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**Children's Attitudes Towards their Peers with Disabilities:  
The Role of Implicit Person Theories**

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## Summary

Previous research has consistently shown that children tend to hold negative attitudes toward their peers with disabilities when compared to those without disabilities (Diamond & Huang, 2005; Nowicki & Sandieson, 2002). What is more, children's attitudes towards those with physical disabilities are more positive than their attitudes towards those with learning disabilities (Nowicki & Sandieson, 2002). Developmental factors such as age, gender, and previous experience with others with disabilities have been explored as potential moderating variables, however, findings have been inconclusive.

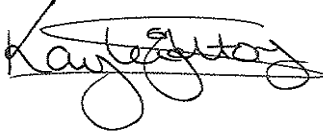
This paper is the first to explore the role of implicit person theories (IPTs) in moderating children's attitudes towards their peers with disabilities. IPTs refer to the belief that attributes are either fixed and not subject to change (an entity theory) or malleable and changeable with effort (an incremental theory; Dweck, 2000). Holding different IPTs has been associated with having differences in social perception (Dweck & Molden, 2008), which may affect children's attitudes.

The current research has two broad aims; to replicate previous research findings of children's attitudes towards their peers with physical and learning disabilities as described above, and to explore the role of IPTs in moderating these attitudes.

This paper comprises of two parts. The first is a literature review which aims to critically discuss and synthesise literature from the two relevant fields of research; that which investigates children's attitudes to their peers with disabilities, and research relating to IPTs. The second part is a research paper giving details of the research that was carried out.

## Declarations

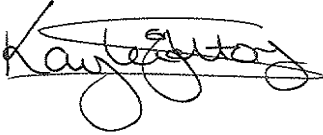
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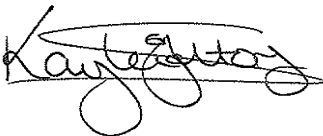
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## **PART 1: Major Literature Review**

## 1. Introduction

Inclusive education for all young people, including those with special educational needs (SEN), has been the focus of education legislation for a considerable time. The Warnock Report (Warnock, 1978) was the first to review and highlight the “integration” of children with SEN in “ordinary” schools. Whilst recognising that “full-time education in an ordinary class should be the aim for many children” (p.102) the report also states that others “will need more specialised provision” (p.102). It was the Salamanca Conference (UNESCO, 1994) that first advocated the provision of education for all children in a “regular school” (p.4). This framework defined the term “SEN” as being applicable to those children “whose needs arise from disabilities or learning difficulties” (p.5). Examples given include physical, intellectual, and emotional difficulties. Throughout this paper the term “children with disabilities” will be used to refer to children who experience physical, intellectual, or emotional difficulties.

As well as considering inclusion as a location or placement in a school, inclusion may be thought of as a way of making societal changes. The statement from the Salamanca Conference, for example, defines an inclusive school as “helping to change discriminatory attitudes”, “creating welcoming communities,” and “developing an inclusive society” (p.6). Later legislation in the UK reinforced inclusion as a process, not just a fixed state, where children with disabilities were expected to be able to join in with “the curriculum and all aspects of school life” (Department for Education and Employment (DfEE), 1997, p.44.).

More than ten years later it was reported that, in the UK, half of pupils with a “Statement of Special Educational Needs” (a legal document outlining a child’s educational needs and the support they require) were placed in a

mainstream primary or secondary school (Department for Education (DfE), 2011). This same review also suggests, however, that many children with disabilities and their families were experiencing “social costs” and were left “feeling isolated and unable to get on at school” (DfE, p.14). It could be argued that these findings indicate that inclusion has so far been unsuccessful in bringing about societal change and changing discriminatory attitudes.

Relationships with peers in school have been found to be particularly important for decreasing social exclusion (e.g., Baumeister & Leary, 1995; Cemalcilar, 2010; Osterman, 2000). Acceptance from peers and the quality of peer relationships have been found to affect behaviour and to promote a feeling of belonging in school (Osterman, 2000). There is also a large body of evidence, however, which indicates that children as young as four years old tend to hold negative attitudes towards their peers with disabilities (Diamond, Le Furgy, & Blass, 1993; Nowicki, 2006). Attitudes affect how people process information about the world and can guide an individual’s subsequent actions and behaviour (Maio & Haddock, 2010). Negative attitudes towards children with disabilities, therefore, may lead to negative behaviour such as social exclusion and bullying (Norwich & Kelly, 2004).

Understanding how children’s attitudes towards their peers with disabilities are formed, and the individual difference factors that moderate attitude formation, could provide important information for professionals, such as educational psychologists (EPs), who work in a school context. It could be suggested that EPs are well placed to design and implement evidence based intervention strategies that aim to bring about attitude change and modify subsequent behaviour towards pupils with disabilities. The current research

aims to contribute to this field by investigating the role of a hitherto novel moderating factor: implicit person theories (IPTs).

The following literature review first outlines research regarding the social and development factors that have been linked to children's negative attitudes towards their peers with disabilities, for example, age (e.g., Nowicki, 2006), gender (e.g., Nowicki & Sandieson, 2002), and previous experience of people with disabilities (e.g., Townsend, Wilton, & Vakilirad, 1993). More recently, the role of cognitive factors, such as children's understanding of ability and disability (e.g., Smith & Williams, 2004), have also been considered as important in the process of attitude formation.

This review will also introduce the concept of IPTs as an individual difference and potential moderating factor in the formation of attitudes towards those with disabilities (see Dweck, 2000). IPTs are part of a social cognitive development research tradition which investigates how social factors impact upon the development of cognitive representations used to process information (Olson & Dweck, 2008). Understanding the role of IPTs in the formation of attitudes towards those with disabilities may provide a focus for intervention by EPs.

### **1.1. Search Criteria**

Databases including PSYCHINFO, ERIC, and Google Scholar were searched for relevant literature until November 2012. The search focused on two lines of research: studies investigating children's attitudes towards their peers with disabilities and the role of IPTs in social perception. The first search criteria included keywords such as "children", "attitudes", and "disabilities". The second search criteria included keywords such as "implicit theory" and "lay theory".

These terms were truncated in order to ensure all forms of the words were included, and were combined in different ways to maximise the search criteria. It is important to note that IPTs are not the only factor that could be considered in the formation of attitudes. It is beyond the scope of this paper, however, to discuss other factors in detail.

## **2. Children's Attitudes Towards their Peers with Disabilities**

Synthesising literature in this area can be challenging due to the different ways in which the concept of attitudes has been operationalised and, therefore, measured (Nowicki & Sandieson, 2002). The definition of attitudes used to guide the current review states that an attitude is ‘...an overall evaluation of an object that is based on cognitive, affective, and behavioural information’ (Maio & Haddock, 2010, p.4). Included in this definition is the multi-component model of attitude (Zanna & Rempel, 1988) which suggests that attitudes are made up of cognitive (beliefs and thoughts associated with an object), affective (feelings and emotions regarding an object), and behavioural (behaviours and experiences linked to an object) components. Attitudes have been found to be predictors of behaviour and so negative attitudes are likely to be linked with negative or discriminatory behaviours (Glasman & Albarracín, 2006).

Children's negative attitudes towards their peers with disabilities have been well documented in recent research (for reviews see Diamond & Huang, 2005; Nowicki & Sandieson, 2002). A meta-analysis of 20 studies (published between 1990 and 2000) measuring children's attitudes allowed comparisons across 2,240 participants (Nowicki & Sandieson, 2002). The results of this analysis suggested that children held more negative attitudes towards their peers with disabilities when compared to those without a disability. Effect sizes calculated for the affective, cognitive, and behavioural components of attitudes indicated a moderate to large effect size in all cases (0.52-0.73).

Evidence for negative attitudes towards those with disabilities also comes from research conducted with those who experience a disability. Interviews with older pupils who experience a moderate learning difficulty about their experiences at school, for example, revealed that 83% reported that they

had been subjected to some form of bullying (Norwich & Kelly, 2004). The participants reported a mixture of physical and verbal bullying incidents and half of pupils interviewed reported that the bullying incidents were related to their learning difficulty. The authors recognise that it is possible that some of the bullying incidents reported could have been behaviour not commonly thought of as bullying, such as that meant with good humour. Nevertheless, it is the perceptions of the young people that will shape their feelings of wellbeing and inclusion at school.

Children tend to hold a more negative attitude towards those with a range of difficulties including disabilities affecting sensory perceptions such as hearing and vision impairment (Diamond et al., 1993), disabilities affecting behaviour and conduct such as attention deficit hyperactivity disorder (Harnum, Duffy, & Ferguson, 2007; Law, Sinclair, & Fraser, 2007) and autistic spectrum conditions (Harnum et al., 2007), and other mental health conditions such as depression (Hennessy & Heary, 2009). The vast majority of research, however, has focused on children's attitudes towards their peers with physical disabilities and learning disabilities (Nowicki & Sandieson, 2002). This is also the focus of the current review.

It is beyond the scope of this review to consider the literature covering all types of disabilities. Physical and learning disabilities have been chosen as the focus of this review to follow on from the wealth of research already carried out in this area. What is more, physical disabilities have been identified as the most commonly reported disability for children in England (Department for Children, Schools and Families (DCSF), 2008) and around 2.6% of pupils have a primary special educational need of learning disability (Emerson & Hatton, 2008). A variety of terms have been used in the literature to describe disabilities including

“handicapped”, “intellectual disability”, and “retardation”. The terms used throughout this paper will refer to a “physical disability” (often depicted in research as a wheelchair user) and a “learning disability” (often described in research as being slow to learn or unable to perform age appropriate learning tasks).

This chapter outlines research investigating children’s attitudes towards those with physical and learning disabilities. Research has considered developmental factors such as gender, age, and previous experience of disabilities as moderators of attitude formation. More recently, children’s understanding of the causes, impact, and permanence of disabilities has also been explored.

## **2.1. Physical Disabilities and Learning Disabilities**

Results from a series of studies have suggested that children aged from three to ten years of age hold more negative attitudes towards their peers with physical and/or learning disabilities as compared to children without a disability (Nowicki, 2005, 2006, 2007). In addition, these studies revealed that children seem to hold a more negative attitude towards a child with a learning disability when compared to a child with physical disability (Nowicki, 2006). This pattern of results is consistent with results obtained in previous research (Nabors & Keyes, 1995). In contrast, one study suggests that children have a generally positive attitude towards their peers with disabilities (Tamm & Prellwitz, 1999). One possible reason for this difference is discussed below.

The experimental paradigm used by Elizabeth Nowicki in her studies involved participants being introduced to fictional target children. Target children represent four categories: those without a physical or learning



disability, those with a physical disability, those with a learning disability, and those with a physical and learning disability. Pictures of the target children were accompanied by verbal descriptions of their ability or disability. For example, the target child in the physical disability condition was shown seated in a wheelchair and was described as being able to complete age appropriate learning tasks. Each participant gave attitude ratings to each target child in turn resulting in a repeated measures research design. This design, coupled with large sample sizes of 100 participants, gave the results increased statistical power and reduced the variability that could be due to individual differences.

Three separate measures of attitudes were included in the studies in order to capture each of the affective, behavioural, and cognitive components of attitude. It should be noted, however, that the multi response attitude scale used to measure the cognitive component of attitude employs a forced-choice methodology. Predetermined positive and negative adjectives had to be ascribed to one of the target children. Participants were forced to assign negative adjectives to one of the target children although this may not have represented their views. This methodological factor could also explain the difference in results reported by Tamm and Prellwitz (1999). These authors used drawings and interview questions to determine attitude valence and found that children held generally positive attitudes towards their peers with disabilities.

What is more, research with adults has suggested that responses to real situations involving those with disabilities and responses to situations described by vignettes were different (Lucas, Collins, & Langdon, 2009). Although this research was carried out with adult participants it could be suggested that the responses to the fictional target children used in the studies described above

would not necessarily be consistent with responses to peers with disabilities in the classroom.

Research conducted without a reliance on vignette information has also provided evidence for children's negative attitudes towards their peers with disabilities. In a longitudinal study over the course of one year, Diamond et al. (1993) used multiple sociometric measures to record pre-school children's (age three to four years) behavioural intentions towards their peers with disabilities. The findings revealed that, compared to their peers with a disability, participants were more likely to know the name of the children without a disability, gave significantly higher sociometric ratings to children without a disability, and chose children without a disability significantly more often as their best friend. It is important to note that the children in these classes had a range of different disabilities. As well as those with physical and learning disabilities, the classroom included children with Down syndrome and pervasive developmental disorder. Research cited previously suggested that children may hold different attitudes towards their peers depending on the type of disability (e.g., Nowicki, 2005), and so it could be argued that the sociometric ratings given in this research provide only a very general picture.

Much of the research discussed above has relied on children's ratings of either fictional children or of peers in their class. It could be argued that children may behave differently than their self-report measures would suggest. Self-report data has, however, been closely linked to actual interactions by research that included classroom observations (Okagaki, Diamond, & Kontos, 1998).

In summary, experimental research suggests that children report more negative attitudes towards those with physical and learning disabilities when compared to those without a disability. This was also the case when more

naturalistic research methods were employed. Furthermore, it appears that attitudes may differ towards children with different disabilities. Results indicated that more negative attitudes exist towards those with a learning disability when compared to those with a physical disability. Research discussed in the following sections considered the developmental and social factors, and the cognitive factors that could account for children's negative attitudes towards those with disabilities.

## **2.2. Developmental and Social Factors**

### **2.2.1. Gender.**

Investigations regarding gender differences in attitude formation have reported inconsistent findings. In some cases girls appear to demonstrate more positive attitudes than boys towards their peers with disabilities (Nabors & Keyes, 1995), whereas in others, boys have been found to hold more positive attitudes than girls (Townsend et al., 1993).

Elsewhere, gender differences have been found to affect just one of the components of attitude. For example, a large scale survey of 1135 students aged ten to fifteen years suggested that girls showed more positive attitudes than boys towards those with disabilities (Vignes et al., 2009). This was particular to the behavioural component of the attitude measure used. Alternative findings indicate that girls are more positive towards those with disabilities than boys but only in the cognitive domain (Nowicki, 2006).

It could be suggested that the inconsistent results are due to the gender preferences commonly shown by children. That is, girls were only more positive towards their peers with disabilities when female target children were included in the research design. When only male target children were shown, girls were

more negative than boys (Nowicki & Sandieson, 2002). In studies where target children were gender matched to participants, gender did not have a significant impact on reported attitudes (Nowicki, 2005). Alternatively, it could be that the array of different attitude measures used in the field may elicit different response patterns from girls and boys and the gender difference could be an artefact of the measures used rather than reflecting children's attitudes (Nowicki, 2006).

### **2.2.2. Age.**

Children's attitudes towards their peers with disabilities begin forming during preschool years and, even at this age, ratings of acceptance of peers with disabilities are low (Favazza & Odom, 1997). The scale used by Favazza and Odum (1997), however, includes questions relating to children with a range of disabilities including visual impairment and physical impairment, and therefore, it is not possible to determine from this measure whether children discriminate between different disabilities at this age.

Evidence for the development of attitudes across age groups is mixed. Using a questionnaire developed for their research question, Magiati, Dockrell, and Logotheti (2002) found that there were no age related differences in the attitudes of children aged between eight and eleven years. These findings are consistent with those reported elsewhere (Diamond, Hestenes, Carpenter, & Innes, 1997; Tamm & Prellwitz, 1999). It is important to note, however, that the questionnaire used by Magiati et al., (2002) was developed specifically for this research and no details of the reliability or validity of the scale were given. Additionally, this scale measured attitudes towards the inclusion of children with

SEN in general and did not address the differences that have been found to occur in children's attitudes towards children with different disabilities.

When disabilities were separated by type, there were differences in the attitudes of younger (four years) and older children (eleven years). Older children reported more positive attitudes to children with learning disabilities (Townsend et al., 1993) and with physical and learning disabilities when compared to those with a physical disability and those with no disability (Nowicki, 2006).

### **2.2.3. Previous experience of disabilities.**

The effect of previous experience of disabilities on attitudes has been measured in different ways. Self-report methods have been used in some cases to capture the participants' own perceptions of their experience of disabilities in their schools or families (Nowicki & Sandieson, 2002; Vignes et al., 2009). It is possible that children identified people they knew as having a disability when the identified person would not typically be thought of as experiencing a disability. Although this is interesting in itself, inclusive classrooms and schools provide other opportunities for quasi experimental research, where previous experience with disabilities can be verified and controlled. In inclusive classrooms children with disabilities attend the same lessons and work closely with their peers without disabilities, thus providing all children with more opportunities for interactions with all peers. In some cases, inclusive classrooms have been found to have a positive effect on children's attitudes, as pupils attending these classes gave higher acceptance ratings for their peers with disabilities (Diamond et al., 1997) and suggested that they would play with fictional peers with a disability as much as those without (Okagaki et al., 1998).

Okagaki et al. (1998) also used observations of interactions in the classroom to verify the self-report data. In line with results from the self-report measures, the researchers observed that children played as frequently with peers with and without disabilities. The authors did not provide details about the nature of the interactions, however, such as whether the interactions occurred during free choice activities or during activities that were constrained by teacher direction. Elsewhere, when children were observed during free choice activities, it was found that children chose to interact less frequently with those with disabilities than those without (Guralnick, 1999). It should also be noted that control groups of children who were not enrolled in an inclusive class were not used here in order to compare the interactions of those with and without experience of children with disabilities.

A longitudinal study carried out with three and four year olds enrolled in an inclusive class with children with disabilities revealed different results to those reported above (Diamond et al., 1993). In this class, the staff made extra efforts to include those with disabilities fully and there was regular teaching about disabilities. Over the course of a year, the children's attitudes were measured three times and revealed negative attitudes towards those with disabilities, in line with previous research. Contrary to other evidence, however, these effects were stronger in the class of older children who had more experience of, and interactions with, peers with disabilities. Inclusion in an integrated class, in this case, did not have a positive effect on the children's attitudes towards those with disabilities. It is of particular concern that additional teaching and efforts to include children with disabilities did not have a positive effect on children's attitudes. This study only took place over the

course of a year, however, and it could be that a greater experience of peers with disabilities may have a more positive effect as the children get older.

Research has also investigated the effects of the inclusion of a satellite class (a separate class in a mainstream school for pupils with disabilities) in a school on children's attitudes towards their peers with disabilities. Results from these studies have also provided conflicting information. In one study, pupils in a school with a satellite class showed more positive attitudes than those with no contact with children with disabilities (Townsend et al., 1993). In direct contrast to this, survey data revealed that attending a school with a satellite class, was strongly associated with poorer attitudes (Vignes et al., 2009).

### **2.3. Cognitive Factors**

It is only recently that research has considered the cognitive representations children hold about ability and disability in moderating their attitudes towards their peers with disabilities. It could be suggested that understanding how children reason about the causes, impact, and permanence of disabilities could help to determine how attitudes are formed and how to change them.

#### **2.3.1. Explaining the causes of disabilities.**

Research suggests that children tend towards biological (e.g., inheritance) or physical (e.g., trauma) causes of disabilities and children as young as four years old can discriminate between likely and unlikely causes of disabilities (Hennessy, Swords, & Heary, 2008; Smith & Williams, 2004).

Using a forced-choice paradigm, Smith and Williams (2004) asked 79 participants aged four to eleven years to rate the likelihood of nine different causal factors for four different disabilities on a three point scale. The

participants were given verbal descriptions of four fictional children with different disabilities: a physical disability (a wheelchair user), a learning disability, a behavioural disability (ADHD) and a sensory disability (visual impairment). The predetermined causal factors included psychological/social, biological, and physical explanations. The results suggest that even very young children can discriminate between the causes of different types of disabilities and that older children showed even greater differentiation in their responses. Children of all ages tended towards physical or biological causes for each of the disabilities, for example, that the disability was inherited, caught from “bugs” or caused by trauma. They seemed to reject psychological or social causes such as upbringing or personal effort. Here, a forced-choice paradigm was useful in gaining an understanding of the ability of the young children in the study to differentiate between the causes of disabilities when they may be unable to provide detailed verbal explanations. However, the target child described was always male and children’s gender preference may have influenced their explanations in some cases.

Open-ended interview questions have also been used to analyse children’s understanding of the causal origins of disabilities. For example, children aged eight to eleven years identified more biological and physical disabilities when asked to think about “special needs” (Magiati et al., 2002). Nowicki (2007) included younger children and interviewed 50 participants aged four to six years and 50 participants aged eight to eleven years. Target children experienced either a learning or a physical disability which were described visually and verbally, and were gender matched to the participants. The results suggested that older children knew more about the causes of learning and physical disabilities than younger children. Older children were also able to



discriminate between causes more readily and their responses covered a broader range of categories. For both age groups, the most frequent explanation was biological or physical, for example, learning disabilities caused by a brain disease or injury and a physical disability caused by a broken limb or paralysis. In this study, the author notes that a large proportion of the younger children could not provide information about the causes of a learning disability (29 out of 50 participants) or a physical disability (21 out of 50 participants).

### **2.3.2. Predicting the consequences of disabilities.**

As well as showing some understanding about the causes of disabilities, even young children are also able to reason about the impact and consequences of experiencing a disability (Diamond & Hong, 2010; Diamond & Tu, 2009). Diamond and colleagues interviewed children aged between three and five years. The participants were presented with two target children: one who experienced a physical disability and used a wheelchair and one without a disability. The children were asked to indicate which child they would choose to play with during four different scenarios. In two scenarios the disability impacted upon participation (football and dancing) and in the other two it only interfered minimally with participation (painting and playing table top games). Results indicated that, overall, children were more likely to choose the target child without a disability to play with across all situations. In addition, children were more likely to choose the child in the wheelchair when the disability interfered minimally with participation in the activity. The authors suggest that children are sensitive to the consequences of using a wheelchair and to the impact this may have on participation in different activities.

It is also possible to suggest that the contextual information influenced findings about attitudes to children with learning disabilities (Nowicki, 2006). The vast majority of research in this area is carried out in schools. The most salient aspect of this context is learning and progression through the curriculum. It is possible that children's attitudes towards those with learning disabilities are more negative in this environment due to the impact of their learning disability on participation in learning activities.

### **2.3.3. Understanding the permanence of disabilities.**

Children aged between four and eleven years were asked about the permanence of learning and physical disabilities through open-ended interview questions (Nowicki, 2007). A significant proportion of the children interviewed (50% of children aged four to six and 98% of children aged eight to eleven years) reported that they thought learning difficulties could be temporary, whereas a significantly smaller proportion were certain the target child would always experience a learning disability (24% of younger children and no older children). All children felt that "trying harder", "getting more help", and "getting older" would mean that these children would not experience this difficulty any longer. The results were similar when a physical disability was considered. Here, 40% of younger children and 94% of older children indicated that this target child would not always need to use a wheelchair. Responses such as "getting better" or "growing up" were given to explain this temporary state.

It was concluded that children between four and eleven years of age have a tendency to suggest that disabilities are temporary but that the reasons can differ between disability types. Children who experience a learning difficulty have more control over their future and could overcome their disability by trying

harder, whereas overcoming a physical disability was beyond a person's control.

It could be suggested that these findings account for the difference in attitudes towards those with physical and learning disabilities reported in previous research. Children may feel more negatively towards those with a learning disability who are perceived to have control over their disabilities but are seen as not doing anything to change.

These results are also reflected in findings about children's reasoning about the permanence of other traits. Children suggested biological traits (such as poor eye sight) were less malleable than psychological traits (such as being shy) and also not within a person's control (Lockhart, Chang, & Story, 2003). Of note is that the characteristic "slow learner" (p.1412) was described as being a hybrid trait that is partly accounted for by biological and psychological explanations. Children's perceptions of the malleability of hybrid traits fell midway between the other two.

## **2.4. Summary**

There is a wealth of research evidence which suggests that children hold negative attitudes towards their peers with disabilities (Diamond & Huang, 2005; Nowicki, 2005, 2006; Nowicki & Sandieson, 2002). What is more, attitudes can vary by disability type so that children hold more negative attitudes towards those with learning disabilities than those with physical disabilities (Nabors & Keyes, 1995; Nowicki, 2006).

It is important to gain further understanding of the structure and correlates of children's attitudes (Antonak & Livneh, 2000). The influence of social and developmental factors such as gender (e.g., Vignes et al., 2009), age

(e.g., Magiati et al., 2002), and previous experience with disabilities (e.g., Okagaki et al., 1998) is inconsistent and research findings are inconclusive due, in part, to the wide range of methodological differences between studies. Furthermore, these findings do not provide significant information or direction for the design and implementation of interventions to change attitudes.

Research relating to children's cognitive understanding and mental representations of disabilities is in its infancy but appears to provide useful information about children's understanding of the causes (e.g., Smith & Williams, 2004), immediate impact (e.g., Diamond & Hong, 2010), and permanence (e.g., Nowicki, 2007) of disabilities. Of particular note is children's lack of understanding of the nature of learning disabilities (Nowicki, 2007), which could account, in part, for the more negative attitudes reported towards these target children.

A so far separate but related research tradition has sought to combine the social and cognitive aspects of development and is concerned with the impact of social experiences on the development of mental representations (Olson & Dweck, 2008). The next chapter introduces the concept of IPTs about the fixedness or malleability of personality characteristics which fits into this research domain. The role of different IPTs in moderating children's attitudes to their peers with disabilities has hitherto not been investigated.

Although only one of many potential moderating variables in attitude formations, IPTs are being considered in the current paper as they are the product of social experiences and can be changed (Molden, Plaks, & Dweck, 2006). Investigating the link between children's attitudes towards their peers with disabilities and their IPTs might provide opportunities for intervention to promote positive attitudes towards people with disabilities.

### 3. Implicit Person Theories

Implicit person theories (IPTs), also called lay theories or naive theories, are the assumptions and beliefs people hold about the nature of the self, of others, and of the world around them (Molden & Dweck, 2006). They provide a framework within which people process and make sense of complex information (Plaks, Levy, & Dweck, 2009). IPTs influence the way in which individuals perceive and explain human behaviour (Molden & Dweck, 2006).

The study of IPTs is part of the social cognitive development (SCD) field of research. SCD combines features from a social development research tradition, which focuses on how social stimuli affect outcomes for children, with those from a cognitive development perspective, which focuses on mental representations. SCD, therefore, is the study of the relationship between social experiences, mental representations, and the subsequent outcomes (Olson & Dweck, 2008). IPTs can be thought of as mental representations that are influenced by social experiences and can have different effects on social perception.

Implicit theories, naive theories, and lay theories have been conceptualised and operationalised in different ways in the literature. In health psychology, for example, the term lay theories refers to service users' understanding about the causes, manifestations, and treatments of conditions such as schizophrenia (Furnham & Chan, 2004), borderline personality disorder (Furnham & Dadabhoy, 2012), or cancer (Bermejo, Levente, & Muthny, 2012). Here, the term "lay" refers to the layman or "ordinary" person's knowledge.

Of interest here, however, are the IPTs people hold about the fixedness or malleability of human attributes (see Dweck, 2000), where the term "implicit" refers to the fact that the beliefs are often underlying or unconscious. This

research tradition differentiates between the belief that attributes are fixed and cannot be changed despite effort and motivation to do so (termed an entity theory), and the belief that attributes can change and be developed through effort (termed an incremental theory; Molden & Dweck, 2006; Plaks et al., 2009).

A person's IPT is typically assessed using a likert-style questionnaire (Dweck, Chiu, & Hong, 1995a; Levy & Dweck, 1999; Levy, Stroessner, & Dweck, 1998). Participants are asked to indicate their agreement with a series of statements on a six point scale. There have been several versions of the measure used in the literature, but, in its most recent form, half of the statements refer to an entity theory (e.g., "Someone's personality is a part of them that they can't change very much") and half refer to an incremental theory (e.g., "People can always change their personality"; Dweck, 2000). Scales have been developed for use with adult and child participants, and have been developed to be domain general (referring to personality or characteristics) or domain specific (referring to a specific trait such as intelligence). The scale has been shown to have good internal validity and reliability (Dweck et al., 1995a; Dweck, Chiu, & Hong, 1995b).

Scores from the measure are typically used to divide participants into two groups with different IPTs. It is expected that approximately 40% of people subscribe to an entity theory and 40% to an incremental theory, with 20% having no discernible theory (Dweck, 2000). It has also been suggested, however, that people do not tend to hold pure IPTs and that they are best thought of as existing on a continuum rather than as dichotomous (Rhodewalt, 1994).

Social perception focuses on making judgements and inferences about other people's underlying traits (Chiu, Hong, & Dweck, 1997). Holding an entity or an incremental implicit theory has been found to affect perceptions of the self and of other individuals (Dweck et al., 1995a), and of social categories or groups (Levy, Chiu, & Hong, 2006). As the purpose of this review is to introduce IPTs as a potential moderating variable in the formation of attitudes towards others, literature regarding self perception will not be covered here (but see Dweck, 2000; Dweck & Master, 2009 for reviews). The following section will provide an outline of the research pertaining to the effects of different IPTs on the social perception of individuals and groups.

### **3.1. Implicit Person Theories and Perceptions of Individuals**

Even very young children are able to make inferences about underlying traits when given sufficient information (Heyman & Gelman, 1998). Children as young as five years old are able to make predictions about a person's underlying traits based on behaviour and motive information. What is more, young children are also able to use trait information to make judgements about a person's behaviour (Heyman & Gelman, 1999). When provided with either positive or negative information about a person's character (e.g., "nice" or "mean"), young children identified corresponding positive or negative motives for the same behaviour.

IPTs about the fixedness of human attributes are thought to be an important moderating variable in explaining differences in the perceived relationship between behaviour and underlying traits (Plaks et al., 2009). IPTs can be thought of as providing a framework for interpreting the behaviour and characteristics of others (Hong, Chiu, Dweck, & Sacks, 1997). Beliefs that traits

are either fixed or malleable have been found to be associated with distinct meaning systems when making judgements about other people's behaviours (Plaks et al., 2009).

Entity theorists believe that underlying traits are fixed across time and situations. Relative to those holding an incremental theory, entity theorists perceive a stronger connection between traits and behaviour (Chiu, Hong, et al., 1997). They consider a person's behaviour to be a good indication of their underlying traits and, subsequently, find it easy to judge traits from behaviour (Levy, Plaks, & Dweck, 1999). Their emphasis on fixed underlying traits as causes of behaviour suggests that change is beyond personal control and that there are no opportunities to make changes (Dweck & Molden, 2008).

Incremental theorists, on the other hand, believe that underlying traits can change across time and situations. They do not seem to emphasise trait information when making judgements about other people but rather take into account and use dynamic, contextual information when making judgements and decisions about others (Levy & Dweck, 1998). Situation and context is perceived to be the cause of behaviour, rather than underlying traits, and so limited behavioural information is not used to make judgements about underlying traits (Levy et al., 1999). Their focus on dynamic and situational factors suggests that there are many opportunities for change and this can be brought about by personal effort (Dweck & Molden, 2008).

Entity and incremental theorists' different beliefs about the relationship between behaviour and underlying traits have been found to affect the judgements they make about other people's intelligence (Heyman & Dweck, 1998), personality (Chiu, Hong, et al., 1997), and moral character (Chiu, Dweck,



Tong, & Fu, 1997). Table 1 on the following page summarises research findings which demonstrate three key differences in information processing.

Much of the research in this field has been carried out with adult participants and so the application of the findings to children could be questioned. It could be argued that adults have greater cognitive development and social experience which would affect their thinking. Some research studies have replicated key findings with child participants aged from seven to eleven years (e.g., Erdley & Dweck, 1993) and these are included in the table. Although there are similarities in findings from studies with child and adult participants, results should only be generalised to apply to children with caution.

It should be noted, however, that in many of the studies included in the table the IPT measure consisted only of items pertaining to an entity theory. That is, participants could only agree or disagree with statements suggesting that traits were fixed, for example, "The kind of person someone is, is something very basic about them and it can't be changed very much." Disagreement with this statement cannot necessarily be assumed to show agreement with an incremental theory. The validity of treating the concept as dichotomous during analysis could, therefore, also be questioned. Although the authors also report correlation data in some cases (e.g., Chiu, Hong, et al., 1997), conclusions suggesting a difference between groups should be viewed with caution.

Table 1

Key Differences in the Information Processing of Entity and Incremental Theorists

Social judgements	Entity Theory	Incremental Theory
Making predictions about the stability of behaviour across situations.	<p>Use behaviour in one situation to make predictions about behaviour in another situation (Chiu, Hong, et al., 1997).</p> <p>Children aged seven and eight years agreed with statements suggesting that behaviour in one situation would be the same as behaviour in other situations (Heyman &amp; Dweck, 1998).</p> <p>Situational information was rejected (Molden et al., 2006).</p>	<p>Did not use single instances of behaviour to make predictions about future behaviour (Chiu, Hong, et al., 1997).</p> <p>Children aged seven and eight years rejected statements suggesting that behaviour in one situation would be the same as behaviour in other situations (Heyman &amp; Dweck, 1998).</p> <p>Situational information was used to inform judgements and different predictions were given with different contextual information (Molden et al., 2006).</p>
Generating explanations for observed behaviour.	<p>Use behaviour to make predictions about traits (Chiu, Hong, et al., 1997).</p> <p>Explanations given by children aged nine to eleven years, and by adult participants, tended to involve judgements about underlying traits. For example, buying a present for others because he is kind (Chiu, Hong, et al., 1997; Erdley &amp; Dweck, 1993).</p> <p>Additional contextual information did not affect their explanations (Erdley &amp; Dweck, 1993; Hong, 1994).</p>	<p>Use situational information to explain behaviour (Hong, 1994).</p> <p>Explanations given by children aged nine to eleven years and adult participants tended to be based on situational beliefs and goals. For example, buying presents for others to please them (Chiu, Hong, et al., 1997; Erdley &amp; Dweck, 1993).</p> <p>Additional contextual information was taken into account in their explanations (Erdley &amp; Dweck, 1993; Hong, 1994).</p>
Predicting behaviour from trait information.	<p>Use trait information, such as aggressiveness, to make predictions about future aggressive behaviour (Chiu, Hong, et al., 1997).</p> <p>Made judgements about behaviour from appearance information (Gervey, Chiu, Hong, &amp; Dweck, 1999).</p>	<p>Less likely to use trait information to predict behaviour (Chiu, Hong, et al., 1997).</p> <p>Appearance information did not affect judgements about future behaviour (Gervey et al., 1999).</p>

### **3.2. Implicit Person Theories and Perceptions of Groups**

Different IPTs have also been found to affect individuals' judgements about social categories or groups (Levy et al., 2006; Levy, Plaks, Hong, Chiu, & Dweck, 2001). Just as entity theorists use limited information to make judgements about individuals' underlying traits, they use information about a few members of a social group to make judgements about the whole group. In the first of a series of studies, Levy and Dweck (1999) presented children aged eleven to thirteen years with negative information about the behaviour of some children at a fictitious school. They were then asked to rate their perceptions of children at that school in general (e.g., "How mean or nice are kids at that school?") and of the variability of behaviour of the children within that school (e.g., "How many kids from that school are mean?"). Participants were also asked to say how likely they would be to interact with a pupil from that school and give their explanations for the pupils' behaviour.

Findings suggested that entity theorists made significantly less favourable and, therefore, more extreme trait judgements about the whole school based on limited examples of only a few pupils' behaviour. Entity theorists were also more likely to perceive the group as a whole and perceived less variability within the group. They also reported that they would be less inclined to interact with members of the school than were incremental theorists. The incremental and entity theorists also differed in their explanations for pupils' behaviour, with incremental theorists giving significantly more situational explanations (e.g., "their friends taught them to be bad") and entity theorists giving more trait based explanations (e.g., "they are dishonest"). What is more, the findings show that entity theorists perceived a greater difference between two social groups than did incremental theorists. Taken together the findings

suggest that a fixed view of personality attributes is associated with making more extreme trait judgements about a social group and with perceiving that group as homogenous. Compared to incremental theorists, entity theorists tended to see group members as more representative of the whole group. Further studies replicated these findings when positive information was given about a group (Levy & Dweck, 1999).

In this study, Levy and Dweck (1999) measured children's perceptions of an artificially created group. Research with adult participants has also found this pattern of results with existing social categories and has been related to stereotype rejection or endorsement (Levy et al., 2006; Levy et al., 1998) and intergroup relations (Levy et al., 2006). Entity theorists have been found to be more likely than incremental theorists to endorse stereotypes of social categories based on ethnicity (Levy et al., 1998) and sexuality (Haslam & Levy, 2006).

### **3.3. The Goal of Social Perception**

Holding an entity or incremental IPT has also been associated with a different focus during social perception (Levy et al., 1999; Molden & Dweck, 2006; Plaks et al., 2009). For individuals holding an entity theory, the aim of social perception is to make judgements about another's stable underlying traits (Levy et al., 1999). Entity theorists believe that traits cause behaviour (Hong, 1994) and so understanding these traits will provide them with a way in which to get to know that person. In contrast to this, individuals holding an incremental theory seek to understand and process information about a person's social context in order to make judgements about them. Incremental theorists believe that behaviour is context-sensitive and it is dynamic social and psychological states

that cause behaviour (Hong, 1994). This has also been found to be the case during social perception of social groups or categories. Stronger entity beliefs are associated with a greater awareness and focus on social category information, which leads to faster judgements about category members (Bastian, Loughnan, & Koval, 2011).

Making inferences about traits or situational factors has also been found to affect the amount of evaluative processing people do when making judgements about social information. Given that entity theorists make judgements about traits more readily than those with an incremental theory, Hong et al. (1997) suggested that entity theorists would also make more evaluative judgements. They proposed an information storage model in which entity theorists would quickly code and store information in a dichotomous way (e.g., “good” or “bad”). Subsequent information would be placed into either of these category stores in order to form an evaluative judgement about the person. On the other hand, incremental theorists, who would not be seeking to make evaluative trait judgements, would not segregate the information in this way. They would seek to integrate information in order to analyse it and form an impression. In order to test their hypotheses, Hong et al. (1997) used a reaction time paradigm, where responses to positively and negatively primed information were recorded to give an indication of the way in which information had been stored. The findings offered support for their hypothesis.

In a similar information processing model, Plaks, Stroessner, Dweck, and Sherman (2001) proposed that holding a different IPT would lead to paying attention to different types of information relating to social groups. Entity theorists were found to pay more attention to information that confirmed their expectations than information that disconfirmed them. Incremental theorists, on

the other hand, either had no preference or preferred disconfirming evidence. Due to their beliefs about the fixedness of traits, and their perceptions of the relationship between traits and behaviour, the authors argue that, once an expectation has been set, entity theorists are more likely to attend to information that allows consistent predications to be made about behaviour. Taken together, it could be suggested that entity theorists quickly categorise information in a dichotomous way and then pay more attention to information that agrees with their initial judgement.

It should be noted that the research investigating these information processing models was carried out with adult participants. The research has not yet been replicated with child participants and so it may be that they process social information in different ways.

### **3.4. Outcomes of Social Perception**

With a focus on stable, underlying traits, it could be argued that entity theorists are more likely to forgive transgressions in behaviour as they are perceived to be caused by fixed character traits and so beyond a person's control. In fact, researchers in other fields cited this hypothesis when fixed biological explanations for traits were preferred (e.g., Nowicki, 2007). Experimental research suggests, however, that this is not the case (Dweck & Molden, 2008; Plaks et al., 2009). It appears that entity theorists employ harsher punishment for transgressors than do incremental theorists.

When asked what punishments the teacher should give a new pupil in school who had lied and stole work in order to make a good impression, children aged nine to eleven years desired higher levels of punishment for a classmate who had broken the rules if they held an entity rather than an

incremental theory (Erdley & Dweck, 1993). Entity theorists also had lower empathy for the classmate, suggesting that they did not feel sorry for him and that the transgressions were mostly his fault because he was a “bad” person. Incremental theorists tended to take into account the situation information and had more empathy towards the target child.

This pattern of results was also seen with adult participants. In their study with undergraduate students, Chiu, Dweck, et al. (1997) asked participants to describe how they would respond to positive and negative behaviours in a school classroom, for example, volunteering to help or refusing to follow instructions. The results suggested that, although both incremental and entity theorists view the transgressions as equally positive and negative, compared to incremental theorists, entity theorists issued more punitive responses for negative behaviour. The authors suggest that entity theorists’ belief in fixed and stable traits extends to belief in a fixed moral code of conduct. Any deviance from this code will, therefore, bring about harsher punishment. Following this strict moral code is a duty and consequently expected, and so does not bring about recommendations for rewards.

Moreover, different IPTs led participants to offer different explanations for punishment (Gervy et al., 1999). When making judgements about the outcomes of committing a crime, entity theorists tended to suggest that the main aim of imprisonment was to punish the offender, whereas for incremental theorists, the principle aim of imprisonment was to rehabilitate the offender and bring about change.

When considering the perception of groups and social categories, belief in an entity theory is also associated with a more negative view of others. In this case the target were out-groups as defined by race (Hong et al., 2004),

behaviour (Levy & Dweck, 1999) or socio-economic status (Karafantis & Levy, 2004). In all cases entity theorists held more negative attitudes and were less likely to engage in positive inter-group interactions than incremental theorists.

The findings of many of these studies are the result of self-report ratings of vignette information, and it could be suggested that they may not directly relate to individual actions in real life situations (Lucas et al., 2009). However, these findings have also been replicated in a study with more ecological validity by asking about real behaviour. Karafantis and Levy (2004) asked children aged between nine and twelve years about their attitudes towards disadvantaged children (described as impoverished and being without food or water), their experience of a volunteering exercise, and the likelihood that they would volunteer again in the future. Findings suggested that children with an incremental theory reported more positive attitudes towards disadvantaged children, found more enjoyment in their volunteering experience, and would be more likely to volunteer in the future. Incremental theorists' belief in the malleability of human attributes and the possibility of change led them to undertake more change focused behaviours (Plaks et al., 2009).

### **3.5. Manipulating Implicit Person Theories**

The relationship between IPTs and social perception is believed to be causal (Dweck, 2000; Levy & Dweck, 1998), that is, different IPTs cause individuals to make judgements about the same information in different ways. Throughout the literature this has been demonstrated by manipulating an individual's IPT for a short period of time and assessing his or her subsequent judgements (e.g., Dweck, 2000).



As described previously, a series of studies by Chiu, Hong, et al. (1997) found that, compared to incremental theorists, entity theorists use information about underlying traits and immediate behaviour more readily in order to make social judgements. In the final study of this series (Study 5), IPTs were temporarily manipulated by giving participants information about research findings that suggest human attributes were either fixed or malleable. After reading the entity information, participants made judgements about behaviour consistent to the ways in which entity theorists had done in the previous studies, that is, compared to those who read the incremental information, they made more inferences about underlying traits from information about behaviour and more inferences about behaviour from given trait information. Similar methodology has yielded similar findings elsewhere (Molden et al., 2006). The authors concluded that IPTs have a causal role in social perception. If IPTs can be changed, then the process of social perception can also be changed.

It is important to note that in each of the studies cited above, participants' IPTs were manipulated and changed for only a short period of time in order to ensure that the IPT had a causal role in determining the way in which social information was processed. Longitudinal research is required in order to understand the impact of other social feedback on the development of IPTs over time.

Not only can IPTs be changed on an individual level, an organisation's IPT of intelligence, that is the shared beliefs of the people within a setting about the fixedness or malleability of the trait, can influence an individual's behaviour and beliefs at least for a short period of time (Murphy & Dweck, 2010). When given information about an organisation that made reference to its implicit theory of intelligence, participants identified related qualities that they perceived

to be important to that organisation. For example, when a fixed view of intelligence was described by the organisation, participants were keen to display their qualifications and tests scores in order to fit in. When an incremental theory was described, on the other hand, participants wanted to display their motivation to learn. What is more, when anticipating joining this organisation, participants differed in their self concept ratings based on the theory of intelligence described. Therefore, participants identified traits related to their achievements and abilities as being central to their self concept when anticipating joining an entity driven organisation, and their motivation and development traits more central when anticipating joining an incrementally based organisation.

Although this study utilised the prospect of joining a club or organisation, it is easy to see how a school's ethos might influence children's implicit theories. For example, if greater importance was placed on outcomes and success in tests, entity theories about intelligence might be more likely to develop amongst pupils. On the other hand, if effort and the process of learning were emphasised, an incremental theory may be more likely to develop. As with individual implicit theories, understanding and changing the IPT of an organisation might provide professionals such as EPs with opportunities to bring about organisational level change within a school.

### **3.6. Summary**

Research differentiates between entity theorists, who believe that traits are fixed, and incremental theorists, who believe that traits are malleable (Dweck, 2000). Different IPTs affect the process of social perception of individuals and groups in different ways. Entity theorists perceive a close connection between

behaviour and traits, and so their focus during social perception is to understand a person's traits in order to get to know them (Chiu, Hong, et al., 1997). Incremental theorists, on the other hand, do not perceive a close relationship between behaviour and traits and so use situational information in order to make judgements about others (Molden et al., 2006).

Information processing models suggest that, unlike incremental theorists, entity theorists store person information in dichotomous categories. They, therefore, make faster, more extreme, and more evaluative judgements of others (Hong et al., 1997).

Although Dweck (2000) explains that entity theories are not better or worse than incremental theories, but that each is a different way of understanding the world, it has been noted that entity theories are typically presented more negatively than incremental theories (Harackiewicz & Elliot, 1995). Research findings often depict entity theorists as making negative judgements about a person's underlying character and not taking into account extenuating circumstantial information (Erdley & Dweck, 1993; Molden & Dweck, 2006). In order to present an alternate view, Harackiewicz and Elliot (1995) suggest that entity theorists hold both incremental and entity theories in their memories but that the theories are activated differently. Consequently, entity theorists can be thought of as more flexible than incremental theorists. Moreover, the authors identify situations in which holding an entity theory might be more valuable, for example, attributing positive behaviours to traits might have positive consequences for self perception and social perception.

Of particular note for the current review are the findings that suggest IPTs can be changed, and thus have a causal role in social perception (Molden et al., 2006). Investigating the role IPTs might play in attitude

formation may, therefore, provide opportunities for intervention and attitude change.

#### 4. The Current Research

The current research aims to investigate the role of IPTs in moderating children's attitudes towards their peers with disabilities. Given that entity theorists and incremental theorists differ in the way they process information about social targets (Plaks et al., 2009), it is possible to hypothesise that they may differ in their processing of information relating to a person with a disability.

Entity theorists tend to believe that underlying traits are fixed and stable (Dweck, 2000). They have been shown to use limited information about instances of behaviour and appearance to make judgements about individuals and groups (Chiu, Dweck, et al., 1997; Gervy et al., 1999). It could be suggested then that, compared to incremental theorists, entity theorists will be more likely to use limited information about ability and disability to make judgements about a target child. Incremental theorists, on the other hand, tend to use more dynamic, situational factors to make social perception judgements (Molden et al., 2006). They do not make judgements based on limited information. It is possible, therefore, that incremental theorists will not make judgements based on limited disability information.

Furthermore, individuals holding different IPTs have been found to have different aims during social perception (Hong et al., 1997). Compared to incremental theorists, entity theorists process and store limited information in a more extreme, dichotomous fashion. Consequently, they appear to make more evaluative judgements than entity theorists, by judging information as good or bad. Taken together with the research that suggests that children's attitudes towards those with disabilities tend to be negative, it could be suggested that the judgements entity theorists make may be more negative than those made by children with an incremental theory.

Understanding the link between children's IPTs and attitudes towards their peers with disabilities may provide an opportunity for early intervention for professionals working with children. It could be argued that EPs, for example, seek to support schools in order to ensure the successful inclusion of children with special educational needs and disabilities within a school. Greater understanding of factors, such as IPTs, that might moderate children's attitudes towards others with disabilities, may help to inform EP practice when working in schools. It has been noted that IPTs can be manipulated and changed (Chiu, Dweck, et al., 1997; Murphy & Dweck, 2010) and so EPs may be able to use information about their role in attitude formation to bring about change in children's attitudes towards their peers with disabilities in school and promote their successful inclusion.

The current research aims to replicate previous findings regarding children's attitudes towards their peers with disabilities. It also hopes to extend research on the moderators of attitude by determining the links between children's IPTs and their attitudes towards people with disabilities. From these aims the following research questions were developed:

1. Do children hold negative attitudes to peers with physical disabilities when compared to those without disabilities?
2. Do children hold negative attitudes to peers with learning disabilities when compared to those without disabilities?
3. Is there a difference in children's attitudes to those with physical disabilities and learning disabilities?
4. Do children with different IPTs differ in their attitudes to those with physical disabilities?

5. Do children with different IPTs of others differ in their attitudes to those with learning disabilities?

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## **PART 2: Research Paper**

## 1. Abstract

Children tend to hold negative attitudes towards their peers with physical and learning disabilities when compared to typically developing peers (Nowicki & Sandieson, 2002). Investigations relating to the role of gender, age, and previous experience with disabilities in moderating children's attitudes have been inconclusive and do not inform intervention (e.g., Nowicki, 2006). The current research is the first to investigate the potential moderating influence of children's implicit person theories (IPTs) about the fixedness (an entity theory) or malleability (an incremental theory) of traits (Dweck, 2000) on their attitudes towards their peers with physical or learning disabilities.

Data from 61 participants aged 10 and 11 years were considered for analysis. A mixed within- and between-subjects design was employed. For the within-subjects component, participants were asked to rate their attitudes towards three fictional target children: a child without a physical or learning disability, a child with a physical disability, and a child with a learning disability. Participants were also asked to complete an IPT measure. This data was treated as both dichotomous and continuous in analysis.

Findings replicated previous research and demonstrated that children hold more negative attitudes towards their peers with disabilities when compared to those without. Additionally, children's attitudes towards their peers with a learning difficulty were more negative than towards their peers with a physical disability. Novel correlation analyses suggest very tentative support for the hypothesis that belief in an entity theory is related to more negative attitudes towards peers with a physical disability. No significant differences were found between the groups. The implication of the findings for educational psychology practice is discussed.



## 2. Introduction

For several years, education legislation in the UK has promoted the implementation of inclusive education for all children, including those with special education needs (SEN), in order to bring about societal changes in discriminatory attitudes (Department for Education (DfE), 2011; Department for Education and Employment (DfEE), 1997; UNESCO, 1994). Recent reviews of this inclusive objective suggest that, although half of pupils with a statement for SEN are placed in a mainstream school (Department for Education (DfE), 2011), children with SEN and their families are experiencing “social costs” and are left “feeling isolated and unable to get on at school” (Department for Education (DfE), 2011, p.14).

Relationships with peers have been found to be particularly important in reducing social exclusion and promoting feelings of school belonging (Baumeister & Leary, 1995; Cemalcilar, 2010; Osterman, 2000). There is, however, a large body of evidence which suggests that children hold negative attitudes towards their peers with disabilities (for reviews see Diamond & Huang, 2005; Nowicki & Sandieson, 2002). Negative attitudes can affect children’s thoughts, feelings, and subsequent behaviour towards these peers (Maio & Haddock, 2010) resulting in social exclusion and bullying (Diamond & Hong, 2010; Norwich & Kelly, 2004).

The purpose of this study is to investigate the role of implicit person theories (IPTs) in moderating children’s attitudes towards others with disabilities. An individual difference variable that has hitherto been unconnected to the disability literature, IPTs suggest that attributes are seen either as being fixed and unchangeable (termed an entity theory) or as being malleable and subject to change (termed an incremental theory) (Dweck, 2000).

IPTs have been found to affect social perception (Levy & Dweck, 1998) and so could affect the evaluative judgements that form the basis of attitude formation. Understanding the individual difference factors that influence children's attitudes could provide professionals working in a school context, such as educational psychologists (EPs), opportunities to design effective interventions to change discriminatory attitudes.

## **2.1. Children's Attitudes towards their Peers with Disabilities**

An attitude can be defined as "...an overall evaluation of an object" (Maio & Haddock, 2010, p.4.) that is based on cognitive, affective, and behavioural components (Zanna & Rempel, 1988).

It is consistently reported in the literature that children hold negative attitudes towards their peers with disabilities (Nowicki & Sandieson, 2002) resulting in children who have a disability experiencing bullying and exclusion (Guralnick, 1999; Norwich & Kelly, 2004). Although children's attitudes towards their peers with a range of disabilities have been investigated (Harnum, Duffy, & Ferguson, 2007; Law, Sinclair, & Fraser, 2007), the vast majority of studies seem to have focussed on physical and learning disabilities (for a review see Nowicki & Sandieson, 2002). This will also be the focus of the current research. As well as demonstrating that children tend to hold negative attitudes towards their peers with physical and learning disabilities compared to those without a disability, research findings suggest that children's attitudes towards those with a learning disability are more negative than their attitudes towards those with a physical disability (Nowicki, 2006).

The experimental paradigm used by Nowicki (2006) involved participants rating their attitudes towards fictional target children with and without

disabilities. Although this method is used frequently in the literature (Nowicki, 2005, 2006, 2007), it could be argued that responses to real situations and fictional descriptions may differ (Lucas, Collins, & Langdon, 2009).

Social and developmental factors thought to affect children's attitudes towards their peers with disabilities have been considered in the literature, for example, gender (Townsend, Wilton, & Vakilirad, 1993), age (Magiati, Dockrell, & Logotheti, 2002), and previous experience with disabilities (Diamond, Le Furgy, & Blass, 1993; Okagaki, Diamond, & Kontos, 1998). The findings, however, have been inconclusive, which may well have resulted from a number of inconsistencies in research design and methodology. Many different measures have been used to capture children's attitudes and are used to target each of the different components of attitude separately. Differences reported in the results might be due to age or gender related response patterns to the measures, rather than reflecting differences in attitude valence (Nowicki, 2006). It could also be that the variables in question were not controlled sufficiently. Studies may have used only one gender to depict the target children, thus allowing for gender preferences to skew the results. When the participant gender was matched to the target child, there were no gender differences in attitudes (Nowicki, 2005).

With findings regarding the social developmental factors being inconclusive and not useful for informing interventions, research has begun to focus on the cognitive developmental factors that might moderate attitude formation such as beliefs about the causes, permanence, and impact of disabilities.

Children appear to tend towards biological (e.g. inheritance) explanations when thinking about disability. Using both forced-choice (Smith & Williams,

2004) and open-ended techniques (Nowicki, 2007), children have identified these causes most frequently. Given this tendency for belief in biological causes, it is perhaps surprising that 68% of children aged eight to eleven years thought that learning disabilities were temporary and 42% indicated that wheelchair use was temporary (Nowicki, 2007).

Children also change their judgements about their peers with disabilities based on their current context (Diamond & Hong, 2010; Diamond & Tu, 2009). Children chose to play with a child in a wheelchair more often when the disability interfered minimally with participation (e.g., painting) rather than when it interfered significantly (e.g., playing football).

## **2.2. Implicit Person Theories**

A so far separate line of research has sought to investigate the role of IPTs in social perception (Dweck, Chiu, & Hong, 1995). IPTs are part of the social cognitive development research tradition which is concerned with the impact of social experiences on the development of mental representations (Olson & Dweck, 2008). IPTs are the assumptions and beliefs people hold about the fixedness or malleability of human attributes (Dweck, 2000; Molden & Dweck, 2006). Research differentiates between the belief that attributes are fixed and cannot be changed despite effort and motivation to do so (termed an entity theory), and the belief that attributes can change and be developed through effort (termed an incremental theory; Molden & Dweck, 2006; Plaks, Levy, & Dweck, 2009).

Research with both adult and child participants suggests that individuals differ in the process of social perception in several important ways depending on whether they hold an entity or incremental theory. Entity theorists tend to

perceive a closer connection between a person's behaviour and his/her underlying traits (Chiu, Hong, & Dweck, 1997). They perceive traits as being fixed across situations and so use limited trait information to make predictions about behaviour, and behavioural information to make predictions about underlying traits. Entity theorists tend to reject situational information (Molden, Plaks, & Dweck, 2006) and focus on making judgements about traits as part of social perception regardless of the context (Levy & Dweck, 1999).

Incremental theorists, on the other hand, perceive traits as being malleable and so perceive behaviour as differing across situations (Levy & Dweck, 1998). They take into account and use dynamic, situational factors when making judgements and decisions about others (Levy & Dweck, 1998). When situational information can explain behaviour, incremental theorists do not focus on making judgements about traits (Molden et al., 2006). When behaviour is at odds with the situation, incremental theorists tend to make more trait-based judgements that are similar to those made by entity theorists (Molden et al., 2006).

Information processing models suggest that holding an entity or an incremental IPT is associated with a different process and focus during social perception (Levy, Plaks, & Dweck, 1999; Molden & Dweck, 2006; Plaks et al., 2009). Individuals holding an entity theory focus on making judgements about another's stable underlying traits in order to understand and predict their future behaviour (Levy et al., 1999). They store information in a dichotomous way (e.g., "good" or "bad") and so make more extremely positive or negative evaluative judgements when compared to incremental theorists (Hong, Chiu, Dweck, & Sacks, 1997). This focus on trait information can lead to quicker social judgements (Bastian, Loughnan, & Koval, 2011).

Importantly, IPTs can be manipulated and have been shown to be a causal factor in social perception (Chiu et al., 1997; Molden et al., 2006). IPTs are the product of social experiences and develop through social interactions (Dweck, 2000), for example, the implicit theory of an organisation has been shown to affect the implicit theory of its members (Murphy & Dweck, 2010). Investigation of the impact of IPTs on social perception might, therefore, create opportunities for intervention and change in social perception processes.

### **2.3 The Current Research**

The current research has two broad aims. Firstly, to replicate findings regarding children's negative attitudes towards their peers with physical and learning disabilities, and secondly, to investigate whether IPTs moderate children's attitudes towards their peers with physical or learning disabilities.

In line with previous research, it is hypothesised that children will hold more negative attitudes towards others with disabilities when compared to children without a disability. More specifically, it is hypothesised that children's attitudes will be rated as most positive towards the target child without a disability and most negative attitudes towards the target child with a learning disability. Attitude ratings towards the target child with a physical disability will fall in between these scores.

Given that entity and incremental theorists differ in the way they process information about social targets, it is possible to hypothesise that they may differ in their processing of information relating to a person with a disability. Entity theorists believe that attributes are fixed and this leads them to make more extreme predictions and evaluative judgements about others (Hong et al., 1997). Given that children's attitudes towards their peers with disabilities are

largely negative, it is hypothesised that, holding an entity theory will be related to more negative evaluations.

### **3. Method**

#### **3.1. Ethical Consideration**

Ethical approval for the research was granted by Cardiff University and at local authority level.

#### **3.2. Participants**

All pupils attending year six classes in two mainstream primary schools in a socioeconomically varied area of a large city were approached to take part in the research. Potential participants were, therefore, all aged between ten and eleven years. Younger participants were not included in the sample as previous research suggests they may not fully understand the concept of “learning disability” (Smith & Williams, 2004). A limited age range was chosen in order to control for any potential age effects.

Pupil participation was on a voluntary basis and subject to parental consent. An opt-out method of consent<sup>1</sup> was employed whereby information regarding the research was sent to parents and they were given a period of two weeks within which to indicate that they did not wish their child to participate. All children whose parents did not object to their participation were invited to take part. Written consent was sought directly from the pupils prior to each data collection session.

A total number of 67 pupils participated in the research. Three participants were not available on the final day of testing, and one further participant withdrew from the study. Data from two additional participants were removed as English was not their first language. Complete data sets from 61

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<sup>1</sup>This opt-out method of obtaining consent was used in order to achieve a larger and more representative sample necessary for the appropriate analysis to take place (Howell, 2002). Use of an opt-in method for obtaining consent might have greatly reduced the sample size and skewed the sample.



participants were considered for analysis. This sample includes approximately two-thirds of all potential participants in the parent population. There were 29 girls and 32 boys, which reflects the gender ratio in the parent population.

### **3.3. Materials and Measures**

#### **3.3.1. Target children.**

Depictions of target children were adapted from those used by Nowicki (2005) and are shown in Figures 1 and 2. Six fictional target children were presented in coloured drawings measuring approximately 9x6cm. The drawings depicted a child without a learning or physical disability (no disability condition), a child with a physical disability, and a child with a learning disability.

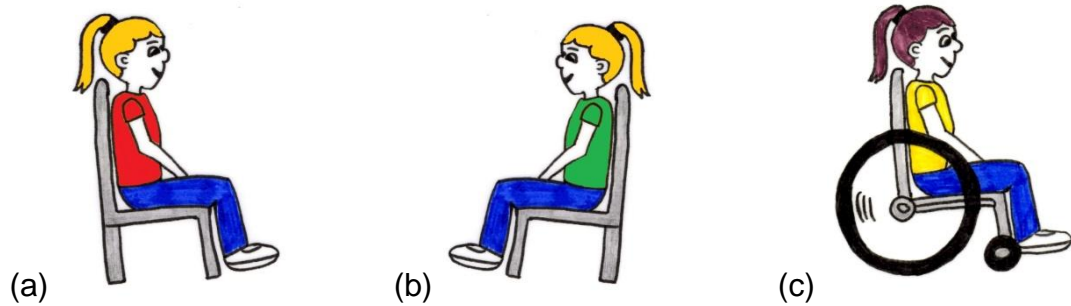
The target child was gender matched to the participants in order to control for same-gender preferences typically noted in childhood (Diamond et al., 1993; Nowicki, 2005, 2006).

Each picture was accompanied by a verbal description naming the child and outlining things that the child could and could not do.

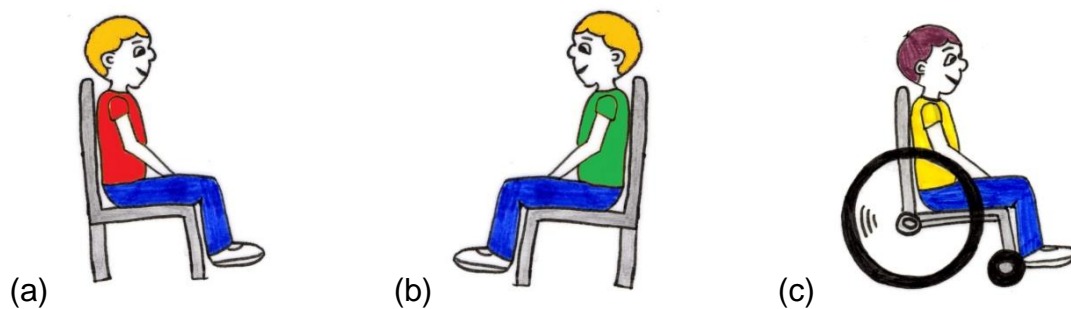
The child with no disability was presented seated in a chair and the following description given: "This is (*name*). S/he is not a real person. S/he is made up. (*Name*) could be a child in your class. (*Name*) learns new things easily. S/he knows how to do the things that someone of your age can do. S/he can read the same books as you and do the same maths as you."

The child with a learning disability was also presented seated in a chair and described as a fictional potential classmate. However, s/he was described as "finding learning difficult" and unable to do much of the school work that the participants could do.

The child with a physical disability was presented as seated in a wheelchair. The description matched the one in the no disability condition, but it was also pointed out that “s/he gets around in a wheelchair.”



*Figure 1.* Pictures of female target children. (a) girl without a physical or learning disability, (b) girl with a learning disability, (c) girl with a physical disability.



*Figure 2.* Pictures of male target children. (a) boy without a physical or learning disability, (b) boy with a learning disability, (c) boy with a physical disability.

### **3.3.2. Attitude measure.**

Antonak and Livneh (2000) make several recommendations about the measurement of attitudes. They suggest using existing measures as there are so many available and using multidimensional scales in order to encompass the multidimensional model of attitudes. Therefore the Chedoke-McMaster Attitudes Towards Children with Handicaps Scale (CATCH, Rosenbaum,

Armstrong, & King, 1986) was used to measure children's attitudes towards their peers with disabilities. A review of instruments designed for this purpose suggested that the CATCH was the most comprehensive as it measures the affective, behavioural, and cognitive components of attitude, as well as having high construct validity and reliability (Vignes, Coley, Grandjean, Godeau, & Arnaud, 2008). Additionally, the questionnaire was designed for use with children aged nine to thirteen years which encompasses the age of the participants in the study.

The questionnaire consists of 36 statements which the participant rates on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire provides an overall attitude score and gives scores for three individual factors; affective, behavioural, and cognitive components. Each factor is measured by 12 items with an equal number of positively and negatively worded statements (example items can be found in appendix 1).

The wording of the questionnaire was adapted for the purpose of the current research. In the original design, the term "handicapped" was chosen to be used in all statements as it was felt to encompass physical and intellectual disabilities. However, in the 20 years since the measure was published, trends in terminology have changed considerably. Disability organisations consider the term handicapped to be pejorative (Rogers, 2001) and the term does not appear in any current legislation (Equality Act, 2010). Additionally, it was felt that the participants would not be familiar with the term. The term handicapped, therefore, has been replaced with the name of the target child in order to direct participants to answer the questions about the target child.

It is also important to note that the instructions and the four questions asking about the child's previous experience of people with disabilities were

omitted from the CATCH in the current research. This decision was taken so that the participants were not prompted to attribute disability labels to their peers and so that their answers were given in response to the target child exclusively.

### **3.3.3. Implicit person theory measure.**

Participants completed the Implicit Theories of Others Form (see appendix 2) taken from Dweck (2000). It is appropriate for use with children from nine years of age (Dweck, 2000; Levy & Dweck, 1999). This consists of six statements which are rated on a six-point Likert scale ranging from 1 (strongly agree) to 6 (strongly disagree). IPTs can be measured at a domain specific level where participants rate their beliefs about specific characteristic (e.g., intelligence). In this case, however, a domain general measure was used which asks about participant beliefs about personality as a whole. This measure has been used elsewhere when measuring implicit theories of others (Levy & Dweck, 1999; Levy, Stroessner, & Dweck, 1998).

Three items relate to an entity view of others, for example, "Someone's personality is a part of them that they can't change very much." A further three items relate to an incremental view of others, for example, "People can always change their personality." The entity and incremental items were always presented in blocks rather than interspersed as this was found to be more easily understood by children (Levy & Dweck, 1999). Approximately half of the participants ( $n = 29$ ) were presented with the entity items first.

### **3.4. Design**

A mixed models design was employed in the research, involving within- and between-subjects variables. Attitude was a within-subjects variable, and this measure was completed on three occasions under different conditions. Participants completed the measure in response to the three different target children described above. The order in which the target children were presented and the names used were partially counter balanced in order to control for fatigue effects, so that each target child and each name was seen once in each position. This gave rise to three orders of presentation with similar numbers of participants in each group (see appendix 3).

IPT was the between-subjects variable. Each participant completed this questionnaire once.

### **3.5. Procedure**

Participants met with the researcher on three different days within the same week. The questionnaires were completed in small groups of between four and six participants of the same sex in a quiet area of the school.

Participants gave their informed consent for participation at the start of each session. They were taken through the consent form in detail on the first day of testing and were reminded of key information during the subsequent sessions.

The small groups were then introduced to the target child. They were shown a picture and the corresponding standardised description was read aloud. They were then asked to complete the attitude measure without discussion. The picture was placed on the table in front of them for reference.

During the final session, the participants were also asked to complete the implicit person theory measure. They were debriefed after the final session and any questions were answered. A debrief form was also sent home to the child's parents.

### **3.6. Pilot Details**

As changes were made to the attitude measure, scores from the first 10 participants were treated as pilot data. All participants were able to understand the questions and gave relevant responses. This data was, therefore, included in the analyses.

## 4. Results

Information regarding the design of the following analyses was taken from Howell (2002) and guidelines for the use of statistical software from Brace, Kemp, and Snelgar (2006).

The data were screened for normality and sphericity and these assumptions were met (see appendix 4 for details). Additionally, analysis of variance procedures revealed that there was no main effect of gender ( $p = .244$ ) on attitude valance and so this variable was not controlled for in further analyses. Raw data is included in appendix 5.

### 4.1. Children's Attitudes towards their Peers with Disabilities

Ratings given in response to the CATCH questionnaire were analysed in order to investigate the hypothesis that children's attitude ratings would be most positive towards a target child with no disability and most negative towards a target child with a learning disability. Attitudes towards a target child with a physical disability were predicted to fall in between.

The questionnaire was coded according to Rosenbaum et al. (1986). Negatively worded items were reverse coded. Four scores were calculated; an overall attitude score and scores for the affective, behavioural, and cognitive factors. Total and factor scores were calculated by summing scores, dividing the sum by the total number of items (36 for the total score and 12 for each factor score) and multiplying this by 10.

Moderate correlations between the individual factors suggested that these should be treated individually (correlations ranged from  $r = .41$  to  $r = .85$ ). However, larger correlations between the affective and behavioural factor

scores in each condition suggest that the measure related to similar constructs. Consequently caution should be taken when interpreting the results.

Cronbach's alpha was used to establish the reliability of the data. Coefficients for the total score and individual factor scores were calculated and are shown in Table 2. Guidelines suggest that alpha values of .7 and above indicate high reliability (Brace et al., 2006).

Table 2

*Cronbach's Alpha Coefficients for the Total and Factor Items of the CATCH Scale by Experimental Condition*

Target child	Affective $\alpha$	Behavioural $\alpha$	Cognitive $\alpha$	Total $\alpha$
ND	.785	.738	.871	.924
PD	.758	.745	.764	.883
LD	.789	.713	.836	.899

*Note.* ND = no disability; PD = physical disability; LD = learning disability; *M* = mean; *SD* = standard deviation.

The possible range of scores is 10 to 50 with higher scores indicating more positive attitudes. Table 3 shows descriptive information including means and standard deviations of the scores.



Table 3

*Descriptive Information for Individual Factor and Total Scores on the CATCH Scale by Experimental Condition*

Target Child	Affective				Behavioural				Cognitive				Total			
	Min	Max	<i>M</i>	<i>SD</i>	Min	Max	<i>M</i>	<i>SD</i>	Min	Max	<i>M</i>	<i>SD</i>	Min	Max	<i>M</i>	<i>SD</i>
ND	32.50	50.00	43.93	4.46	25.83	50.00	41.05	5.16	29.17	50.00	42.04	5.98	29.17	50.00	42.32	4.87
PD	32.50	50.00	41.41	4.52	24.17	50.00	40.15	5.23	25.00	48.33	38.13	5.12	31.67	49.17	39.90	4.22
LD	30.00	50.00	39.52	5.51	29.17	50.00	39.18	5.22	15.83	50.00	36.09	6.42	28.29	48.61	38.27	4.92

*Note.* ND = no disability; PD = physical disability; LD = learning disability; *M* = mean; *SD* = standard deviation.

In order to investigate any differences in attitudes towards the different target children, a series of repeated measures Analysis of Variance (ANOVA) procedures were used. The total attitude score, as well as the individual factor scores, were subject to analysis.

The findings revealed a statistically significant main effect of disability for the total scores on the attitude scale,  $F(2,120) = 40.102$ ,  $p < .001$ , partial  $\eta^2 = .401$ . The results are similar when the individual factors were considered. There was a main effect of disability for scores on the affective factor,  $F(2,120) = 32.937$ ,  $p < .001$ , partial  $\eta^2 = .354$ , the behavioural factor,  $F(2,120) = 5.465$ ,  $p = .005$ , partial  $\eta^2 = .083$ , and the cognitive factor,  $F(2,120) = 45.015$ ,  $p < .001$ , partial  $\eta^2 = .429$ .

Planned post hoc comparisons using a Bonferroni adjusted alpha level of 0.0167 (0.5/3) were used to further investigate the differences between the scores in the experimental conditions. Table 4 shows the mean difference and standard error scores for these comparisons.

Taken together, the findings revealed that scores tended to be significantly higher in the no disability condition than the physical disability condition or learning disability condition. Additionally, the mean scores in the physical disability condition were significantly higher than the learning disability condition. Whilst scores on the behavioural factor did follow this pattern, not all of the comparisons on this factor were significant. Thus, attitudes were rated in the following order from most to least positive: no disability > physical disability > learning disability.

Table 4

*Mean Differences for Factor and Total Scores on the CATCH Scale for Comparisons between Experimental Conditions*

Attitude component	Comparisons		
	ND > PD	ND > LD	PD > LD
Affective	2.53* (.55)	4.41* (.59)	1.89* (.49)
Behavioural	.89 (.59)	1.86* (.59)	.97 (.50)
Cognitive	3.91* (.60)	5.94* (.69)	2.04* (.62)
Total	2.43* (.48)	4.06* (.51)	1.63* (.37)

*Note.* \*denotes significant difference,  $p < .0167$ . ND = no disability; PD = physical disability; LD = learning disability; *M* = mean; *SD* = standard deviation.

## 4.2. The Role of Implicit Person Theories

The attitude ratings given by the entity and incremental theorists were analysed in order to investigate the hypothesis that holding an entity theory would be related to more negative attitudes towards others with a disability.

This variable has been treated as both dichotomous and continuous within the literature (Chiu et al., 1997; Rhodewalt, 1994) and will be given the same treatment in the following analysis.

### 4.2.1. Continuous data analysis.

A two-tailed Pearson Correlation Coefficient was calculated in order to investigate the relationship between agreement with an entity theory and attitudes towards the target children. Correlations between the implicit theory measure and the attitudes measures are displayed in Table 5. All of the correlations are small in magnitude and reveal a negative relationship between

scores on the implicit theory measure and scores on the attitude measure, revealing that higher entity beliefs were weakly associated with more negative attitude scores. No significant correlations were found between the implicit theory measure and the attitude scores in the no disability and learning disability conditions. However, the implicit theory measure was significantly negatively correlated with overall attitude scores in the physical disability condition, and the cognitive component of the attitude measure in the same condition.

The results seem to suggest that holding a stronger entity IPT is related to holding a more negative attitude towards others with a physical disability.

Table 5

*Pearson Correlation Coefficients between Attitude Scores and Implicit Theory Scores by Experimental Condition*

Condition	Affective	Behavioural	Cognitive	Total
ND	-.12	-.11	-.13	-.13
PD	-.23	-.24	-.28*	-.29*
LD	-.18	-.19	-.23	-.24

*Note.* \*denotes significant correlation,  $p < .05$ . ND = no disability; PD = physical disability; LD = learning disability; *M* = mean; *SD* = standard deviation.

#### **4.2.2. Dichotomous data analysis.**

In order to investigate whether any group differences existed, the data were also treated as a dichotomous variable.

An implicit theory score was calculated for each participant according to the procedure used by Levy and Dweck (1999). Scores from the three incremental items and the inversely coded items from the three entity items

were summed and divided by the number of items in the questionnaire. Higher scores indicate a stronger entity view.

The inclusion criterion for each category was obtained from Levy et al. (1998). In order to include only participants with a strong entity or incremental belief, participants who scored three or below on the implicit theory measure were included as incremental theorists and participants with a score of four and above were included as entity theorists. Participants whose scores fell between these points were not included in the following analyses. Scores from 42 participants were eligible. Of these, 29 held an incremental theory and 13 held an entity theory. Table 6 shows the means and standard deviations of the attitude scores for participants with different IPTs. Standard deviations are given in brackets.

A series of repeated measures ANOVA procedures were carried out on the total attitude score as well as the individual factor scores. The analysis revealed no significant differences between the groups' attitudes scores ( $p > .05$ ).

Table 6

*Mean Attitude Total and Factor Scores for Entity and Incremental Theorists by Experimental Condition*

Group		Entity	Incremental
ND	Aff	43.65 (3.98)	44.51 (3.64)
	Beh	41.47 (4.86)	42.04 (3.84)
	Cog	41.99 (5.64)	43.16 (4.96)
	Total	42.37 (4.46)	43.24 (3.71)
PD	Aff	40.64 (4.06)	42.30 (3.99)
	Beh	39.42 (2.85)	41.64 (4.15)
	Cog	36.03 (3.59)	39.14 (5.07)
	Total	38.70 (3.12)	41.02 (3.56)
LD	Aff	40.00 (4.05)	40.34 (5.36)
	Beh	39.10 (5.36)	40.11 (4.72)
	Cog	35.51 (5.09)	36.78 (7.12)
	Total	38.21 (4.07)	39.08 (4.80)

*Note.* ND = no disability; PD = physical disability; LD = learning disability; *M* = mean; *SD* = standard deviation.

## **5. Discussion**

This study is the first to investigate the role of IPTs in moderating children's attitudes towards their peers with disabilities. More specifically, the research had two broad aims. Firstly, the research aimed to replicate previous findings that suggested children have more negative attitudes towards their peers with disabilities when compared to those without, and that attitudes are more negative to those with a learning disability than those with a physical disability. Secondly, the research aimed to investigate whether children holding different IPTs would differ in their attitudes towards their peers with disabilities. It was hypothesised that entity theorists may hold more negative attitudes than incremental theorists.

### **5.1. Children's Attitudes towards their Peers with Disabilities**

The findings replicated previous work (e.g., Diamond et al., 1993; Nowicki, 2005, 2006) and suggested that children aged ten and eleven years hold negative attitudes towards their peers with disabilities compared to those without disabilities. There was a significant difference between attitude ratings for peers with a physical disability and for peers with a learning disability when compared to those without a disability. The findings in the current research also suggest that children seem to hold more negative attitudes towards those with learning disabilities than to those with physical disabilities.

The means obtained in the learning disability and physical disability conditions in the current study are similar to those reported when the CATCH questionnaire has been used elsewhere in research (Bossaert, Colpin, Pijl & Petry, 2011; Rosenbaum et al., 1986; Vignes et al., 2009). It could be suggested that the similarity in scores across studies indicates that the CATCH is a valid

measure for use in the current study and expands the possible use of the CATCH in two important ways.

Firstly, the current study is the first to use the CATCH in order to explore children's attitudes to disabilities separated by type (learning disability and physical disability) rather than seeking to understand attitudes to disabilities in general terms as in the previous research cited. It is possible to suggest, therefore, that the CATCH can also be used to explore attitudes towards those with different disabilities.

Secondly, the current study is the first to use the CATCH questionnaire to explore children's attitudes using specific vignettes as opposed to asking about their experience of disabilities in general. The similarity in scores across studies suggests that the CATCH might also be a valid measure to use in research with this methodology in the future.

Although not the focus of the current investigation, elsewhere, negative attitudes have been shown to affect interactions in the classroom where peers with disabilities were excluded more often than those without a disability (Guralnick, 1999). It is important for EPs to be aware of children's negative attitudes, and to note that there may be a difference in the way in which children view different disabilities, so that interventions to support successful inclusion may need to be adapted to suit different needs.

## **5.2. The Role of Implicit Person Theories**

It was hypothesised that, due to their tendency to make stronger and more evaluative judgements from limited information, belief in an entity theory would be associated with more negative attitudes to other children with disabilities. Support for this hypothesis was inconsistent. A weak but significant correlation



suggested that, overall, holding a stronger entity theory was related to holding a more negative attitude toward a peer with a physical disability. There were no significant group differences between the attitudes of children with an entity theory when compared to those with an incremental theory.

It is perhaps surprising that the moderating effect of IPTs only occurred in the physical disability condition given that children's attitudes towards those with learning disabilities are thought to be more negative. This pattern of results should be considered in the context of the current research methodology and previous research findings.

Research suggests that, compared to incremental theorists, entity theorists categorise limited information to make more extreme evaluative judgements (Hong et al., 1997). Additionally, research has shown that entity and incremental theorists differ in their use of situational factors when engaged in social perception. Entity theorists tend to reject situation information in all cases, whereas incremental theorists sometimes take it into account (Molden et al., 2006). For example, when a person's behaviour can be explained by the situation, incremental theorists focus on situation information and their judgements differ from entity theorists. When behaviour cannot be explained by the situation, however, incremental theorists tend to make judgements that are more similar to those of entity theorists.

In the current study, there was a salient school context and a focus on learning and achievement. The information the participants received about the target child's learning and achievement differed across experimental conditions and so could account for the differences in attitudes towards those with a physical or learning disability.

In the physical disability condition, participants were described as being able to complete work tasks, which is congruent with expectations about academic achievement in a school context. It is suggested that entity theorists rejected this situational information, and so when given information about disability (in this case physical), they quickly categorised this limited information to make more extreme negative judgements. Incremental theorists, on the other hand, utilised the situational information and did not use limited information about disability to inform their perceptions. Consequently their judgements were different to those made by the entity theorists.

In the learning disability condition, participants were described as not being able to complete age appropriate tasks. This information is not consistent with an environment that promotes learning and cannot be explained by the situation. It is suggested that in this case incremental theorists might be more inclined to make similar judgements to those made by entity theorists.

### **5.3. Implications for Educational Psychology Practice**

Understanding more about the role of IPTs in moderating children's attitudes towards their peers with disabilities might provide a point of intervention for EPs. Although not manipulated in the current research, IPTs have been found to be malleable and subject to change (Molden et al., 2006) through information giving and feedback (Dweck, 2000). EPs could work in a variety of ways, and at a variety of levels, in order to bring about a change to the attitudes of children. At an individual level, EPs could design intervention programmes and work with small groups of children in order to promote an incremental view of attributes. They could also work at a systemic level within the school providing training for teaching staff so that their interactions with pupils, and each other,

might help to promote an incremental IPT. Working at an organisational level could help change the whole school ethos and so change the IPTs of those within the organisation (Murphy & Dweck, 2010).

The role of the EP is currently undergoing some significant changes and might continue to change as the profession finds new ways of working, for example, there may be a shift towards carrying out more community based work with children and their families. The effects of family values on the development of IPTs have not been investigated in the current research and EPs would be well placed to carry out these kinds of investigations in order to inform their practice in this area.

#### **5.4. Limitations**

This research was carried out in a specific context and so the findings should only be generalised to other situations with caution. A very narrow age range was used and so it is important to note that the results could vary in different age groups. Even within the same age group, these findings may differ across schools with a different organisational implicit theory or ethos (Murphy & Dweck, 2010).

Only a limited number of variables were taken into account during the research. The age of the participants was taken into account and the range was limited in order to control age effects. Gender was also considered and it was shown statistically that there were no gender differences. The participants' experience with those with a disability was not taken into account in the current study. Whilst previous findings regarding the effects of experience with disabilities on attitude are inconsistent (Diamond et al., 1993; Okagaki et al.,

1998), some findings suggest that previous experience can affect attitudes and this variability, therefore, cannot be ruled out.

The attitude measure used met many of the conditions suggested by Antonak and Livneh (2000) and had reported measures of reliability and validity. It also encompassed the three components of attitude. However, it is important to note that the measure was changed slightly for the purpose of this research which could negate the reliability and validity results reported previously.

Nowicki (2007) pointed out that the wording of the descriptions of disabilities could have an impact on the findings. Children without a disability and children with a physical disability were described in terms of what they could do, whereas children with a learning disability were described in terms of things that they could not, which could have accounted for the difference in the reported attitudes for children with a physical or learning disability. What is more, the relationship between reported attitudes towards fictional children and actual behaviour observed in the classroom has been found to differ in some cases (Guralnick, 1999; Okagaki et al., 1998).

The data relating to children's IPTs was treated separately as dichotomous and continuous in analysis in accordance with previous research (Chiu et al., 1997). This data was collected with a questionnaire that used Likert scales and so produced continuous data. The validity of using this data to form dichotomous categories could, therefore, be questioned. The criteria for inclusion in the groups also resulted in a large portion of the data (approximately 30%) being excluded from this analysis which may have masked some patterns in the data.

The pattern of results tentatively suggests that children with different IPTs might process information about different social targets in different ways.

It is possible that including an additional condition where the target child had both a physical and a learning disability may have provided useful information in order to be able to make further comparisons between the groups.

Although previous research suggests that IPTs are subject to change (Molden et al., 2006), they were not manipulated in this group of participants. There was no direct measurement of the effect of manipulating IPTs on children's attitudes towards those with disabilities.

### **5.5. Further Research**

The current research is the first to explore the role of IPTs as a potential moderating variable in children's attitudes towards their peers with disabilities. The findings provide tentative support for the continued investigation of social cognitive developmental factors in the formation of children's attitudes towards their peers with disabilities.

Future research might focus on investigating children's knowledge about different disabilities and their understanding of disability as a social category. Understanding the ways in which children with different IPTs process information about traits and behaviours associated with the disability category, whether they perceive people with disabilities as being a homogenous group, and their behavioural intentions or observed behaviour towards people with disability, would provide greater understanding of the cognitive processes children with different IPTs are using to make social judgements.

The literature investigating IPTs is lacking any longitudinal research. Research of this kind could help further understanding about the development of IPTs and the long term impact of any targeted intervention to change IPTs. It

is not clear how the IPTs held by parents or the organisational IPT of the school affects the IPTs of children.

## **5.6. Conclusion**

It is tentatively suggested that IPTs may play a role in the formation of children's attitudes towards their peers with disabilities. Children with different IPTs process information about social targets in different ways and so may make different evaluative judgements. It appears that stronger agreement with an entity theory is weakly associated with more negative judgements about peers with a physical disability. Understanding more about the development of IPTs and their role in the formation of children's attitudes towards their peers with disabilities will provide EPs with opportunities to develop effective intervention strategies in order to bring about attitudinal change and greater social inclusion for children with disabilities.

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## 7. Appendices

## 7.1. Appendix 1: Example Questions from the Female CATCH Scale

Table 7

*Example Statements from the Female CATCH Questionnaire by Individual Factor*

	<b>Statements</b>	<b>Direction</b>
Affective factor	I would be pleased if Jane invited me to her house.	Positive
	I feel upset when I see Jane.	Negative
Behavioural factor	I would stick up for Jane if she was being teased.	Positive
	I wouldn't know what to say to Jane.	Negative
Cognitive factor	Jane can make new friends.	Positive
	Jane doesn't have much fun.	Negative

## 7.2. Appendix 2: Implicit Theories of Others Form

People can't really change what kind of personality they have. Some people have a good personality and some don't. They can't change much.

1	2	3	4	5	6
Strongly agree	Agree	Mostly agree	Mostly disagree	Disagree	Strongly disagree

Someone's personality is a part of them that they can't change very much.

1	2	3	4	5	6
Strongly agree	Agree	Mostly agree	Mostly disagree	Disagree	Strongly disagree

A person can do things to get people to like them, but they can't change their real personality.

1	2	3	4	5	6
Strongly agree	Agree	Mostly agree	Mostly disagree	Disagree	Strongly disagree

No matter who somebody is and how they act, they can always change their ways.

1	2	3	4	5	6
Strongly agree	Agree	Mostly agree	Mostly disagree	Disagree	Strongly disagree

Anybody can change their personality a lot.

1	2	3	4	5	6
Strongly agree	Agree	Mostly agree	Mostly disagree	Disagree	Strongly disagree

People can always change their personality.

1	2	3	4	5	6
Strongly agree	Agree	Mostly agree	Mostly disagree	Disagree	Strongly disagree

### 7.3. Appendix 3: Counterbalance Information

Table 8

*Order of Presentation of Each Experimental Condition Including Name of the Target Child*

Order	Name of target child		
	Jane / John	Lucy / Mark	Sarah / Paul
1 ( <i>n</i> = 19)	PD	LD	ND
2 ( <i>n</i> = 21)	ND	PD	LD
3 ( <i>n</i> = 21)	LD	ND	PD

*Note.* ND = no disability, PD = physical disability, LD = learning disability.

## 7.4. Appendix 4: Normality and Sphericity Information

### 7.4.1. Test for normality.

The tables below display adapted outputs from SPSS showing the Skewness and Kurtosis in the distribution of data for the total scores and individual factor scores of the attitude measure in each experimental condition, and for the scores on the implicit theory measure.

To check that the data are not significantly skewed, the value of skewness is divided by the standard error of skewness. The data is thought to be within the normal range if the result is no greater than  $\pm 2.58$ . All values meet this assumption.

Table 9

*Adapted SPSS Output of the Skewness and Kurtosis Values for the Distribution of Scores from the Implicit Theory Measure*

	Skewness	Std.Error of Skewness	Skewness/ Std. Error	Kurtosis	Std. Error of Kurtosis
IPT total	.195	.306	0.637	-.408	.604

*Note.* IPT = implicit person theory

Table 10

*Adapted SPSS Output of the Skewness and Kurtosis Values for the Distribution of Scores of the Individual Factors and Total Attitude Scale*

	Skewness	Std. Error of Skewness	Skewness / Std. Error	Kurtosis	Std. Error of Kurtosis
ND_total	-.732	.306	-2.392	.041	.604
ND_Aff	-.673	.306	-2.199	-.119	.604
ND_Beh	-.733	.306	-2.395	.452	.604
ND_Cog	-.461	.306	-1.507	-.769	.604
PD_total	.166	.306	0.542	-.692	.604
PD_Aff	-.099	.306	-0.324	-1.029	.604
PD_Beh	-.423	.306	-1.382	.267	.604
PD_Cog	-.054	.306	-0.176	-.389	.604
LD_total	.172	.306	0.562	-.701	.604
LD_Aff	-.009	.306	-0.029	-.985	.604
LD_Beh	.068	.306	0.223	-.773	.604
LD_Cog	-.320	.306	-1.046	.773	.604

*Note.* ND = no disability, PD = physical disability, LD = learning disability, Aff = affective, Beh = behavioural, Cog = cognitive.



#### 7.4.2. Tests for sphericity (within-subjects factor only).

Table 3 shows the Greenhouse-Geisser and Huynh-Feldt Epsilon values for the within subjects data. If the Greenhouse-Geisser or Huynh-Feldt Epsilon values are below .70 then the assumption is violated. Epsilon values in all experimental conditions meet this assumption.

Table 11

#### *Greenhouse-Geisser and Huynh-Feldt Epsilon Values for the Attitude Measure*

	Mauchly's W	Approx. Chi-Square	df	Sig.	Greenhouse-Geisser Epsilon	Huynh-Feldt Epsilon
Affective	.951	2.969	2	.227	.953	.984
Behavioural	.956	2.653	2	.265	.958	.989
Cognitive	.968	1.905	2	.386	.969	1.000
Total	.883	7.347	2	.025	.895	.921

## **7.5. Appendix 5: Raw data**

Available in a separate document.