & West, 1999) so in many cases there is no reason for subjective observation methodologies to be applied. In addition the physiological measures used by Blair (1999) provide an interesting avenue for further research using objective and direct measurements. This would also be one measure that could be used for both those with and without intellectual disabilities, and therefore allow direct comparison of the two groups.

Reliable answers about empathy and theory of mind skills can only be found by building up a picture of all the individual abilities involved in them. Currently, the Interpersonal Reactivity Index (Davis, 1983) appears to be the most easily-interpreted existing empathy measure as it fits to some extent with the concepts identified in literature searches on the nature of empathy ( Figure1). However it may be productive to completely cease attempting to measure empathy as a single concept and to use measures of individual components instead. In this review, empathy is hypothesised as an overarching collection of abilities, which subsumes that of theory of mind. In order to be empathic, an individual must have perceptual components such as emotion recognition (which could potentially be measured in any sensory modality), must be able to realise



that others are different from themselves, to think from another's perspective, to imagine others' thoughts and feelings, to have an emotional response including both their own and a vicarious experience of the others', to decide on an appropriate action and to act on this decision. These components are shown in Figure 4, which also shows how each component can be broken down. For example, the ability to read facial expressions may differ across emotions, as might the ability to interpret body language. An individual may be able to recognise happiness, but not distinguish between sadness and anger. Similar differences might occur in most of the other components such as ability to think about others' emotions and ability to vicariously experience different emotions. Each of these components should be investigated and validated by further research.

PROPOSED COMPONENT	POSSIBLE SUB-COMPONENTS
PERCEPTUAL COMPONENT	<ul style="list-style-type: none"> <li>• Physical abilities such as sight, hearing etc.</li> <li>• Ability to recognise different emotions (for example via body language, facial expression, tone of voice etc.)</li> </ul>
COGNITIVE COMPREHENSION COMPONENT (THEORY OF MIND?)	<ul style="list-style-type: none"> <li>• Realisation that others have separate thoughts/feelings to oneself.</li> <li>• Ability to think from another's perspective</li> <li>• Ability to imagine others' thoughts and feelings</li> </ul>
EMOTIONAL COMPONENT	<ul style="list-style-type: none"> <li>• Own feelings (of concern etc.) and associated physiological responses.</li> <li>• Expression of own emotions either consciously or unconsciously (i.e. body language, facial expression etc.)</li> <li>• Vicarious experience of others' emotions.</li> </ul>
COGNITIVE DECISION-MAKING COMPONENT	<ul style="list-style-type: none"> <li>• Ability to decide on appropriate action based on all these factors.</li> </ul>
ACTION COMPONENT	<ul style="list-style-type: none"> <li>• Ability to physically perform the action selected (this may be hindered by physical limitations or by specific difficulties expressing different emotions).</li> </ul>

**Figure 4: Proposed Components of Empathy**

As well as the conceptual difficulties, future researchers in this area face a number of other pitfalls. A group of people with intellectual disabilities are often included as a

control group rather than as the main focus of the investigation, which has contributed to the scarcity of evidence in this review. Future studies should specifically attempt to assess those with intellectual disabilities in comparison to those without them and to ensure the aetiology of the intellectual disabilities is stated where appropriate. In addition, people with intellectual disabilities are often compared to children, since this allows 'mental age' to be matched and to allow the investigation of differences when IQ is taken into account. However, when thinking about offenders with intellectual disabilities a more important consideration is chronological age, as they are tried as adults in the criminal justice system. In these situations it is not relevant that the adult performs as well as a child, only that he or she performs at a lower level than would be expected from adults.

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# Appendices

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# **Research Report.**

*(Option B - Journal of Applied Research in Intellectual Disabilities)*

**Empathy & Theory of Mind in Offenders with Intellectual Disabilities.**

## Research Report Table of Contents

<b>Research Report Table of Contents.....</b>	<b>42</b>
<b>Structured Summary .....</b>	<b>43</b>
<b>Introduction.....</b>	<b>44</b>
<b>Materials and Methods.....</b>	<b>48</b>
Ethical Approval	48
Participants	48
Measures	50
Procedure	55
<b>Results Section.....</b>	<b>56</b>
Hypothesis 1: Groups will Differ on IRI Subscale Scores	56
Hypothesis 2: Groups will Differ on 1st Order ToM Scores	56
Hypothesis 3: Groups will Differ on second Order ToM Scores	57
Hypothesis 4: Groups will Differ on the Test of Emotional Perception	58
Hypothesis 5: Empathy Scores of ToM Passers & Failers Will Differ	63
<b>Discussion .....</b>	<b>66</b>
<b>Conclusions .....</b>	<b>73</b>
<b>References .....</b>	<b>74</b>
<b>Appendices .....</b>	<b>101</b>

## **Structured Summary**

### *Background*

There is increasing interest in the characteristics of offenders with intellectual disabilities, with one area of focus being that of empathy. However, little empirical research has been carried out. The related concept of theory of mind has also been neglected.

### *Materials and Methods*

Scores on two empathy and three theory of mind tasks were compared for twenty-five offenders and twenty-five non-offenders with intellectual disabilities.

### *Results*

Offenders with intellectual disabilities performed significantly better than non-offenders (all participants were male) on a second-order theory of mind task, emotion recognition task and description of emotional vignettes. Offenders gave empathic/caring responses more often than non-offenders when the emotion observed was happiness. Participants were more successful in tasks involving happiness than sadness or anger.

### *Conclusions*

Some differences exist in the empathy and theory of mind performance of offenders and non-offenders with intellectual disabilities, with offenders appearing more skilled. The present methodology should be utilised in further research.



## Introduction

There is an increasing research interest in offenders with intellectual disabilities, with three journals recently publishing special issues on the subject (British Journal of Forensic Practice, Bates & Frankish, 2001; Journal of Applied Research in Intellectual Disabilities, Felce & Murphy, 2002; Journal of Intellectual Disability Research, Holland, 2002) and a book having just been published (Lindsey et al., 2004). One area often discussed in offenders without intellectual disabilities is that of empathy, with sex offenders in particular frequently receiving empathy training as part of their treatment (a survey found that over 90% of North American programs included empathy training as a principal component, Knopp et al., 1992). Since it has been suggested that people with intellectual disabilities may also have empathy deficits, it would be appropriate to combine these research areas and consider offenders who also have intellectual disabilities. Existing research is sparse and contradictory. Even in the field of empathy in offenders much of the evidence comes from evaluation of treatment plans rather than investigations specifically attempting to measure deficits. The few studies that have been carried out in this area offer little clarity on the subject, being difficult to interpret and showing contradictory results. Similarly, the related concept of theory of mind has generally been neglected in studies looking at offenders, although it has been utilised increasingly in research with people with intellectual disabilities.

One particular difficulty in this area is definition of terms. The layman might think of empathy as the ability to share another's emotional perspective and similar definitions has also been used in the literature (for example Covell & Scalora, 2002). However, the measurement of this concept has proved difficult. A variety of questionnaire methods have been developed (Davis, 1983; Mehrabian & Epstein, 1972) but have been

increasingly criticised for their conception of empathy as a single concept rather than one made up of a number of components. Davis (1983) proposed that empathy consists of a number of individual components that should be investigated separately, since any one person may have difficulty in one area but be skilled in another. A number of authors in recent years have also advocated adoption of this componential view of empathy and related concepts (for example Covell & Scalora, 2002; Geer, 2000; Goldstein & Higgins D'Alessandro, 2001; Marshall et al., 1995) but it has yet to be taken up consistently. Inspection of a number of proposed empathy models yields a number of potential empathy components including a perceptual component, a cognitive comprehension component, an emotional component, a cognitive decision-making component and an action component (Davis, 1983; Geer, 2000; Goldstein & Higgins D'Alessandro, 2001; Keenan & Ward, 2000; Marshall et al., 1995; McFall, 1990; Tager-Flusberg & Sullivan, 2000; Ward et al., 2000). However, further research will be required to explore and empirically confirm what elements need to be present in a comprehensive empathy model.

As well as varying definitions, the inconsistent measurement of empathy often makes existing research on empathy in offenders and in people with intellectual disabilities difficult to interpret. When the concepts are broken down as shown above the inconsistencies in existing research become more evident and care must therefore be taken when summarising findings to describe the specific methods and definitions used each time. With this in mind, the evidence will be briefly described below, first looking at offenders and then at people with intellectual disabilities.

A recent review of the area describes some evidence that sex-offenders obtain decreased scores on *global* empathy scales compared to non-offenders, although their scores remain

within normal limits (Marshall et al., 1995). If literature relating to a componential view of empathy is examined, there is also a little evidence suggesting that offenders show deficits in areas of emotion recognition and replication of victims' feelings (Marshall et al., 1995). Overall however, what little evidence exists on empathy in offenders is contradictory. The situation is even worse in terms of theory of mind in offenders, where there is no published evidence to draw on. Blair et al. (1996) did apply theory of mind tests to incarcerated psychopaths but did not include a non-offender control group.

In people with intellectual disabilities, the evidence on empathy is again conflicting. Even when empathy is broken down into components, studies contradict one another about whether or not those with and without intellectual disabilities differ on emotional and behavioural aspects (Dyck et al., 2001; Kasari et al., 2003). In the field of theory of mind in people with intellectual disabilities, research is plagued with difficult to interpret results because those who do not manage to follow the tasks are often classified together with those who only fail on theory of mind aspects (e.g. Bowler & Strom, 1998). Hence we cannot tell whether there is a theory of mind deficit or a general difficulty because of lower IQ.

Due to the scarcity of evidence in these two research fields, even combining the two sheds little light on how skilled we might expect offenders with intellectual disabilities to be in areas of empathy and theory of mind. Researchers can either continue to consider the areas of offending and intellectual disabilities separately in order to make predictions about offenders with intellectual disabilities, or design studies to look at them specifically. Lindsay (2002) points out that a major flaw in research into offenders with intellectual disabilities is that studies are often based on clinical samples with no control group of people with intellectual disabilities who have not offended. It was the aim of the

current study to remedy this, and to avoid a number of the pitfalls making the literature discussed above difficult to interpret. Firstly, empathy was treated as a multi-layered concept and tests were selected on the basis that they could be interpreted in this way. Secondly, failures of general comprehension were separated from failures specific to theory of mind or empathy. Thirdly, commonly-used, validated measures were used where possible.

It was hypothesised that the offender and non-offender groups would differ on empathy and theory of mind scores (selection of measures is discussed below). It might be predicted that offenders would show deficits in these scores, but existing evidence is contradictory and some have hypothesised that offenders may actually be more skilled in these areas (Covell & Scalora, 2002). Finally, in the interests of clarifying the relative roles of empathy and theory of mind, the empathy scores of those who were found to have good theory of mind skills were compared with those found to have poor theory of mind skills. This leads to a discussion of whether theory of mind skills are required for empathy skill.

## Materials and Methods

### *Ethical Approval*

Ethical approval was sought through all relevant health care organisations and the host university. Additional approval was sought for alterations to recruitment procedures. All ethical approval documentation can be found in Appendix 3.

### *Participants*

A power calculation was carried out in order to determine the appropriate number of participants. However only one study was found using the same measures with people with intellectual disabilities and this compared those with and without challenging behaviour rather than offending behaviour (Moffatt et al., 1995). Power calculations using this study could therefore be used only as a rough guide. It was found that for a power of 80% in the Test of Emotional Perception (TEP) sample size should range from 10 to 30 per group, depending on the subtest. The aim was therefore to recruit around 30 participants per group.

Participants in the experimental group were recruited from organisations providing secure environments for offenders with intellectual disabilities. Volunteers were screened to include only those who had at some point offended against another person and had no serious mental health problems<sup>7</sup> or autism. Empathy training was not a part of the offenders' treatment programs. Twenty-five participants were recruited for this group, with a mean IQ of 64.16 and mean age of 31. Participants in the control group were originally selected from day services in the community. The managers of a number of

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<sup>7</sup> Information about mental health and prior offences was obtained through the records of the organisation.

day services were approached and agreed to offer their clients the chance to participate. If data were not already available, volunteers were screened using the Wechsler Abbreviated Scale of Intelligence (WASI) in order to match them with the experimental group, for whom IQ data was available. Those who did not provide a suitable match were allowed to complete the tests if they expressed any distress at not being able to take part, but their scores were not analysed. However, it became clear that those recruited from day centres generally had a lower IQ than those in the experimental group. This was thought to be due to the high number of very able participants in the offender group, who would probably not access day services if they were in the community, but would instead find supported employment. Extra participants with this level of ability were therefore recruited from community teams (through psychologists) once ethical approval had been obtained for these procedural changes. The mean IQ for the final twenty-five participants in this group was 60.76 and the mean age was 41. Details of both groups are shown in Table 1. All participants were male due to a lack of female offenders in the participating organisations.

<b>Group</b>	<b>N</b>	<b>Mean Age (SD)</b>	<b>Mean IQ (SD)</b>
Offender	25	31 (11)	64.16 (7.34)
Non-Offender	25	41 (12)	60.76 (6.06)

**Table 1: Mean IQ of Participants (Standard Deviations)**

IQ scores of the offender and non-offender groups were compared. As the distribution of the IQ scores was skewed and could not be successfully transformed, parametric tests could not be used. However, a Mann-Whitney test showed that the IQ scores of the two groups were not significantly different ( $U=209.5$ ,  $p=0.10$ ).

## Measures

### 1. Interpersonal Reactivity Index (IRI: Davis, 1983).

The IRI was selected because of its common usage in the existing literature (Bovasso et al., 2002; Burke, 2001; Bush et al., 2000; Goldstein & Higgins D'Alessandro, 2001; Smallbone et al., 2003) and because it attempts to measure four separate components of empathy (fantasy, perspective taking, personal distress and empathic concern). It has been shown to have sufficient internal reliability (with alpha levels from 0.71 to 0.77) and test-retest reliability (from 0.62 to 0.71) (Davis, 1983). However, for this study it was adapted to be more suitable for people with intellectual disabilities by removing unnecessary wording, simplifying concepts and removing ambiguity, making existing reliability and validity data inappropriate. The original and adapted versions are shown in Appendix 5 and Appendix 6 respectively. Prior to administration, the response method was carefully explained (Figure 1) and the participants' understanding tested through questioning about their likes and dislikes (for example 'do you like chocolate'). Each question in the IRI was then read slowly and clearly to the participant who was prompted to respond using the method shown. A mean score was calculated for each of the four subscales.

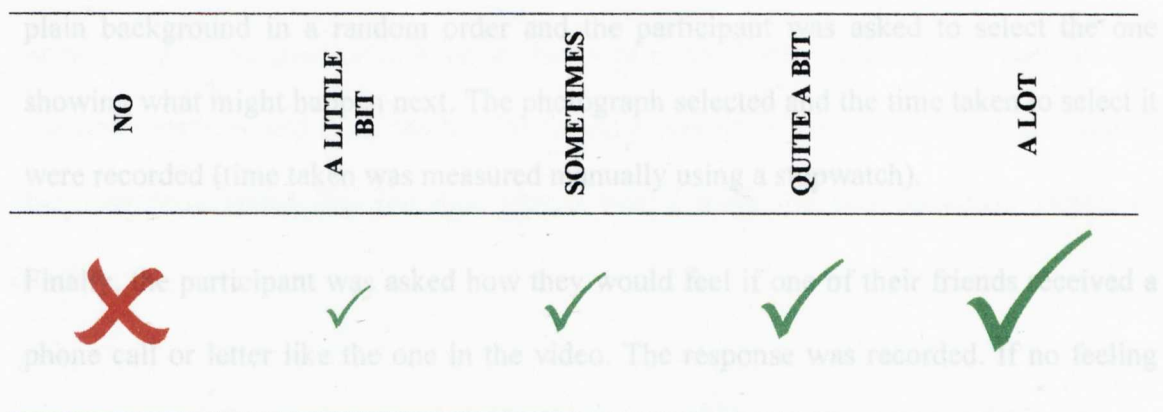


Figure 1: Scoring Method for Adapted IRI.

## 2. *Test of Emotional Perception (TEP) (Moffatt et al., 1995).*

Although not commonly used in the existing literature, this is the only empathy measure found that attempts to objectively measure concrete components of empathy in people with intellectual disabilities. Components include emotion recognition, selection of an emotional response to somebody else's emotion and expression of own emotional response. The test consists of 6 video clips, plus a video clip for training. The training tape was shown up to a maximum of 3 times to ensure that the participant understood the concept of 'what happens next?' in terms of selecting from photographic options. Each of the 6 test video sequences was then shown. The tape provided the 6 different sequences of the clips in 6 different orders to eliminate order effects.

Following each video clip, the participant was asked 'what did you see?'. If their response did not mention the emotional response in the tape, a vague prompt was given ('anything else?', 'did you see anything else?') up to a maximum of two times. If there was still no emotional component to the response, the participant was asked 'what happened after he/she answered the phone/ opened the letter?' If necessary the participant was finally asked 'how did he/she feel after he/she answered the phone/opened the letter?' The number of prompts given was recorded. Three photographs were then presented on a plain background in a random order and the participant was asked to select the one showing what might happen next. The photograph selected and the time taken to select it were recorded (time taken was measured manually using a stopwatch).

Finally, the participant was asked how they would feel if one of their friends received a phone call or letter like the one in the video. The response was recorded. If no feeling was mentioned, the participant was prompted: 'but how would you *feel*?' The response was coded as either the same as the emotional response they identified in the first part of



the test (for example they would feel sad if their friend was sad), a concerned response (for example feeling sad because their friend was cross), an incongruous response (for example feeling happy when the friend was sad) or no emotional response given, if they failed to give a response even after prompting.

These questions were repeated for each of the six video-clips, 2 depicting happy news, 2 sad and 2 depicting news that made the character on the tape angry. A record sheet is shown in Appendix 7.

### *3. Deceptive Box (Smarties) Task (Gopnick & Astington, 1988)*

This test was selected due to its repeated use in theory of mind research (e.g. Charman & Baron Cohen, 1995; Perner et al., 1989; Prior et al., 1990; Yirmiya et al., 1996; Zelazo et al., 1996). Reliability of these tasks with people with intellectual disabilities has been found to be no lower than in normally developing children (e.g. moderate, Charman & Campbell, 1997). Participants were shown either a Smarties box or a toothpaste box and asked 'what do you think is in here?' They were then shown that the box actually contained a pencil and asked 'what is in here really?' The next question asked 'if somebody else comes in here, what will they think is in here?' Responses were recorded (Appendix 8). The participant was thought to have either got lost (if they could not answer any of the questions), have no theory of mind (if they followed the task but said the new person would think the box contained a pencil) or have good theory of mind (if they correctly stated that the new person would think the box contained sweets or toothpaste).

#### *4. Location Change (Sally-Anne) Task (Baron Cohen et al., 1985; Wimmer & Perner, 1983)*

This is another commonly-used theory of mind task (e.g. Reed, 1994; Yirmiya & Shulman, 1996; Yirmiya et al., 1996), which has also been found to have reliability no lower than in normally developing children (e.g. moderate, Charman & Campbell, 1997). However, in order to maximise the understanding of participants with intellectual disabilities, a video version was developed. In the first video-clip two men are sitting on a couch reading. One of them gets up and goes through a door marked with a men's toilet sign. After a brief pause, the man comes back and the tape pauses as he closes the door. The participant is asked what happened in the tape and what they think might happen next. This is to check that they understand the concept of 'what happens next' and that they can demonstrate this, so that any mistakes on the next sequence can be attributed to theory of mind difficulties.

The second video-clip corresponds to the Sally-Anne task. The two men are sitting on the couch eating sandwiches and one of them (the other one this time) gets up to go through the toilet door, putting his sandwich in his bag before he goes. While he is gone, the remaining man takes the sandwich and puts it in his own bag. The first man then returns from the toilet and the tape pauses as he closes the door. Again, the participant is asked what happened in the tape and what happens next.

With both video-clips, the participant is helped to understand the question with prompts such as 'what will that man [point] do now?' or 'where will he go?' This allows participants who find it difficult to communicate to point their answers on the screen. The experimenter was interested mainly in whether the participant knew that the returning man would have to look in his own bag before realising the sandwich had

gone. If the participant said 'he'll look in the bag', they were prompted 'which bag?' to ensure they meant his own bag.

As long as the participant indicated that the man would look in his own bag, they were scored as having theory of mind. If they were unable to indicate the general gist that he would come back and sit down and try to finish his sandwich, they were marked as 'lost'. If they said there would be an argument or fight, or the man would be angry, they were prompted to talk the experimenter through, to determine whether they realise that he would have to look in his bag before realising the other man had taken his sandwich. Only if they omitted the man looking in his own bag were they scored as having no theory of mind. The record form is shown in Appendix 8.

##### *5. Second Order Location Change (Ice Cream Van) Task (Perner & Wimmer, 1985)*

This test was added at an early stage of data collection when it was clear to the experimenter that most participants were passing the 1<sup>st</sup> order tasks. Previous participants were asked to complete this task in a separate session. The task was selected because it has been commonly used in existing research (e.g. Baron Cohen, 1989; Dahlgren et al., 2003; Doody et al., 1998). Although reliability and validity data could not be located for this specific test, good test-retest reliability and internal consistency' have recently been demonstrated in a number of tests based on the same premise (Hughes et al., 2000). The test is shown in Appendix 9 and involves a plan view of a town, including park, church, two houses and roads between them (Figure 2). Two small figures (one in trousers and one in a skirt) and a model ice cream van were initially placed in the park area.

Unfortunately although it has been found to correlate with standard false belief tests while identifying subtler theory of mind problems in those who pass them, the strange stories test (Happé, 1994) was clearly too verbally demanding for participants with

intellectual disabilities. It was not possible to sufficiently simplify the task while retaining necessary detail and could therefore not be used in the current study.

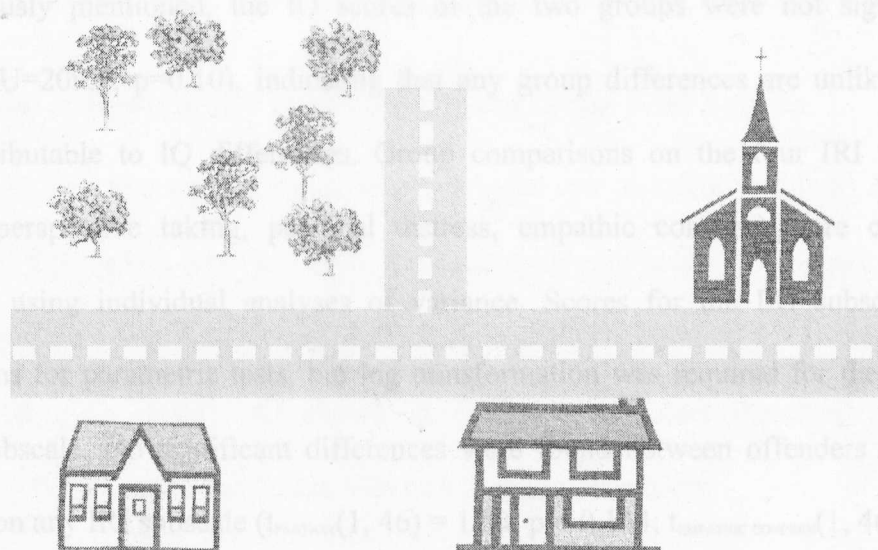


Figure 2: Diagram Used in Ice Cream Van Task.

### Procedure

Participants were carefully read the information sheet and asked to sign the consent form if they wanted to take part (Appendix 4). If IQ data were not available, participants were tested using the Wechsler Abbreviate Scale of Intelligence (WASI). This was used rather than the full Wechsler Adult Intelligence Scale (WAIS) due to time restraints. The theory of mind and empathy tests were then given in random order (by use of a random number generator) in order to minimise practice effects. Finally, participants were asked if they had any questions and given a chance to talk about the tests.

## Results Section

### ***Hypothesis 1: Groups will Differ on IRI Subscale Scores***

As previously mentioned, the IQ scores of the two groups were not significantly different ( $U=209.5$ ,  $p=0.10$ ), indicating that any group differences are unlikely to be solely attributable to IQ differences. Group comparisons on the four IRI subscales (fantasy, perspective taking, personal distress, empathic concern) were conducted separately using individual analyses of variance. Scores for the IRI subscales met assumptions for parametric tests, but log transformation was required for the personal distress subscale. No significant differences were found between offenders and non-offenders on any IRI subscale ( $t_{\text{FANTASY}}(1, 46) = 1.53$ ,  $p = 0.134$ ;  $t_{\text{EMPATHIC CONCERN}}(1, 46) = 1.43$ ,  $p = 0.160$ ;  $t_{\text{PERSONAL DISTRESS}}(1, 46) = 0.48$ ,  $p = 0.634$ ;  $t_{\text{PERSPECTIVE TAKING}}(1, 46) = 1.56$ ,  $p = 0.127$ ).

### ***Hypothesis 2: Groups will Differ on 1st Order ToM Scores***

In line with existing research (Charman & Campbell, 2002; Frith et al., 1994; Jervis & Baker, 2004) results of the Sally-Anne and Smarties tasks were combined such that participants were judged to have passed only if they passed both tests. This is legitimate since both are thought to measure the same construct: first order theory of mind. One participant from the offender group and three from the nonoffender group were excluded due to getting lost and therefore not understanding the task. Results are shown in Table 2. A Chi-Square test was used since the data consisted of frequency counts in discrete categories. No significant differences were found between the two groups ( $\chi^2(1) = 2.18$ ,  $p = 0.14$ ). However 82% of non-offenders and 96% of offenders passed both tests, suggesting a ceiling effect.

	Number of Offenders	Number of Non-Offenders
Failed	1	4
Passed	22	18

**Table 2: First Order Theory of Mind Data (Sally-Anne and Smarties Tasks)**

### ***Hypothesis 3: Groups will Differ on second Order ToM Scores***

One offender and two non-offenders were excluded due to being unable to follow the task. A Chi Square test was used since the data again consisted of frequency counts in discrete categories and a significant difference was found between the two groups ( $\chi^2(1) = 17.08, p = 0.001$ ). As shown in Table 3, offenders therefore performed significantly better on the Ice Cream Van task than non-offenders.

	Number of Offenders	Number of Non-Offenders
Failed	5	19
Passed	18	4

**Table 3: Second Order Theory of Mind Data (Ice Cream Van Task)**

In order to examine the possible role of IQ in this difference, the IQ scores of Ice Cream Van passers and failers were compared using another Mann-Whitney test (the previous comparison did not apply due to some participants being excluded from this test). There was no significant difference between the IQ scores of the 2 groups ( $U=181, p=0.06$ ) although it should be noted that the difference did approach significance (see Table 4).

	Ice Cream Task Passers	Ice Cream Task Failers
Mean (SD) IQ	64.9 (6.86)	59.5 (5.26)

**Table 4: Mean IQ (SD) for Passers and Failers on the Ice Cream Van Task**

Given that the difference between the IQ scores of the 2 groups approached significance, it was desirable to clarify the relative contributions of IQ and offender status to Ice Cream Van task performance. Sequential logistic regression was carried

out in order to achieve this. The predictor added in block 1 was IQ, which showed a significant effect ( $\chi^2(1) = 8.591, p = 0.003$ ). Offender status was added in block 2 and also showed a significant effect over and above that of IQ ( $\chi^2(1) = 14.971, p = 0.001$ ) (Appendix 10). This shows that offender status has a significant effect on Ice Cream Task Performance even when the effect of IQ has been taken into account. Although the sample size is slightly small for this test (generally logistic regression requires at least 50 cases (Grimm & Yarnold, 1995)), the significance of the results suggests that power was adequate.

#### ***Hypothesis 4: Groups will Differ on the Test of Emotional Perception***

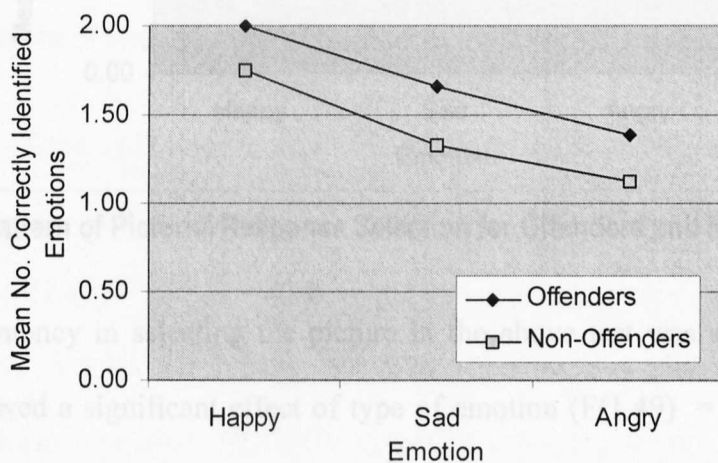
For each hypothesis using the TEP, results for each emotion (happy, sad or angry) can be considered separately. For this reason an ANOVA design (allowing comparison between groups as well as comparison between emotions) would be ideal. However, the data provided by the TEP does not meet the criteria for parametric analysis as many of the variables are not continuous. A 'randomisation ANOVA' (RANOVA) can compute the same comparisons on nonparametric data. This is a powerful, non-parametric equivalent of ANOVA in which significance is assessed in terms of random permutations rather than an F distribution. The only requirement for a RANOVA is that observations within each sample are independent of one another (for a discussion of Randomisation ANOVAs, see for example Edgington, 1995).

A RANOVA on the emotion recognition aspect of the TEP using 5000 permutations of the data found both a significant effect of offender status ( $F(1,49) = 6.17, p = 0.015$ , offenders performed significantly better than non-offenders) and type of emotion ( $F(1,49) = 12.28, p = 0.001$ ) but no interaction between the two ( $F(1,49) = 0.05, p = 0.962$ ). This is shown in Table 5 and graphically in Figure 3. Post-hoc (RANOVA) tests were carried out to clarify the within group differences and found that happy

was correctly identified significantly more often than sad or angry ( $F(1,49) = 13.72, p = 0.001$ ,  $F(1,49) = 29.63, p = 0.001$  respectively), but there was no significant difference between how often sad and angry were recognised ( $F(1,49) = 2.47, p = 0.131$ ). It should be noted that for these multiple within-group post-hoc comparisons, more stringent significance criteria are necessary. The Bonferroni criterion reduces the cut-off from 0.05 to 0.017 in this case and was used to determine significance.

	Happy	Sad	Angry
Offender	2.00 (0.00)	1.65 (0.63)	1.38 (0.75)
Non-Offender	1.75 (0.61)	1.33 (0.70)	1.13 (0.85)

**Table 5: Mean Number (SD) of Correctly Identified Emotions in the TEP.**



**Figure 3: Pattern of Emotion Recognition for Offenders and Non-offenders**

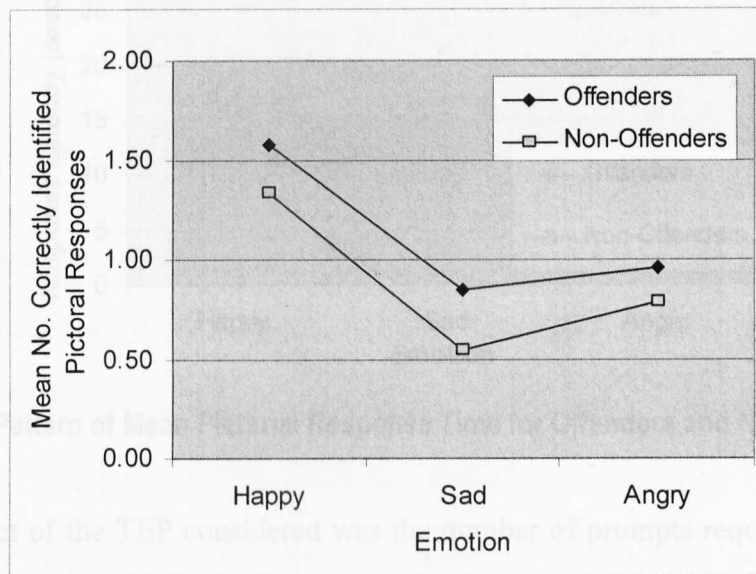
A RANOVA on the picture selection (response decision) results of the TEP showed a significant effect of type of emotion ( $F(1,49) = 14.53, p = 0.001$ ) but not offender status ( $F(1,49) = 3.70, p = 0.08$ ). Post-hoc (RANOVA) tests (again using the Bonferroni-corrected significance level of 0.017) showed that again the correct response was chosen in the happy condition significantly more often than either sad or angry ( $F(1,49) = 26.64, p = 0.001$ ,  $F(1,49) = 18.66, p = 0.001$  respectively) but there was no significant difference between the sad and angry conditions ( $F(1,49) = 1.34, p = 0.30$ ).



These results are shown in Table 6 and Figure 4. There was no significant interaction.

	Happy	Sad	Angry
Offender	1.58 (0.70)	0.85 (0.88)	0.96 (0.72)
Non-Offender	1.33 (0.76)	0.54 (0.66)	0.79 (0.72)

**Table 6: Pattern of Emotion Recognition for Offenders and Non-Offenders.**

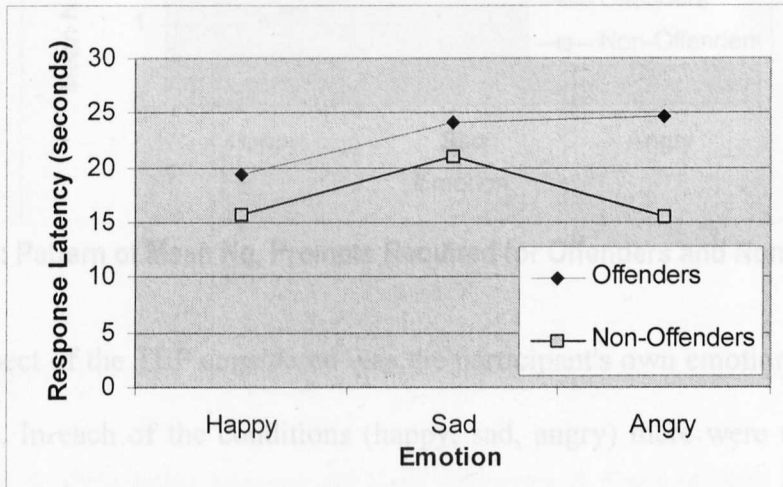


**Figure 4: Pattern of Pictorial Response Selection for Offenders and Non-offenders**

The response latency in selecting the picture in the above test was also measured. A RANOVA showed a significant effect of type of emotion ( $F(1,49) = 3.19, p = 0.049$ ) and offender status ( $F(1,49) = 5.01, p = 0.029$  – offenders took significantly longer to select a picture than non-offenders) on time taken. However, post-hoc (RANOVA) testing showed none of the individual emotion comparisons were significant ( $F(1,49) = 5.38, p = 0.018$  for happy vs. sad,  $F(1,49) = 2.16, p = 0.152$  for happy vs. angry and  $F(1,49) = 1.37, p = 0.239$  for sad vs. angry) which is not surprising given that the overall result only just achieved significance at 0.049. These results are shown in Table 7 and Figure 5, which also illustrate that there was no significant interaction.

	Happy	Sad	Angry
Offender	19.35 (16.80)	24.23 (14.33)	24.77 (14.11)
Non-Offender	15.75 (8.82)	20.96 (17.58)	15.54 (10.05)

**Table 7: Mean Response Time in Seconds (SD) for Selecting a Pictorial Response.**

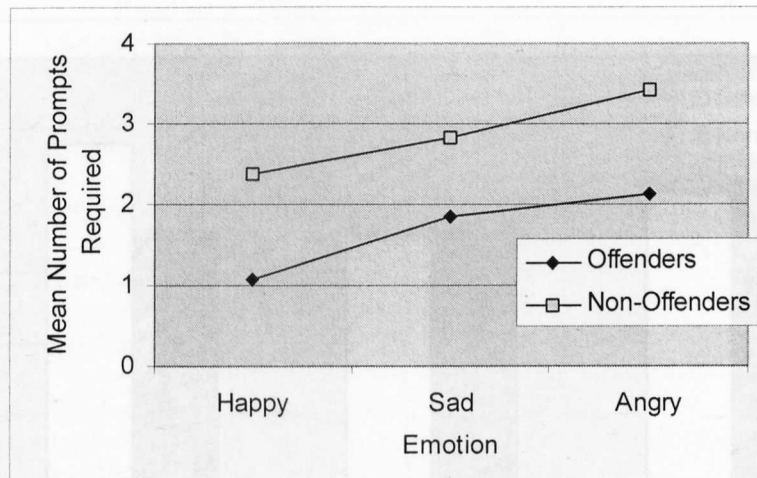


**Figure 5: Pattern of Mean Pictorial Response Time for Offenders and Non-offenders**

Another aspect of the TEP considered was the number of prompts required to elicit an emotion-description of the vignettes. A RANOVA showed a significant effect of offender status ( $F(1,49) = 5.01, p = 0.03$ , offenders requiring fewer prompts) and type of emotion ( $F(1,49) = 3.19, p = 0.049$ ). However as before, due to this effect only just reaching significance, post-hoc (RANOVA) testing using Bonferroni correction found no significant differences when individual emotions were compared. (happy vs. angry:  $F(1,49) = 5.22, p = 0.029$ , happy vs. sad:  $F(1,49) = 3.16, p = 0.09$  and sad vs. angry:  $F(1,49) = 1.00, p = 0.33$ ). These results are shown in Table 8 and Figure 6. Once again there were no significant interactions.

	Happy	Sad	Angry
Offender	1.08(1.60)	1.85(2.15)	2.12(2.53)
Non-Offender	2.38(2.83)	2.83(2.96)	3.42(2.96)

**Table 8: Mean Number Prompts (SD) to Elicit Emotion Description in the TEP.**



**Figure 6: Pattern of Mean No. Prompts Required for Offenders and Non-offenders**

The final aspect of the TEP considered was the participant's own emotional response to the vignettes. In each of the conditions (happy, sad, angry) there were two trials, one involving a telephone call, the other a letter and participants' responses were coded as either the same as the person in the vignette, concern for that person, incongruous with the situation or no emotion given. However in the Chi-Square analysis, too many cells had expected frequency less than five, so the data were condensed in order to fit a 2x2 contingency table and Fisher's Exact Test. The remaining codes were empathic (either expressing the same emotion or concern) or non-empathic (either no emotion or an incongruous one). Fisher's Exact Test showed that only the happy condition showed a significant difference between offenders and non-offenders ( $p = 0.003$ ) with significantly more offenders showing empathic responses than non-offenders ( $p = 0.496$  and  $0.389$  for sad and angry respectively). The scores are shown in Figure 7.

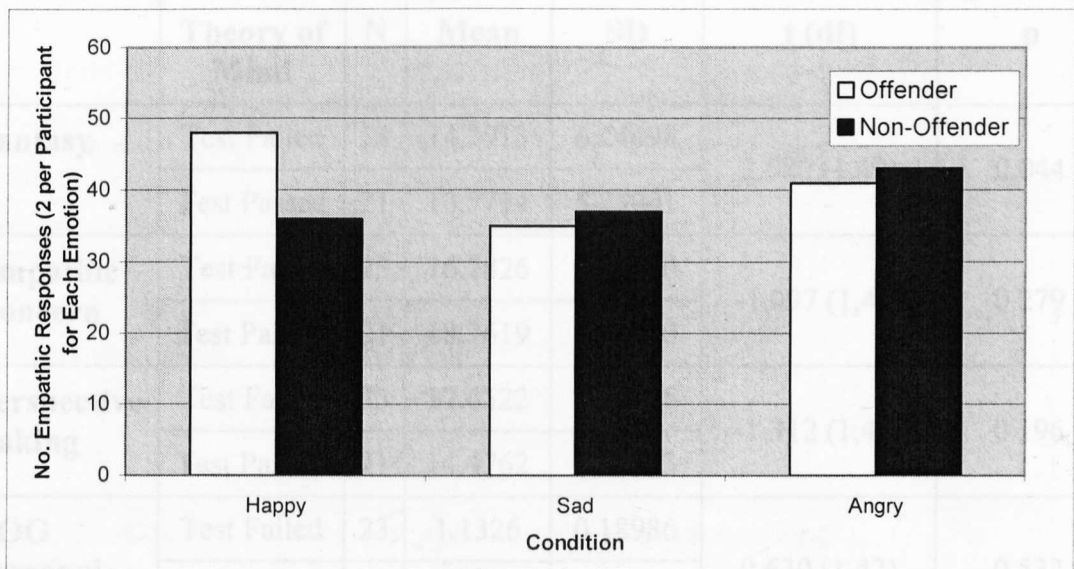


Figure 7: Shows Results of 'Own Emotional Response' Aspect of TEP.

Table 9: Mean IRI Scores for ToM Passers and Failers with Most Comparisons.

### **Hypothesis 5: Empathy Scores of ToM Passers & Failers Will Differ**

T-tests were carried out in order to compare the IRI empathy scores of those who passed and failed the second order theory of mind test. Assumptions for parametric testing were met, except for the personal distress variable, which required log transformation due to skew. As shown in Table 9, t-tests were carried out and a significant difference was found between the IRI Fantasy Subscale scores of passers and failers on theory of mind tests. Those who passed the Ice Cream Van theory of mind Test scored significantly lower on the Fantasy subscale of the IRI than those who failed ( $t(1, 42) = 2.080, p = 0.044$ ). No other significant differences were found.

other significant differences were found.

Table 10 summarises the results described above in relation to offenders and non-offenders.

	<b>Theory of Mind</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>t (df)</b>	<b>p</b>
<b>Fantasy</b>	Test Failed	23	14.3913	6.74698	2.080 (1,42)	0.044
	Test Passed	21	10.5714	5.25901		
<b>Empathic Concern</b>	Test Failed	23	16.7826	5.81500	-1.097 (1,42)	0.279
	Test Passed	21	18.7619	6.14740		
<b>Perspective Taking</b>	Test Failed	23	12.6522	5.33946	-1.312 (1,42)	0.196
	Test Passed	21	14.4762	3.62793		
<b>LOG Personal Distress</b>	Test Failed	23	1.1326	0.18986	0.630 (1,42)	0.532
	Test Passed	21	1.1021	.11926		

**Table 9: Mean IRI Scores for ToM Passers and Failers with t-test Comparisons.**

Similar comparisons were also carried out on the scores for the Test of Emotional Perception, using t-tests where parametric assumptions were met and Mann-Whitney Tests where they were not. Due to the large amount of data, results are shown in full in Appendix 10 in Figure 8, Figure 9, Figure 10, Figure 11, Figure 12 and Figure 13. In the picture selection task, those who passed the Ice Cream Van theory of mind test were able to select the correct picture for ‘angry’ significantly more often than those who failed ( $U = 153.5$ ,  $p = 0.042$ ). When asked how they might feel in response to another’s sadness, those who failed the Ice Cream Van theory of mind test responded with concern significantly more often than those who passed ( $U = 162.0$ ,  $p = 0.023$ ). No other significant differences were found.

Table 10 summarises the results described above in relation to offenders and non-offenders.

TEST	FINDING
<b>First Order Theory of Mind</b>	❖ Ceiling Effect (No difference between groups)
<b>Second Order Theory of Mind</b>	❖ Offenders significantly better than non-offenders
<b>Interpersonal Reactivity Index</b> ❖ Empathic Concern ❖ Personal Distress ❖ Perspective Taking ❖ Fantasy	❖ No group differences ❖ No group differences ❖ No group differences ❖ No group differences
<b>Test of Emotional Perception</b>	<i>(Note Bonferroni correction has been applied)</i>
❖ Emotion Recognition	❖ Offenders significantly better than non-offenders
❖ Response Prediction	❖ No difference between groups
❖ Response Prediction (time)	❖ Offenders took significantly longer to select a picture.
❖ No. Prompts to Elicit Emotion	❖ Offenders required significantly fewer prompts.
❖ Own Emotional Response	❖ Offenders gave empathic responses significantly more often than non-offenders in the 'happy' condition.

**Table 10: Summary of Offender vs. Non-Offender Findings.**

## Discussion

This study aimed to compare empathy and theory of mind in offenders and non-offenders with intellectual disabilities. In response to problems with existing research care was taken to select tests allowing the various components of these concepts to be analysed separately, rather than as single entities.

The simplest, first-order theory of mind tasks found a ceiling effect - the vast majority of both offenders and non-offenders with intellectual disabilities passed them. This was somewhat surprising given that a recent meta-analysis suggested that adults with intellectual disabilities often fail these tasks (Yirmiya et al., 1998). The discrepancy may be explained by the new video presentation of the Sally-Anne task, which was designed to reduce failures due to lack of understanding rather than a lack of theory of mind. It is possible that previous studies have measured general task comprehension rather than specifically theory of mind abilities.

The second-order (Ice Cream Van) task found that offenders with intellectual disabilities performed significantly better than non-offenders with intellectual disabilities even when the significant effect of IQ was taken into account. The result suggests that the offender group had better theory of mind skills than the non-offender group, contrary to the original hypothesis that non-offenders would be better. Taken together with the 1<sup>st</sup> order theory of mind findings, this suggests that although both groups were able to understand simple situations requiring a theory of mind, the non-offenders could not follow a more complex situation. As highlighted above, it is important to ensure that these tests are measuring theory of mind skills rather than general levels of understanding and the second order test accomplished this through its methodology as well as by specialised analysis of the data it provided. It attempted to measure whether participants 'got lost' during the task, and distinguish these from

those with poor theory of mind skills. These findings appear to clarify the existing literature which has found that people with intellectual disabilities often fail theory of mind tasks, by making this finding more specific: when presented in a more user-friendly way, adults with intellectual disabilities can pass theory of mind tasks, but more complex second order tasks are often failed.

The Interpersonal Reactivity Index (Davis, 1983) showed no differences between offenders and non-offenders with intellectual disabilities on any of its four empathy subscales. Since this was the first time that this measure had been adapted for use with people with intellectual disabilities and no reliability or validity data exist as yet, it is possible that this version failed to measure the desired constructs. Further research is required to investigate the properties of this new version of the questionnaire, before these findings can be fully interpreted. In addition, the questionnaire attempts to assess its subcomponents by means of verbally asking participants how they react in certain situations. It does not therefore provide a concrete measure of these subcomponents *in action*. Nevertheless, the findings suggest that offenders and non-offenders with intellectual disabilities do not differ in any of the following aspects of empathy: personal distress, perspective taking, fantasy, empathic concern.

The more objective empathy measures of the Test of Emotional Perception (Moffatt et al., 1995) did find some differences. This measure appears particularly suitable for use with people with intellectual disabilities since it uses video-tapes of emotion being expressed in a natural way rather than photographs, pictures or words. Offenders with intellectual disabilities performed significantly better than non-offenders with intellectual disabilities at emotion recognition from a video vignette. Consistent with results of the second-order theory of mind task, this result suggests that offenders with intellectual disabilities are more skilled than non-offenders in certain areas.



When participants were asked to predict the response of the other person in the vignette via a photograph, offenders and non-offenders with intellectual disabilities did not differ, although the offenders took significantly longer to make their choice. This pattern of results is difficult to explain, apparently suggesting that the offenders processed the information more slowly but just as accurately. Before attempting to interpret this finding, more research is needed, to clarify whether it is a robust finding and if so, whether it holds true that offenders process all aspects of emotional stimuli slower than non-offenders, despite matching or beating them on accuracy. In addition, a priori power calculation suggested that 30 participants would be needed per group for this subtest, indicating that with only 25 per group there may have been insufficient power to detect a difference here. At the present time, this particular finding therefore sheds little light on the research question. When asked to describe the vignettes, offenders required significantly fewer prompts than non-offenders before they provided an emotion descriptor. This suggests that the group of offenders found it easier to access thoughts about emotions (or the emotions themselves) than the non-offenders. This fits with the above finding that offenders were able to recognise emotions significantly better than non-offenders. Together these findings strongly suggest that offenders have superior abilities in this area.

Finally, when participants were asked how they would feel if one of their friends received a letter/ phone call like the one they saw, offenders gave an empathic/ caring response significantly more often than non-offenders in the happy condition. There were no other group differences. This is another finding that remains difficult to interpret without further research. A single group difference in this comparison is unconvincing, but certainly warrants further research. For now though, all that can be said is that although future research may clarify this, offenders and non-offenders do not appear to

differ in the way they *think* that they respond to emotional situations. It should be noted however, that this part of the test of emotional perception is less objective than the majority of it, since it asks participants how they would react if a similar situation happened to one of their friends. Given the vagueness of the vignettes (they simply depict the emotional reaction of the recipient of a letter or phone-call) the fact that any difference has been found could indicate that more sensitive measures might have stronger results.

Overall, it is acknowledged that the results of this study are rather involved and difficult to interpret. However, the reader is reminded that this complexity has been deliberately retained in order to resolve issues of over-simplification in the existing literature, whereby the concept of empathy has often been treated as a single concept. Where differences have been found between offenders and non-offenders, the offenders appear to be the more skilled in certain areas of theory of mind and empathy such as emotion recognition and salience of emotions (i.e. they required fewer prompts to mention them). When an attempt was made to consider the relationship between theory of mind task performance and empathy task performance, the only difference found between second order theory of mind passers and failers was that those who passed scored lower on the fantasy subscale of the IRI than those who failed. This is a counterintuitive finding suggesting that those with good theory of mind abilities are worse at the fantasy or inner representational aspects of empathy. However, as this finding only just reached significance among a large number of insignificant results it would be difficult to draw any conclusions from it. The large number of insignificant results strongly suggests that theory of mind performance does not affect empathic ability as measured by the IRI. Further research is required to clarify this issue, and studies should be specifically designed to do this rather than adding it to other hypotheses, as here.

In the spirit of detailed investigation, results for different emotions were compared as well as scores of offenders and non-offenders. This is because it is feasible that some emotions might be recognised or otherwise processed more easily than others. In fact the only differences found were in emotion recognition, where happiness was recognised significantly more often than sadness or anger. This supports the idea that not only should empathy and theory of mind be measured by their individual components, but that skills may also vary across emotions meaning that performance at different emotions should be measured separately where possible, as in this study.

Given the dearth of literature on this topic, it is not possible to directly compare the findings of the current study to previous research. However, some researchers have compared empathy in offenders and non-offenders without intellectual disabilities. As with existing findings in the area, the present results are not conclusive. Reviews have suggested that emotion recognition may be hindered in sex offenders without intellectual disabilities (Covell & Scalora, 2002; Marshall et al., 1995), which would appear to contradict the present results. However it is possible that both groups of participants with intellectual disabilities in the current study would demonstrate poorer emotion recognition than non-offenders without intellectual disabilities and therefore not oppose the previous finding. In this respect, it would be useful to conduct further research including offenders and non-offenders both with and without intellectual disabilities. Another possibility is that it is only sex offenders who have inferior emotion recognition skills, whereas the current study did not differentiate between different categories of offender. This is an issue requiring future research.

It is very difficult to interpret the current findings in terms of a model or mechanism of offending given that where there were differences, the offenders were more skilled. Without a clear baseline to decide whether offenders had skills above 'normal' or

whether non-offenders had skills below, it is not easy to speculate. If it is the case that offenders are hyper-sensitive when it comes to recognising others' emotions, it would be necessary to determine whether this was a result of the offending behaviour or a precursor. Alternatively, it is possible that people with intellectual disabilities have decreased empathy and theory of mind skills in general, but that in those who do not, the opportunity to exploit others using these skills is difficult to refuse (possibly when combined with poverty of social interaction during development). Of course this is pure speculation and further research is needed to clarify whether these differences can be replicated. In future it would also be useful if a group of offenders and/ or non-offenders without intellectual disabilities could be included as a control group to allow the relative contributions of offender status and intellectual ability to empathy and theory of mind to be assessed.

In addition, the tools used in this study would all benefit from being more closely related to offending. Existing tools could not be used in this study because they are often aimed at offenders and difficult to use with non-offenders, particularly those with intellectual disabilities (due to the complexity of explaining hypothetical offences in spoken vignettes). However, it may be possible to use the methodology of the test of emotional perception (i.e. videotaped vignettes) to resolve this issue.

Before concluding, it is necessary to consider the wider implications of the current findings. Since many of the comparisons showed no difference in the empathy skills of offenders and non-offenders, doubt is cast on the merit of empathy training in offenders with intellectual disabilities. It has been shown that evidence for the majority of interventions for offenders with intellectual disabilities is based on small-scale studies rather than properly designed and controlled research (Barron et al., 2002). Those that do exist appear to support the efficacy of behavioural interventions (although these have

drawbacks relating to their intrusiveness and may not be useful for offenders with milder intellectual disabilities) and cognitive-behavioural interventions (Taylor, 2002). In fact, although empathy training appears common in offenders without intellectual disabilities, the literature does not appear to support the idea that this is applied to those who do have such disabilities (Barron et al., 2002). It is possible that as in other services for people with intellectual disabilities, services for these offenders focus on anger and aggression as the main problem to address. If so, this may have worked in the favour of offenders with intellectual disabilities since in this instance there is little evidence for the efficacy of empathy-based treatments. In general, these findings underline the previously identified need for thorough assessment and formulation of each individual's difficulties (Taylor, 2002) in order to avoid inappropriate and possibly detrimental treatments. Since very little evidence exists in this area it would be useful to conduct qualitative studies about their experiences, to inform future research and treatment. It is clear that their intellectual disabilities set these offenders apart from other groups of offender and that there is an obligation to investigate the needs of this extremely vulnerable group separately and sensitively.

## Conclusions

Offenders with intellectual disabilities performed significantly better than non-offenders with intellectual disabilities on a second-order theory of mind task, emotion recognition task and description of emotional vignettes. Results also suggest that offenders gave an empathic/ caring response more often than non-offenders when the emotion observed was happiness.

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# **Critical Appraisal.**

**Empathy & Theory of Mind in Offenders with Intellectual Disabilities.**

## Critical Appraisal Table of Contents

<b>Critical Appraisal Table of Contents .....</b>	<b>81</b>
Introduction	82
Project Origins	82
Barriers to Progress and Process Issues	83
Personal Disillusionment with the Project	83
Process Issues with Participation Organisations	85
Difficulties with Recruitment and Ethical Approval	85
Personal Issues – Reconnecting with the Project	86
Supervision	87
Methodological Limitations	88
Clinical Implications	92
Further Research	93
<b>References .....</b>	<b>98</b>

## ***Introduction***

In this section I will attempt to explain the process of carrying out this piece of research, to summarise its strengths and limitations and to make sense of some of my struggles with it. I conducted the research and wrote the reports during some of the most difficult and some of the most wonderful times in my life, through personal tragedy and joy. As a result, coming back to finish it off after a six month break, I found great difficulty in pulling it all together into one cohesive piece of work. I feel that I have succeeded in doing so only to a point and would like to explore in this section why this has happened and what I can learn from it.

## ***Project Origins***

Embarking on the clinical psychology course, I had very little experience of clinical work. The main experiences I did have were with people with intellectual disabilities and autism. There was an urgency to select a topic for the thesis and I had a sense that my peers already had ideas. I felt left behind. I later learned that this was not an uncommon feeling among trainees and I now feel it might be related to my sense of inexperience and being at the beginning of a long journey of learning.

I had no ideas for research. I turned to my personal tutor, as I didn't feel that I knew other staff members sufficiently to go to them for help. With hindsight, I believe I felt quite ashamed at not having ideas of my own, at not knowing which areas most interested me. I now believe that this also was not unusual and was an understandable part of the training process. My tutor worked in the field of intellectual disabilities and suggested looking at Theory of Mind in offenders. Having worked with a child who had autism, this area did hold some interest for me and so I began to develop my idea. I had no burning desire to investigate this issue, nor any particular knowledge of the

literature, but a strong sense of urgency to get started.

### ***Barriers to Progress and Process Issues***

The first meeting with my university and outside supervisors took place at the participating offender service. At that stage the organisation was enthusiastic and helpful. It was agreed that I could use a certain room and that participants could be brought to and from that room with little difficulty. However, the exact tests I would be using had not been decided and I did not realise at the time how important this would be. When I arrived, the fact that I required video equipment for two of the tests meant that the agreed rooms were no longer suitable. I had to find another room, which then meant that I required accompaniment by assistant psychologists at all times. This then became a problem since these assistants were already short staffed and were not being supported in helping me by their superiors. I now realise that with prior planning I could have avoided these problems. In future I will be prepared to sacrifice complexity for practicality.

Choice of tests held things up for other reasons too. One of the tests I required had only been used once or twice and only in the USA. I contacted a researcher who promised to send me the equipment (a video and some photos) but this took several months to arrive. Once it did arrive, I realised that the tape needed converting to UK format, which held things up further.

### ***Personal Disillusionment with the Project***

As I progressed through the course, my interest in working with people with intellectual disabilities had increased. I began to feel passionately about treating these clients with respect and dignity, without prejudice. I developed this in my clinical work. During my second year I attended a special interest group where some past trainees presented their



research. They had worked qualitatively to thoughtfully investigate some important issues in the day to day lives of people with intellectual disabilities. As I listened, I began to feel ashamed of my research. I wondered what good it was going to do the people who took part, or other people with intellectual disabilities. I became very disillusioned with the work, and I spent a lot of time reflecting on this. I now realise that until quite late on in my training, I didn't sufficiently understand the issues that people with intellectual disabilities face, in order to know what to research to make the most of the opportunity. I eventually accepted my limitations and that the study I was undertaking was worthwhile. I had hoped that I might find that offenders with intellectual disabilities had some deficit that they might be helped to overcome, in order to prevent them from offending against others. In this way I realised that my intentions were good. However, in combination with my personal situation, this left me with a sense of disillusionment with the research, which has not fully left me. In the future, I therefore hope to carry out some research more akin to that which was presented at the special interest group; something involving people with intellectual disabilities at all levels of its design and implementation and which will be of more direct benefit to those participants.

As mentioned above, I carried out this research during a difficult time in my personal life. Just before the final year, I suffered a profound personal loss, a miscarriage, which still deeply affects me as I write about it eighteen months later. I had never been bereaved before and I struggled to continue with the demands of the course while processing the loss. In terms of ensuring I did not fail the course, I felt that on a day to day basis I had to continue with my clinical work, and I discussed the impact of my situation on my clients in supervision. I managed. However, during study days I found it very difficult to undertake self-driven research, particularly as – as mentioned above – I

was feeling disillusioned with it anyway. Work on my research slowed almost to a standstill. I was unproductive, although I managed to continue at a level that allowed me to complete pieces of coursework on time for deadlines. However, without specific deadlines for the research, I was floundering.

### ***Process Issues with Participation Organisations***

At the same time, relations with one of the participating organisations were breaking down, due to political issues within the organisation. Although I cannot go into details, my contact and main ally within the unit decided to leave and the remaining staff felt unable to help me in my research due to time constraints. I was left with insufficient participants from that location and forced to find others. This struggle, though it takes only seconds to write, actually dragged on for some months. Each time I attempted to carry out the research I had to travel for several hours and stay overnight for several nights. I would then attempt to collect data, only to be held back by not having the manpower to accompany me with participants who required supervision. After several days that I could ill afford to lose, I would return home with far fewer participants than I'd hoped, but with the promise that next time would be better. It was not until several weeks and most of my research days had been spent that I finally realised I would have to look elsewhere.

### ***Difficulties with Recruitment and Ethical Approval***

Finding additional participants was not easy. In order to find offenders with intellectual disabilities I had to approach organisations both local to my home and to my research supervisor. I also had to use a similar tactic in recruiting additional non-offender participants. In each case this meant contacting ethics committees to ensure that they approved of this new recruitment and therefore delaying data collection further.

Although ethics approval was eventually obtained, the process was unbearably slow and complicated, due to the number of sites I was having to use. Had I known in the beginning about this, I could have approached an MREC (Multi-Centre Research Ethics Committee) rather than a number of LRECs (Local Research Ethics Committees). Even before the procedural changes I had fallen at the first hurdle by obtaining ethics approval from the host university ethics committee, which appeared to be the appropriate one since none of the participants were recruited through the NHS or seen in NHS sites. However, once research governance was applied for it became clear that the NHS claims jurisdiction over research even in these circumstances. I found that I had to apply to the NHS committees in order to gain research governance approval and so I did so, which became the first substantial delay to my research since I had already gone through the university ethics procedure and was ready to begin data collection.

### ***Personal Issues – Reconnecting with the Project***

As I began reconnecting with my research, I became pregnant again, several months after the miscarriage. Despite the elation, the anxiety that this new pregnancy provoked in me was difficult to manage. Several clinical clients had issues touching on it, which had to be worked through in clinical supervision. In terms of the research, I remained distracted, finding it difficult to concentrate to a sufficient level. However, I was able to carry out the practical tasks relatively well, making the visits mentioned above to collect data. It was more abstract work such as the literature review that became increasingly difficult to concentrate on. As a result, that piece of work still seems ‘incohesive’ or ‘bitty’ to me. Once I returned after having my baby and enjoying six months of maternity leave, I was only able to devote one and a half days per week (while I paid for him to attend nursery prior to my returning to work) to my research. Again, this meant that my attention was distracted, and still the literature review suffered.

This combination of distraction by personal problems and disillusionment with the topic has been disastrous. In fact I believe that the disillusionment was also somehow related to my personal loss. This loss left me feeling very deeply and I was able to access my feelings about people with intellectual disabilities in a very honest way because of it. In a very concrete sense I was faced with the possibility of carrying a child with a disability and had to consider how I would want that child to be treated if that were the case. I suppose I found myself feeling almost 'motherly' to people with intellectual disabilities as a result of my loss. This was both as a result of my strong feelings about them anyway and part of my coming to terms with being a mother or not. The over-emphasis of this mothering feeling toward people with intellectual disabilities probably enhanced my disillusionment with my research. Now having these feelings in a better balance allows me to see that the research is valuable in its own way.

In future I now realise the importance of caring strongly about the research being carried out, in order to be able to give it full attention. I realise that most clinicians have to continue their clinical work while conducting research, which must be distracting in a similar (albeit less devastating) manner. My experiences have therefore prepared me for the real world as a clinical psychologist and I hope that having survived this piece of research I will be more prepared for the day to day distractions that go with the job.

### ***Supervision***

One of the ways in which I could have improved the research process would have been to make better use of supervision. Although I kept in contact with my university research supervisor through a placement, this led to some complacency on my part as it removed the urgency for research-specific meetings. The boundary between clinical

work and research became blurred, with supervision encompassing both. Due to my personal situation I did not seem to have the capacity to delineate the research time. My supervisor was quite laid back about the research process and I remain unsure about whether a more strict approach might have helped me to finish on time or whether it might have caused me to break down entirely and be unable to finish the clinical placements as well. At the time my focus was on surviving, which between us we achieved, so I'm reluctant to say that we should have done it differently.

However, I did fail to connect properly with the outside supervisor who eventually left the service. Had I made a stronger relationship with her, it is possible that she could have helped me more with data collection and possibly the literature review, which I found very difficult. I have learned from this, and in future will endeavour to schedule regular meetings with those I am working with. On the course we were encouraged to make relationships with our provided 'mentors' on the basis that although we might not feel the need for them in the early stages, we would appreciate having developed the relationship if we needed it later. It strikes me that this was a similar process. Had I spent more time with my outside supervisor in the early research stages, things might have run more smoothly later on.

### ***Methodological Limitations***

One of the major problems with this piece of work is the dearth of tools to measure Theory of Mind and empathy, particularly with participants who have intellectual disabilities. As has been explained in the main body of the research, empathy has often been poorly defined and the existing measures reflect this. As a result, very few measures were found that would be suitable. One empathy measure had to be adapted for use with people with intellectual disabilities and although the wording was simplified, there were times during data collection that I felt the participants were

still not understanding it. In the future, it will be necessary to either rewrite that measure completely for people with intellectual disabilities, or to attempt to measure the validity and reliability of the version used here. Similarly, the Theory of Mind measures were not ideal. The Sally-Anne and Smarties tests produced ceiling effects and the Ice Cream Task was added. Unfortunately the preferred test (Happé's Strange Stories, Happé, 1994) could not be used as its complexity made it unsuitable for people with intellectual disabilities. This test would have been ideal since it has been shown to identify those with autism who pass standard Theory of Mind tasks (Happé, 1994).

A further methodological limitation was the difficulty in recruiting participants. Both offenders and non-offenders had to be recruited from several services, leading to a diverse sample. One aspect of this that could be done better in future research is the matching of offenders and non-offenders. It was originally assumed that offenders with intellectual disabilities could be matched with non-offenders from day centres in the community for people with intellectual disabilities. However, it became apparent that many of the offenders would not use these services if they were in the community, but would hold down supported employment. An improvement to the matching procedure might be to ask each offender what they did for work or education before they were incarcerated (obviously in words they would understand) and to look for appropriate matches in the community.

A particular strength of this piece of research is that it begins to address the lack of empirical investigations into offenders with intellectual disabilities. Despite a number of treatment programs that attempt to improve offenders' empathy, there has been little empirical research. In addition, Lindsay (2002) has described how one of the main problems with existing research into the characteristics of sex offenders is that it is often based on clinical samples with no control group. This means that it is impossible to be

sure that the characteristic described are not also found in people with intellectual disabilities who do not offend. The current study has addressed this by directly comparing offenders and non-offenders with intellectual disabilities. It would have been desirable to include further control groups consisting of offenders and non-offenders without intellectual disabilities, but this was beyond the scope of this piece of research.

It should be noted that while this piece of work focused on offenders, it did not look in detail into types of offence. Due to the lack of available participants, it would not have been possible to limit recruitment to only sex offenders or only violent offenders for example. All that was possible was to ensure that all offenders had committed an offence directly against another person. As a result, the offender group could be considered rather diverse, with crimes ranging from relatively mild assault to sex offences. It is possible that some types of offender show empathy or Theory of Mind deficits while others do not, and that the scores of those with good skills in these areas have masked the deficits of others. Unfortunately the small sample size did not allow this to be investigated. In particular, the distinction between sexual and non-sexual offenders appears to be important, since sexual offending has sometimes been thought of as closer to sexual deviation (such as fetishism) than to other types of crime (Smallbone et al., 2003), which suggests the two should be considered separately.

It could be argued that the methodology utilised here is rather simplistic, in the sense that it does not consider the whole person in their social and environmental context. Jahoda, Trower, Pert & Finn (2001) assert that research (specifically on anger and aggression in those with intellectual disabilities) should draw on self-concept theories encompassing both individual and inter-personal factors. One possibility not considered in the present study is that the individual's mental state or even mental health might lead to offending behaviour. Jahoda et al. (2001) discuss the link between depression and

aggression, suggesting that reducing depression and helping to identify non-aggressive ways to achieve personally-important goals might be a more ethically sound way to reduce incidents of violence. Perhaps investigating difficulties such as depression or anxiety rather than excluding them from the study would have produced some enlightening results. As it stands, the current study excluded any history of severe mental illness and therefore missed any potentially associated patterns. It is possible that it is the offenders who do have mental illnesses who struggle with Theory of Mind and empathy tasks, particularly if these are considered to be state-based rather than stable trait-based concepts.

The representation of the concepts measured as global and stable could be seen as a further limitation of the current study. Recent findings show that rapists have higher empathy scores than non-sexual offenders for women in general and accident victims, but lower empathy for their own victims (Fernandez & Marshall, 2003). This means that when assessing for empathy, care should be taken not to make assumptions based on general empathy measures, since specific deficits may exist. However, comparisons of general empathy scores are valuable in their own right, since there may be differences between individuals and/ or groups such as offenders, sex offenders and non-offenders or people with and without intellectual disabilities. This view is upheld by Smallbone et al. (2003) who feel that individual characteristics such as general empathy should be investigated in addition to situational or contextual factors, since it is likely to be a combination of both that provides the most complete explanation.

Finally in this section it is necessary to consider the possible impact of unidentified autistic spectrum disorders on this study. Since Theory of Mind tasks were passed by a majority of participants, it does not seem likely that there were a large number of participants with autism in the sample. However, since the recruitment organisations did



not screen routinely for these disorders it is certainly conceivable that there was some unrecognised autism (particularly at the milder end of the spectrum). There appears to be no reason to believe that either group would be more likely to go undiagnosed with autism than the other, which leads to the conclusion in this case, that this is not a major problem for the study, although it should certainly be held in mind for future research.

### ***Clinical Implications***

The findings (or rather lack of findings) in this study raise the question of whether empathy should be a focus of treatment for offenders. Very few differences were found between offenders and non-offenders with intellectual disabilities on measures of either empathy or theory of mind, and in fact where they were found they tended to show that offenders were the more skilled of the two groups. The trend of treatment aimed at improving empathy in offenders seems therefore rather pointless. The findings imply that having empathy and/or theory of mind skills does not in itself prevent offending. Similarly, they imply that it is not a lack of empathy and/or theory of mind skills that leads to offending behaviour.

Rather than empathic deficits, aggression is often seen as the primary problem in people with intellectual disabilities and treatment tends to lead from this formulation. Given the lack of evidence for empathic deficits as a basis for offending in the present study, it would be advisable to explore aggression further as a causal factor. Taylor (2002) discusses how there is little evidence for the efficacy of most existing interventions for aggression and anger in this population and that evidence appears to show that most benefit appears to be gained from components such as relaxation, self-monitoring and role-play to develop skills.

Despite a lack of evidence that offending behaviour stems from aggression or empathy

deficits, it appears that offenders with intellectual disabilities might expect to receive either treatment aimed at improving their empathy or at decreasing their anger and aggression, although in some cases therapeutic interventions are non-specific (Barron et al., 2004). Further research should be carried out to investigate the causes of offending behaviour in the individual so that appropriate, personalised treatments can be developed. In discussing their findings of victim-specific empathy deficits in sex offenders, Fernandez and Marshall (2003) suggest that cognitive distortion may be a factor in these cases, and that treatment should reflect this. Other possibilities are that self-preserving instincts prevent the offender from feeling empathy to their victims, due to the negative view of self that this would provoke. Therefore, great attention should be paid to the assessment of the individual, in order to determine in each case what the aetiology of offending might have been (using existing psycho-therapeutic models) and to use this to inform treatment. The current study highlights this need by underlining how little is known about offenders with intellectual disabilities as a group. Assessment should break from the traditional behavioural approach and avoid neglecting the emotional lives of this group of people, as appears to have happened in the past, which has led to a dearth of knowledge about this area of their lives (Taylor, 2002).

### ***Further Research***

A key focus of further research should be investigating the aetiology of offending behaviour in both those with intellectual disabilities and those without. Empathy and theory of mind as measured here do not seem to be significant predictors, but it is possible that an aspect of them is important. For example this research report has discussed different components of empathy and theory of mind, but has only attempted to measure some of these. This is partly due to limitations in existing measures. However, based on the current research, it appears possible that offenders may have

better empathic abilities in some areas, but do not use these to inhibit their behavioural urges. This ‘stopping oneself’ might be an important aspect for further research to consider. If offenders know what they are doing is hurtful and wrong, what is it that allows them to do it anyway? Perhaps those who have been abused in some way themselves have had to inhibit some of their own feelings (an aspect of empathy only indirectly measured here, and in a somewhat artificial and indirect manner, by asking how a protagonist might feel if their friend received some minor bad news). Research based on psychotherapeutic ideas (psychodynamic or cognitive-behavioural for example) of how we deal with abuse or other traumas might have something to add to this debate. For example, perhaps offenders are somehow protecting their own feelings by hurting others. If they had been abused by a parent, perhaps they have had to minimise the negative consequences in their own minds in order to maintain their idealised view of that parent despite the abuse. Although this is an extremely unformed argument at present, it could certainly be developed into a useful research question.

Lindsay (2002) points out that there is little empirical research into variables important in risk assessment of sex offenders (and therefore in their assessment and treatment) but lists a number of possibilities that have been suggested: co-operation with evaluation; offence history, violence, anger management, willingness to discuss offences; acceptance of responsibility; remorse; deviant sexual interests; substance abuse; victim empathy; mental illness; having been abused themselves; motivation to be treated. Currently unsupported by evidence, most of these would provide a good basis for further studies, both in offenders with and without intellectual disabilities.

As discussed above, it was not possible to look at different categories of offender in the present study. Future research could attempt to achieve this, although a strong commitment from a large organisation providing services for offenders would be

necessary. Breaking offending behaviour down into separate components (much as the concept of empathy has been broken down in this study) would also allow research from these related fields to be utilised. Models of aggression and anger in those with intellectual disabilities (Jahoda, 2002; Taylor, 2002) might inform this work and aggressive behaviour or violence (Nussbaum et al., 2002) could be used rather than offending behaviour as an independent variable. However, this may also prove difficult due to a general lack of reliable measures for the assessment of anger and aggression in people with intellectual disabilities (Taylor, 2002).

One final comment on omissions from existing research is the lack of consideration of female offenders. Although specific searches were not carried out to identify studies including women, of all the papers identified in the course of this piece of research, only one was noted to do so (Allen et al., 2001). In the present investigation, women were excluded due to small numbers in the offender organisation. Future research should address this issue, since there may be differences in the aetiology of offending for men and women.

The existing measures of empathy and theory of mind require a great deal of work. Research could focus on either redeveloping the Interpersonal Reactivity Index (Davis, 1985) or on validating the version adapted here. However, it would be very useful to thoroughly research a model encompassing theory of mind and empathy and to attempt to support this with empirical research. This presents an additional challenge when considered for people with intellectual disabilities who cannot use many of the measures in circulation. It would be desirable to minimise the use of questionnaire measures entirely and attempt to measure concepts directly as the Test of Emotional Perception has endeavoured to do. This not only helps it be applied to people with intellectual disabilities, but can provide a more objective and direct measure, where

questionnaires in this area might measure how people like to think they are rather than how they really are. Finally, existing 'victim empathy' scales could be adapted for use in comparisons of offenders and non-offenders. In the past, this has been achieved by asking about hypothetical victims but this is complex and unwieldy when applied to people with intellectual disabilities. Perhaps video could be used to improve these measures, as it can make questions about hypothetical characters more concrete and meaningful.

Studies are needed to clarify whether the video presentation of classic theory of mind tasks has indeed highlighted a methodological problem in existing studies. In addition, the videotape methodology could be used to adapt existing measures of victim empathy (such as Fernandez et al., 1999; Roeyers et al., 2001; Rose et al., 2002) for use with non-offenders and those with intellectual disabilities. Additionally, the adapted version of the Interpersonal Reactivity Index used here requires investigation into its psychometric properties, which would then help to clarify the present results.

Finally, an entirely different approach could be undertaken in the form of qualitative studies. One study was identified that considered empathy in offenders from this point of view (Webster & Beech, 2000), using grounded theory and finding differences in power and blame within the sample of offenders. This is a good example of unconventional methodology being used to answer questions that had previously gone unanswered and allowing the individuals themselves to tell their stories. However, there remain a great number of possible avenues for this type of research, including 'why do offenders with intellectual disabilities offend?'; 'what distinguishes sex offenders from other offenders?'; 'what empathic skills do offenders with intellectual disabilities possess?'; 'how do offenders with intellectual disabilities interact with others?' Although generally broader topics than would be chosen for quantitative work, these

would allow individuals to be studied in more detail, without the assumption of similarities across what may actually be very diverse groups. Considering the motivations for offending in a small number of participants may be very helpful in guiding future large-scale empirical studies. This approach could also be seen as more respectful to the individuals involved in that it makes fewer assumptions about their actions and internal states. In addition, researchers have called for careful assessment and formulation in offenders with intellectual disabilities (Taylor, 2002) and qualitative work might provide a basis for the development of tools to make this possible.

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## Appendices

Appendix 1.	Notes for Contributors.	102
Appendix 2.	University Journal Approval	106
Appendix 3.	Ethical Approval Letters.	107
Appendix 4.	Information Sheet and Consent Form.	115
Appendix 5.	Original Interpersonal Reactivity Index.	117
Appendix 6.	Adapted Interpersonal Reactivity Index.	120
Appendix 7.	Test of Emotional Perception.	123
Appendix 8.	Smarties and Sally Anne Tasks	125
Appendix 9.	Ice Cream Van Task	127
Appendix 10.	Ice Cream Van ToM Task Comparisons.	129

## **Appendix 1. Notes for Contributors.**

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**Appendix 2. University Journal Approval**



**THE UNIVERSITY OF SHEFFIELD**  
**Clinical Psychology Unit**  
**Department of Psychology**

Doctor of Clinical Psychology (DClin Psy) Programmes (Pre-registration and post-qualification)  
Clinical supervision training and NHS research training and consultancy

**Clinical Psychology Unit**  
**Department of Psychology**  
**University of Sheffield**  
**Western Bank**  
**Sheffield S10 2TP UK**

Telephone: ++44 (0)114 22 26632  
Fax: ++44 (0)114 22 26610  
Email: [dclinpsy@sheffield.ac.uk](mailto:dclinpsy@sheffield.ac.uk)

Unit Director: Prof Graham Turpin (26569)

Assistant Director: Dr Pauline Slade (26568)

Clinical Practice Director: Ms Joyce Scafe (26574)

Course Administrator: Carole Gillespie (26570)

---

*Please reply to: Dr. Gerry Kent Direct Line: 0114 222 6527 e-mail: [g.kent@sheffield.ac.uk](mailto:g.kent@sheffield.ac.uk)*

25/06/2003

T Proctor,  
Third Year trainee,  
Clinical Psychology Unit,  
Department of Psychology

Dear Tracey,

I am writing to indicate our approval of the journal(s) you have nominated for publishing work contained in your research thesis.

Literature review: Journal of Applied Research in Intellectual Disabilities

Research report: Option B Journal of Applied Research in Intellectual Disabilities

Please remember to bind in this letter and a copy of the relevant Instructions to Authors with your thesis.

Yours sincerely,

Gerry Kent  
Chair, Research Sub-Committee

**Appendix 3. Ethical Approval Letters.**

Southern Derbyshire  
Local Research Ethics Committee

Central Derby  
Primary Care Trust

Sheffield Teaching Hospitals **NHS**

NHS Trust  
Northern General Hospital  
Herries Road  
Sheffield  
S5 7AU

**North Sheffield Ethics Office**  
1<sup>st</sup> Floor Vickers Corridor

Direct Line: 0114 271 4894 or 271 4011  
Fax: 0114 256 2469  
Email: Sue.Rose@sth.nhs.uk

SRB/SR/03/02/03  
Proctor/NS2003 2 1564  
(Please quote reference on all correspondence)

15 January 2003

**CORRESPONDANCE  
ADDRESS REMOVED**

Dear Ms Proctor

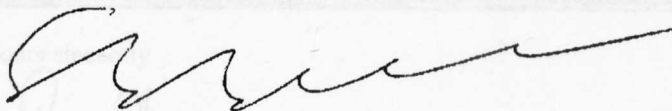
**Re Theory of mind empathy in people with learning disabilities: Offenders versus non-offenders**  
**Ref: NS2003 2 1564**

Thank you for your letter of the 9 January 2003 and enclosed details of the above project.

I am prepared to provide Chairman's approval in order for you to proceed with the project. This decision will be ratified at the next available meeting but it will not be necessary for you to attend. If comments are made at the meeting I will write to you.

As you are proposing to undertake some aspects of the project outside the remit of this Research Ethics Committee you should contact the relevant RECs for the specific geographical area.


Yours sincerely



S R Brennan  
CHAIRMAN - RESEARCH ETHICS COMMITTEE  
Consultant physician

Cc R & D Consortium



Central Derby 

Primary Care Trust

Derwent Court  
Stuart Street  
Derby  
DE1 2FZ

**Southern Derbyshire  
Local Research Ethics Committee**

**Chairman:** Mr P Korczak FDSRCS FRCS  
**Administrator:** Jenny Hancock  
**Telephone** 01332 203102 ext 6209 (direct dial from Derby hospitals 16-6209)  
**Direct fax:** 01332 363963  
**email:** [jenny.hancock@mail.sderby-ha.trent.nhs.uk](mailto:jenny.hancock@mail.sderby-ha.trent.nhs.uk)

6 February 2003

**CORRESPONDANCE  
ADDRESS REMOVED**

Dear Ms Proctor

**SDLREC REF: 0302/613**

**THEORY OF MIND AND EMPATHY IN PEOPLE WITH LEARNING DISABILITIES:  
OFFENDER vs NON-OFFENDERS**

Thank you for your emailed correspondence of 29 January 2003 and the protocol and associated documents received on 5 February 2003 relating to the above study. The following documents have been reviewed:

- Letter from Department of Psychology Ethics Sub-Committee, University of Sheffield, dated 6 August 2002
- Letter from North Sheffield LREC dated 15 January 2003
- Letter from Hull and East Riding LREC dated 27 January 2003
- Study protocol version 1
- Information sheet for research version 1
- Consent form for research version 1
- Layman's summary version 1

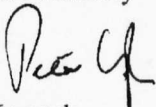
I note that this study has already received a favourable ethical review from a committee recognised for that purpose and, acting under delegated authority from the committee, I am happy to endorse that decision and grant approval for the study to take place within Southern Derbyshire.

I will inform the committee of my decision at the next meeting of Southern Derbyshire LREC.

You should copy this letter to the managers at the day centres involved.

**Please quote the SDLREC reference number (shown above) in all future correspondence on this study.**

Yours sincerely



P Korczak  
Chairman  
Southern Derbyshire Local Research Ethics Committee

## Derbyshire Local Research Ethics Committees

Central Derby **NHS**  
Primary Care Trust

**Chairman Derbyshire South:** Mr P Korczak FDSRCS FRCS  
**Chairman Derbyshire North:** Mr J O Harris B.Sc(Pharm.), MSc., M.R.Pharm.S  
**Administrator:** Jenny Hancock  
**Telephone** 01332 868765 (direct line)  
**email:** [jenny.hancock@centralderby-pct.nhs.uk](mailto:jenny.hancock@centralderby-pct.nhs.uk)

6th Floor  
Laurie House  
Colyear Street  
Derby  
DE1 1LJ

26 June 2003

Please note  
change of  
address.

**CORRESPONDANCE  
ADDRESS REMOVED**

SDLREC REF: 0302/613

**THEORY OF MIND AND EMPATHY IN PEOPLE WITH LEARNING DISABILITIES:  
OFFENDER vs NON-OFFENDERS**

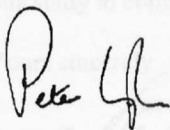
Thank you for your recent emails relating to proposed amendments to the above study. I note that you now propose to contact additional offenders and non-offenders through a community-based psychologist in order to increase the number of offenders recruited and obtain an IQ rate for the non-offenders closer to that of the offender group.

Acting on delegated authority from the Committee, I am happy to approve these amendments and I confirm that you may now proceed with the modified study in the Southern Derbyshire area. However, I would like to point out that in general the Committee is unhappy about creeping developments to projects. Should you wish to make further modifications to the study, we would ask you to reapply to the Committee for approval in the normal way.

I will report this information to members at the next meeting of the Southern Derbyshire Local Research Ethics Committee.

**Please quote the SDLREC reference number (shown above) in all future correspondence on this study.**

Yours sincerely



P Korczak  
Chairman  
Southern Derbyshire Local Research Ethics Committee

## HULL AND EAST RIDING LOCAL RESEARCH ETHICS COMMITTEE

c/o Faculty of Health  
Coniston House  
The University of Hull  
East Riding Campus  
WILLERBY  
HU10 6NS  
Phone: 01482 466771  
Fax: 01482 466769  
e-mail: k.birtwhistle@hull.ac.uk

Our ref: 02/03/035

27 January 2003

**CORRESPONDANCE  
ADDRESS REMOVED**

Dear Ms Proctor,

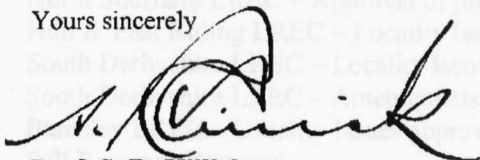
**Re: Theory of Mind & Empathy in People with Learning Disabilities : Offenders vs Non-Offenders**

Thank you for your letter received via e-mail on 16<sup>th</sup> January 2003. The Chair of the Hull and East Riding Local Research Ethics Committee has reviewed the following documents:

- Southern Derbyshire LREC application form
- Research Proposal and appendices numbered 1 through to 7
- University of Sheffield dept of Psychology letter granting ethical approval
- Letter from North Sheffield Ethics Office dated 15<sup>th</sup> January 2003 granting chairman's approval

The Hull and East Riding Research Ethics Committee notes that approval has already been given for this study to commence by the North Sheffield Ethics Office. **The LREC endorses this approval.**

Yours sincerely



**Prof. S. R. Killick**  
Chair of the Hull and East Riding REC

**DONCASTER LOCAL RESEARCH ETHICS COMMITTEE**

Medical Teaching Centre, Doncaster Royal Infirmary, Armthorpe Road, DONCASTER DN2 5LT

Secretary: Mrs C Cooper Tel: 01302 366666 Ext: 3704 Fax 01302 553113

E-mail: chris.cooper@dbh.nhs.uk

Hours of Work: Tues 8.30 – 4.30 & Wed 8.30 – 10.30 a.m.

**CHAIRMAN: Dr N M Thomas BDS, MCDH, MFDS, DDPH, RCS (ENG), HonFPHM,  
Consultant in Dental Public Health**

**REC/03/75 Please quote this number on all correspondence**

NT/CRC/03/75TPa

**CORRESPONDANCE  
ADDRESS REMOVED**

Dear Tracey

**Re: Theory of mind empathy in people with learning disabilities: Offenders  
versus non-offenders**

**Doncaster REC Ref: 03/75  
NS REC Ref: 2003 2 1564**

The two members of the Doncaster Research Ethics Committee considered in full the locality issues relating to the above application on the 17<sup>th</sup> September 2003. The documents reviewed were as below:

University of Sheffield Department of Psychology - Approval of project  
Community Health Sheffield – Indemnity  
North Sheffield LREC – Approval of project  
Hull & East Riding LREC – Locality Issues approval  
South Derbyshire LREC – Locality Issues approval  
South Derbyshire LREC – Amendments approval  
Barnsley LREC – Locality Issues approval  
Full Research Proposal  
Information Sheet  
Consent Form  
CV – Tracey Proctor  
Letter dated 10 09 03 in response to queries raised by Doncaster LREC 02 09 03

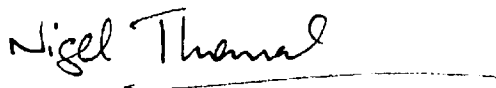
The issues reviewed were as follows:

- The suitability of the local researcher
- The appropriateness of the local research environment and facilities
- Any specific issues that may relate to this local community

The LREC members consider the locality issues have been adequately addressed and the proposed research can be conducted within the boundary of this Health Authority on the understanding that you will follow the conditions set out below:

- You supply the Doncaster LREC with a consent form and information sheet on local headed paper.
- You have a favourable opinion from an MREC or LREC within this Strategic Health Authority for the ethics of the proposed research.
- You do not undertake this research in an NHS organisation until the relevant NHS management approval has been gained as set out in the Framework for Research Governance in Health and Social Care.
- You do not deviate from, or make changes to, the protocol without prior written approval of the MREC/ Lead LREC and notifying this LREC of the approval, except where this is necessary to eliminate immediate hazards to research participants, or when the change involves only logistical or administrative aspects of the research.
- You notify this LREC when you have completed your research, or if you decide to terminate it prematurely.
- You advise your sponsor of any unusual or unexpected results that raise questions about the safety of patients taking part in the research.

Yours sincerely,



Dr N M Thomas  
Chairman  
Doncaster Local Research Ethics Committee

Barnsley **NHS**

Primary Care Trust

Hillder House  
49/51 Gawber Road  
Barnsley  
S75 2PY

Direct dial: 01226 777034  
Fax: 01226 730054

Website: [www.barnsley.nhs.uk](http://www.barnsley.nhs.uk)

Your Ref:

Our Ref: AJT/AJ

Please ask for: Mr A J Thorpe

## BARNSELY RESEARCH ETHICS COMMITTEE

8 July 2003

**CORRESPONDANCE  
ADDRESS REMOVED**

Dear Ms Proctor

### **THEORY OF MIND EMPATHY IN PEOPLE WITH LEARNING DISABILITIES: OFFENDERS VERSUS NON OFFENDERS**

Thank you for your letters received via e-mail on 9 and 29 June 2003 and the accompanying application relating to the above study. I note that you have already obtained approval from the North Sheffield Research Ethics Committee. The details were reported to the Barnsley REC at its July meeting and I am pleased to confirm that the Committee agreed to approve your request to recruit Barnsley patients.

The Committee received the following documents:-

1. Research protocol and appendices including patient information and consent forms;
2. Letter from North Sheffield Research Ethics Committee dated 15 January 2003 giving Chairman's approval to the project;
3. Letter from Hull and East Riding REC dated 27 January 2003 giving approval to the project;
4. University of Sheffield Department of Psychology letter granting ethical approval.

Would you please ensure that full information regarding the study is provided to the Barnsley Primary Care Trust Research Governance Department.

Finally, the Committee would also wish to be provided with an end of study report in due course.

Yours sincerely

A handwritten signature in black ink, appearing to read "Peter Yates". The signature is written in a cursive style with a large, sweeping initial "P".

**Peter Yates**  
**Chairman**

**Appendix 4. Information Sheet and Consent Form.****Information Sheet for Research (to be read out to participants).**

Tracey Proctor, Trainee Clinical Psychologist.  
The University of Sheffield, Clinical Psychology Unit.

- You do not have to do this study if you don't want to, You can stop at any time, for any reason.
- Anything you say will be kept confidential and you will not be identified.
- If you have concerns about this study, contact Tracey Proctor

CONTACT  
DETAILS  
REMOVED

CONTACT  
DETAILS  
REMOVED

**Description of the Study:**

- I am trying to find out about how people think about the other people.
- To do this, I will ask you questions about videos, pictures and stories.
- You will then be able to talk about your answers if you would like to.
- Your answers will not be shared with anyone unless you want them to.

**Confidentiality:**

- A number will be used instead of your name, so that nobody knows which answers are yours.
- The form that you sign will be kept separately from your answers and both will be kept safely.

**Opportunities to Withdraw:**

- If you decide now or at any time that you want to stop, you are free to do so - please let me know.
- If you take part but later change your mind, your answers will be destroyed.

**Complaints:**

- If you would like to complain about how you have been treated in this study, please contact the project co-ordinator

CONTACT DETAILS REMOVED

DETAILS REMOVED

If this is not good enough, you can use the normal complaints procedure for your service.



**Consent Form for Research (to be read out to participants).**

Tracey Proctor, Trainee Clinical Psychologist.  
The University of Sheffield, Clinical Psychology Unit.

Participant's Name: \_\_\_\_\_

Date of Birth: \_\_\_\_\_

Research Number: \_\_\_\_\_

Tick one of the following:

Please share my responses with [DETAILS REMOVED] / Day Service]

Please DO NOT share my responses with [DETAILS REMOVED] / Day Service]

I understand what I am being asked to do and I agree to take part.

Signature of Participant \_\_\_\_\_

Signature of Researcher \_\_\_\_\_

Date \_\_\_\_\_

**Appendix 5. Original Interpersonal Reactivity Index.**

**SECTION ONE**

INTERPERSONAL REACTIVITY INDEX

*Directions: Please indicate how much the following statements describe you by marking the box below the response you choose for each item.*

	Describes me very well	Describes me well	Describes me fairly well	Does not quite describe me	Does not really describe me	Does not describe me at all
F (1) I daydream and fantasize, with some regularity, about things that might happen to me. . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EC (2) I often have tender, concerned feelings for people less fortunate than me. . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PTG I sometimes find it difficult to see things from the "other guy's" point of view. . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EC (4) Sometimes I don't feel very sorry for other people when they are having problems. . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C (5) I really get involved with the feelings of the characters in a book. . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P (6) In emergency situations, I feel apprehensive and ill-at-ease. . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F (7) I am usually objective when I watch a movie or play, and I don't often get completely caught up in it. . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PT (8) I try to look at everybody's side of a disagreement before I make a decision. . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EC (9) When I see someone being taken advantage of, I feel kind of protective towards them. . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		Describes me very well	Describes me well	Describes me fairly well	Does not quite describe me	Does not really describe me	Does not describe me at all
JD	(10) I sometimes feel helpless when I am in the middle of a very emotional situation. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PT	(11) I sometimes try to understand my friends better by imagining how things look from their perspective. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F	(12) Becoming extremely involved in a good book or movie is somewhat rare for me. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PD	(13) When I see someone get hurt, I tend to remain calm. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PE	(14) Other people's misfortunes do not usually disturb me a great deal. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PT	(15) If I'm sure I'm right about something, I don't waste much time listening to other people's arguments. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PE/F	(16) After seeing a play or movie, I have felt as though I were one of the characters. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PD	(17) Being in tense emotional situations scares me. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EL	(18) When I see someone being treated unfairly, I sometimes don't feel very much pity for them. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PD	(19) I am usually pretty effective in dealing with emergencies. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		Describes me very well	Describes me well	Describes me fairly well	Does not quite describe me	Does not really describe me	Does not describe me at all
EC	(20) I am often quite touched by things I see happen. . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PT	(21) I believe that there are two sides to every question and try to look at them both. . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EC	(22) I would describe myself as a pretty soft-hearted person. . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F	(23) When I watch a good movie, I can very easily put myself in the place of a leading character. . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PD	(24) I tend to lose control during emergencies. . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PT	(25) When I'm upset at someone, I usually try to "put myself in his or her shoes" for a while. . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F	(26) When I am reading an interesting story or novel, I imagine how I would feel in the events in the story were happening to me. . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PD	(27) When I see someone who badly needs help in an emergency, I go to pieces. . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PT	(28) Before criticizing somebody, I try to imagine how I would feel if I were in their place. . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Do you ever feel that you understand the feelings of people on telly?














































In an emergency, do you ever get carried away and worried?

When you watch a good movie, do you get carried away with it?

In an emergency, do you ever think about what everybody wants, not just yourself?

If somebody is really unhappy, do you wish you could help them?

## Appendix 6. Adapted Interpersonal Reactivity Index.

	NO	A LITTLE BIT	SOMETIM ES	QUITE A BIT	A LOT
					
1	<i>Do you think about things that you would like to happen?</i>				
					
2	<i>Do you worry about people when bad things happen to them?</i>				
					
3	<i>Is it hard to understand why people do the things they do?</i>				
					
4	<i>Do you care about other people's problems?</i>				
					
5	<i>Do you get really interested in the feelings of people on telly?</i>				
					
6	<i>In an emergency do you feel scared and worried?</i>				
					
7	<i>When you watch a film or the telly, do you get carried away with it.</i>				
					
8	<i>In an argument do you think about what everybody wants, not just yourself?</i>				
					
9	<i>If something nasty happens to someone, do you wish you could help them?</i>				

- |    |  |   |   |   |   |
|----|--|---|---|---|---|
|    | x  | ✓ | ✓ | ✓ | ✓ |
| 10 | <i>When things are very happy or very sad - do you know what to do?</i>                      |   |   |   |   |
|    | x  | ✓ | ✓ | ✓ | ✓ |
| 11 | <i>Do you think about what your friends are thinking, so you can understand them better?</i> |   |   |   |   |
|    | x  | ✓ | ✓ | ✓ | ✓ |
| 12 | <i>Do you get very 'into things' on telly or in films?</i>                                   |   |   |   |   |
|    | x  | ✓ | ✓ | ✓ | ✓ |
| 13 | <i>If you see someone get hurt, do you stay calm?</i>  |   |   |   |   |
|    | x  | ✓ | ✓ | ✓ | ✓ |
| 14 | <i>Are you bothered if bad things happen to other people?</i>                                |   |   |   |   |
|    | x  | ✓ | ✓ | ✓ | ✓ |
| 15 | <i>If you're definitely right, do you still listen to what other people say?</i>             |   |   |   |   |
|    | x  | ✓ | ✓ | ✓ | ✓ |
| 16 | <i>After watching a film, do you feel like you are one of the people in it?</i>              |   |   |   |   |
|    | x  | ✓ | ✓ | ✓ | ✓ |
| 17 | <i>When things are very happy or sad - do you get scared?</i>                                |   |   |   |   |
|    | x  | ✓ | ✓ | ✓ | ✓ |
| 18 | <i>If something unfair happens to someone else, do you care?</i>                             |   |   |   |   |
|    | x  | ✓ | ✓ | ✓ | ✓ |
| 19 | <i>Are you pretty good in an emergency?</i>  |   |   |   |   |
|    | x  | ✓ | ✓ | ✓ | ✓ |
| 20 | <i>Can things you see make you happy or sad or angry?</i>                                    |   |   |   |   |
|    | x  | ✓ | ✓ | ✓ | ✓ |
| 21 | <i>Do you try to see both sides of an argument?</i>  |   |   |   |   |

	1	2	3	4	5
	x	✓	✓	✓	✓
22	<i>Are you a caring person?</i>				
	x	✓	✓	✓	✓
23	<i>When you watch a film, can you pretend you are the main person in it?</i>				
	x	✓	✓	✓	✓
24	<i>In an emergency do you lose control?</i>				
	x	✓	✓	✓	✓
25	<i>If someone upsets you, do you think what you would have done if it was you?</i>				
	x	✓	✓	✓	✓
26	<i>When you hear a story or watch a film, do you wonder how you would feel if you were in the story?</i>				
	x	✓	✓	✓	✓
27	<i>If someone needs help in an emergency, are you good at helping them?</i>				
	x	✓	✓	✓	✓
28	<i>Before you say something nasty to someone, do you think about how you would feel if someone said that to you?</i>				
	x	✓	✓	✓	✓

**Appendix 7. Test of Emotional Perception.**

**Test of Emotional Perception**

Participant Number:.....

*(for each section write exactly what the participant says as they will be scored for number of propositions they come up with)*

- 1. Select sequence number .....
- 2. Inform participant that they will be able to see each tape twice if they need to.
- 3. **Show training tape (balloons)**
- 4. Ask participant to tell you what they saw: .....

- 5. Show the 3 pictures and ask which one shows what comes next:

Correct <input type="checkbox"/>	Incorrect <input checked="" type="checkbox"/>	Time taken: .....
----------------------------------	---	-------------------



Smarties and Sally Anne Tests

Smarties Task 3

Participant Number.....

6. Show 1

7. Ask participant to tell you what they saw: .....

.....  
 .....  
 .....

8. If no emotional content to answer say 'anything else' or 'what else did you see' (give this prompt a maximum of twice).....

.....  
 .....  
 .....

Tick one of the following:

No prompt needed  Prompt given once  Prompt given twice

9. If still no emotional content say 'what happened in the tape after s/he answered the phone/ opened the letter' and if still no then say 'how did the woman/man feel'.

.....  
 .....  
 .....

Tick one of the following:

No prompt needed  1<sup>st</sup> Prompt given  2<sup>nd</sup> Prompt given

10. If still no emotional content show the tape again (last time)

Tape shown once <input type="checkbox"/>	Tape shown twice <input type="checkbox"/>
---	--

11. Show the 3 pictures and ask which one shows what comes next:

Correct <input type="checkbox"/>	Incorrect <input type="checkbox"/>	Tune taken <input type="checkbox"/>
----------------------------------	------------------------------------	-------------------------------------

Note the emotion for each.

12. Ask participant how they would feel if one of their friends received a letter/ phone call like that .....

.....  
 .....  
 .....

If the participant does not indicate that the man will sit down and read his book, say 'what will he do when he sits back down?' (give number of prompts below)

No prompt needed  Prompt given once  Prompt given twice

11. If the participant still does not indicate that the man will sit down and read his book, show the pictures again (last time)

**Appendix 8. Smarties and Sally Anne Tasks****Smarties Task &  
Adapted Sally-Anne Task**

Participant Number.....

**Smarties Task**

1. Show the participant the Smarties/ toothpaste box and say 'what do you think is in here?'. Record response.  
.....  
.....
2. Open the box and show the participant what is inside.
- 3.
4. Close the tube and ask the participant 'what is really in here?' Record response.  
.....  
.....
5. If the participant says 'smarties/ toothpaste' (or equivalent) say 'but what's in it really?' Record response.  
.....  
.....

No prompt needed <input type="checkbox"/>	Prompt given once <input type="checkbox"/>	Prompt given twice <input type="checkbox"/>
---	--	---

6. Say 'if someone else comes in here, what will they think is in here?'. Record response.  
.....  
.....
7. Say 'what did you think was in here before I showed you?'. Record response.  
.....  
.....

**Adapted Sally-Anne Task.**

8. **Show the 'book' sequence.**
9. Ask participant what happened in the tape: .....  
.....  
.....
10. Ask participant what might happen next: .....  
.....  
.....

If the participant does not indicate that the man will sit down and read his book, say 'what will he do when he sits back down?' (note number of prompts below).

Tick one of the following:

No prompt needed <input type="checkbox"/>	Prompt given once <input type="checkbox"/>	Prompt given twice <input type="checkbox"/>
---	--	---

11. If the participant still does not indicate that the man will sit down and read his book, show the tape again (last time)

Tape shown once <input type="checkbox"/>	Tape shown twice <input type="checkbox"/>
--	---

- If tape shown again, ask participant what happens next: .....  
 .....  
 .....  
 .....

If the participant still does not indicate that the man will sit back down and read his book, say ‘what will he do when he sits back down?’ (note number of prompts).

Finally, if necessary, explain that the man will sit down and read his book, then move on to the next section.

prompt needed <input type="checkbox"/>	Prompt given once <input type="checkbox"/>	Prompt given twice <input type="checkbox"/>	Explanation given <input type="checkbox"/>
--	--	---	--

- Show the 'sandwich' sequence.**
- Ask participant what happened in the tape: .....  
 .....  
 .....
- Ask participant what might happen next: [NOTE WHERE THEY SAY HE WILL LOOK FOR SANDWICH – NOT JUST BAG, WHICH BAG???] ...  
 .....  
 .....  
 .....

If the participant does not indicate that the man will sit down and look for his sandwich (or similar), say ‘what will he do when he sits back down?’ (note number of prompts below).

**Once the participant has mentioned the sandwich, attempt to determine whether they think he will look in HIS OWN bag or go straight to the other man’s bag. If the participant says ‘he will ask the other man where his sandwich is’ you need to find out if they think that he’s noticed it missing from his bag or if they just somehow know the sandwich has moved. If necessary, ask the participant to talk you through it slowly, pointing to the screen.**

Tick one of the following:

No prompt needed <input type="checkbox"/>	Prompt given once <input type="checkbox"/>	Prompt given twice <input type="checkbox"/>
---	--	---

- If the participant still does not indicate that the man will look for his sandwich, show the tape again (last time)

Tape shown once <input type="checkbox"/>	Tape shown twice <input type="checkbox"/>
--	---

- If tape shown again, ask participant what happens next: .....  
 .....  
 .....  
 .....

If the participant still does not indicate that the man will look for his sandwich, say ‘what will he do when he sits back down?’ (note number of prompts).

No prompt needed <input type="checkbox"/>	Prompt given once <input type="checkbox"/>	Prompt given twice <input type="checkbox"/>
---	--	---

**Appendix 9. Ice Cream Van Task**

This is John and this is Mary. They live in this town. Here they are in the park. Here is the ice-cream man. John wants to buy an ice cream but he's left his money at home. He is very sad. 'Don't worry' says the ice cream man 'you can go home and get your money and buy some ice cream later, I'll be here in the park all day'.

'Oh good' says John, 'I'll be back later to buy an ice-cream'.

1. Where did the ice cream man tell John he would be all day?

Correct (Park) <input type="checkbox"/>	Incorrect <input type="checkbox"/> .....
---	--

So John goes home, he lives in this house. Now the ice cream man says 'I'm going to drive my van to the church to see if I can sell ice cream there'.

2. Now where did the ice cream man say he was going?

Correct (Church) <input type="checkbox"/>	Incorrect <input type="checkbox"/> .....
---	--

3. Did John hear him say that?

Correct (no) <input type="checkbox"/>	Incorrect (yes) <input type="checkbox"/>
---------------------------------------	--

So the ice cream man drives to the church. On his way he passes John's house. John sees him and says 'where are you going?'. The ice cream man says 'I'm going to sell some ice creams outside the church'. So off he drives to the church.

4. Where did the ice cream man tell John he was going?

Correct (Church) <input type="checkbox"/>	Incorrect <input type="checkbox"/> .....
---	--

5. Does Mary know the ice cream man has talked to John again?

Correct (no) <input type="checkbox"/>	Incorrect (yes) <input type="checkbox"/>
---------------------------------------	--

6. Now Mary wants to see John. She goes to John's house and knocks on the door. She asks 'is John in?'. John's mum says 'no, he's gone to buy an ice cream'.

7. Where does Mary think John's gone to buy an ice cream?

Correct (Park) <input type="checkbox"/>	Incorrect <input type="checkbox"/> .....
---	--

8. Why?

.....

.....

.....

.....

.....

9. Where did John really go to buy an ice cream?

Correct (Church) <input type="checkbox"/>	Incorrect <input type="checkbox"/> .....
---	--

**Appendix 10. Ice Cream Van ToM Task Comparisons.**

	ToM	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Sig
<b>Correctly identified happy</b>	Poor	22	20.57	452.50	199.500	.083
	Good	21	23.50	493.50		
<b>Correctly identified sad</b>	Poor	22	19.00	418.00	165.000	.068
	Good	21	25.14	528.00		
<b>Correctly identified angry</b>	Poor	22	20.73	456.00	203.000	.460
	Good	21	23.33	490.00		

**Figure 8: Emotion Identification in Passers and Failers of Ice Cream Van ToM Task..**

	ToM	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Sig
<b>Selected correct pic for happy</b>	Poor	22	20.09	442.00	189.000	.242
	Good	21	24.00	504.00		
<b>Selected correct pic for sad</b>	Poor	22	19.41	427.00	174.000	.130
	Good	21	24.71	519.00		
<b>Selected correct pic for angry</b>	Poor	22	18.48	406.50	153.500	.042
	Good	21	25.69	539.50		

**Figure 9: Emotion Picture Selection in Passers and Failers of Ice Cream Van ToM Task.**

	ToM	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Sig
<b>No. Prompts needed to identify happy</b>	Poor	22	25.14	553.00	162.000	.067
	Good	21	18.71	393.00		
<b>No. Prompts needed to identify sad</b>	Poor	22	24.05	529.00	186.000	.244
	Good	21	19.86	417.00		
<b>No. Prompts needed to identify angry</b>	Poor	22	21.98	483.50	230.500	.990
	Good	21	22.02	462.50		

**Figure 10: Number of Prompts To Select Emotion Picture in Passers and Failers of Ice Cream Van ToM Task.**

	ToM	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Sig
<b>Own response to happy = same</b>	Poor	22	19.89	437.50	184.500	.126
	Good	21	24.21	508.50		
<b>Own response to happy = concern</b>	Poor	22	21.98	483.50	230.500	.973
	Good	21	22.02	462.50		
<b>Own response to happy = incongruous</b>	Poor	22	23.93	526.50	188.500	.086
	Good	21	19.98	419.50		
<b>Own response to happy = none</b>	Poor	22	22.48	494.50	220.500	.563
	Good	21	21.50	451.50		

**Figure 11: Own Responses to Others' Happiness in Passers and Failers of Ice Cream Van ToM Task.**

	ToM	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Sig
<b>Own response to sad = same</b>	Poor	22	23.52	517.50	197.500	.383
	Good	21	20.40	428.50		
<b>Own response to sad = concern</b>	Poor	22	18.86	415.00	162.000	.023
	Good	21	25.29	531.00		
<b>Own response to sad = incongruous</b>	Poor	22	23.43	515.50	199.500	.313
	Good	21	20.50	430.50		
<b>Own response to sad = none</b>	Poor	22	22.25	489.50	225.500	.851
	Good	21	21.74	456.50		

Figure 12: Own Responses to Others' Sadness in Passers and Failers of Ice Cream Van ToM Task.

	ToM	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Sig
<b>Own response to angry = same</b>	Poor	22	21.73	478.00	225.000	.876
	Good	21	22.29	468.00		
<b>Own response to angry = concern</b>	Poor	22	22.43	493.50	221.500	.784
	Good	21	21.55	452.50		
<b>Own response to angry = incongruous</b>	Poor	22	22.91	504.00	211.000	.418
	Good	21	21.05	442.00		
<b>Own response to angry = none</b>	Poor	22	21.30	468.50	215.500	.557
	Good	21	22.74	477.50		

Figure 13: Own Responses to Others' Anger in Passers and Failers of Ice Cream Van ToM Task.