The relationship between adolescents' attitudes and behaviour toward adults with an intellectual disability: Do they do what they say?

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Thesis declaration form

I confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Signature:

Name: Richard Grove

Date:

Overview

This thesis examines the relationship between attitudes and behaviour towards people with intellectual disabilities. There is reason to believe that there is a difference between what people report they will do and what they actually do when it comes to discriminated against groups such as this one.

Part one is a literature review of studies that have investigated the relationship between attitudes and behaviour towards people with intellectual disabilities. The review finds nine studies that measured attitudes and behaviour of adults and children towards this group and results suggest that there is a variable relationship between attitudes and behaviour, with them cohering at times but differing in other cases. The few studies found did not provide enough information to draw out a conclusion, and so further studies investigating this relationship should be conducted.

Part two is an empirical paper investigating the explicit and implicit attitudes of adolescents towards people with intellectual disabilities and how these attitudes relate to behaviour. This study is the first one to date that uses a paper-based implicit attitude measure on this population, and the first to attempt to measure actual behaviour at the same time. The results suggest that further studies of this nature, with adaptions to the design of the study, should be conducted as it is possible to measure actual behaviour and explore the complex interaction between behaviour and explicit and implicit attitudes.

Part three is a critical review of this thesis that deals with some reflections on the process of conducting the research and some of the difficulties faced, and improvements that could be made.

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PART 1: LITERATURE REVIEW

The relationship between self-reported attitudes and behaviour towards people with
an intellectual disability: A literature review.

Abstract

Background

The relationship between self-reported attitudes and behaviour is unclear. First-hand accounts by people with intellectual disabilities suggest that they face frequent harassment and abuse in their communities. In apparent contrast, in studies on public attitudes participants mostly report that they would act positively towards people with intellectual disabilities. More information about the relationship between attitudes and actual behaviour is needed as others' actions are crucial to the everyday experience of children and adults with intellectual disabilities.

Method

A detailed search of PsycINFO, Web of Science, and Scopus was conducted to identify studies that simultaneously measured attitudes and behaviour towards people with intellectual disabilities. The quality of all studies included in the review was assessed using the QualSyst.

Results

Only nine articles matched the review's criteria. They investigated attitudes and behaviour among children and adults and suggest that the relationship between attitudes and actual behaviour is sometimes consistent and coherent, at other times self-reported attitudes are more positive than observed behaviour. Owing to the small number of studies conducted to date, no firm conclusions can be drawn.

Conclusion

Some studies report a consistent relationship between attitudes and behaviour, other a discrepancy between the two. More research into the relationship between attitudes and actual behaviour towards people with intellectual disabilities is needed.

Introduction

This literature review aims to illuminate the entwined, yet unclear, relationship between attitudes and behaviour. Furthermore, to investigate the link between what people report they would do, and what they actually do in real life, or quasi-real life, situations. This taps into the apparent disparity between how people report they would behave towards a minority group, and the reality of prejudice and discrimination experienced by members of many minority groups. The focus of this review is on the relationship between self-reported attitudes and behaviour towards those with an intellectual disability, one of the most undervalued and discriminated against groups in modern society (Abbott & McConkey, 2006; Gordon, Feldman, Tantillo & Perrone, 2004).

Over the last few decades there has been a significant change in the way people with an intellectual disability have been supported and positioned in UK society. Specifically, the transition was made from institutionalised care to community care, meaning that there has been increased inclusion and interaction between people with and without an intellectual disability (Beadle-Brown, Mansell & Kozma, 2007). Whilst this has been a step toward greater equality in UK society, it has only partly reduced the marginalisation and discrimination people with an intellectual disability face within communities. Although they are now physically more present in communities, their social inclusion is still very low (Cummins & Lau, 2003).

Over the past 20 years, policies and legislation have been put in place to promote acceptance and respect of people with an intellectual disability (Disability Discrimination Act, 2005; Equality Act, 2010; Valuing People, 2001; Valuing People Now, 2009). However, statistics would suggest that there is still a long way to

go to make this ethos a reality. A survey conducted by ComRes of over 500 people

with an intellectual disability found that more than half had experienced harassment,

hostility or violence from a stranger on a weekly or daily basis (ComRes, 2011).

Between 2011 and 2014 there were approximately 62,000 disability-motivated hate

crimes each year, and although crime rates seem to be falling in general, there has

been an increase in the number of reported disability-motivated hate crimes over the

last few years (Home Office, 2013). It could be that an increase in awareness of the

process of reporting abuse is partly the cause for the apparent increase in crimes.

However, each reported event translates into a possible incident of harm toward a

person with an intellectual disability.

Attitudes

Attitudes have been defined as an evaluative judgment about an issue, person

or object (Maio & Haddock, 2010). Ajzen (1991) described attitudes as behavioural

dispositions, and as a way of predicting behaviour that removes the notoriously

difficult task of measuring actual behaviour. Accordingly, if someone holds a

negative attitude towards a group, their behaviour towards members of that group is

predicted to be negative.

Attitudes can be measured explicitly and implicitly. Explicit measures of

attitudes are those that directly ask the person to express their attitudes about a topic,

for example, using questionnaires or surveys. Explicit measures of attitudes have

been shown to have problems with validity, including the wording of questions

influencing responses, the tendency of participants to respond in a socially desirable

way, and the possibility that participants may not have an awareness of their attitudes

(Maio & Haddock, 2010).

Implicit measures of attitudes aim to measure the unconscious associations

people make between an object or person and an evaluative description ('good' or 'bad'), arguably bypassing the conscious control of the expression of attitudes, leading to a more spontaneous and accurate presentation (Greenwald, Poehlman, Uhlmann & Banaji, 2009; Wilson & Scior, 2014). This would allow for expression of unconscious attitudes, but conversely may tap conscious yet socially undesirable attitudes, something that is hard if not impossible to distinguish empirically.

Attitude-behaviour link

The main measures for investigating behaviour indirectly involve surveys of attitudes. These methods are preferred because they avoid the validity issues that arise when actual behaviour is measured, for example, the Hawthorne effect, whereby behaviour is modified when participants know they are being observed. Ajzen (1991) argued that in order for attitudes to predict behaviour accurately, one must be sure that the attitude being measured is related to the behaviour of interest. Therefore, although implicit attitude studies in the field of intellectual disability are an exciting prospect for future research, problems in classifying attitudes and the uncertainty of their link to an actual behaviour of interest may lead to inconsistent or inaccurate results. For this reason, it is important for studies to attempt to measure actual behaviour as directly as possible, because this allows for findings to have more external validity.

There is a gap in the knowledge base regarding the link between attitudes and behaviour, and how behaviour can be measured most optimally. This review aims to evaluate existing evidence on whether a significant link exists between what people say they will do, and what they actually do in relation to people with an intellectual disability.

<center>**Method**</center>

Inclusion/exclusion criteria

   A systematic review of the literature was conducted by searching PsycINFO, Scopus, and Web of Science (WOS). Search terms focused on three concepts: intellectual disability, attitudes, and behaviour (see Table 1). No limits were placed on the searches in terms of publication year, and articles were included if they focused on intellectual disability, alongside both of the two other concepts. A study was deemed to be measuring attitudes if participants were asked to report their views on intellectual disability, and a study was deemed to be measuring behaviour if the measure was objective in the sense that it did not require the subject to report their own behaviour via questionnaire for example. Furthermore, articles were only included if they were published in English and published in a peer-reviewed journal. Articles were chosen by looking at the title, though if their inclusion/exclusion was not clear on this basis, the abstract was read and, where necessary, the whole article.

Table 1
Literature review search terms

Intellectual Disability	Joining word	Attitudes	Behaviour
Learning disab*	Correlation	Attitude*	Action
Mental retardation	Link	Prejudice*	Act
Learning difficult*	Association	Stereotype*	Do†
Intellectual disab*	Relationship	Stigma	Behavio*
Developmental disab*		Belief	

* - truncated terms to allow for multiple endings of words
† - excluded after initial search due to large quantity of irrelevant results

Search strategy

   Terms were mapped to subject headings where available, and were also

searched in 'free text' style. Each variant of the search term was combined with the 'OR' function to ensure that synonyms could be located, and then individual searches for each area were combined with the 'AND' function to narrow down the results. Older terms such as mental handicap and mental deficiency were hypothesised to be unlikely to add weight to the search, as mental retardation was thought to be an older term that would cover the small number of studies that would be overlooked by the newer terms. Initial searches from Scopus and WOS returned over 15,000 results, and it was hypothesised that the word 'do' was likely to appear in many articles that were not relevant. Following the removal of the word, all databases together returned 1,420 peer reviewed articles, excluding duplicates (N = 96). After excluding results based on the criteria mentioned, the process resulted in six articles being judged as fitting the criteria, and after a search of their references a further three articles were obtained. This resulted in nine studies included in the review of the literature. A more detailed explanation of exclusions can be seen in Figure 1.

Table 2

Articles found from each database

Database	Number
PsycINFO	685
Web of Science	477
Scopus	354
Total	1516

Excluded studies of note

Some studies were discussed in more detail between the researchers when it was not clear whether they had met criteria for inclusion. A study by Shafer *et al*. (1989) reported that co-workers of people with an intellectual disability presented generally positive attitudes to people with an intellectual disability, however they did

not spend time with them at lunch breaks or socially after work. On further examination, the measure of time spent with the person with an intellectual disability was a self-report measure, so despite the findings revealing something of note, the method of measuring behaviour (i.e. spending time with co-workers with an intellectual disability) was measured subjectively, and thus cannot be included in this review. Teachers' attitudes and behaviour towards the inclusion of children with social, emotional and behavioural difficulties in mainstream classes was investigated by MacFarlane and Woolfson (2012). The target children appeared to include those with intellectual disability, but also children with autism and other behavioural difficulties, hence the study was not deemed sufficiently specific. This study also measured behaviour indirectly with a questionnaire, and this was judged to be an insensitive measure for this literature review. Unal and Baran (2011) investigated the attitudes and behaviours of children towards their siblings with an intellectual disability but again behaviour was measured via self-report questionnaire. Rothlisberg, Hill and Damato (1994) measured the behaviour of children towards peers with an intellectual disability by recording their willingness to befriend a new student joining their class. This study did not include a measure of attitudes towards intellectual disability and therefore did not examine the relationship between attitudes and behaviour.
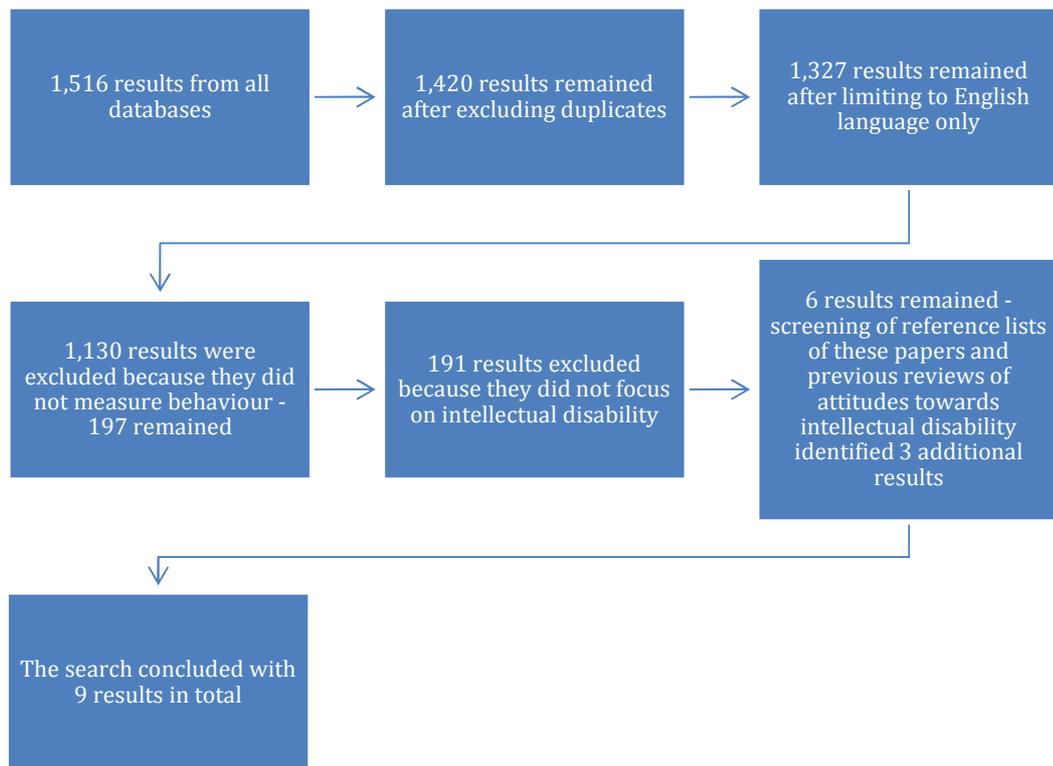
Figure 1. Flow diagram of the search process.

Results

Table 3

An overview of studies included in the review presented in alphabetical order

Authors Location	Sample characteristics	Attitude measures	Behaviour measures	Method	Key Results
Bak & Siperstein (1987) USA	62 (34:28 female:male) typically developing children aged 9-11 from 3 schools and 16 children (9:7 female:male) with an intellectual disability (ID).	Participants rated as friend or not friend. *Friendship Activity Scale* (Bak & Siperstein, 1987), measuring commitment to befriend a peer, and *Attributions Scale* (Bak & Siperstein, 1987), measuring teammates' perceived performance.	Asked to choose which teammate they would like to keep for a future game, and which teammate should make the 'last toss' to decide the game's outcome.	Sociometric survey. Children matched into teams of 3 each with one teammate with ID. Played beanbag and Frisbee toss games against other teams. Experimenters manipulated scores to make the teammate with ID the best or an average player in the team. Children then completed the measures.	• Teammates with ID were preferred if they had been the 'best' player in the previous game- 50% chose the teammate with ID. • Children were more likely to select a teammate with ID for a future game if they rated them as a friend. • Game performance of child with ID did not affect attitudes of the other teammates (as constructed by the sociometric survey) towards them. • No difference in attitudes between teammates that chose a teammate with ID for future game and those who did not.

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Authors Location	Sample characteristics	Attitude measures	Behaviour measures	Method	Key Results
Dailey *et al*. (1974) USA	14 (13:1 female:male) attendants working in a residential unit for children with moderate ID. Age range 20-50.	Children ranked by each attendant on domains of "likability", "physical attractiveness" and "perceived mental level".	Attendant-child interactions observed over 8-weeks by undergraduates working individually or in pairs, using Interaction Recording System (Veit, 1973).	Interval observations to establish percentage of "social-play interactions", "positive interactions", and "total interactions". Two weeks after behavioural observations, attendant attitudes measured.	- Moderate positive correlations found between attendant attitudes and observed behaviours indicating the positive interactions between attendants and residents were correlated with higher ratings on "likability", "physical attractiveness" and "perceived mental level". "Perceived mental level" did not significantly correlate with "positive interactions", but with "social play interactions". - Positive attitudes of attendants led to more positive and social interactions.
Fortini (1987) USA	125 students aged 11-14 from a public school.	Adjectives Checklist (Siperstein, Budoff & Bak, 1980 to measure intention to volunteer.	Students asked to volunteer as peer tutors for children with an ID.	Students given a short lecture on peer tutoring and ID; told there would be a recruitment drive for volunteers in two weeks. Students completed the attitude measures. One week later, asked if they would like to sign up as volunteer.	- Intention to volunteer was most strongly correlated with volunteering behaviour. - The general attitude measure was significantly correlated with intention and behaviour. - Intention was the strongest predictor of behaviour (r = 0.35) and attitudes were the weakest (r = 0.22).

Authors Location	Sample characteristics	Attitude measures	Behaviour measures	Method	Key Results
Gillmore & Farina (1989) USA	72 males aged 11-14.	Interview-style questionnaire asking perceptions of intelligence, temperament, and likability of target child, and assessing desire for social distance from the target child.	Interactions between participants and the target child were recorded and rated on the qualities of the interaction including 'time talked', 'friendliness', 'nervousness', and 'peer vs authoritative manner'.	Participants were randomly assigned to spend time with a confederate child described as 'mentally retarded', 'emotionally disturbed', or 'normal'. Participants were asked to speak with the child about their school, and also play a game together, as child may join their school. Participants were asked questions about whether the child would 'fit in'.	• When the child was described as being emotionally disturbed or having an ID the behaviour of the participants was rated by observers as being significantly lower on friendliness, and significantly higher on nervousness. • Participants indicated they would desire more social distance from the children described as 'non-normal' and they rated they would not like to engage in various activities with the child when described in this way. • This study did not report the results of the 'time talked' or 'peer vs authoritative manner' but the conclusion was that the attitudes and the behaviour towards the child with an ID were negative.

Authors Location	Sample characteristics	Attitude measures	Behaviour measures	Method	Key Results
Manetti, Schneider & Siperstein (2001) Italy	190 (102:88 males:female) children aged 9-11 years in two schools.	Attitudes measured by the participant saying whether they would hypothetically play with a child presented in a picture and matched vignette. Participants were also asked which adjectives on a list they would use to describe the hypothetical child.	Children in the classes were asked to rate identified children with an ID in terms of whether they were socially accepted by others.	Pictures and a vignette about a child's behaviour were presented. Participants were asked to say whether they would play with the child and to assign adjectives to describe the child. They were then asked about the social acceptance of the children in their schools who had an ID.	• Participants had positive attitudes towards hypothetical peers with an ID. • Hypothetical peers with or without an ID were rated similarly even when the vignette described aggressive behaviour. • Participants reported less favourable attitudes to playing with a child with an ID when the activity resulted in more chance of physical contact. • Positive attitudes did not correlate with actual behaviour - 5 out of 6 children with an ID were identified as being socially rejected and excluded.
Miller *et al.* (1991) USA	20 children with an ID and 20 typically developing children. Matched for age, gender and school (15:5 male:female in each group, 9-14 years old).	'Expectations' of perceiver children were assessed before their telephone call	'Observers' made up of college students (n = 80), middle school students without an ID (n = 22), and teachers (n = 30) rated the behaviour of the target children on a scale of stigmatising social behaviour.	Typically developing children and those with ID were both told they would be speaking on the phone with another child. They were either told the child is in special education or mainstream education. All telephone partners were children without an ID.	• Telephone partners described as having an ID were rated by perceiver children as displaying more stigmatising behaviour. • Perceivers without an ID were rated as "talking down" to telephone partners who were described as having an ID, even though observers rated the behaviours of the telephone partners as not being significantly different from one another.

Authors Location	Sample characteristics	Attitude measures	Behaviour measures	Method	Key Results
Williams (1987) USA	78 (39:39 female:male) undergraduate university students aged 18 – 45.	*Rokeach Value Survey* – values ranked in order of importance. *Perceptions of Mentally Retarded Persons* – respondents say whether their list of values describe a person with or without an ID. *Attitudes about volunteer work with persons with mental retardation* – rate whether this work would be enjoyable, rewarding, of benefit to people with mental retardation.	Participants were asked to indicate whether they would be willing to volunteer to work with people with an ID. They were told they would be contacted after the survey if they had indicated an interest.	Participants completed the questionnaires and also reported the type and level of exposure they had had with people with an ID. They reported any volunteer work that they had done in the past 2 years. They indicated their wish to volunteer.	• Attitudes towards disability were not a significant predictor of volunteer interest. • Whether participants chose to volunteer was predicted by their personal values and their attitude towards volunteering.
Yu, Ostrosky, & Fowler (2015) USA	32 (16:16 female:male) typically developing pre-schoolers of inclusive classes. Mean age 5 years. 48% white, 34% black, 18% Hispanic.	*Sociometric Peer Ratings* (Asher, Singleton, Tinsley & Hymel, 1979) – pictures of children sorted into groups of 'like to play with' and 'don't like to play with'. *Social Acceptance Ratings* – social acceptance rated	Play behaviour was observed during free-play situations. Partial interval time sampling of 15-second intervals was used. Play behaviour was coded for 'onlooker',	Play behaviour was observed and coded by the primary researcher and a 'second observer' who was not aware of the study's focus. The attitude assessments were administered by the primary researcher with each child	• Typically developing children were less likely to play with children they identified as having a disability. • Typically developing children were more likely to play with a child with a disability if they had rated them previously as someone they 'like to play with'. • Social acceptance scale revealed children were generally accepting of ID. • There was no relationship between attitudes as measured by the social acceptance scale

Authors Location	Sample characteristics	Attitude measures	Behaviour measures	Method	Key Results
		by categorising a 'doll' with a disability into groups of 'lots of friends' or 'not many friends'.	'solitary play', 'parallel play', and 'cooperative play'.	individually over four weeks.	and play behaviour.
Zsambok, Hammer, & Rojahn (1999) USA	206 adults (124:82 female:male) from urban, middleclass neighbourhoods.	The Scale of Attitudes towards Disabled People (Antonek 1982)	A mock petition drive to show support for/against inclusion of people with mental retardation in the neighbourhood	Researchers went door to door with a positively worded petition (for inclusion) and a negatively worded petition (against inclusion). Participants were then debriefed and given the attitude measure.	• There was a "moderate level of correspondence" between attitudes and behaviour, with a correlation of 0.4. • The attitude measure was not an accurate predictor of behaviour in this study. • Participants who were against inclusion had significantly more negative attitudes to mental retardation as compared with those who were for inclusion ($p < .001$). • The positive or negative petition preceding the attitude measure was found to significantly affect the attitudes, with negative petition leading to more negative attitudes and positive to more positive ($p < .01$). 90 respondents gave their support to inclusion, 71 did not.

Study characteristics

Eight of the nine studies took place in the USA, one in Italy. Sample sizes ranged from 14 to 206 (mean = 95) and the samples consisted of a range of different populations, from pre-school children (1 study, N = 32), primary school children (2 studies, N = 252), secondary school age children (3 studies, N = 217), undergraduates (1 study, N = 78), and working age adults (2 studies, N = 220). Of the studies that reported demographic information further, despite the large age range (2-50 years), the samples were largely homogenous, with the majority of participants White Americans. There was a relatively equal split of gender from those studies that reported it (355 males, 319 females), yet only two studies investigated gender differences specifically. Manetti *et al.* (2001) found that girls had more positive attitudes towards peers with an intellectual disability on some of their measures, while Yu *et al.* (2005) found no difference between genders. The latter finding is possibly due to low sample size, and the authors allude to this when discussing the limitations of their study. Though only two studies, this inconsistency in gender difference seems to reflect Scior's (2011) finding that gender differences vary and it cannot be concluded that one gender has consistently more positive attitudes than the other.

Quality rating of review articles

The QualSyst (Kmet, Lee & Cook, 2004) was used in this review to assess the quality of the studies included. It consists of two lists of criteria, one to assess the quality of quantitative studies, the other the quality of qualitative studies. For this review only the fourteen criteria for quantitative studies were used (see Appendix A). Each criterion is rated as to whether the study meets the standard (2 = yes, 1 = partial, 0 = no, NA = not applicable). Criteria 1 to 4 evaluate the description of the

study objectives, sample characteristics, design of the study, and the sample selection process. Criteria 5 to 7 evaluate the description of random allocation and whether the study was blinded at any level. Criteria 8 to 9 evaluate the measures used and the sample size, and criteria 10 to 14 evaluate the analysis, whether an estimate of variance and whether the study is controlled, how completely results were presented and were clear conclusions drawn. A cumulative total for each study is then calculated and divided by the total possible score to give a value between 0 and 1; the closer to 1 the value is, the higher the quality of the study. Kmet *et al*. (2004) did not report a cut-off score. The assessment revealed a range of ratings from 0.64 to 0.95, indicating a degree of quality of the studies in the review. For the purposes of the present review, two researchers rated the studies included, and inter-rater reliability was 0.84. Any differences in ratings were resolved through discussion, rendering the final ratings presented in Table 4.

Differences of note from reviewing the articles were that few of the studies gave an estimate of variance or were controlled for confounding variables. Only Miller *et al*., (1991) and Zsambok *et al*., (1999) met both these criteria fully, and Fortini (1987) met neither. Six of the nine studies could not be rated on criteria assessing whether participants were randomly allocated or experimenters were blind to condition as this was not applicable to their designs. All studies were deemed to be at least partially descriptive in terms of design, hypotheses, and conclusions drawn.

Table 4.
Quality assessment of studies using the QualSyst criteria

Study	QualSyst criteria item scores (0, 1, 2 or NA)														Quality Score (0-1)
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	

Bak & Siperstein, 1987	2	2	2	2	NA	NA	2	2	1	2	1	2	1	1	**0.83**
Dailey *et al.*, 1974	2	2	1	2	NA	NA	NA	2	2	2	1	0	1	2	**0.77**
Fortini, 1987	2	2	1	1	NA	NA	NA	1	2	2	0	0	1	2	**0.64**
Gillmore & Farina, 1989	2	2	2	1	2	2	2	2	1	1	1	2	2	2	**0.86**
Manetti *et al.*, 2001	2	2	2	2	NA	NA	NA	2	2	2	2	1	2	2	**0.95**
Miller *et al.*, 1991	2	2	2	2	1	1	2	2	0	2	2	2	2	2	**0.86**
Williams, 1987	2	2	1	2	NA	NA	NA	2	1	2	0	1	1	2	**0.72**
Yu *et al.*, 2015	2	2	1	2	NA	NA	NA	2	0	2	2	1	2	2	**0.81**
Zsambok *et al.*, 1999	2	2	2	1	2	2	2	2	2	1	2	2	2	2	**0.93**

Measuring behaviour

The majority of the techniques for measuring behaviour used in the nine studies used a form of observer rating. This type of measurement provides an objective record of the way in which participants act towards those with an intellectual disability because the participant is not informed that their behaviour is being observed. Of course it is unlikely that in the studies that employed observation, participants were completely oblivious to their behaviour being monitored, therefore it could be argued that the results are still likely to be affected by social desirability. Despite this, it is thought that these observations give a more accurate representation of actual behaviour than reported attitudes.

Attitudes and behaviour towards people with an intellectual disability

In general, attitudes were reported as being positive towards those with an intellectual disability in studies that reported this information. All studies used explicit attitude measures where participants were asked to self-report their attitudes.

The majority of the studies collected attitude measurements before behaviour measurements. In some of the studies where the behaviour measurement preceded the attitude measurement, there was some evidence that attitudes were affected by the behavioural measurement. For example, when their petition was framed in a positive sense (i.e. for inclusion of people with intellectual disability in the community), Zsambok *et al*. (1999) found that attitudes were more positive. This indicates that attitudes are open to influence from immediate external sources, thus their accuracy in predicting behaviour is uncertain. One study analysed the power of attitudes in predicting behaviour, and found that although they are a weaker predictor $(r = 0.22)$ than intention $(r = 0.35)$, they significantly predict the behaviour of participants (Fortini, 1987), although as this study was the weakest according to the quality review, conclusions from this finding must be made cautiously. Contrary to Fortini (1987), Williams (1987) found that self-reported attitudes do not predict the behaviour of participants when choosing to volunteer to work with people with intellectual disabilities.

Behaviour as measured by the studies in this review revealed a mixed picture of how people generally act towards people with an intellectual disability. The fact that this review incorporated studies of participants from a variety of ages may be one reason for this, as arguably prejudicial behaviour may be less prevalent among pre-school children who may not yet have been fully exposed to negative stereotypical ideas and beliefs regarding disability. For example, Yu *et al*. (2015) found that preschool children are more likely to play with children with or without an intellectual disability based on their prior estimation of them as 'someone they like to play with'. This estimation was not affected by the target child having an intellectual disability or not, but in general participants in this study were more likely to interact

positively with a peer without an intellectual disability. It may be that with this subject group the sensitivity of the design is lacking, as it is not possible to accurately say whether the observed interactions are due to participants' attitudes, or their actual experience of the children with an intellectual disability; for example, being less verbal, less social, or more disruptive in class. Certainly there was evidence to suggest that behaviour was somewhat different towards those with an intellectual disability, indicating that the means of eliciting attitudes in this study was possibly unreliable.

In one study, when children were told that their telephone partner had an intellectual disability, they were more likely to rate their behaviour as less socially desirable, and to 'talk down' to them, independent of whether the telephone partner was independently rated as behaving in a socially undesirable way or indeed whether the partner had a diagnosis of intellectual disability at all (Miller *et al*., 1991). The majority of studies showed some connection between attitudes and behaviour, apart from Manetti *et al*. (2001), the highest rated study in the quality review, who found that despite pupils expressing positive attitudes towards peers with intellectual disabilities, children with an intellectual disability in the classes were reportedly socially isolated, indicating that the attitudes not only failed to predict behaviour, but were not in line with pupils' actual behaviour.

A study by Gillmore and Farina (1989), with boys of a similar age to Manetti *et al*.'s (2001) study, found a close relationship between the expressed attitudes of the students and their observed behaviour. Students were rated as significantly less friendly to children described as 'mentally retarded' as compared with those described as 'normal', and when interviewed after the interaction they reported that they did not like the former as much as the 'normal' children. It is possible that this

result was at least partly due to the order of the procedure, as students interacted with the target child prior to being asked for their opinions. The negative attitudes encountered could have been primed following the negative interactions they had with said children, and therefore any degree of social desirability would be lessened. Attitudes and behaviour were found to be largely unrelated in Bak and Siperstein's (1987) study. Their behavioural measure, whether a child with an intellectual disability was chosen as a teammate for games, was not affected by children's attitudes but related to the supposed performance of the child with an intellectual disability in a prior game. A further finding by Miller *et al*. (1991) showed coherency between the behaviour of children on the phone when they believed they were speaking to a child with an intellectual disability, and their reported attitudes. Participants rated children with an intellectual disability higher on the index of stigmatising social behaviours, which was comprised of yes/no answers to statements such as 'I would feel sorry for them' and 'they will be someone I would want to be like', indicating more negative responses due to the child being described as having an intellectual disability. This was coherent with the participants being judged as 'talking down' to the children they thought had an intellectual disability, regardless of the latter children's interaction.

Of the three studies that focused on adult samples, Dailey *et al*. (1974) observed care home staff behaviour towards young people with an intellectual disability and found that more positive behaviours were observed when staff were working with a young person they held positive attitudes towards. This study seems to suggest that people do act in accordance with their attitudes, however, like many of the studies in this review, attitudes were measured in a relatively crude and unstandardised way. Indeed, Williams (1987) acknowledges that attitudes may not

have emerged as a predictor of behaviour in the study because the attitude measure was too unspecific. The second highest rated study from the quality review, Zsambok *et al*. (1999) concluded that their petition responses were not accurately predicted by the attitude measure, despite there being a moderately strong correlation of 0.4 between the two.

Limitations of the reviewed articles

As mentioned, many of the articles in this review relied on non-standardised measures of attitudes, which means a degree of caution must be employed when interpreting their findings. As the concepts of attitudes and behaviour are undoubtedly linked in some way (Ajzen, 1991; Glasman & Albarracin, 2006), it is likely there is some overlap between the two. However, as with unstandardised measures of attitudes, different concepts may be inadvertently measured though interpreted by the experimenters as attitudes. Similarly, the majority of studies measured behaviour through direct observation, which is likely to be noticed by participants, thus introducing a confounding variable. It is not possible to say with any degree of certainty that the studies using this method are reporting an accurate representation of actual behaviour towards people with an intellectual disability. It is interesting to note however, that only one article using this method reported particularly positive interactions and observed behaviour (Dailey *et al*., 1974). The other studies (Gillmore & Farina, 1989, Miller *et al*., 1991, Yu *et al*., 2015) reported somewhat negative behaviour towards people with an intellectual disability. This raises real concerns how people behave towards individuals with intellectual disabilities when not observed. It stands to reason that when someone is aware that they are being observed yet still behaves in an excluding way, this bodes badly for unobserved, real life interactions. It certainly would lend support to reports by people

with intellectual disabilities of others' not infrequent negative behaviour towards them, and occasional outright hostility.

Two studies did not include a control condition in their investigation of attitudes and behaviour, in the form of volunteering towards people with an intellectual disability (Fortini, 1987; Williams, 1987). Had these studies included a condition where behaviour to volunteer with other groups could be compared to their target behaviour of volunteering with people with an intellectual disability, more conclusions could have been drawn concerning the participants' behaviour towards this group. Similarly, Bak and Siperstein (1987) did not compare the proportion of children with an intellectual disability that were chosen as teammates with the proportion of typically developing children chosen. Thus, despite results showing that previous performance affects the behaviour of those making choices, there is no indication of whether this effect was moderated by the child's intellectual disability status. They also did not provide information about the attributions the children made regarding their teammate without an intellectual disability, reporting only that when teammates with an intellectual disability were the best player this was attributed to ability for about half of the time. Without a direct comparison, it is not possible to conclude whether this indicates positive attitudes towards teammates with intellectual disabilities or not. Other studies such as Dailey *et al*. (1974), Fortini (1987), and Williams (1987) also failed to analyse self-reported attitudes in a way that would allow one to determine whether they were generally positive or negative, although in two of the studies attitudes were reported as correlating with observed positive behaviour (Dailey *et al*, 1974; Fortini, 1987). Another point of debate about some of the studies is that they used deception as a means to examining the relationship between attitudes and behaviour (Bak & Siperstein, 1987; Gillmore &

Farina, 1989; Miller *et al*., 1991; Zsambok *et al*., 1999). On one hand, the designs of these studies made it possible to generate the necessary conditions to examine the relationship between attitudes and behaviour towards people with intellectual disabilities, and the deception used did not put the participants at risk of harm. However, it could be argued that using deception does risk alienating the population from research and potentially the field of psychology, in the sense that particularly when working with young people, the experience of psychology that they are likely to have is one of deception and lies. This could have implications for the children having future interactions with psychologists, and the question could be posed whether research involving deception might breed a distrust of psychologists in general. Deception is currently used in research as long as the participants are adequately debriefed, and it could be argued that the debrief needs to extend to addressing ethical issues such as trusting researchers or psychologists in future.

Discussion

This review aims to investigate the link between attitudes and behaviour towards people with an intellectual disability, and attempts to illuminate the complex interaction between what people say they will do, and what they actually do. The first thing to note is that despite the large body of research into attitudes towards people with intellectual disabilities, very little effort has been made to understand the relationship between attitudes and behaviour, the variable most likely to affect the everyday experience of children and adults with intellectual disabilities.

A review of respective attitudes among adults in the general population for the period 1990 to 2011 by Scior (2011) identified 75 studies. Although no recent systematic review of children's attitudes towards peers with intellectual disabilities is available, this area of research appears to be at least as vibrant as research into

adults' attitudes. That only nine peer-reviewed studies assessed the relationship between attitudes and behaviour indicates a major gap in the literature. What is more, behaviour is the variable that has the largest impact on the wellbeing of people with intellectual disabilities, in the sense that it is behaviour such as being stared at in public, discriminated against in education, employment and other spheres, and verbally or physical abused that poses the greatest barriers to full social inclusion and equal access to activities. It may be the case that only a measurement of behaviour can ultimately reveal whether societal responses to this group are changing over time.

The nine studies reviewed here produced mixed results. It is clear that there is a direct relationship between attitudes and behaviour, and that at times this relationship is consistent and coherent, as some studies show that participants act in accordance with their attitudes. However, two studies show that this relationship holds if attitudes and behaviour are both negative (Gillmore & Farina, 1989; Miller *et al*., 1991), and only one if attitudes and behaviour are both positive (Dailey *et al*., 1974). Evidence for a coherent relationship between attitudes and behaviour in both directions is provided by Zsambok *et al*. (1999), who found moderate correspondence in reported negative attitudes and refusal to sign a petition in favour of community integration, and positive attitudes and refusal to sign a petition opposing integration. However, the authors considered that the relationship was not strong enough to conclude that attitudes as measured in their study predicted behaviour. Two studies provide evidence to suggest that the relationship between attitudes and behaviour is more complex, as they found that generally positive self-reported attitudes stood in contrast to observed behaviour which was more negative and excluding of those with an intellectual disability (Manetti *et al*., 2001; Yu *et al*.,

2015). These studies are the most recent in the review, and both score highly on the quality tool, suggesting that the findings may hold more weight when considering the limited evidence in this area.

Limitations of the review

A main limitation of this review was the small number of studies found that met criteria for inclusion. This made the process of investigating the findings for trends more difficult, in much the same way as a study with a low number of participants will struggle to find statistical significance. The review question was possibly too specific when focussed on attitudes and behaviour towards intellectual disability in particular, and it may have been the case that investigating these domains towards two or three marginalised groups may have provided more insight into the relationship between what people say they will do and what they actually do. However, the fact that many studies have investigated attitudes to intellectual disability, without examining their relationship with observable behaviour, is indicative of a significant and important gap in the knowledge base and limits our understanding of the real world experience of this marginalised group. This review also includes studies that score relatively low on the QualSyst quality rating tool, suggesting that there may have been flaws in the designs that cast the reliability of their findings into question. The QualSyst has been found to have good inter-rater reliability (Kmet *et al.*, 2004) and has been used in previous work in the intellectual disability field (Wilson & Scior, 2014).

Conclusions and recommendations

It is clear that the relationship between what people say about individuals with intellectual disabilities and what they actually do in interactions with them is difficult to evaluate. The main conclusion to be drawn is that more needs to be done

to evaluate this interaction in relation to children and adults with an intellectual disability. Such work is needed to advance our understanding of the multiple social challenges and difficulties they face which are only partially documented by studies concerned with attitudes alone, which tend to present a rather positive picture. It seems plausible, based on findings from some of the studies in this review, that positive attitudes often do not cohere with observed behaviour. With a better understanding of both attitudes and behaviour towards this group, a stronger case can be made for interventions that challenge prejudice and discrimination directed at this population. For an effective intervention to be created and accepted by the majority, we must be permitted to have an open discussion about issues of discrimination in society and not be curtailed by our desire to give socially desirable responses or our ignorance of the issue in question.

References

* denotes references of studies included in the review.

Abbott, S., & McConkey, R. (2006). The barriers to social inclusion as perceived by people with intellectual disabilities. *Journal of Intellectual Disabilities, 10*, 275-287.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior And Human Decision Processes, 50, 179-211.*

*Bak, J. J., & Siperstein, G. N. (1987). Effects of mentally retarded children's behavioral competence on nonretarded peers' behaviors and attitudes: Toward establishing ecological validity in attitude research. *American Journal of Mental Deficiency, 92*, 31-39.

Beadle-Brown, J., Mansell, J., & Kozma, A. (2007). Deinstitutionalization in intellectual disabilities. *Current Opinion in Psychiatry, 20,* 437-442.

ComRes (2011). Scope discrimination survey. CommunicateResearch Ltd. Retrieved 01/02/16 from http://www.comres.co.uk/polls/scope-discrimination-survey-3/

Cummins, R. A., & Lau, A. L. D. (2003). Community integration or community exposure? A review and discussion in relation to people with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities, 16*, 145-157.

*Dailey, W. F., Allen, G. J., Chinsky, J. M., & Veit, S. W. (1974). Attendant behavior and attitudes toward institutionalized retarded children. *American Journal of Mental Deficiency, 78,* 586-591.

Department of Health (2001). *Valuing People: A new strategy for learning disability for the 21st century*. Retrieved 21/08/14 from http://www.archive.officialdocuments.co.uk/

Department of Health (2009). *Valuing People Now: From progress to transformation.*
Retrieved 21/08/14 from
http://www.dh.gov.uk/en/Consultations/Liveconsultations/DH_081014

*Fortini, M. (1987). Attitudes and behaviour towards students with handicaps by their nonhandipped peers. *American Journal of Mental Deficiency, 92*, 78-84.

*Gillmore, J. L., & Farina, A. (1989). The social reception of mainstreamed children in the regular classroom. *Joumal of Mental Deficiency Research, 33*, 301-311.

Glasman, L. R., & Albarracin, D. (2006). Forming attitudes that predict future behavior: A meta-analysis of the attitude-behavior relation. *Psychological Bulletin, 132*, 778-822.

Gordon, P. A., Feldman, D., Tantillo, J. C., & Perrone, K. (2004). Attitudes

regarding interpersonal relationships with persons with mental illness and mental retardation. *Journal of Rehabilitation, 70*, 50-56.

Greenwald, A. G., Poehlman, T. A., Uhlmann, E. L., & Banaji, M. R. (2009). Understanding and using the Implicit Association Test III: Meta-analysis of predictive validity. *Journal of Personality and Social Psychology, 97,* 17–41.

Home Office, Office for National Statistics, and Ministry of Justice (2013). *An overview of hate crime in England and Wales*. Retrieved 21/08/14 from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/266358/hate-crime-2013.pdf

Kmet, L. M., Lee, R. C., & Cook, L. S. (2004). Standard quality assessment criteria for evaluating primary research papers from a variety of fields. *Edmonton: Alberta Heritage Foundation for Medical Research (AHFMR),* HTA Initiative #13.

MacFarlane, K., & Woolfson, L. M. (2013). Teacher attitudes and behavior toward the inclusion of children with social, emotional and behavioral difficulties in mainstream schools: An application of the theory of planned behaviour. *Teaching and Teacher Education, 29*, 46-52.

*Manetti, M., Schneider, B. H., & Siperstein, G. (2001). Social acceptance of

children with mental retardation: Testing the contact hypothesis with an

Italian sample. *International Journal of Behavioral Development, 25*, 279-
286.

Maio, G., & Haddock, G. (2010). *The psychology of attitudes and attitude change*.

London: Sage.

*Miller, C. T., Clarke, R. T., Malcarne, V. L., Lobato, D., Fitzgerald, M. D., &

Brand, P. A. (1991). Expectations and social interactions of children with and

without mental retardation. *Journal of Special Education, 24*, 454-472.

Ministry of Justice (2005). *Disability Discrimination Act*. Retrieved 21/08/14

from http://www.legislation.gov.uk/ukpga/2005/13/contents

Ministry of Justice (2010). *Equality Act*. Retrieved 21/08/14 from

http://www.legislation.gov.uk/ukpga/2010/15/contents

Rothlisberg, B. A., Hill, R., & Damato, R. C. (1994). Social acceptance by their

peers of children with mental-retardation. *Psychological Reports, 74*, 239-
242.

Scior, K. (2011). Public awareness, attitudes and beliefs regarding intellectual

disability: A systematic review. *Research in Developmental Disabilities, 32,*
2164-2182.

Shafer, M. S., Rice, M. L., Metzler, H. M., & Haring, M. (1989). A survey of

    nondisabled employees' attitudes toward supported employees with mental

    retardation. *Journal of the Association for Persons with Severe Handicaps,*

    14, 137-146.

Ünal, N., & Baran, G. (2011). Behaviors and attitudes of normally developing

    children toward their intellectually disabled siblings. *Psychological Reports,*

    108, 553-562.

*Williams, R. F. (1987). Receptivity to persons with mental retardation: a study of

    volunteer interest. *American Journal of Mental Deficiency, 92,* 299-303.

Wilson, M. C., & Scior, K. (2014). Attitudes towards individuals with

    disabilities as measured by the Implicit Association Test: A literature review.

    Research in Developmental Disabilities, 35, 294-321.

*Yu, S., Ostrosky, M. M., & Fowler, S. A. (2015). The relationship between

    preschoolers' attitudes and play behaviors toward classmates with disabilities.

    Topics in Early Childhood Special Education, 35, 40-51.

*Zsambok, J., Hammer, D., & Rojahn, J. (1999). Put your money where your mouth

    is: Direct and indirect measures of attitude toward community integration.

    American Journal on Mental Retardation, 104, 88-92.

PART 2: EMPIRICAL PAPER

The relationship between adolescents' attitudes and behaviour toward adults with an
intellectual disability: Do they do what they say?

Abstract

Background

Research suggests that adolescents' attitudes towards people with intellectual disabilities are neutral to positive (e.g. Moore & Nettelbeck, 2013). However many people with intellectual disabilities experience frequent harassment and abuse in their communities from some adolescents (Beadle-Brown *et al*., 2014). There is a need to examine the relationship between explicit attitudes, implicit attitudes, and actual behaviour towards people with intellectual disabilities in order to illuminate the apparent disparity between research findings and lived experiences of people with intellectual disabilities.

Method

In total, 397 secondary school students were recruited. Participants were led to believe that they would be voting on a proposed change to their school cafeteria staff. In one condition the new staff had intellectual disabilities, in the other they did not. Participants also completed some 'unrelated' attitude measures for a local university. Participants were debriefed about the true nature of the study and then watched a film about the experiences of abuse and harassment of people with intellectual disabilities.

Results

Participants were less in favour of new staff with intellectual disabilities joining the school. Participants' explicit attitudes were more negative in the experimental

condition and predicted voting behaviour. Implicit attitudes and participant characteristics did not predict voting behaviour.

Conclusion

Participants voted for inclusion in both conditions, however, there was greater reluctance to the proposed inclusion of people with intellectual disabilities compared to people without intellectual disabilities. Problems in the design of the experiment resulted in the relationship between attitudes and behaviour remaining unclear. The study should be replicated with a randomised order of tasks in the procedure and a computer-based implicit attitude measure.

Introduction

An intellectual disability is defined within the medical model as a developmental disability that has a limiting effect on intellectual and adaptive functioning initiating before adulthood (World Health Organisation, 1996). The deficit is placed within the individual in this definition, and over the past 35 years, legislation and policies (Disability Discrimination Act, 2005; Equality Act, 2010; Valuing People, 2001; Valuing People Now, 2009) have attempted to shift this understanding towards a more social and rights-based conception of disability, whereby the disability is understood as at least partly resulting from barriers in the person's environment and society (Emerson *et al*., 2012). This progression has seen the transition from institutionalised care to community and person-centred care. This has increased interaction between those with an intellectual disability and those without (Beadle-Brown, Mansell, & Kozma, 2007), but it has not illuminated the marginalisation and discrimination people with an ID face within communities.

A survey conducted by Mencap found that 88% of people with an ID surveyed had experienced bullying or harassment in the previous year (Mencap, 2000). A more recent survey by ComRes (2011) found that over half of the 500 people with intellectual disabilities surveyed experience harassment, hostility or violence from a stranger on a weekly or daily basis. Emerson *et al*., (2012) reported that between the years 2010 and 2012, there was a 33% increase in reported abuse of adults with an intellectual disability, as well as only 7.1% of adults with an intellectual disability being in employment. Thus, it seems that despite large scale changes, people with intellectual disabilities are still marginalised and discriminated against (Abbott & McConkey, 2006; Gordon, Feldman, Tantillo, & Perrone, 2004), and whilst their physical presence in communities has increased, their involvement and connectedness with their community has remained at levels consistent with that of a discriminated against group (Cummins & Lau, 2003).

There is evidence to suggest that a gap exists between the principles enshrined in policy, and the actual behavior of some of those who come into contact with people with intellectual disability, with recent figures suggesting around 62,000 disability-motivated hate crimes each year (Home Office, 2013). Crime rates seem to be falling in general, however there has been an increase in the number of reported disability-motivated hate crimes over the last few years (Emerson *et al*., 2012, Home Office, 2013). It is possible that this increase reflects better education on what constitutes disability hate-crime and how to report this, however each reported crime still relates to a possible case of harm against someone with a disability.

To gather more insight into the struggles faced by people with an intellectual disability living in the community, Beadle-Brown *et al*. (2014) studied their experiences of harassment and discrimination. Participants consistently reported that

although they experienced abuse from people of all ages, most of the time it was adolescents that were the perpetrators. Many participants reported that they avoided travelling or leaving the house around the times that young people finish school for fear of being targeted.

To understand social behaviour of many groups, researchers have often turned to measuring attitudes. They are used to predict behaviour without measuring actual behaviour (Ajzen, 1991), and so to understand the behaviour of adolescents towards people with intellectual disabilities, it may be helpful to consider research on attitudes.

Attitudes

Attitudes are defined as an evaluative judgment about an issue, person or object (Maio & Haddock, 2010). It follows that if someone holds a negative attitude towards a group, their behaviour will also be negative towards that group. Therefore, one could suggest that in studies investigating attitudes towards people with intellectual disabilities, a pattern of generally negative attitudes should be observed, in line with evidence that many people with intellectual disabilities experience abuse of some sort from those without an intellectual disability (Beadle-Brown *et al*., 2014; ComRes, 2011).

In general, it would seem that people report relatively positive views about those with intellectual disability and their inclusion in society (Scior, 2011). In a large study of adults by Morin, Rivard, Crocker, Boursier, and Caron (2013), attitudes toward people with an intellectual disability were positive, with more positive attitudes found among younger and more educated participants. These findings seem to sit at odds with the experiences of many people with intellectual disabilities. However, because there is evidence to suggest that most perpetrators of

harassment of those with intellectual disabilities are adolescents (Beadle-Brown *et al.*, 2014), studies investigating adolescents' attitudes may be more in line with the evidence showing a persistent problem with discrimination.

Adolescents' attitudes.

Similarly to studies on adults' attitudes toward intellectual disability, there is evidence to suggest that reported attitudes of adolescents are somewhat positive. A study of 170 young people aged between 10 and 16, Townsend and Hassell (2007) found them to respond favourably to the idea of peers with an intellectual disability being included in team sports. A study investigating the effectiveness of a programme to increase awareness of intellectual disability in adolescents found that attitudes were generally positive pre-intervention (Moore & Nettelbeck, 2013). There is also evidence to suggest that positive attitudes can be observed across different cultures, with Hastings, SjoÈstroÈm, and Stevenage (1998) reporting that English and Swedish adolescents' attitudes towards people with an intellectual disability were both positive. Adolescents have also been found to have generally positive attitudes to intellectual disability and these only slightly improve with an educational intervention (Rillotta & Nettelbeck, 2007).

Taken at face value, these findings indicate that there may be a difference between what adolescents say they do, and what they actually do. It is possible that the populations surveyed by the studies mentioned may not include the perpetrators of abuse against many people with intellectual disabilities, perhaps through them declining to take part. However, the disparity may come from the problem of using explicit attitude measures. Explicit measures are those that require a conscious deliberation and expression by the respondent, often in the form of questionnaires or surveys (Ajzen & Dasgupta, 2015). They have been shown to have problems with

validity, including the wording of questions influencing responses, the tendency of participants to respond in a socially desirable way, and the possibility that participants may not have an awareness of their attitudes (Maio and Haddock, 2010).

However, some studies have provided evidence that adolescents' attitudes are negative towards people with an intellectual disability (Brown, Ouellette-Kuntz, Lysaght, & Burge, 2011; Gilmore & Farina, 1989). Over 300 adolescents between the ages of 14 to 17 were asked to anonymously report whether they would interact with students with an intellectual disability or a physical disability in a variety of situations including standing next to them in line and inviting them to their home (Brown *et al*., 2011). Participants were less likely to agree to interact with the student with a disability as the tasks became more social, and there was a significantly lower desire for interaction with students with an intellectual disability, compared to those with a physical disability. It is likely that this study uncovered a truer reflection of how adolescents would actually behave when interacting with a person with an intellectual disability, and it could be argued that because the participants responded anonymously, this reduced the potential social desirability bias.

This may indicate that in order for a more honest response by participants in any study measuring attitudes, participants may need to feel that they can respond to questions without fear of being judged for their answers. The varied results from studies using explicit measures of attitudes suggest that validity and reliability issues may be at the heart of misleading findings.

Explicit measures of attitudes.

On further examination of studies using explicit measures of attitudes, there is evidence to suggest other measurement methods are required for accurate results. One study by Taubman-Ben-Ari, Eherenfreund-Hager and Findler (2011) found that

when directly measuring adolescents' desire for social contact with a (fake) new pupil joining their class, participants reported more desire for social contact with a student pictured in a wheelchair as opposed to one sitting in a chair, despite both pictures featuring the same child. Taken together with evidence that many people with physical and intellectual disabilities feel marginalised and disconnected from society (Ouellette-Kuntz, Burge, Brown, & Arsenault, 2010), and evidence that these groups report discrimination often (Home Office, 2013), it is possible that this study exposes the extent to which explicit measures of attitudes can be affected by social desirability, as the participants reported attitudes akin to positive discrimination, i.e. the fact the child was disabled made them more inclined to say they would be friends with them.

There is some evidence to suggest that explicit attitudes do not conform to reported behaviour. A study by Shafer, Rice, Metzler and Haring (1989) found that co-workers of people with an intellectual disability expressed generally positive attitudes towards them, but did not spend time with them at lunch breaks or socially after work. Similarly, in a study of primary school children, Manetti, Schneider and Siperstein (2001) found that although reported attitudes where positive towards children with intellectual disabilities, the latter were socially shunned.

There is some evidence from studies investigating attitudes towards intellectual disability that personal characteristics of participants can influence this construct (Scior, 2011). For example, gender and prior contact, but not age, have been found to have some consistent relationship with attitudes, with females and people with more prior contact having more positive explicit attitudes and less desire for social distance (Wilson & Scior, 2015). More prior contact in particular has been shown to have an effect on reducing stigma and prejudice (Binder *et al*., 2009;

Walker & Scior, 2014) so it would be possible that an influence of prior contact is seen in this study, particularly positive contact with someone the person feels close to (Binder *et al.*, 2009). The influence of gender is unclear, with some studies suggesting that females have more positive attitudes towards people with intellectual disabilities (e.g. Manetti *et al.*, 2001), however in Scior's (2011) review it is noted that gender differences in attitudes vary.

Implicit measures of attitudes.

It may be that implicit measures of attitudes could potentially avoid the problems associated with explicit measures (McCaughey, 2005). Implicit measures do not rely on self-report, but rather record the speed and accuracy of respondents' reactions to certain stimuli in order to reveal unconscious associations (Ajzen & Dasgupta, 2015). The authors argue that this bypasses the conscious control of the expression of attitudes, leading to a more spontaneous and accurate presentation (Greenwald, Uhlmann, Poehlman, & Banaji, 2009). This would allow for expression of unconscious attitudes, but conversely may tap conscious yet socially undesirable attitudes, something that is hard if not impossible to distinguish empirically.

Some studies have found compelling evidence to suggest that implicit attitudes are more strongly aligned with behaviour. One study investigated the decision making of voters in elections and found that the eventual vote of undecided voters one week prior to the vote was predicted by their implicit attitudes, but not by their explicit attitudes (Galdi, Arcuri, & Gawronski, 2008). The explicit attitudes of those who had decided one week prior to voting were found to predict their vote accurately (Galdi *et al.*, 2008). This suggests that explicit attitudes should not be disregarded completely when it comes to predicting behaviour, however in studies investigating more contentious or socially sensitive issues, implicit attitude measures

may provide a more accurate portrayal of those beliefs that can be corrupted before explicit expression. However, Friese, Smith, Plischke, Bluemke and Nosek (2012) found that implicit attitudes did not predict voting behaviour better than explicit attitudes, and argued that problems with defining the concept of attitudes could result in research inaccuracies. Wilson and Scior (2014) conducted a review of all studies using the Implicit Association Test to measure attitudes towards disability. They found that in the three studies that specifically measured attitudes toward people with an intellectual disability, participants displayed moderate to strong negative attitudes (Enea-Drapeau, Carlier, & Huguet, 2012; Hein, Grumm, & Fingerle, 2011; Proctor, 2012). Wilson and Scior (2015) also found evidence to suggest that implicit attitudes towards people with intellectual disabilities are generally more negative than explicit attitudes in the same sample. It would seem that these findings are more in line with reports of harassment against people with intellectual disabilities. However, all studies investigated the attitudes of adults as opposed to adolescents, and there is not an equivalent review of studies investigating the attitudes of adolescents to this population.

Attitude-behaviour link

The main measures for investigating behaviour indirectly involve surveys measuring social distance. These methods are preferred because they avoid the validity issues that arise when actual behaviour is measured, for example the Hawthorne effect; whereby behaviour is modified when participants know it is being observed (Maio & Haddock, 2010).

A study by Zsambok *et al*. (1999) investigated attitudes toward people with an intellectual disability by conducting mock petition for and against plans to open a local home for this group. The authors found that there was a moderate correlation

between self-reported attitudes and the number of signatures on the different petitions, indicating that the two measures were assessing related, yet distinct, constructs. The authors argued that the petition was the better source of information as it forced participants to act in a 'real world' situation, as opposed to providing a response that had nothing riding on it and therefore could potentially be more influenced by social desirability. Indeed, evidence suggests that voters in a hypothetical situation will not vote the same as in a real situation, often overestimating the positive (Blumenschein, Johannesson, Blomquist, Liljas, & O'Connor, 1998).

It seems that both explicit and implicit measures of attitudes are open to issues with validity when predicting actual behaviour, therefore is important for studies to attempt to measure actual behaviour as directly as possible, to ensure external validity.

Hypotheses

1. The voting behaviour of participants in the experimental condition will be less favourable towards inclusion of out-group members as compared with the voting behaviour of participants in the control condition.

2. The voting behaviour of participants in the experimental condition will be predicted by their attitudes, with implicit attitudes being a stronger predictor of behaviour than explicit attitudes.

3. Participant characteristics will have a mixed relationship to voting behaviour. Those with more prior contact will display more positive voting behaviour. However there will be no influence of gender or age on voting behaviour.

<center>**Method**</center>

Setting and Participants

A convenience sample of 397 adolescents aged 11-16 was recruited from three

secondary schools in London. Of these, two were in the Boroughs of Camden and

Islington, and one in the Royal Borough of Kingston. The sample consisted of 140

males and 257 females, with a median age of 13 years.

Measures

The Attitudes Toward Persons with an Intellectual Disability Questionnaire (ATPID)

(Rillotta & Nettelbeck, 2007) (see appendix B) consists of 31 questions that

investigate attitudes towards people with an intellectual disability. In a pilot with a

convenience sample of family members of the main author, it was found to be clear

and appropriate. This questionnaire has been found to have high internal consistency

(Cronbach's alpha 0.89) (Rillotta & Nettelbeck, 2007). Factor analysis revealed that

the measure assesses a uni-dimensional construct, therefore the complete score was

used in this study. Scores were removed from the analysis if participants responded

to less than 85% of the items. Scores can range from 31 to 124 and items are rated on

a 4-point Likert scale, with higher scores indicating more negative attitudes. This is

in contrast to the original paper in which the scores are reversed making lower scores

represent negative attitudes; it was decided to match scores with the voting task

(higher scores = less in favour of inclusion).

Paper-format Implicit Association Test (Lemm, Lane, Sattler, Khan, & Nosek, 2008).

(see appendix C) A shortened version of the Implicit Association Test (IAT) based

<center>52</center>

on the work of Lemm and colleagues that can be completed on paper was used that is. This was adapted from Lemm *et al*., (2008) to include words associated with intellectual disability instead of race. Two blocks were randomly presented to participants, one in which the most common words related to intellectual disability (Down Syndrome, impaired, dependent, needs help, handicapped, retarded, low IQ, slow learner, disabled, special needs) taken from Wilson and Scior (2015) were to be categorised alongside 'pleasant' (joy, happy, love, cuddle, good) words, and one in which they were to be categorised alongside 'unpleasant' (poison, bad, vomit, evil, hatred) words, both sets of words being taken from Lemm *et al*., (2008). The number of correct responses for each block was calculated using the equation $x \div y \times \sqrt{(x-y)}$ where x represents the larger score of the blocks and y the smaller score. In cases where the incongruent score is higher, the total is multiplied by -1 to retain directionality. The resulting score represented the participant's implicit attitude. The authors recommended that participants who score less than eight on individual blocks, and participants with a range of more than 40 between block scores, should be eliminated from the study, as such scores most likely result from error or distraction as opposed to being reflective of the participant's implicit attitudes. However, as the participants in their study were undergraduates, for the present study, more lenient criteria were applied as the measure was used with adolescents. Therefore, the minimum score was set at four, and the maximum range at 30 as criteria for elimination from the dataset.

Voting sheet. This consisted of one question asking participants to say whether they supported the idea strongly, supported the idea, did not support the idea, or did not support the idea at all, to add the cafeteria staff to the school. See Appendix D.

Distraction questionnaire. This consisted of questions about participants' journey to school and school activities and served as a distraction to limit the linking of the voting task to the attitude measures. See Appendix E.

Pictures of 'catering trainees'. A picture of a group of young adults with clear visual features associated with intellectual disabilities was found on Google image search by using the keywords "learning disability", Down Syndrome", "cooking", "chefs", and "food". This picture was then uploaded to Google image search to produce results of visually similar images and a match based on genders and ages was chosen of people without intellectual disabilities. See Appendix F.

Questions assessing contact and closeness were taken from Scior and Furnham (2011). Participants answered 'yes' or 'no' to whether they had had contact with someone with an intellectual disability in the past. They then rated closeness on a 5-point Likert scale, with a higher score corresponding to a closer relationship.

Procedure

Ethical approval was granted by the University College London Research Ethics Committee (see Appendix H). Thirty secondary schools were contacted by phone to retrieve an appropriate address to send an invitation letter (see Appendix G) via email. Schools were asked to reply to declare their interest, though initially none did. Follow-up emails were sent and personal contacts in schools were asked to ensure the emails were seen, and eventually three schools replied declaring an interest. The experimenter met with representatives from each of the schools to discuss logistics and explain the study in more detail. All three of the schools were happy to

participate and dates were set as to when this would happen.

The experimenter spent one day in each school, and the experiment was run with classes throughout the day. Each class was randomly allocated, by the experimenter, to either the experimental or control condition. In both the experimental and control conditions, participants received a short talk introducing the experimenter and purpose of their involvement. For the purpose of making the tasks that followed appear real instead of hypothetical, the experimenter explained that he was from a university and a "representative of the school governors". The participants were told that the school governors were in charge of changes at their school, but that before any changes were implemented, the governors would often come into the school to ask the opinion of students and teachers, especially if that change would directly affect the students. The participants were then informed of a proposed plan in which new trainee catering staff who were completing a course on 'Food Preparation and Distribution' at a local college would be joining their catering staff from next term. The participants were told that the trainees' college, head teacher of their school and school governors had agreed that this would be a good project to both help the trainees complete a practical part of their training in the school, and also forge stronger ties with the local community. At this point a picture was shown of the trainees and the experimenter informed the participants that the college was for people with intellectual disabilities. In the control condition the trainees did not have these features and participants were told the trainees were from a local college for people wanting to learn a new skill. In the experimental condition the participants were informed what was meant by intellectual disabilities in the following way:

"These trainees all have a learning disability, and this means that they take longer to learn new things. It's something that they have from childhood, often from birth, and it makes it harder to process information. It's not like dyslexia, which I'm sure some of you have heard of, because that affects quite a specific area of learning. A learning disability is something like Down Syndrome, and having this doesn't mean you can't do the same things as others, but just that it takes a bit longer to learn how to. This means that there may be some minor delays in food preparation at the beginning, but this should not last long as the trainees will be supported by current staff. Does that make sense?"

In the control condition, participants were told the following:

"These trainees are new to this line of work, and they are learning, so this could mean there will be some minor delays in food preparation at the beginning, but this should not last long as the trainees will be supported by current staff. Does that make sense?"

The experimenter stressed the importance of the participants being able to have their say on the proposed changes, and they were told that what they voted would determine whether the change happened or not. They were encouraged to be as honest as possible, as no one would see their vote or link it to them. The voting papers were then handed out, and participants were asked to fold them to maintain anonymity once they had voted. They were numbered in order to match up the various papers from each participant. The order of the tasks was not randomised as it was hypothesised that were the attitude measures to precede the vote, this could have

a significant influence on participants' voting behaviour, and the vote would lose the illusion of being a real decision with consequences.

The participants were then told that the school governors also wanted to use this opportunity to gather some information about pupils' route to school and lunchtime and afterschool activities. They were also told that they would be asked to complete some attitude measures because the university were interested in using this opportunity to collect data for their research department. Throughout, participants were asked to ensure they had the same number at the top of their papers as this would allow them to be anonymously organised. The participants were then asked to complete the questionnaire about their route to school and other activities, which served as a distraction task and a means of assessing whether having packed lunch as opposed to school dinners might affect participants' vote. They also reported their sex and age at this point.

The papers were collected up whilst the experimenter explained the next task; the paper IAT, which the participants were informed was a timed task. They were told they would have 30 seconds per block to categorise as many of the words in the list as accurately as they could, and the experimenter took each class through three examples. The participants were then randomly given one block of the paper IAT face down, before being asked to turn their paper over and begin. After the 30 seconds was up, the papers were collected in and then the process was repeated with the other block. In the control condition, the participants were given the same description of intellectual disability before the IAT that the experimental group were given before the voting part of the study. Following this, participants were asked to complete the ATPID and questions assessing prior contact and degree of closeness with someone with an intellectual disability.

The participants were then asked to watch a film that aimed to tackle common misconceptions about intellectual disability, to raise empathy of common experiences of bullying and rejection among people with intellectual disabilities, and to empower young people to stand up against such behavior should they witness it. After the film, the participants were debriefed: they were informed that the experimenter was not from the school governors, and that the proposed changes to the cafeteria staff would not take place. The participants were informed that this deception was used to increase the likelihood of an honest vote, and that all their responses were still anonymous. They were then asked whether they had any questions or comments, and the experimenter facilitated a discussion about any of the tasks and the video.

<div align="center">

Results

</div>

Exploration of data

The 'explore' function in SPSS was used to check whether the data violated assumptions of normality. All variables were found to be normally distributed and no skewness or kurtosis was present. Outliers were found in the ATPID and IAT scores, and these were removed from the data set by labeling them as 'missing values'. Any absent ATPID scores were also labeled as missing values, and missing items on the ATPID were ignored if they numbered less than 15% (5 items). If a participant left out more than 5 items, their score was disregarded and labeled as a missing value. The IAT inclusion criteria were applied which resulted in over 40% of the data being excluded from the analysis due to scoring less than four on one or both blocks, or for the range between the two block scores exceeding 30.

Table 5 shows descriptives for the three outcome variables. Vote scores ranged from 1 to 4, with higher scores meaning the participant was less agreeable to the proposed changes to staff. Overall, mean scores indicated that participants were generally 'in favour' of the proposed changes, but participants in the experimental condition were less so.

IAT scores ranged from -21.91 to 20.00, with negative values indicating a negative implicit bias towards people with intellectual disabilities and positive values indicating a positive implicit bias. Scores were spread relatively evenly throughout the sample, and there was very little difference between conditions in IAT mean scores (experimental = -0.56, control = -0.53). Correlational analysis indicated a relationship between IAT score and sex, and independent t-test revealed a significant difference in the IAT score of females (n = 139, M = -1.18, SD = 7.70) compared to males (n = 84, M = 1.18, SD = 5.26), $t(217.61)$ = 2.71, $p < .01$. This indicates that within this sample, females held more negative implicit attitudes towards intellectual disability than males.

ATPID scores ranged from 34 to 116, with higher scores indicating a more negative explicit attitude towards people with intellectual disabilities. The scores of the entire sample between conditions seem to suggest a higher mean score in the experimental condition. Following this, post-hoc analysis was conducted correcting for type-I error, and ATPID score was found to be negatively correlated with condition r = -0.18, $p < 0.01$. The independent samples t-test revealed that participants in the control condition (n = 140, M = 56.94, SD = 9.47) had more positive explicit attitudes towards intellectual disability than those in the experimental condition (n = 241, M = 61.04, SD = 11.61), $t(338.39)$ = 3.75, $p < 0.001$.

Table 5.

Means, (Standard Deviations) for Vote, IAT and ATPID scores by condition

	Experimental			Control		
	Vote	IAT	ATPID	Vote	IAT	ATPID
Entire sample	1.95 (0.80) n=252	-0.56 (6.11) n=145	61.04 (11.61) n=241	1.66 (0.62) n=145	-0.53 (7.05) n=76	56.94 (9.47) n=140
Gender						
Male	1.88 (0.87) n=102	1.36 (5.63) n=57	61.60 (12.64) n=95	1.58 (0.55) n=38	0.79 (4.45) n=27	59.16 (10.50) n=38
Female	1.99 (0.75) n=150	-1.80 (6.12) n=88	60.67 (10.92) n=146	1.69 (0.64) n=107	-1.25 (8.09) n=49	56.11 (8.97) n=102
Contact						
Previous contact	1.92 (0.80) n=190	-0.49 (6.01) n=117	59.66 (10.74) n=186	1.66 (0.59) n=116	-0.96 (7.57) n=62	56.64 (9.49) n=114
No contact	2.09 (0.80) n=58	-0.86 (6.62) n=28	65.42 (13.27) n=52	1.42 (0.51) n=19	1.15 (3.47) n=9	58.16 (9.14) n=19
Lunch						
Packed lunch	1.94 (0.78) n=98	-0.68 (6.19) n=67	60.18 (11.77) n=95	1.75 (0.63) n=51	1.10 (8.03) n=27	55.80 (9.86) n=48
School dinner	1.98 (0.79) n=126	-0.05 (6.12) n=72	60.85 (10.96) n=120	1.64 (0.61) n=88	-0.19 (6.59) n=48	57.51 (9.05) n=86
School						
School 1	1.88 (0.91) n=88	-0.97 (6.18) n=10	66.15 (13.19) n=82	1.18 (0.39) n=17	1.77 (6.67) n=3	62.00 (9.23) n=17
School 2	2.00 (0.69) n=81	-2.59 (6.06) n=59	59.90 (10.42) n=81	1.79 (0.64) n=85	-1.34 (9.26) n=36	56.43 (8.30) n=80
School 3	1.98 (0.78) n=83	1.07 (5.73) n=76	56.85 (8.81) n=78	1.61 (0.54) n=43	0.07 (4.05) n=37	55.88 (11.07) n=43
Age						
11 – 12 years	1.96 (0.87) n=135	0.88 (5.83) n=88	60.34 (11.22) n=126	1.61 (0.54) n=43	0.07 (4.05) n=37	55.88 (11.07) n=43
13 – 14 years	1.84 (0.73) n=51	-1.85 (6.98) n=22	60.77 (9.63) n=51	1.52 (0.54) n=56	-1.51 (8.82) n=20	58.00 (9.12) n=55
15 – 16 years	2.02 (0.69) n=66	-2.83 (5.46) n=40	62.63 (13.67) n=64	1.89 (0.71) n=46	-0.66 (9.51) n=19	56.62 (8.12) n=42

Is there a difference in voting behaviour?

Analyses revealed that the condition participants were in was correlated with their voting behaviour. An independent samples t-test revealed that the vote in the experimental condition was significantly higher than the vote in the control condition $t(395) = 3.73$, $p < 0.001$. As higher scores in this case indicate less support for the proposed change, it can be concluded that participants who believed people with intellectual disabilities would be joining the catering staff were less supportive of the plan than participants who believed the new catering staff would not have intellectual disabilities. Thus the first hypothesis was supported. Figure 2 displays the breakdown of the voting behaviour of participants in the two conditions. Although there were more participants randomised into the experimental condition, the graph shows that there is a visible difference in the voting behaviour of participants. More participants were in agreement with the proposed change in the experimental condition, thus the significantly higher total vote score in the experimental condition is likely due to a minority of participants who voted against inclusion; a much smaller sub-group with this voting behaviour was present in the control condition.
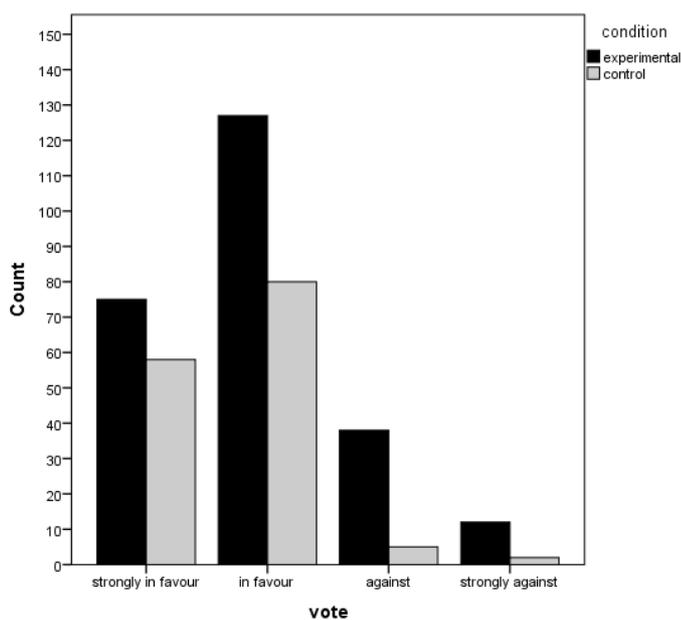

Figure 2: a graph of the voting scores for the experimental and control conditions

The relationship between explicit attitudes, implicit attitudes and voting behaviour

Correlational analysis was conducted to establish the inter-correlations of the predictor variables; ATPID score, IAT score, age, contact, and closeness. In the control condition, contact was significantly correlated with closeness ($r = -0.6$, $p < 0.001$), but no other predictor variables were significantly correlated. In the experimental condition, ATPID score was significantly correlated with contact ($r = 0.2$, $p < 0.01$), and closeness ($r = -0.2$, $p < 0.05$). Age was correlated with closeness ($r = -0.2$, $p < 0.01$), and also IAT score ($r = -0.3$, $p < 0.01$). The other variables were not related.

To investigate whether voting behaviour was predicted by attitudes, hierarchical regression analyses were conducted on the sample split by condition. Following correlational analysis, ATPID scores were found to be significantly related to vote, particularly within the experimental condition, and therefore it was decided this would be the primary variable in the analysis. Model 1 in the experimental condition, see Table 6, revealed that the predictor variable significantly predicted the voting behaviour of participants, B = 0.02, $t(139) = 3.79$, $p < 0.001$. This indicates that participants' explicit attitudes predicted their voting behaviour, with higher scores on the ATPID generally corresponding with a less supportive vote. In the control condition, ATPID score was also a significant predictor of voting behaviour, B = 0.01, $t(78) = 2.04$, $p < 0.05$. Although ATPID score was a predictor of vote in both conditions, in the experimental condition the model explained almost twice as much of the variance ($R^2 = 0.10$) compared to the control condition ($R^2 = 0.06$). This indicates that explicit attitudes were a stronger predictor of voting behaviour in the condition in which participants thought the proposed new catering

staff would have intellectual disabilities. Model 2 included the IAT score, and

inclusion of this variable lessened the predictive power of the model in both the

experimental condition and the control condition (B = 0.004, t(131) = 0.38, $p > 0.05$,

B = 0.009, t(67) = 1.08, $p > 0.05$). This indicated that the implicit attitudes of

participants did not predict their voting behaviour. Addition of IAT scores in Model

2 also resulted in ATPID no longer being a significant predictor of voting behaviour

in the control condition ($p > 0.05$) and the change in the variance predicted by the

model was not significant, $p > 0.05$. This resulted in the second hypothesis being

partially supported, as in the experimental condition explicit attitudes were a

predictor of voting behaviour in the experimental condition, as predicted, but implicit

attitudes were not a predictor of voting behaviour.

The role of participant characteristics

In Model 3 of the regression analysis, other variables were included in the

model to investigate how they might interact with participants' attitudes in predicting

voting behaviour, including sex, age, packed lunch v. school dinner, contact, and

closeness. As can be seen in Table 6, none of the added variables predicted voting

behaviour in either the experimental or the control condition. Despite the finding that

IAT scores were correlated with sex, the characteristics of participants did not seem

to interact with any of the outcome variables. However, change in R^2 was significant

($p < 0.05$) from Model 2 to Model 3, indicating that the included variables did add to

the model as a whole, though none were powerful enough predictors to reach

significance. Contact, and closeness which was included to illuminate contact

further, did not predict voting behaviour, thus the third hypothesis was not fully

supported.

Table 6.

Results of hierarchical regression analyses split by condition.

	Model	Experimental				Control			
		B	*SE B*	*t*	*p*	*B*	*SE B*	*t*	*p*
1	(Constant)			1.53	.12			2.77	.01
	ATPIDscore	.02*	.01	3.79	.000	.01*	.01	2.04	.045
2	(Constant)			1.47	.14			2.83	.01
	ATPIDscore	.02*	.01	3.80	.000	.01	.01	1.99	.051
	IATscore	.00	.01	.38	.70	.00	.01	1.08	.29
3	(Constant)			1.85	.07			1.51	.14
	ATPIDscore	.02*	.01	3.39	.001	.01*	.01	2.03	.047
	IATscore	.00	.01	.51	.61	.01	.01	1.27	.21
	sex	-.14	.16	-.87	.39	-.01	.17	-.08	.94
	age	.42	.24	1.82	.07	.35	.25	1.37	.18
	Plunch	-.48	.27	-1.78	.08	-.08	.25	-.31	.76
	contact	.37	.20	1.86	.07	-.21	.23	-.89	.38
	closeness	.02	.05	.46	.65	-.01	.05	-.25	.80

Notes: R^2 for Model 1 experimental = 0.10, for Model 1 control = 0.06

R^2 for Model 2 experimental = 0.10, for Model 2 control = 0.07

R^2 for Model 3 experimental = 0.18, for Model 3 control = 0.07

* denotes significant value

Discussion

This study aimed to investigate the relationship between explicit attitudes, implicit attitudes and actual behaviour of adolescents without intellectual disabilities towards people with intellectual disabilities. The results supported the first hypothesis, as participants who believed the new cafeteria staff would be from a local college for people with intellectual disabilities, as opposed to a local college for people without intellectual disabilities, were less in favour of the plan for these staff members to join their school. The results partially supported the second hypothesis, as explicit attitudes were a predictor of voting behaviour, however implicit attitudes were not. The third hypothesis was only partially supported after results showed that

prior contact and closeness did not predict voting behaviour, however participant characteristics including age and gender also did not predict voting behaviour.

Voting behaviour

The finding that participants were less in favour of people with intellectual disabilities joining their school catering staff provides evidence to support the reported experience of exclusion of many people with intellectual disability currently living in community settings (Cummins & Lau, 2003). The difference in voting behaviour between conditions was significant, but not polarised, in the sense that the experimental group did not vote against contact with people with intellectual disabilities. Participants were generally supportive of changes in both conditions, however they were significantly less in favour of allowing outsiders into the school if these had intellectual disabilities. This could suggest a wariness of difference, where the control group saw the proposed new staff as more similar to them and so experienced fewer feelings of wanting distance from them. However, evolutionary theories of stigma suggest that desire for distance from people with intellectual disabilities may be the result of deep-seated feelings of disgust (Scior & Werner (in press)). Thus, in the current study, it could be argued that because the new staff would be in contact with participants' food, this triggered feelings of disgust and desire for distance from a person possibly seen as being unhygienic or perhaps contagiously ill. Indeed, evolutionary theory from a study considering behaviour towards people with physical disabilities supports this idea that there exists a disease avoidance reaction (Park, Faulkner & Schaller, 2003). Although intellectual disability is far more of an invisible disability, in this current study, the visible facial features associated with Down Syndrome may have produced a similar reaction to loss of a limb for example.

The general level of positive support towards the proposed changes is an encouraging finding. It indicates that despite evidence to suggest people with intellectual disabilities face abuse and discrimination in society, this younger generation may harbour sufficiently positive feelings towards this group to support a plan to have more contact with them. Indeed, this finding suggests that should a scheme like the one in this study be posited in reality, that adolescents might be receptive to it, providing an important opportunity to increase contact with people with intellectual disabilities in a fairly controlled environment.

However, it is possible that the inclusive behaviour was due to something other than positive, welcoming feelings towards people with intellectual disabilities. For example, the participants were told that the experimenter would be collecting votes from everyone in the school, and that the majority choice would be enacted. It may be that this information resulted in participants' perceived individual influence being dissolved, thus causing them to feel apathetic about the choice they had to make. Also, the participants may have realised that the voting task was just hypothetical, and so they may have acted in a socially desirable manner. However, there is evidence to suggest the voting task was seen as a real life task, as in the debrief section of the experiment the overwhelming response was one of surprise. Interestingly, all schools were informed of the plan via information being disseminated by the head teacher before the experiment took place. However, on one occasion this message had not been clearly conveyed, and the class teacher expressed surprise during the debrief. This general reaction to the debrief section of the study also suggests that an apathetic response was unlikely, and the experimenter made a point of stressing that the vote would have real consequences on their school life. There is anecdotal evidence from running this study to suggest that many participants

in the experimental condition voted for inclusion out of feelings of compassion for the staff with intellectual disabilities, as many participants were heard to remark, and even write on their voting sheet, "why not give them a chance?" or words to that effect. This commentary could also be seen as resulting from feelings of pity however, as it was not seen in the control condition and suggests that despite evidence of inclusive behaviour towards people with intellectual disabilities in this study, this behaviour may still be based in seeing the different status of a person, rather than making a judgment on their ability to do a job.

Explicit attitudes and behaviour

The finding that explicit attitudes predict voting behaviour may indicate that within this study, explicit attitudes were an accurate predictor of behaviour, which is somewhat in contrast to the assumption that the disparity between research that shows adolescents' attitudes towards people with intellectual disabilities to be positive, and the actual behaviours of harm towards people with intellectual disabilities often seen in communities, is due to an invalid measurement of explicit attitudes, or that explicit attitudes do not explain actual behaviour. That being said, the link between attitudes and behaviour is well established (Ajzen, 1991; Ajzen & Dasgupta, 2015), if somewhat inconsistent, and so it is not an unexpected finding that explicit attitudes are related to behaviour. Explicit attitudes predicted behaviour most strongly in the experimental condition. This seems to suggest that participants in the experimental condition would be less in favour of changes due to a desire to have less contact with people with intellectual disabilities, which fits with the first hypothesis.

Participants in the experimental condition were also found to have more negative explicit attitudes in general than participants in the control condition, which

may relate to something other than explicit attitudes predicting behaviour. As the voting task always took place prior to the ATPID, it is possible that the difference in ATPID scores between conditions was caused by the difference in the voting task between conditions. It may be that the experience of voting to possibly exclude people with intellectual disabilities and having that behaviour legitimised by an authority figure, primed negative attitudes that were then activated when the participants completed the ATPID. This implies that the process of having considered contact with people with intellectual disabilities may have actually resulted in more negative attitudes, as the participants in the control condition who were considering contact with people without intellectual disabilities did not show this effect. Although imagined contact with discriminated against groups has been found to have a positive effect on attitudes and behavioural intentions (Miles & Crisp, 2014), there is evidence to suggest that imagining negative contact could in fact result in more negative attitudes (West, Holmes & Hewstone, 2011). It may be the case that participants imagined negative interactions with the prospective new staff with intellectual disabilities, and this resulted in a wish to avoid contact and more negative attitudes. The implication of this finding is that the predictive power of explicit attitudes on the voting behaviour is cast in doubt due to the order of the tasks, and the observed relationship between these two variables may be explained by the priming effect.

Implicit attitudes and behaviour

The second hypothesis was only partially supported on the basis that implicit attitudes did not predict voting behaviour, against the expectation that they would be a stronger predictor than explicit attitudes. This finding provides evidence to suggest that implicit attitudes are a less valid predictor of behaviour than explicit attitudes, in

contrast to the extensive empirical evidence (e.g. Greenwald *et al*., 2009; Greenwald, McGhee & Schwartz, 1998; Wilson & Scior, 2015). Due to the unexpected nature of this finding, other influences for the poor predictive power of implicit attitudes need to be considered. This study used a paper-based IAT, which, although used to good effect in previous studies (Lemm *et al*., 2008; Mori, Uchida, & Imada, 2008), has not been piloted with children to date. Thus, this study adapted the measure to be more appropriate for this population, including increasing the time limit for completing the task from 20 seconds to 30 seconds, and providing a detailed example of how to complete the task. Despite this, when it came to scoring the measure sticking to the criteria set by Lemm and colleagues, more than half of the data set would have to be removed from the analysis as they scored less than 8 per block, or had a large range in scores between blocks.

It was decided that more lenient criteria should be employed to account for the participants clearly finding the task more difficult than previous adult populations. It is likely that more lenient criteria, although allowing for a larger data set, resulted in many participants who responded inaccurately due to confusion or perhaps boredom being included in the analysis and therefore corrupting the data. Anecdotal evidence from the experimenter supports this view, as many participants reported feeling confused during the IAT task, despite having said they understood it following the example. The timed nature of the task and time pressures placed on the experiment as a whole meant that there was no opportunity to help individual participants who were struggling. What is more, the administration of the timing of the task in larger classes was inaccurate, as even with help from the class teacher, participants were competitive and would continue the task even after the experimenter had instructed them to stop. This resulted in a rush to collect papers

from participants, and therefore an inaccuracy in the amount of time different participants had to complete the task. It seems that rather than conclude that the failure to find a relationship between voting behaviour and implicit attitudes, and between explicit and implicit attitudes, provides evidence against the use of implicit attitude measures, it is more likely that failings in the design and administration of the paper IAT are responsible for these findings.

Participant characteristics, attitudes and behaviour

The results of the regression model show that none of the participant characteristics considered predict voting behaviour. Based on evidence (Scior, 2011; Walker & Scior, 2014) it was expected that there would be some effect of previous contact on participants' attitudes and therefore behaviour, however this was not the case. There is evidence to suggest that although contact can have a positive effect on stigma, its effect on behavioural intentions is less established (Walker & Scior, 2014). It may be that contact was not a significant predictor of voting behaviour in this study because the complex mediating and moderating factors between contact and actual behaviour towards people with intellectual disabilities are not fully understood. It may also be possible that how contact was understood contributed to the lack of statistical significance, as the overwhelming majority of participants (81%) reported that they had had contact with someone with an intellectual disability. However, within this group, there was a large range of contact experiences, from family members to complete strangers that they met once on the bus. Their rating of 'closeness' to the person was also recorded to try to illuminate contact further, but this variable did not predict voting behaviour either. There was a difference in IAT scores between males and females, however following the

discussed problems with the IAT measure, this finding cannot be accepted as reliable, and therefore must be disregarded.

Limitations

A significant limitation of this study was the design of the experiment. The attempt to measure the attitudes and behaviour of secondary school age students in a way that was both accessible and appealing to schools contributed to the large sample size, however it clearly affected the validity and reliability of the procedure. One constriction was the time that was allocated for one run of the study (45 minutes to fit in with school periods) whilst feasible, was not flexible enough to account for problems that arose such as class lateness, disruptive students, or further clarifying for students who found the tasks particularly difficult. The latter of these was particularly relevant for the paper IAT, which unlike the ATPID, distraction, and voting tasks, was novel to students. It is likely that this resulted in IAT scores holding little if any value to findings from this study. Furthermore, the order of the tasks was fixed, with the voting task followed by the distraction task, the IAT and finally the ATPID. It was hypothesised that having the attitude measures, particularly the ATPID, prior to the voting task would bias the responses because participants would likely guess that the voting task was not a real world task. This was deemed important when planning the experiment, as the main focus of this study was to attempt to do something innovative when it came to measuring behaviour towards this population, rather than add to the wealth of research on explicit attitudes. However, it seems that the voting task biased the response of participants on the ATPID in the experimental condition, which was not anticipated. It would be advisable to randomise the order of the tasks should this experiment be repeated to attempt to control for any biasing effects.

Another problem with the design of this study is that due to the heavy pressure on the experimenter to maintain consistency between classes and conditions, the potential for reliability issues from human error was high, and the replicability of the study is arguably difficult. Despite the experimenter having a script, this did not protect from the somewhat unpredictable environment and participants' curiosity, which meant that the delivery of the experiment was not entirely identical each time. However, it could be argued that rather than being a limitation that should have been controlled for, this problem is an unavoidable occupational hazard for working with this population in this environment, and having the same experimenter each time as opposed to having a team of experimenters arguably added to reliability. Though one alternative may be to record instructions, then rate the adherence to the study protocol through observation of the participants.

This study used pictures to show participants trainee cafeteria staff who might be joining their school. These pictures were sourced from the internet, and although every effort was made to ensure there were few differences other than the subjects having Down Syndrome or not, it was not possible to do this perfectly. Although the pictures were matched for age, ethnicity, and gender, there were other differences such as location, equipment, dress, and facial expressions that were difficult to match. It cannot be ruled out that part of the difference found between conditions was due to some uncontrolled for difference between the pictures, for example how friendly or competent the subjects looked. It could be argued though that a noticeable difference in perceived friendliness may in fact be related intellectual disability stigma, and also that the difference in the apparent competence of the groups in itself relates to the way people with intellectual disabilities can be patronised and infantilised in society.

The sample size was one of the positives in this study. However, the process of recruiting schools was a difficult one, and persistence was needed to recruit this number of participants. There was no response from most of the schools that were approached, and being able to conduct the study in the three schools that did participate was ultimately dependent on personal connections (a family member of the thesis supervisor worked in one of the participating schools; an old teacher of the author was now the head of another participating school; the placement supervisor of the author asked for a favour from a school she was working in), without which this study would not have been completed. This experience highlighted the difficulties in conducting research with participants other than psychology undergraduate students who are often required to participate as part of their degree. More needs to be done to emphasise the importance of research studies such as this one that allow for useful data to be collected that can help inform both school policy and policy more widely.

One interesting consideration is around the use of deception in this study. This is something that has been used by many researchers, however there is an argument that this strategy could do more harm than good for the general population's trust in psychological research. It may be possible to see the use of deception as a limitation in this study for ethical reasons, even though participants were thoroughly debriefed and at no risk of harm. Arguably, an ideal study of this kind would not have to rely on misleading participants, for example by organising that the proposed change to cafeteria staff does go ahead in reality, which was beyond the capability of this study.

Being able to complete this study required a lot of flexibility from the experimenter, in particular structuring it around the school day. Class sizes varied but there was a minimum of 20 students in each, which meant that it was not possible to

ensure that all participants were completing the tasks independently. This casts doubt on the validity of the findings, and is a particular cause for concern when considering the voting task, as it was hypothesised that this task would be the most effective means of measuring actual behaviour. It could be argued that anonymity being threatened during the task makes it less likely that it is an accurate representation of a participant's behaviour towards people with intellectual disabilities. Future studies would be better advised to set up some way of maintaining anonymity, for example using voting booths, however this would involve more planning and organising with the schools and, importantly, more time, which might make the study even less appealing to schools.

Conclusion

This study aimed to illuminate the relationship between adolescents' attitudes and behaviour towards people with intellectual disabilities. There was evidence to suggest that adolescents do behave in a less including way towards people with intellectual disabilities, although they did not actively seek to exclude this group. This indicates that although there is clearly still a problem with adolescents feeling less comfortable about contact with this group, in general adolescents will show positive behaviour towards them. One interesting finding was that there was no effect of contact on behaviour, which is in contrast to most other studies investigating the effect of contact on attitudes. Explicit attitudes were found to predict voting behaviour, with more negative attitudes predicting a less inclusive vote. However, there was some evidence to suggest that imagining negative contact was responsible for this relationship, as the voting task always preceded the explicit attitude measure. Implicit attitudes were not found to predict behaviour or be related to explicit attitudes, and it must be concluded that this is because the measure itself

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was vulnerable to too many problems when using it in this environment and with this population.

Although some evidence was found to support the use of a measure of behaviour like the present voting task, problems in its design and administration limit the reliability of the findings on the relationship between attitudes and behaviour. The contribution of this paper to the knowledge base is seated heavily in suggestions for improving the design of future experiments to investigate a complex relationship in a complex environment. Future studies should investigate this relationship in a similar way, but perhaps use a computer-based IAT and randomise the order of tasks.

<div align="center">**References**</div>

Abbott, S. & McConkey, R. (2006). The barriers to social inclusion as perceived by people with intellectual disabilities. *Journal of Intellectual Disabilities, 10*, 275-287.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior And Human Decision Processes, 50, 179-211.*

Ajzen, I., & Dasgupta, N. (2015). *Explicit and implicit beliefs, attitudes, and intentions: The role of conscious and unconscious processes in human behaviour*. In Haggard, P., & Eitam, B., *The Sense of Agency*. Published to Oxford Scholarship Online: September 2015.

Beadle-Brown, J., Mansell, J., & Kozma, A. (2007) Deinstitutionalization in intellectual disabilities. *Current Opinion in Psychiatry, 20,* 437-442.

Beadle-Brown, J., Richardson, L., Guest, C., Malovic, A., Bradshaw, J. & Himmerich, J. (2014). Living in fear: Better outcomes for people with learning disabilities and autism. Main research report. Canterbury: Tizard Centre, University of Kent.

Binder, J., Brown, R., Zagefka, H., Funke, F., Kessler, T., Mummendey, A. … Leyens, J. P. (2009). Does contact reduce prejudice or does prejudice reduce contact? A longitudinal test of the contact hypothesis among majority and

minority groups in three European countries. *Journal of Personality and Social Psychology, 96,* 843-856.

Blumenschein, K., Johannesson, M., Blomquist, G. C., Liljas, B., & O'Connor, R. S. (1998). Experimental results on expressed certainty and hypothetical bias in contingent valuation. *Southern Economic Journal, 65*, 169-177.

Brown, H. K., Ouellette-Kuntz, H., Lysaght, R., & Burge, P. (2011). Students' behavioural intentions towards peers with disability. *Journal of Applied Research in Intellectual Disabilities*, *24,* 322–332.

ComRes (2011). Scope discrimination survey. CommunicateResearch Ltd. Retrieved 01/02/16 from http://www.comres.co.uk/polls/scope-discrimination-survey-3/

Cummins, R. A. & Lau, A. L. D. (2003). Community integration or community exposure? A review and discussion in relation to people with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities, 16*, 145-157.

Department for Education (2012). *Schools, pupils and their characteristics: January 2012*. Retrieved 14/01/16 from https://www.gov.uk/government/statistics/schools-pupils-and-their-characteristics-january-2012

Department of Health (2001). *Valuing people: A new strategy for learning disability*

for the 21st century. Retrieved 11/12/14 from http://www.archive.official-documents.co.uk/

Department of Health (2009). *Valuing people now: From progress to transformation.* Retrieved 11/12/14 from http://www.dh.gov.uk/en/Consultations/Liveconsultations/DH_081014

Emerson, E., Hatton, C., Robertson, J., Baines, S., Christie, A., & Glover, G. (2013). People with learning disabilities in England 2012. Durham: Improving Health and Lives: Learning Disabilities Observatory.

Enea-Drapeau, C., Carlier, M., & Huguet, P. (2012). Tracing subtle stereotypes of children with Trisomy 21: from facial-feature-based to implicit stereotyping. *PLoS ONE, 7*, e34369.

Friese, M., Smith, C. T., Plischke, T., Bluemke, M., & Nosek, B. A. (2012). Do implicit attitudes predict actual voting behavior particularly for undecided voters? *PLoSONE, 7*, 1-14. doi:10.1371/journal.pone.0044130

Galdi, S., Arcuri, L., & Gawronski, B. (2008). Automatic mental associations predict future choices of undecided decision-makers. *Science, 321*, 1100-1102.

Gillmore, J. L., & Farina, A. (1989). The social reception of mainstreamed children in the regular classroom. *Joumal of Mental Deficiency Research, 33*, 301-311.

Gordon, P. A., Feldman, D., Tantillo, J. C., & Perrone, K. (2004). Attitudes

    regarding interpersonal relationships with persons with mental illness and

    mental retardation. *Journal of Rehabilitation, 70*, 50-56.

Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring

    individual differences in implicit cognition: The implicit association test.

    Journal of Personality and Social Psychology, 74, 1646-1480.

Greenwald, A. G., Uhlmann, E. L., Poehlman, A. T., & Banaji, R. M. (2009).

    Understanding and using the implicit association test: III. Meta-analysis of

    predictive validity. *Journal of Personality and Social Psychology,* 97, 17-41.

Hastings, R. P., SjoÈstroÈm, K. E., & Stevenage, S. V. (1998) Swedish and English

    adolescents' attitudes toward the community presence of people with

    disabilities. *Journal of Intellectual Disability Research*. *42*, 246-253.

Hein, S., Grumm, M., & Fingerle, M. (2011). Is contact with people with disabilities

    a guarantee for positive implicit and explicit attitudes? *European Journal of*

    Special Needs Education, 26, 509-522.

Home Office, Office for National Statistics, and Ministry of Justice (2013). *An*

    Overview of Hate Crime in England and Wales. Retrieved from

    https://www.gov.uk/government/uploads/system/uploads/attachment_data/fil

    e/266358/hate-crime-2013.pdf

Lemm, K. M., Lane, K. A., Sattler, D. N., Khan, S. R. & Nosek, B. A. (2008).

    Assessing implicit cognitions with a paper- format implicit association test.

    In *The Psychology of Modern Prejudice.* Eds. Morrison, M. A. & Morrison,

    T. G. (2008). Nova Science Publishers, Inc. Retrieved online 14/04/15.

Manetti, M., Schneider, B. H., & Siperstein, G. (2001). Social acceptance of

    children with mental retardation: Testing the contact hypothesis with an

    Italian sample. *International Journal of Behavioral Development*, *25*, 279-

    286.

Maio, G., & Haddock, G. (2010). *The psychology of attitudes and attitude change*.

    SAGE publications Ltd. London.

McCaughey, T. J. (2005). Prototypes as an indirect measure of attitudes toward

    disability groups. *Rehabilitation Counseling Bulletin. 48*, 89-99.

Mencap (2000) *Living in Fear*. Retrieved 19/08/14 from:

    http://www.mencap.org.uk/document.asp?id=12069

Miles, E. & Crisp, R. J. (2014). A meta-analytic test of the imagined contact

    hypothesis. *Group Processes and Intergroup Relations, 17,* 3-26.

Ministry of Justice (2005). *Disability Discrimination Act*. Retrieved 21/08/14

    from http://www.legislation.gov.uk/ukpga/2005/13/contents

Ministry of Justice (2010). *Equality Act*. Retrieved 21/08/14 from

    http://www.legislation.gov.uk/ukpga/2010/15/contents

Moore, D., & Nettelbeck, T. (2013). Effects of short-term disability awareness

    training on attitudes of adolescent schoolboys toward persons with a

    disability. *Journal of Intellectual & Developmental Disability*, *38*, 223-231.

Morin, D., Rivard, M., Crocker, A. G., Boursier, C. P. & Caron, J. (2013). Public

    attitudes towards intellectual disability: a multidimensional perspective.

    Journal of Intellectual Disability Research volume, 57, 279-292.

Ouellette-Kuntz, H., Burge, P., Brown, H. K. & Arsenault, E. (2010). Public attitudes

    towards individuals with intellectual disabilities as measured by the concept

    of social distance. *Journal of Intellectual Disability Research, 23,* 132-142.

Park, J. H., Faulkner, J., & Schaller, M. (2003). Evolved disease-avoidance processes

    and contemporary anti-social behavior: prejudicial attitudes and avoidance of

    people with physical disabilities. *Journal of Nonverbal Behavior, 27*, 65-87.

Proctor, S. (2012). Implicit bias, attributions, and emotions in decisions about parents

    with intellectual disabilities by child protection workers. Pennsylvania,

    United States of America: Pennsylvania State University. [Unpublished

    doctoral dissertation cited in Wilson & Scior, 2013].

Rillotta, F., & Nettelbeck, T. (2007). Effects of an awareness program on attitudes
of students without an intellectual disability towards persons with an
intellectual disability. *Journal of Intellectual & Developmental Disability*, *32*,
19-27.

Scior, K. (2011). Public awareness, attitudes and beliefs regarding intellectual
disability: A systematic review. *Research in Developmental Disabilities, 32,*
2164-2182.

Scior, K. & Furnham, A. (2011). Development and validation of the Intellectual
Disability Literacy Scale for assessment of knowledge, beliefs and attitudes
to intellectual disability. *Research in Developmental Disabilities, 32*, 1530-
1541.

Scior, K. & Werner, S. (in press). *Stigma and Intellectual Disability: Stepping out
from the Margins.* Basingstoke: Palgrave Macmillan.

Shafer, M. S., Rice, M. L., Metzler, H. M., & Haring, M. (1989). A survey of
nondisabled employees' attitudes toward supported employees with mental
retardation. *Journal of the Association for Persons with Severe Handicaps,
14*, 137-146.

Taubman-Ben-Ari, O., Eherenfreund-Hager, A. & Findler, L. (2011). Mortality

salience and positive affect influence adolescents' attitudes toward peers with physical disabilities: terror management and broaden and build theories. *Death Studies, 35*, 1-21.

Townsend, M., & Hassell, J. (2007). Mainstream students' attitudes to possible inclusion in unified sports with students who have an intellectual disability. *Journal of Applied Research in Intellectual Disabilities*, *20*, 265-273.

Walker, J., & Scior, K. (2013). Tackling stigma associated with intellectual disability among the general public: A study of two indirect contact interventions. *Research in Developmental Disabilities, 34,* 2200-2210.

West, K., Holmes, E., & Hewstone, M. (2011). Enhancing imagined contact to reduce prejudice against people with schizophrenia. *Group Processes and Intergroup Relations, 14*, 407-428.

Wilson, M. C., & Scior, K. (2014). Attitudes towards individuals with disabilities as measured by the Implicit Association Test: A literature review. *Research in Developmental Disabilities*, *35*, 294-321.

Wilson, M. C., & Scior, K. (2015). Implicit attitudes towards people with intellectual disabilities: Their relationship with explicit attitudes, social distance, emotions and contact. *PLoS ONE 10*, e0137902. doi:10.1371/journal.pone.0137902

World Health Organisation, (1996). *ICD-10 guide for mental retardation*. Division

    of Mental Health and Prevention of Substance Abuse, World Health

    Organization, Geneva. Retrieved 23/05/16 from

    http://www.who.int/mental_health/media/en/69.pdf

Zsambok, J., Hammer, D., & Rojahn, J. (1999). Put your money where your mouth

    is: direct and indirect measures of attitude toward community integration.

    American Journal on Mental Retardation, *104*, 88-92.

PART 3: CRITICAL APPRAISAL

Introduction

       This critical appraisal focuses on four areas: Firstly, the initial challenges that were faced in commencing this process, particularly in relation to recruitment for the major research project. Secondly, a critical assessment of the design of the study with reflections on how the problems encountered may have been influential in leaving some of the research questions unanswered. Thirdly, my personal reflections on the findings of the study and the positives that have come from it, and finally, points of consideration for future research.

Initial challenges

       A significant challenge in conducting this study was recruitment of participants. Initially all secondary schools in Camden and Islington were telephoned to ask for appropriate email contacts and to introduce the experimenter to hopefully increase the chances that the schools would be receptive to reading the email invitation to participate. School representatives (the head teacher and SENDCO) were then personally emailed and informed about the nature of the study. They were asked to reply by phone or email to express an interest or to ask for more information. However, despite this and two follow-up emails explaining that we understood how busy the schools could be but reinforcing the advantages of participating in the study, only one school replied. A time consuming back and forth ensued with this school, and despite the SENDCO being very enthusiastic about the study, they eventually stopped replying to emails. Recruitment was proving so difficult that alternative studies were considered in order to ensure I would complete

my thesis on time. Finally, three schools engaged with the study after personal connections of mine and my supervisor's were called on, and initial meetings were arranged to discuss the purpose of the study and its logistics. Following these meetings, all three schools agreed to participate, and there were enough participants for statistical power.

This process illustrated the difficulty in recruiting in environments where resources are stretched and time is short, as the response from the three schools that did engage with the study, and the fourth that disengaged eventually, was that they recognised the importance of investigating attitudes and behaviours towards people with intellectual disabilities. The study was also seen as very relevant to the PSHE curriculum and achieving governmental targets of increasing awareness and reducing the prevalence of stigma and discrimination towards minority groups. Despite this, it was necessary to convince schools that this study could be conducted during a lesson period, and that the experimenter was up to the task. This indicates that schools that did not reply may also have found this opportunity enticing but may have felt that they could not devote the time to pursuing it, or that the logistics would not work, or possibly some schools may have barely read the email in view of other demands.

Design of the study

Conducting the experiment within pressured school environments was challenging, and provided some possible insight into why so few schools replied to the invitation to participate. All three schools that did take part were well organised, but extremely pushed for time, and the recruitment succeeded in large part due to the extra efforts of key supportive teachers and the experimenter. This time pressure also influenced the experimenter, as he was always conscious of how long was left to complete the study in order to ensure the students were not late for their next lesson.

This resulted in less time to deal with problems that arose, for example students causing disruptions or students needing help with a task. The format of the study fitting in with a normal school lesson helped to familiarise and engage the students in the tasks they had to do, however it also left the potential for normal classroom intrusions, and it put the experimenter in the role of 'teacher'. This meant that the experimenter had to manage class disruptions and keep the attention of the class as the teacher would normally do. This additional responsibility made the running of the study even more difficult, as students quickly realised that the experimenter had no real sanctioning power, so he had to keep the students engaged and onside by giving them positive attention, which alongside his attempts to keep the study in the correct order and running to time was admittedly exhausting. A further problem with the classroom environment was that participants were sat closely together, meaning that there was a possible external threat to perceived anonymity of their responses. In much the same way that explicit attitude measures are affected by social desirability, having a peer nearby, who could quite easily see one's vote would likely decrease the feeling that responses were anonymous, and increase the temptation to behave in a socially desirable way.

This study was designed to be accessible to as many schools as possible. Therefore the decision was made to use paper resources for all tasks as it was not known whether all schools would have access to the use of computers on the scale that was necessary for this study. This created difficulties though in that time was taken up handing out and collecting the various sheets, ensuring that participants had matching participant numbers for each task, and on a practical level, at times transporting and managing over 900 pieces of paper across London. On this point, this study was made up of 14 different classes where the experimenter would attempt

to stick as closely to the scripted delivery of the study as possible. The potential for minor differences in delivery was high though due to students asking questions or being disruptive (which happened on two occasions). Thus even within this study minor variations in delivery of the study or response to the experimenter may have had an influence on the results.

One major problem with the design of the study was only discovered after it was completed. It was hypothesised that the order of the tasks should be such that the attitude measures did not precede the voting task, as it was thought that this would likely reduce the effectiveness of the voting task as a measure of actual behaviour, with participants recognising that the vote was likely to be hypothetical. However, when it was found that the voting task had seemingly influenced the explicit attitude measure, the problem with not randomising the order of tasks acquired greater significance. This finding provided some interesting reflections on the possible mechanisms whereby participants imagining contact with people with intellectual disabilities may result in more negative attitudes being expressed, however it also meant that the study's aims could not be accurately achieved. This was also a frustrating realisation, and I reflected on my motivations for conducting this study and my theoretical leaning. I feel I was intent on prioritising the voting task as a measure of behaviour to such an extent that standard experimental design considerations were overlooked. On the one hand, this prioritising is understandable as it is the measure of behaviour that sets this study apart from the many others that have investigated attitudes towards intellectual disabilities. However, on the other hand, it could be argued that my bias against explicit attitude measures was somewhat naïve considering the decades of research conducted using them. It is warranted that research measuring actual behaviour is conducted, because there is

evidence that the experiences of abuse that individuals with intellectual disabilities face within their communities does not match up with some findings based on explicit attitude measures. However, future research must ensure that all measures are considered and used equally, therefore randomisation of the procedure is necessary.

Another reason that some of the questions posed by this study could not be answered was due to the implicit attitude measure. The paper-based IAT had never been piloted with children, and thus the adaptions to it were somewhat experimental. In general, participants were observed to struggle with the measure, despite the experimenter demonstrating the task. Some participants required support during the task, either because they had forgotten the instructions or because some words confused them, and due to the timed nature of the task this support could not be provided appropriately without disrupting the task for other participants. Some participants also did not take in the instruction that their second attempt at the task would be different to their first, and that they should pay attention to the categories at the top of their sheets. This resulted in a considerable number of participants categorising words as they had done on their first attempt, and not realising until halfway into the task that the categories had now swapped (in the sense that 'intellectual disability' was now grouped with 'pleasant' as opposed to 'unpleasant' words, or vice versa). Furthermore, the timed nature of the task resulted in an air of competitiveness within classes, and many participants did not stop after 30 seconds as instructed. This resulted in some participants using more than 30 seconds to complete the task, as some would only stop once the sheet was taken from them. Upon reflection, more time was needed to explain the task to participants, and to allow for clarification. It also would have been an advantage to have a computer-

based IAT, as the timing of the task would have been easier to regulate, and the reliability of the measure would have been stronger as participants would not be able to skip words.

Another area of this study that could have been improved upon was the use of pictures in the different conditions. Participants were shown one of two pictures that were found online after a detailed search of Google Images. In one condition the picture showed young people with intellectual disabilities, and in the other young people without intellectual disabilities. There were some undesirable differences between the two pictures that may have had an effect on the results of this study. Firstly, the individuals in the non-intellectual disability picture were all looking at the camera and smiling. They were also positioned closer to the observer and closer in proximity to each other. In the other picture, the individuals were not directly looking at the camera, were further away from the observer and each other, and were not clearly seen to be smiling. It could be argued that these differences resulted in the participants perceiving the picture of people without intellectual disabilities as more appealing in terms of the individuals seeming more at ease with each other, or perhaps the individuals seeming friendlier.

Furthermore, it proved impossible to find a picture of a multi-ethnic group of people with intellectual disabilities engaged in a catering task, therefore all the individuals in the pictures were White. Although demographic information relating to participant ethnicity was not collected, as this study was carried out in three London schools the ethnic make-up of participants frequently varied from the individuals in the pictures. This may have resulted in the participants from minority ethnic backgrounds feeling less able to identify with the people in the pictures. However, as this was controlled for between conditions, it is unlikely that the

difference in the voting task found between the experimental and the control conditions was related to this. Future research should produce pictures fully tailored to the demands of the experiment rather than trying to use existing pictures that leave room for inconsistencies.

Reflections on the study's findings

When reflecting on this study, it is hard not to feel disheartened by the results. It could be argued that the problems with the study's design mean that the attempted investigation into the relationship between attitudes and actual behaviour was destined to fail. In particular, the decision not to randomise the order of the tasks, and the use of the paper based IAT in particular, proved crucial errors. It seems that the contribution of this study to the knowledge base is above all contained within the lessons learnt for a future attempt at investigating this relationship.

Having said this, this study has arguably shown that it is possible to measure a construct that is close to actual behaviour in a non-experimental setting. The use of a seemingly successful deception in this study was an achievement, and opens the door for future studies to employ a similar technique in schools and other settings. When it is considered that schools rightly tend to closely monitor issues of consent and what ideas students are being exposed to, to be given permission and succeed in conducting a study that used deception is an achievement and testament to the persistence and conviction that I and my supervisor put into this study.

Future research

There is reason to believe that a study such as this one should be conducted again in future with significant adaptations to the design. One lesson that has been learnt for future attempts is that if possible, the tasks should be completed on computers or tablets rather than on paper. This will allow for a simplified and more

controlled design, as responses will be easier to read and manage practically. In particular this will be useful for administering the IAT, as participants will not be able to exceed the time limit, and will arguably be more used to the format of completing a task like this on a computer. Another adaptation that would be advisable would be to increase the anonymity participants perceive, particularly during the voting task. It is possible that using computers could positively influence this, but another possibility would be to create a quasi 'polling station' where participants are able to cast their vote individually. It will also be important in future studies of this nature to randomise the order of the tasks. Again, using a computer would make this much easier, as individual participants could have their tasks randomised, rather than whole classes having to have the same order of tasks. The difficulty with this design would be that the experimenter's introduction, so important for the setting up of the conditions, would be more challenging if individual participants are completing the tasks in different orders. One possibility is that the whole experiment becomes computer-based, in the sense that the introduction to the class lesson and the tasks would be recorded and then played individually as and when is appropriate. However, a risk is that this design would result in the experiment being perceived as a hypothetical task rather than a real life event, as the presence of the experimenter as a trusted adult arguably meant that participants were more likely to believe what he was saying.

APPENDICES

Appendix A: QualSyst rating tool

	Criteria	YES (2)	PARTIAL (1)	NO (0)	N/A
1	Question / objective sufficiently described?				
2	Study design evident and appropriate?				
3	Method of subject/comparison group selection or source of information/input variables described and appropriate?				
4	Subject (and comparison group, if applicable) characteristics sufficiently described?				
5	If interventional and random allocation was possible, was it described?				
6	If interventional and blinding of investigators was possible, was it reported?				
7	If interventional and blinding of subjects was possible, was it reported?				
8	Outcome and (if applicable) exposure measure(s) well defined and robust to measurement / misclassification bias? means of assessment reported?				
9	Sample size appropriate?				
10	Analytic methods described/justified and appropriate?				
11	Some estimate of variance is reported for the main results?				
12	Controlled for confounding?				
13	Results reported in sufficient detail?				
14	Conclusions supported by the results?				

Appendix B: ATPID

Please put the number showing how much you agree in the box next to each sentence:

1 = I strongly agree
2 = I agree
3 = I disagree
4 = I strongly disagree

Statement	
1. Students with a learning disability should be included in regular classes.	
2. Having students with a learning disability in a regular class will mean that regular students may be disadvantaged.	
3. Students with a learning disability should always be in separate schools with other students with disabilities.	
4. Students with a learning disability may have something to contribute to a regular classroom.	
5. Regular students should be able to work in a class that has a student with a learning disability in it.	
6. Students with a learning disability in a regular school should always have an adult by their side.	
7. Regular students should help students with a learning disability cope within a regular school.	
8. Regular students will benefit socially from having students with a learning disability in their class.	
9. Students with a learning disability should be given the same punishment as regular students if displaying disruptive behaviour in class.	
10. Students with a learning disability will benefit academically from inclusion.	
11. Students with a learning disability should have their own break and lunch times.	
12. Inclusion causes problems for regular class teachers, because students with a learning disability take up too much of the teacher's time.	
13. Students with a learning disability will benefit socially from inclusion.	
14. Too many problems will occur when students with a learning disability are included in regular classes.	
15. Students with a learning disability should only be included in regular classes if they are at the same academic level as the rest of the class.	
16. Students with a learning disability who talk funny and/or look funny will interfere with regular students' learning.	
17. Students with a learning disability cause trouble and are disruptive in regular classes.	
18. I feel uncomfortable when I am near someone who has a learning disability.	
19. People with a learning disability may learn things from observing people who do not have a disability.	
20. When I am in public and I see someone with a learning disability, I don't mind and just treat them with respect.	

1 = I strongly agree
2 = I agree
3 = I disagree
4 = I strongly disagree

21. I would feel comfortable engaging in conversation with a person with a learning disability if I was confronted by him/her.	
22. If a person with a learning disability sat next to me on the bus I might move away if a free seat was available elsewhere.	
23. People without a learning disability cannot learn anything from people with a learning disability.	
24. People with a noticeable learning disability should not actively participate in society because they look different.	
25. When in public places, people with a learning disability should always be accompanied by a carer.	
26. By including people with a learning disability in the community, people without a learning disability can learn to be more accepting of diverse people.	
27. You can get sick from being with a person with a learning disability.	
28. People with a learning disability can be loving and sensitive.	
29. If it is known that a baby is going to be born with a learning disability, an abortion should take place.	
30. I keep interactions with people with a learning disability brief because I notice their disability more than I notice the person they are.	
31. I have so many problems of my own and I do not have time for people with a learning disability.	

Have you ever had contact with someone with a learning disability? YES or NO

Who is/was this person to you? (friend, school mate, family member, stranger, etc)

How close did/do you feel to that person?

(not close) 1 – 2 – 3 – 4 – 5 (very close)

Appendix C: Paper-format IAT

Do you want the new cafeteria staff who have been mentioned to work at the school from next term?

1. Yes, I support this idea strongly

2. Yes, I support this idea

3. No, I do not support this idea

4. No, I do not support this idea at all

Your answer will remain completely anonymous – no one will know who wrote the answer on this sheet.

Appendix E: Distraction questionnaire

Please tick the box next to each statement that applies to you:

1. I travel to school by bus/train/tube	
2. I travel to school by car	
3. I walk to school	
4. I usually take 10 minutes or less to get to school	
5. I usually take 10 to 20 minutes to get to school	
6. I usually take 20 to 30 minutes to get to school	
7. I take more than 30 minutes to get to school	
8. I eat school dinners	
9. I eat packed lunch	
10. I attend one lunchtime or after school club	
11. I attend 3 or more lunchtime or after school clubs	

Appendix F: Pictures of catering trainees
Experimental condition:

Control condition:

Appendix G: Letter to schools

██████████████████████
██████████████
███████

██████, 2016

Re: Invitation to participate in UCL research to promote positive attitudes to learning disability

We are conducting research into young people's attitudes towards those with learning disabilities. Most schools now take strong action against bullying, and the recent Department of Education funded SEN and Disability anti-bullying campaign has developed resources to support schools in tackling bullying of children with disabilities. However, it is clear that more needs to be done to not only reduce bullying but also encourage more positive attitudes among young people towards peers and adults with learning disabilities. This study goes beyond normal school policies to investigate further how adolescents may make choices to socially include those with a learning disability. We would like to invite your school to participate in this study. The project will combine awareness raising of learning disability, with fostering of positive attitudes towards people with a learning disability using a multi-media and discussion format.

What will taking part involve?

We would like to conduct this study during one 45 minute lesson (we imagine a PSHE lesson may be most suited) with pupils in years 7 to 11. Pupils will be asked to complete several tasks during the lesson, including: anonymous short questionnaires measuring attitudes towards peers with learning disabilities, one distraction exercise answering questions about their journey to school, and a brief voting task to assess how they might respond in a real life task concerned with social interactions with people with learning disabilities. Following these short exercises, pupils will receive a brief, multimedia educational session aimed at awareness raising and encouraging positive attitudes towards individuals with (learning) disabilities. Above all this session is designed to educate, to tackle common misconceptions about learning disability, to raise empathy of common experiences of bullying and

rejection among people with learning disabilities, and to empower young people to stand up against such behavior should they witness it.

We would be very happy to answer any queries you may have and show you the materials to be used to help you decide whether or not your school should take part in this project.

If this study would be something you might be interested in participating in, please contact us by email (████████████████) and we would be happy to arrange a brief meeting to discuss the study in more detail.

Yours sincerely

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Appendix H: Ethical approval

UCL RESEARCH ETHICS COMMITTEE ACADEMIC SERVICES
30 April 2015

Dr Katrina Scior Research Department of Clinical, Educational and Health Psychology UCL

Dear Dr Scior

Notification of Ethical Approval Project ID: 6529/001: An investigation into the relationship between adolescents' attitudes and behaviour toward people with intellectual disabilities: Do they do what they say?

Further to your satisfactory response to the committee's comments, I am pleased to confirm in my capacity as Chair of the UCL Research Ethics Committee (REC) that your study has been approved by the UCL REC

Approval is subject to the following conditions:

1.   You must seek Chair's approval for proposed amendments to the research for which this approval has been given. Ethical approval is specific to this project and must not be treated as applicable to research of a similar nature. Each research project is reviewed separately and if there are significant changes to the research protocol you should seek confirmation of continued ethical approval by completing the 'Amendment Approval Request Form':
2.   It is your responsibility to report to the Committee any unanticipated problems or adverse events involving risks to participants or others. Both non-serious and serious adverse events must be reported.

Reporting Non-Serious Adverse Events
For non-serious adverse events you will need to inform Helen Dougal, Ethics Committee Administrator (   ), within ten days of an adverse incident occurring and provide a full written report that should include any amendments to the participant information sheet and study protocol. The Chair or Vice-Chair of the Ethics Committee will confirm that the incident is non-serious and report to the Committee at the next meeting. The final view of the Committee will be communicated to you.

Reporting Serious Adverse Events
The Ethics Committee should be notified of all serious adverse events via the Ethics Committee Administrator immediately the incident occurs. Where the adverse incident is unexpected and serious, the Chair or Vice-Chair will decide whether the study should be terminated pending the opinion of an independent expert. The adverse event will be considered at the next Committee meeting and a decision will be made on the need to change the information leaflet and/or study protocol.

On completion of the research you must submit a brief report (a maximum of two sides of A4) of your findings/concluding comments to the Committee, which includes in particular issues relating to the ethical implications of the research.

With best wishes for the research.

Yours sincerely
Professor John Foreman Chair of the UCL Research Ethics Committee
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Professor Peter Fonagy
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