Imagined contact as a means to improving attitudes towards people with learning disabilities and reducing intergroup anxieties

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ABSTRACT

Background: It is well evidenced that people with learning disabilities are exposed to multiple disadvantages including stigma and discrimination; however, few interventions have been developed to tackle this. The aim of the present study was to investigate the effectiveness of an intervention called 'imagined contact' as a way to improve attitudes and reduce intergroup anxieties towards people with learning disabilities. This was the first time imagined contact had been delivered as a face-to-face intervention for this target group.

Method: University students (N = 107) were randomised to four experimental conditions (imagined contact condition; imagined contact control condition; educational film condition; and education delivered as text condition). Participants attitudes, anxiety and desire for social distance towards people with learning disabilities were measured post-intervention and at one-month follow-up.

Results: Imagined contact did not improve attitudes, reduce intergroup anxiety, or reduce participants' desire for social distance towards people with learning disabilities, compared to the other experimental conditions. Instead results indicated that imagined contact significantly increased participants' intergroup anxiety towards people with learning disabilities. However, at one-month follow-up it was found that imagined contact reduced intergroup anxiety and desire for social distance.

Conclusions: More exploration of the mechanisms of imagined contact are needed, particularly for highly stigmatised groups, such as people with learning disabilities, in order for it to be shown to be effective, above and beyond educational interventions. Due to the small sample size and convenience sample utilised, the findings in the present study should be viewed primarily as pointers for recommendations for future research.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACKNOWLEDGEMENTS

1. INTRODUCTION

This chapter introduces the main concepts to be explored throughout the thesis. I start by defining important terms, and review the literature relating to the contact hypothesis (Allport, 1954). I go on to discuss the effectiveness of contact as a prejudice-reducing mechanism, the role of intergroup anxiety (Stephan & Stephan, 1985) and its effects on contact, and new interventions derived from the contact hypothesis. In particular, I explore imagined intergroup contact (Turner, Crisp, & Lambert, 2007a), a new form of extended contact that has been shown to reduce stigma without the need for actual contact. I highlight the need for further research examining the relationship between contact, attitudes and stigma in relation to people with learning disabilities in order to develop interventions to reduce negative attitudes. Finally, I outline my research question and hypotheses for the present study which is an experimental investigation into the effectiveness of imagined contact as an intervention to improve attitudes and reduce intergroup anxieties towards people with learning disabilities.

2. DEFINITIONS

I will briefly define important terms used within this thesis.

2.1. Learning Disability

The term 'learning disability' is applied to a wide, diverse, and non-homogenous group of people. There are a number of defined features of a learning disability which have gained widespread acceptance across professional boundaries within the UK and America for diagnosis and classification purposes (British Psychological Society [BPS], 2015; Diagnostic and Statistical Manual of Mental Health Disorders [DSM-V], American Psychiatric Association [APA], 2013). The BPS (2015, p. 12) defines an intellectual disability as:

- "significant impairment of intellectual functioning;

- significant impairment of adaptive behaviour; and

- onset before adulthood".

Within the literature many terms are used to describe people with an IQ of below 70, for example 'learning disabilities', 'mental handicap', 'mental retardation' 'mental impairment', and 'intellectual disabilities'. I have chosen to use the term 'learning disability', shortening this to LD(s), in preference to alternative labels as it is the most commonly used term within the UK at the moment. In addition, 'learning disability' is the terminology used in UK Government policy documents and services designed to support people with this diagnosis.

2.2.   Attitudes

The concept of attitude has been defined in many ways. In 1981 attitude was defined as "a general and enduring positive or negative feeling about some person, object, or issue" (Petty & Cacioppo, 1981, p.7). More recently attitudes have been defined as "an overall evaluation of an object that is based on cognitive, affective and behavioural information" (Maio & Haddock, 2010, p. 4), which can vary according to dimensions of 'valence' (positive, negative, neutral) and 'strength' towards an object. Attitudes are made up of seemingly factual statements and emotional responses or value components. Maio and Haddock (2010) described the varying nature of attitudes, for example they can be in relation to ourselves (e.g. self-confidence), other individuals (e.g. a particular celebrity), and social groups (e.g. bankers).

Attitude research plays an important role in understanding what underpins and shapes behaviour, such as how opinions form, are changed and measured. In the literature cognitive and affective components of attitude are regularly measured, however the behavioural component rarely is (Maio & Haddock, 2010). Research has highlighted that behavioural intentions are precursors of actual behaviour (Ajzen, 1991; Armitage & Conner, 2001). Thus the attitude-behaviour link is crucial as measures of attitudes are only conceptually useful if they help to predict behavioural intentions.

2.2.1. Prejudice

Prejudice has been a crucial and compelling topic in the field of psychology for many years. The term prejudice means to 'prejudge', and for the purposes of the present study a helpful working definition of prejudice was provided by Reber and Reber (2001, p. 557) as "an attitude formed on the basis of insufficient information, a preconception". Prejudice can be either positive or negative in evaluative terms and can be in relation to many different things, for example, an event, a person, a group of people, etc. (Reber & Reber, 2001). However, 'prejudice' is widely used to describe something in a negative way, and usually refers to a particular group of people (Minton, 2012). Negative attitudes towards particular groups of people can lead to a failure to respond to individuals as humans with unique qualities and traits, and instead can lead to the assumption that they possess stereotypical attributes of the socially defined group (Reber & Reber, 2001). These prejudicial attitudes towards particular groups of people are thought to include negative evaluative components, such as internal emotional responses (e.g. fear) and external responses (e.g. behaviour) (Eagly & Chaiken, 1993). Behavioural responses, underpinned by prejudice, can lead to discrimination (Crocker, Major, & Steele, 1998), which includes but is not limited to, avoidant behaviour (Corrigan, 2000), hostile behaviour (Weiner, 1995), and hate crimes.

2.2.2. Stereotypes

Reber and Reber (2001, p.710) provide a working definition of stereotypes as "within a culture, a set of widely shared generalisations about the psychological characteristics of a group or class of people". Stereotypes can include positive or negative characteristics. Hamilton and Sherman (1994) describe how categorising others on the basis of similarities and differences places less processing demands on the human cognitive system, and allows individuals to generate more efficient impressions and expectations of others. However, when the stereotypes held are negative they can influence the way people behave towards a particular group of people in a negative way.

2.3. Stigma

There is a huge amount of variability in the concept of, and definitions, of stigma with different emphasis being placed depending on the discipline investigating or researching stigma and also on the circumstances to which it is being applied (Link & Phelan, 2001).

Goffman's (1963, p.3) definition of stigma states it is an "attribute that is deeply discrediting" reducing the bearer "from a whole and usual person to a tainted, discounted one". Crocker et al. (1998, p. 505) note that "stigmatised individuals possess (or are believed to possess) some attribute, or characteristic, that conveys a social identity that is devalued in a particular social context".

Stigma is underpinned by negative attitudes which comprise cognitive, emotional, and behavioural aspects (Corrigan & Watson, 2002). The behavioural chain starts from stereotypes about a discredited subgroup, progresses through attitude structures, and ultimately results in discrimination towards particular subgroups (Corrigan & Watson, 2002; Lam, Tsang, Chan, & Corrigan, 2006). This discriminatory behaviour includes labelling, stereotyping, separation and distancing (Link & Phelan, 2001).

3. LITERATURE SEARCH

3.1. Search Strategy

A thorough literature search was conducted to identify published studies, written in English, which examined/studied imagined contact as an intervention to improve attitudes, and/or reduce stigma, prejudice and discrimination. Initially the search focused on the LD population only, however, due to the limited research available in the area of imagined contact and LDs the criteria were amended and the search was expanded. All studies deemed relevant to the research aims were included. The electronic databases PsycINFO, PsycArticles, Pubmed, Science Direct, CINAHL, Wiley Online and Google Scholar were searched up until 29th February 2016. No limits were placed on the time frame of publications. Academic journals, reviews, and books/chapters

were included in the search. The reference lists of all the studies included in the review were also searched to identify any further relevant studies. The results for all searches were collated and duplicates removed. A total of 290 records were identified through electronic databases. The titles and/or abstracts were read for all articles and these were then excluded based on inclusion/exclusion criteria. The search yielded 41 relevant articles. Please see Table 1 for the terms used in the searches.

3.1.1. <u>Inclusion Criteria</u>
- Published in English.

- Published in full in a peer or non-peer reviewed journal.

- The study focused on imagined contact as an intervention to improve any of the following: attitudes, intergroup anxiety, stigma, prejudice and discrimination towards an out-group.

3.1.2. <u>Exclusion Criteria</u>
- The study explored imagined contact with something other than contact with an out-group, for example, music, dead people, smoking behaviour.

Table 1
Search Terms Used

Attitudes	Intervention
Attitude*	Imagined contact
Stigma*	Contact
Social Distance	Imagery
Anxiety	Imag*
Belief*	Interact*
Inclusion	Expos*
Discriminat*	Experience*
Aware*	
Knowledge*	
Opinion*	
Accept*	
Stereotyp*	
Prejudice*	

Note: *indicates terms that were truncated to allow for multiple endings of the word

4. LITERATURE REVIEW

4.1. Stigma and Learning Disabilities

People with LDs are exposed to multiple disadvantages, are excluded from many areas of human experiences, and are one of the most vulnerable groups in society (*Valuing People*, Department of Health [DoH], 2001). Despite legislation and policy embedded in political structures to protect their rights, for example, *The Disability Discrimination Act (2005), Valuing People (DoH, 2001), Valuing People Now (DoH, 2009), The Equality Act (2010)*, people with LDs often experience many sources of social and health inequalities (Emerson, Baines, Allerton, & Welch, 2012). Williams (2002) suggested that individuals who are disadvantaged, mistreated and discriminated against within society are also at risk of experiencing this treatment within services designed to support them.

In an attempt to reduce the disadvantage experienced by people with LDs, the DoH White Papers *Valuing People (2001)* and *Valuing People Now (2009)* highlighted 'inclusion' as a key principle, stating that people with LDs should have access to mainstream services and be fully included within their local communities. Although changes to policy and service provision have given people with LDs a physical presence in the community, they have not resulted in their social inclusion and people with LDs are often not socially part of their community (Cummins & Lau, 2003). The social divisions that have plagued the history of people with LDs appear to be still evident today despite the principles of 'normalisation' and 'inclusion' (Quarmby, 2011; Rogers & Pilgrim, 2003). The 'Mere Exposure Effect' theory (Zajonc, 2001) describes a process in which repeated exposure to something is sufficient enough to create a preference for that thing and can change an individual's attitude towards it. However, contrary to this theory it does not appear sufficient to simply place a person with an LD in the community in order for the public to demonstrate attitude and behavioural changes consistent with social acceptance (Rillotta & Nettelbeck, 2007). People with LDs are misunderstood by the public who appear to have less positive attitudes than those found in public policy and legislation (Coles & Scior, 2012).

As a result, people with LDs are prone to experiencing prejudice (Emerson et al., 2012).

Further to this, many people with LDs have reported that they have not had a positive experience in the community. Research has shown that people with LDs are often subject to hostility from non-disabled peers when participating in community activities (Walker & Scior, 2013), highlighting societal attitudes and discourses that are permitting discriminatory behaviours towards people with LDs. Attention has also been drawn to incidents of bullying, abuse and harassment, alongside hate crimes committed against people with LDs (Beadle-Brown et al., 2014; Fyson & Kitson, 2010; Mencap, 2000, 2007; Quarmby 2008). In a survey by Beadle-Brown et al. (2014), 80 per cent of people with LDs reported having experienced some form of disability related victimisation. In addition, 61 per cent of people with LDs cited young people, such as children and teenagers, as the perpetrators of abuse and victimisation. These findings suggest that there is a widespread societal belief and 'casual disablism' that legitimatises treating people with LDs differently, and denies them access to things that others take for granted. Thus creating an environment where disability hate crime towards people with LDs can exist without being challenged (Quarmby, 2008).

Crandall, Eshleman, and O'Brien (2002) researched the social acceptability of prejudice and produced a list of 105 stigmatised groups that exist along a continuum. Socially acceptable prejudice refers to prejudice that participants are comfortable with, and an assumption is made that participants' comfort is a reflection of attitudes within wider society. American college students were asked to rate how comfortable they would be holding negative attitudes toward members of particular groups of people. One group in particular that was cited as a target of socially acceptable prejudice was "mentally retarded people". The findings of this study revealed that social norms are powerful predictors of expressed prejudice. Furthermore, the acceptability of discriminatory acts closely follows social norms. Staniland (2009) found that 22 per cent of respondents on a survey about public perceptions of disabled people felt they would be very or fairly comfortable with negative references to disabled people.

There have been many high profile cases of people with LDs who have been subjected to abuse and torture, and have been the victim of hate crimes. For example, Steve Hoskins (July 2006), Christine Lakinski (July 2007), and Bijan Ibrahami (July 2013), were tortured and murdered. Although the motivation for these crimes is unclear they are believed to have been disability hate crimes (Quarmby, 2008). Additionally, there have been cases of abusive practices happening towards people with LDs within institutional settings. For example, Winterbourne View, a privately run hospital for people assessed as having LDs, complex needs, and 'challenging behaviour', was exposed as having a culture in which staff routinely physically assaulted and abused people with LDs, as well as psychologically abusing them. Following the exposure of abuse at Winterbourne View the DoH released the *Transforming care: A national response to Winterbourne View Hospital* (DoH, 2012) report which stated "changing attitudes to people with challenging behaviour is vital. Tackling disability hate crime is an issue DoH takes seriously" (pg. 21). However, despite ideological and policy context there has been little public discussion about how to tackle these issues in wider society.

Research has stressed the importance of providing the public with education and information about LDs, as well as the importance of providing opportunities for interaction, in order to break down barriers and increase the chances of successful inclusion for those with LDs (e.g. Fritz, 1990; Hughes et al., 1999; Rittolla & Nettelbeck, 2007; Seewooruttun & Scior, 2014). However, research has found that the public do not desire social interaction with people with LDs, want greater social distance from them than other groups of people, and are less likely to view people with LDs as friends (Gordon, Feldman, Tantillo, & Perrone, 2004; Negata, 2007; Westbrook, Legge, & Pennay, 1993). It has been suggested that this is, in part, due to a lack of knowledge about LDs and also due to ingrained societal stigma. Gordon et al. (2004) have found that greater awareness of disability issues improves societal attitudes; however, it could be argued that if the public continue to have little experience interacting and communicating with the LD population, then they will continue to hold negative attitudes towards people with LDs.

In 2011, Scior conducted a systematic review of research into awareness, attitudes and beliefs regarding LDs. This review concluded that public

knowledge of LDs and causal beliefs are an under-researched area, with an absence of well-designed interventions reducing misconceptions about LDs and tackling negative attitudes. Furthermore, the existing research was not of high quality due to it being based on small unrepresentative samples and cross-sectional designs. Scior (2011) highlighted the need for future research to consider awareness, attitudes and beliefs in relation to stigma theory.

It is apparent, from the literature available, that people with LDs are an under-researched group (McDonald, Keys & Balcazar, 2007). Historically social divisions have existed that have segregated people with LDs and made them invisible within society, which in turn has legitimised treating people with LDs differently (Quarmby, 2008). By its very nature, the label of 'learning disability' is defined through the absence ('dis') of normative abilities, and in the public eye associated predominantly with difference and deficiency. It could be speculated that as a result research in this area may be lower priority than in other areas. Because historically the lives and experiences of people with LDs were understood as antithetical to academic life, there was little space for their voices or perspectives within academic research. Even today this historical context has made people with LDs invisible within research. It could be argued that public interest and support for research in this area only becomes priority when a high profile case is exposed in the media, for example the abuse at Winterbourne View.

There are many barriers, in addition to the historical context described above, that could obstruct research in the field of LDs, such as the lack of accessibility in relation to people with LDs, funding constraints, difficulties with support organisations, and various issues related to consent (Lennox, Taylor, Rey-Conde, Bain, Purdie, & Boyle, 2005). I will now go on to explore accessibility and consent in further detail.

Accessibility barriers, such as communication, could be considered one of the major factors that affects research in this area. Burns, Paterson and Watson (2009) point out that people with disabilities are a diverse group in terms of communication, experiences, views and needs, and nature of the disability. Researchers may therefore worry about their ability to communicate effectively with such a diverse group of individuals, whilst ensuring that information and

9

measures are accessible enough to gain informed consent. Emerson and Hatton (2014) argue that researchers do not routinely make 'reasonable adjustments' such that research methods and procedures are accessible to people with LDs. It is evident that while seeking to value the experiences of people with LDs research in this area is likely to encompass substantial barriers between the powerful researcher and the less powerful researched (Nind, 2008).

Consent issues in research include: the person's competence to give consent, the extent to which the research is in the person's own best interests, and the balance with public interest (Scott, Wishart, & Bowyer, 2006). Historically people with LDs have been considered unable to make decisions for themselves, and therefore excluded from research. However, attitudes appear to have shifted in relation to decision-making given the legal changes surrounding capacity (Mental Capacity Act, 2005). Capacity with people with communication difficulties, and particularly with LDs, causes complications (Nind, 2008). Many adults cannot consent to participation themselves, and a third party is needed to give consent on their behalf. Identifying a third party can be difficult and can force extensions of the length of the recruitment phase (Lennox et al., 2005). It could be speculated that these issues have deterred researchers undertaking research in relation to people with LDs.

As described throughout this section very few interventions have been developed to tackle attitudes, stigma and discrimination towards people with LDs at a general population level. To date, theories of attitude change have been the focus of interventions designed to challenge public stigma. Corrigan and Penn (1999) suggest that contact is likely to be the most effective method in reducing stigma towards out-groups, for example people with LDs.

4.2. Contact Hypothesis

The 'contact hypothesis', first described by Allport (1954), proposed that direct intergroup contact with members of stigmatised groups would reduce prejudice and hostility, leading to more positive intergroup attitudes. Allport emphasised that under the right 'optimal' conditions direct contact between the in-group and out-group could positively affect attitudes. He defined these optimal conditions

as whether the status of the out-group is positioned as equal, whether there is cooperation to achieve common goals, and whether such contact is supported or encouraged by important societal institutions. Allport's hypothesis has been the subject of much research over the years and as a result direct contact has been supported as an effective means of attitude change (Pettigrew, 1998; Zajonc, 2001). Contact has become a widely used psychological intervention in the reduction of prejudice and the improvement of intergroup relations (Oskamp & Jones, 2000).

There has been on-going debate focusing on Allport's optimal conditions and whether they are necessary for contact to reduce prejudice. In a meta-analysis of over 500 intergroup contact studies, Pettigrew and Tropp (2006) found that the effect of contact on prejudice was highly significant despite not meeting the proposed optimal conditions. It was concluded that although contact effects are strengthened when the optimal conditions are present, they are, at best, facilitating the reduction of prejudice rather than being an essential condition.

Allport (1954) proposed that contact reduces prejudice as in-group members gain an increased knowledge of the out-group which subsequently improves intergroup attitudes. Research studies have shown that educational interventions, designed to increase participant's knowledge of LDs, appear to hold a lot of promise in improving attitudes towards people with LDs (Campbell, Gilmore & Cuskelly, 2003; MacDonald & MacIntyre, 1999; Seewooruttun & Scior, 2014). In addition, support for the positive influence of contact with people with LDs has also been demonstrated across several interventions (Hall & Hollins, 1996; Melville et al., 2006; Nosse & Gavin, 1991). Rillotta and Nettelbeck (2007) found evidence that exposure to people with LDs combined with training awareness of disability had a significant, positive, impact on attitudes towards people with LDs.

Following evidence confirming that contact, even without the 'optimal' conditions, results in more positive out-group attitudes, recent research has further explored the mechanisms and process factors underlying contact, 'how' contact reduces prejudice, and how contact affects intergroup relations. It has been highlighted that contact works through cognitive (i.e. learning about the out-group), behavioural (changing one's behaviour to be open to potential

experiences of positive contact), and affective (diminishing negative emotions such as anxiety / threat) processes. Pettigrew and Tropp's (2008) meta-analysis indicated that a particularly important mediating mechanism for contact is affect. Intergroup anxiety is thought to underpin and contribute to stigma and prejudice, and therefore has an effect on intergroup contact. Specifically, contact reduces prejudice because it lowers intergroup anxiety. I will go on to examine intergroup anxiety.

4.2.1. Intergroup Anxiety

Intergroup anxiety is described as a negative form of arousal, causing uncertainty and discomfort when interacting with out-group members (Stephan & Stephan, 1985, 2000). It arises as a consequence of negative expectations of intergroup encounters, for example, rejection or discrimination (Shelton & Richeson, 2005), fears of an unpredictable encounter with an interactional partner that could become negative, or concerns about making an embarrassing mistake during the interaction (Greenland, Xenias, & Maio, 2012).

Intergroup anxiety is one of the most investigated variables in contact research and has been found to be the most supported mediator as to the success or failure of intergroup contact (Brown & Hewstone, 2005; Pettigrew & Tropp, 2008; Stephan & Stephan, 2000). Greenland et al. (2012) distinguished between two dimensions of intergroup anxiety that are thought to be related: self-anxiety and other-anxiety. Self-anxiety is described as anxiety about thinking or doing something that is prejudiced, whereas other-anxiety is described as anxiety that the other might do something to you.

Intergroup anxiety has been found to have many consequences such as a reduction in cognitive control (Amodio, 2009), changes in physiological responses (Mendes, Blascovich, Lickel, & Hunter, 2002), and increased reliance on stereotypes (Wilder, 1993). Additionally, people experiencing intergroup anxiety are more likely to experience heightened hostility during an intergroup contact and may even avoid contact with the out-group altogether (Plant & Devine, 2003). If this happens group members are more likely to interpret this interaction in a negative light, thus reinforcing negative intergroup relations in the future. Intergroup anxiety is likely to be reduced when individuals

have had successful interactions with members of the out-group as they learn that there is nothing to fear during these encounters (Crisp & Abrams, 2009).

It is important to be mindful that the experience of intergroup contact with the out-group is complex and therefore individuals will experience different threats, stresses, or anxieties when in these situations (Greenland et al., 2012).

4.2.2. Limitations Of Direct Contact

Despite the positive and clear evidence for direct intergroup contact, there are important limitations to consider. Dixon, Durrheim, and Tredoux (2005) argued that implementing the optimal conditions originally proposed by Allport is unrealistic. To start with, direct interventions require groups to have the opportunity to meet and have contact in the first place (e.g. Phinney, Ferguson, & Tate, 1997; Turner et al., 2007a; Turner, Hewstone, & Voci, 2007b) which is not always logistically or ethically possible. Additionally, direct contact can be difficult to organise and is often rare or actively discouraged in some contexts and with certain groups of people (Chin, 1997; Schulze & Angermeyer, 2003), particularly as most out-groups are a minority within society (Cook, Arrow, & Malle, 2011).

Furthermore, it is not always possible to control the quality and tone of direct contact so the encounter may not necessarily be a positive one, particularly if there are high levels of intergroup anxiety (see section 4.2.1). As a result, negative attitudes may persist. Although direct contact has been shown to reduce stigma it is not necessarily realistic for a large-scale intervention. Yet the stigma and prejudice encountered by particular groups of people, for example people with LDs, is where contact-based interventions are needed the most.

4.3. Extended Contact

Following the success of direct intergroup contact on attitudes, further advances in contact research suggest that positive intergroup attitudes can be developed even when there is no actual or direct experience of contact with out-group members (Turner et al., 2007a; Wright, Aron, McLaughlin-Volpe, & Ropp, 1997). These interventions are 'extended' and 'indirect' contact. According to Wright et al. (1997) 'extended contact' involves having knowledge that in-group

members have had contact or friendships with out-group members and this knowledge alone is sufficient enough to improve intergroup attitudes. 'Indirect contact' refers to contact through, for example, exposure to photographs, films or television representations.

Extended contact literature suggests that when an in-group member is seen to be showing tolerance towards out-group members it has positive influences on the attitudes of other in-group members. Additionally, if an out-group member is observed behaving positively towards in-group members, expectations about intergroup interactions may be more positive (Turner, Hewstone, Voci, Paolini, & Christ, 2007c). A number of studies have supported this theory, for example in adult populations (Turner et al., 2007b), in minority and majority group adolescents (Liebkind & McAllister, 1999, Turner et al., 2007b), and in young children (Cameron, Rutland, Brown, & Douch, 2006; Cameron & Rutland, 2006; Cameron, Rutland, & Brown, 2007; Turner et al, 2007a).

Research into extended contact has demonstrated that actual experience of contact with out-groups is not a necessary component of contact interventions, and as such extended contact can address some of the limitations of direct contact, such as the need for face-to-face contact (Turner et al., 2007a). The importance of extended contact for future interventions, designed to improve intergroup attitudes and reduce stigma towards particularly groups of people, cannot be understated. However, extended contact still has some of the limitations of direct contact. For example, in highly segregated settings and with highly stigmatised groups, people are unlikely to know anyone in their wider social network who has an out-group friend (Crisp & Turner, 2009).

In addition, research has found that indirect contact, through exposure to photographs, films or television representations, can improve attitudes towards people with LDs immediately, with effects partially maintained over time (Hall & Minnes, 1999; Walker & Scior, 2013). Of note is that these studies do not meet Allport's conditions of contact yet still yield positive results (Seewooruttun & Scior, 2014).

Furthermore, it has been suggested that the same benefits associated with actual contact, extended contact, and indirect contact may occur by simply

imagining the contact (Crisp & Turner, 2009; West, Holmes, & Hewstone, 2011). This promising new alternative contact addresses the concerns raised by actual contact and extended contact, particularly the need for in-group members to have or know of a friendship with an out-group member. I will now go on to discuss the imagined intergroup contact literature and its relevance to LDs.

4.4. Imagined Intergroup Contact

Imagined intergroup contact, developed by Turner et al. (2007a) is "the mental simulation of a social interaction with a member or members of an out-group category" (Crisp & Turner, 2009, p. 234). The theory postulates that imagining contact with a member of an out-group automatically activates thoughts, feelings and concepts that occur within successful real-life interactions with members of unknown groups, for example reduced anxiety and feeling less apprehensive, particularly about future contact (Cameron, Rutland, Turner, Holman-Nicolas, & Powell, 2011; Crisp & Turner, 2013; Turner et al., 2007a). It is thought that the process of imagining a contact with an out-group member automatically activates concepts that are normally associated with successful interactions with members of unknown groups. This includes feeling more comfortable and less apprehensive about the prospect of future contact with the out-group. In addition, imagining a contact may also lead people to engage in conscious processes similar to those activated in actual intergroup contact, such as thinking about what they could learn about the out-group member, how they would feel during the interaction, and how this would influence their perceptions of that out-group member and of the out-group more generally. In turn, this leads to more positive evaluations of the out-group similar to the effects of face-to-face contact (e.g. Islam & Hewstone, 1993; Paolini et al., 2004; Voci & Hewstone, 2003). Imagined intergroup contact theory is based upon findings in mental imagery research which will be explored further below.

4.4.1. Mental Imagery Research
Findings in mental imagery research have demonstrated the power of mental simulation and imagery across many areas (Stathi, Tsantila, & Crisp, 2012). Imagined mental states have been found to elicit similar emotional and motivation responses as real experiences (Dadds, Bovbjerg, Redd, & Cutmore,

1997). This can be explained by neuropsychological studies which show that mental imagery can engage neural structures that are also engaged when an actual experience occurs (Kosslyn, Ganis, & Thompson, 2001). Kreiman, Koch, and Fried (2000) found that participants' responded in similar ways regardless of whether they saw a visual stimulus in pictures or whether they formed mental images of the same pictures. Additionally, visualising an object not only engages motor systems, but also has the same effects on the body as actually seeing the object, for example increased heart rate when imagining threatening stimuli (Kosslyn, 1987; Kosslyn, Ganis, & Thompson, 2001). Additionally, these imagined mental states can be falsely remembered as having actually occurred (Thomas, Hannula, & Loftus, 2007). Within social psychology research it has been shown that simply imagining a particular situation can create the same experience as actually being in the situation (Crisp & Turner, 2009). In a study of the bystander apathy effect (phenomenon in which individuals do not offer means of help to a victim when other people are present) Garcia, Weaver, Moskowitz, and Darley (2002) found that participants' offered significantly less helping behaviour on a subsequent task if they imagined being in a larger group.

4.4.2. Behavioural Theories

Positive effects of imagined contact on attitudes and behaviours may also be explained, in part, by behavioural theories such as classical conditioning and social learning theory (Bandura, 1971). For example, imagining a positive encounter models positive intergroup relations and should result in more positive representations of the out-group (Harwood, Paolini, Joyce, Rubin, & Arroyo, 2011). Through classical conditioning mental images can be paired with emotional states (Dadds et al., 1997). Therefore, it is possible that positive effects of imagined intergroup contact occur as a result of the out-group being paired with positivity. Additionally, priming effects, such as subtle cues of 'primes' in our social environment, are known to influence and activate associated knowledge structures in our minds (Turner et al., 2007a). These knowledge structures have a powerful influence on our attitudes and behaviours as they become more accessible in memory (Bargh, Chen, & Burrows, 1996; Garcia et al., 2002).

4.4.3. Evidence For Imagined Contact

There is a growing body of evidence for the positive effects of imagined contact, for example in relation to older adults and homosexuals (Turner et al., 2007a), people with schizophrenia (Giacobbe, Stukas, & Farhall, 2013; West et al., 2011), people with depression (Na & Chasteen, 2015), people with HIV (Derose et al., 2014), children with physical disabilities (Cameron et al., 2011), minority ethnic groups (Stathi, Cameron, Hartley, & Bradford, 2014; Turner & Crisp, 2010), and in-group identity (Vezzali et al., 2015). This evidence suggests that imagined contact produces more positive perceptions of out-groups, improves explicit and implicit attitudes, and reduces stereotyping (Crisp & Turner, 2013). In addition, many studies have demonstrated the ability of imagined contact to reduce intergroup anxiety, and also provided useful information about the mediating role of intergroup anxiety in the imagined contact effect (Crisp & Turner, 2009; Husnu & Crisp, 2010; Turner et al., 2007a; Vezzali, Crisp, Stathi, & Giovannini, 2013). It is crucial that imagined contact can limit anxiety at the prospect of meeting out-group members as intergroup anxiety is a key mediator of the success of intergroup relations (see section 4.2.1). A meta-analysis of 71 imagined contact studies demonstrated the effectiveness of imagined contact on four dependent measures: intergroup attitudes, emotions, behavioural intentions and actual behaviours (Miles & Crisp, 2014). It was found that imagining an interaction with a member of the out-group reduces prejudice and encourages positive intergroup behaviour. In addition, the positive effect of imagined contact was found to be consistent across different target groups, age groups, and situational contexts, with the effects paralleling direct contact. The meta-analysis conducted by Miles and Crisp (2014) also found that imagined contact has a strong effect on behavioural intentions. This is consistent with the evidence found in mental simulation literature that shows that mental simulation is linked to neural structures that are involved in action initiation (Kosslyn et al., 2001).

4.4.4. Imagined Contact Paradigm

The imagined contact experimental task asks participants to engage for a few minutes in a mentally simulated encounter or interaction with an unknown member of the target out-group. A meta-analysis by Miles and Crisp (2014)

concluded that most design characteristics, such as time spent imagining contact, type of control condition, and valence of the imagined interaction, had no significant impact on the effect of imagined contact. As described above (section 4.4.3) a number of studies have found that imagined contact improves intergroup attitudes and reduces intergroup anxiety (e.g. Cameron et al., 2011; Crisp & Turner, 2009; Turner et al., 2007a; West et al., 2011). I will now go on to detail three experiments from the original imagined contact study conducted by Turner et al. (2007a).

4.4.4.1. *Experiment 1:* the original study of imagined intergroup contact (Turner et al., 2007a) randomly allocated undergraduate students (*N* = 28) to one of two conditions, either the imagined contact condition designed to invoke participants' imagination of a detailed encounter with an out-group member, or the control condition designed to invoke their imagination of something unrelated to a contact encounter. In the imagined contact condition participants were asked to spend a few minutes imagining "meeting an elderly stranger". Participants in the control condition were instructed to spend a few minutes imagining a pleasant outdoor scene. In order to strengthen the effect of the mental simulation task, all participants were required to write a description of the scenario they imagined. Participants then rated the extent to which they would prefer interacting with a young person or an elderly person. Participants who imagined meeting an elderly stranger subsequently showed lower levels of intergroup bias, showing no preference regarding interacting with a young or elderly person, compared to participants who imagined an outdoor scene. The task used in experiment 1 is a neutral imagined contact task with participants asked to simply imagine meeting a member of the out-group with no elaboration or priming as to how to do this. A potential criticism of experiment 1 is that participants may have been influenced by demand characteristics, for example having a level of awareness regarding the rationale of the study, and may have responded more positively in the imagined contact condition. Additionally, the findings may have been affected by category priming in which participants in the imagined contact condition were primed to think of the out-group (the elderly) which then led to a conscious attempt to regulate behaviour to appear non-prejudiced (Devine & Monteith, 1999).

4.4.4.2. *Experiment 2:* in order to explore the potential impact of priming, as described in experiment 1, the control task was adapted in experiment 2. Undergraduate students (N = 24) were randomly allocated to either the imagined contact condition or the control condition. Participants in the imagined contact condition were asked to engage in the same mental simulation task as in experiment 1 - "imagine yourself meeting an elderly stranger". Participants in the control condition were asked to spend a few minutes "thinking about the elderly". Results showed lower levels of intergroup bias in the imagined contact condition compared to the control condition in which participants were simply asked to think about elderly people. These results rule out a priming explanation for the findings of experiment 1.

4.4.4.3. *Experiment 3:* the aim of experiment 3 was to replicate the findings of the previous two experiments but with a different out-group, homosexual males, to see if the effects of imagined contact could be replicated. Heterosexual male participants (N = 27) were instructed to spend five minutes either imagining an interaction with a homosexual male (imagined contact condition), or imagining a hiking trip. Participants were instructed to write down things they found out about the individual they were interacting with or to write down what they saw on the hiking trip. Participants were then asked to rate their attitudes (Wright et al., 1997) and levels of intergroup anxiety (based on Stephan & Stephan, 1985) towards homosexual males. Results in experiment 3 replicated the positive impact of imagined contact observed in experiments 1 and 2, with improved attitudes towards the out-group. In addition, results suggested that the bias-reducing effects of imagined contact were mediated by reduced intergroup anxiety.

4.4.4.4. *Findings:* across Turner et al.'s (2007a) experiments it was found that imagining a neutral contact with an out-group member led to more positive intergroup attitudes and reduced intergroup anxiety. These findings highlighted the potential benefits of indirect interventions based on intergroup contact in reducing prejudice. Subsequently research has continued to find positive effects of imagined contact with different out-groups (e.g. Cameron et al., 2011; Stathi

et al., 2014; Vezzali et al., 2015), and different design characteristics (e.g. Stathi & Crisp, 2008; Husnu & Crisp, 2010; West et al., 2011).

4.4.4.5. *Neutral imagined contact task:* most researchers exploring the effects of imagined contact have continued to use a neutral version of the task, similar to the original task used by Turner et al. (2007a) (e.g. Abrams et al., 2008, Husnu & Crisp, 2010; Stathi & Crisp, 2008, Experiment 2; Turner & Crisp, 2010, Experiment 1) and have found positive results. However, West et al. (2011) found that a neutral imagined contact task in relation to people with schizophrenia had negative effects on intergroup anxiety and no effect on attitudes, compared to a control condition (Experiment 1), even when paired with incidental positive information (Experiment 2). It was hypothesised that the nature of stereotypes towards some out-groups, in this instance people with mental health problems, may alter the nature of the imagined contact task rendering it ineffective or even counter-effective as a prejudice reducing intervention (West et al., 2011). It is thought that stereotypes held about people with mental health problems are very different to the stereotypes about other out-groups for whom a neutral imagined contact task has been successful. For example, people with severe mental health problems are often stereotyped as dangerous and unpredictable (Angermeyer & Matschinger, 2003), unlike the elderly whom Turner found positive effects.

4.4.4.6. *Positive imagined contact task:* a potential safeguard against the possible negative effects of a neutral imagined contact condition has been the recommendation by Crisp, Stathi, Turner, and Husnu (2008, Experiment 1) that the imagined contact task be positive, rather than neutral. Positivity of the interaction is a crucial element in the instruction set: participants are asked to imagine themselves interacting with the target person in a positive, relaxed, and comfortable way. It is suggested that if no direction is given about the tone of the imagined contact task then participants might rely on previously held negative stereotypes as a basis for the task (West et al., 2011). The increased effectiveness of positive imagined contact tasks, relative to neutral imagined contact tasks, has been empirically demonstrated (e.g. Stathi & Crisp, 2008, Experiment 1; West et al., 2011, Experiment 3 and 4).

West et al (2011, Experiment 3) randomly assigned undergraduate students (*N* = 38) to one of two imagined interaction tasks. In the imagined contact task participants were asked to imagine attending a charity dinner and being seated next to a well renowned clinical psychologist, Dr Rufus May, who was diagnosed with schizophrenia at the age of 18. In the control condition participants were asked to imagine attending a charity dinner and being seated next to Mr Jay Wright, a poet who did not suffer from schizophrenia. It was found that by providing participants with positive information about a member of the out-group, in this case a well-respected psychologist with a diagnosis of schizophrenia, they reported more positive attitudes towards people with schizophrenia and this effect was mediated by a reduction in intergroup anxiety.

It has been theorised in the direct and extended contact literature that positive contact leads to greater self to out-group similarity which increases out-group liking through 'projection' (Stathi & Crisp, 2010). The projection theory has been described as the tendency to expect similarities between oneself and others (Robbins & Krueger, 2005). If out-group members appear more similar to in-group members this can foster a more positive interaction and lead to positive 'projection of self' from in-group members towards the out-group (Eller & Abrams, 2004; Wright et al., 1997). Stathi and Crisp (2008) demonstrated that positively toned imagined contact leads participants to infer that out-group members share positive traits with themselves.

4.4.4.7. *Limitations of imagined contact:* it is important to note that the potential attitude change and reduction in prejudice associated with imagined contact may be somewhat smaller in relation to members of particular groups of people than that generated by face-to-face interactions (Crisp & Turner, 2013). There are many possible reasons for this, for example it has been shown that attitudes based on first-hand information are stronger than those based on second-hand information (Fazio, 1990). Also, other factors such as attitude strength, the intensity, certainty, importance, and accessibility of an attitude (Krosnick, Boninger, Chuang, Berent, & Carnot, 1993) might influence the nature of the imagined contact activity. Stereotype content may also have an important role to play in the success or failure of imagined contact, as it would guide expectations of the contact scenario. The effectiveness of the imagined contact

task may also be impacted on by individual differences, such as how vividly participants are able to generate a mental image.

Overall, however, when actual or extended contact is impossible or impractical, as in contexts of extreme segregation or social exclusion, imagined contact can produce positive benefits similar to those of contact, as demonstrated by Turner et al. (2007a) and West et al. (2011) to name a few. Therefore, using imagined contact may have considerable potential in the area of LD.

4.5. Imagined Contact And People With LDs

There is a gap in the current imagined intergroup contact literature, in relation to LDs, as research has been limited to exploring the reduction of stigma and improvement of attitudes towards target groups that, it could be argued, are more visible within society. The original studies of imagined contact (Turner et al., 2007a; Turner & Crisp, 2009; West et al., 2011), which explored whether imagined contact could improve attitudes and reduce intergroup anxiety towards the out-group have not yet been replicated in the same way with LDs as the target group. I will now go on to explore three studies most relevant to the present study that have been conducted in relation to imagined contact and disabilities.

4.5.1. Imagined Contact And Physical Disabilities

Cameron et al. (2011) investigated the effectiveness of imagined contact on non-disabled children's attitudes towards the out-group, physically disabled children. It was hypothesised that imagined contact would reduce intergroup bias by bringing about more positive general attitudes towards disabled children and that imagined contact would lead to more positive intended out-group friendship behaviour. This was examined using the following dependent variables: general attitude, warmth, competence and intended out-group friendship behaviour. A between-participants design was adopted with two conditions (imagined contact and control) and three age groups (5-6, 7-8 and 9-10 years old).

Young children (*N* = 123) were randomly assigned to either the imagined contact or control condition. All children were provided with a simple definition of

the term 'disabled' in order to give them a frame of reference for the imagined contact task. This definition was supported by pictures of physically disabled children in wheelchairs or using walking aids. Children were tested individually with the researcher. Those in the imagined contact condition were asked to spend 5 minutes imagining that they were "in a park with a disabled friend" having lots of fun playing together. The children were then interviewed individually immediately after the imagined contact session to obtain measures of the dependent variables. Children in the control condition did not complete the imagined contact activity and completed the individual interview to obtain measures only.

The results showed that children imagining an interaction with a physically disabled child showed improved general attitudes and higher ratings of warmth and competence compared to children who did not engage in imagined contact (control group). In addition, imagined contact led to more positive intended friendship behaviour towards peers with disabilities (Cameron et al., 2011). The imagined contact effect was most consistent among younger children aged 5-6 years, who had improved attitudes, stereotype content and intended behaviour. Cameron et al. (2011) suggested that younger children are likely to be less experienced with the out-group, less likely to have experienced negative inter-group contact with disabled children, and are therefore more likely to benefit from imagined contact. Subsequently a meta-analysis by Miles and Crisp (2014) found that the imagined contact effect is stronger for children than for adults. It has been suggested that, at school age, children are at a formative stage where imagery is a key component of how they learn about the world (Cameron & Rutland, 2006). The positive results may also reflect that imagined contact interventions conducted with children have been found to be more involved than those used with adults, as sessions are often conducted individually and provide high levels of detail (Miles & Crips, 2014).

The present study will be using adults as participants so it is likely positive results may be reduced in comparison to Cameron et al.'s findings and given the findings of Miles and Crisp (2014) meta-analysis. It is possible that the focus of the present study, LDs as a target out-group, may find differing results to Cameron et al (2011) given that LDs are widely misunderstood by the public (Coles & Scior, 2012) and due to the high levels of hostility and discrimination

people with LDs have been subjected to (Walker & Scior, 2013). It will therefore be important for the present study to provide participants with a frame of reference for the imagined contact task, similarly to the one provided by Cameron et al. (2011), to clarify what is meant by the term 'learning disability' whilst increasing awareness and knowledge of what it means to have an LD.

4.5.2. Imagined Contact And Humanity Perceptions

In 2014, Falvo, Capozza, Hichy, and Di Sipio explored whether imagined contact could improve humanity perceptions of people with LDs, and whether this effect could be maintained over time. Falvo et al. (2014) aimed to test the hypothesis that imagining a positive encounter with an individual with LDs could ameliorate the negative humanity perceptions of LDs.

Leyens, Demoulin, Vaes, Gaunt, and Paladino (2007) introduced the paradigm of emotions: primary emotions (e.g. pleasure and anger) that are shared by humans and animals, and secondary emotions (e.g. hope and remorse) that are unique to human beings. Leyens et al. (2007) found that participants' ascribed more secondary emotions to the in-group than the out-group, while primary emotions were not differently assigned to the two groups. The humanity bias (the calculated difference between ratings of primary and secondary emotions) is the tendency to ascribe a lower human status to the out-group than the in-group by displaying fewer, if any, secondary emotions (Falvo et al., 2014). It is possible that this bias can lead to dehumanising behaviour, with increased aggressive behaviours and enhanced willingness to cause harm, towards the out-group (Viki, Osgood, & Phillips, 2013). Falvo et al. (2014) highlight that this humanity bias could, in part, explain why people with LDs have been denigrated throughout history.

Falvo et al. (2014) examined non-disabled adult participants (*N* = 164) twice, once immediately after the imagined contact intervention and then at one-month follow-up. Participants were individually examined and were instructed to answer a questionnaire which included an imagination task. Participants in the imagined contact condition were instructed to "imagine, for a few minutes, that you meet for the first time a person with a learning disability. The interaction is pleasant and interesting". In the control condition participants were instructed to imagine an outdoor landscape. Participants in both conditions were asked to

write down what they were imagining. The dependent variable, measured both at time 1 and time 2, consisted in the attribution of primary and secondary emotions (humanity perceptions) to people with LDs (Demoulin, Leyens, Paladino, Rodriguez, Rodriguez, & Dovido, 2004). Participants were asked to choose, from a list, the words they felt described people with LDs.

Results showed that in both conditions more primary than secondary emotions were assigned to people with LDs, highlighting a tendency to assign a not fully human status to people with LDs. However, the humanity bias (the calculated difference between primary and secondary emotions) was found to be lower in the imagined contact condition compared to the control condition. Moreover, the positive influence of imagined contact remained consistent after one month, highlighting a long-term impact of imagined contact.

Although the humanity bias was lower in the imagined contact condition it is not possible to conclude this was as a result of the intervention as no baseline measures were conducted prior to the intervention. Therefore, it is possible that participants already held slightly more favourable, humane, views towards people with LDs.

Additionally, research has highlighted that attitudes are precursors of actual behaviour (Ajzen, 1991; Armitage & Conner, 2001). As Falvo et al. (2014) did not include a measure of attitudes, or of behavioural intentions, it is not possible to know whether a small improvement in the humanity bias is likely to impact on participants' behaviour towards people with LDs. It was suggested by Falvo et al. (2014) that future research should examine whether reduced anxiety could explain the relationship between imagined contact and out-group humanisation. The present study will be including a measure of attitudes (Wright et al., 1997), a measure of intergroup anxiety, as well as a measure of behavioural intention (Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999). It is important to determine that stigma interventions, intending to improve discrimination towards people with LDs, have an impact on participants' behavioural intentions.

I will now go on to discuss the only study that has examined the impact of imagined contact on attitudes and intergroup anxiety in relation to people with LDs.

4.5.3. Imagined Contact Via The Internet

At University College London (UCL) there has been exploration into the effectiveness of imagined contact compared to brief education based interventions delivered via the internet. Thus far, results in a pilot study (Lindau, Amin, Zambon, & Scior, under review) have shown that combining film-based education about people with LDs with positive imagined contact had small positive effects on participants' attitudes, intergroup anxiety and desire for social distance. These effects were maintained at one-month follow-up, with further reductions found in intergroup anxiety.

Adult participants (N = 401) were randomised to six brief digital interventions consisting of different combinations of education and imagined contact: (1) text based information about LDs; (2) education based film about LDs; (3) neutral imagined contact task; (4) neutral control task; (5) positive imagined contact task; (6) positive control task. Participants in conditions 2-6 (as detailed above) watched a two-minute education based film about people with LDs. Participants in conditions 3-6 engaged in an imagined contact task which was delivered analogous to studies by Turner et al. (2007) and West et al. (2011) with LDs as the target out-group. Following the interventions all participants were asked to fill out a questionnaire detailing attitudes (Wright et al. 1997), intergroup anxiety (based on Stephan & Stephan, 1985) and desire for social distance (Link et al., 1999) towards people with LDs. This information was gathered immediately post-intervention and at four to six-week follow-up.

It was found that brief film-based education delivered via the internet was more effective in improving attitudes than textual education alone. The effects of film-based education were enhanced by a positively toned imagined contact task, whilst a neutral task appeared to result in raised intergroup anxiety. At follow-up intergroup anxiety was reduced further for the positive imagined contact group, suggesting brief film-based education followed by a positive imagined contact task shows the most promising results.

The present study is similar in design to Lindau et al.'s (under review) study, however, will be delivered face-to-face replicating the original imagined contact studies (Turner et al., 2007a; West et al., 2011) in order to see if this yields more positive results than imagined contact delivered via the internet. See

section 5.1 below for further discussion about delivering the intervention face-to-face.

The results from Lindau et al.'s (under review) study had a direct impact on the way in which the present study was designed. It had been originally proposed that the present study would follow the exact design of previous studies (Turner et al., 2007a; West et al., 2011) in being made up of two experiments with two independent variables: tone of task (two levels: neutral vs. positive) and condition (two levels: imagined contact or control). However, following Lindau et al.'s findings that a neutral imagined contact task may be harmful to efforts to reduce stigma towards people with LDs due to an increase intergroup anxiety it was decided that the present study would remove the first 'neutral' imagined contact task and only conduct the second 'positive' experiment. In addition, West et al. (2011) emphasised the importance of the quality of the imagined contact experience and recommended using the explicitly positive version of the imagined contact task as suggested by Crisp et al. (2008).

Within the original 2x2 design, as described above, it was proposed that all participants would watch a two-minute education film prior to engaging in the imagination task, either imagining a detailed interaction with a person with an LD, or imagining something unrelated to a contact encounter (control condition). However, Lindau et al. (under review) reported similar levels of intergroup anxiety and attitudes across the positive imagined contact condition and the education delivered via film condition. This led to questions about whether the educational film shown at the beginning of the experiment created a ceiling effect, which may have limited the potential effect of the imagined contact task. Therefore, the amendment to the present study was, in addition to removing the two neutral imagined contact conditions as noted above, to add two conditions: one in which educational information is delivered via text only, and another condition where participants watch the educational film only but do not engage in an imagination task prior to filling out the measures. It was hoped that adding these two conditions would allow an exploration of whether changes are due to the imagined contact task or education alone, and what impact each of these interventions has on attitudes, intergroup anxiety and social distance.

5. PRESENT STUDY

5.1. Justification

People with LDs experience marked levels of discrimination, are often segregated, are less visible in society, and more diverse than other marginalised groups. As a result, direct contact is often very limited and the benefits associated with contact unrealised. Finding effective ways of challenging the discrimination experienced by people with LDs should be a priority for researchers in this field. The present study set out to investigate the effectiveness of imagined contact as an intervention to improve attitudes and reduce intergroup anxiety towards people with LDs. This was the first time imagined contact interventions had been delivered face-to-face, using a similar design with similar procedures as well as the same measures of attitudes and intergroup anxiety to previous imagined intergroup contact interventions (Turner et al., 2007a; West et al., 2011), for this target group.

At present there is an established literature of delivering imagined contact with participants face-to-face in an experimental setting. Thus far these studies have yielded positive results (e.g. Cameron et al., 2011; Crisp & Turner, 2009; Crisp & Turner, 2013; Falvo et al., 2014; Turner et al., 2007a; West et al., 2011). Of the three studies exploring the effect of imagined contact with disabilities and LDs as the target out-groups, two have delivered imagined contact to participants face-to-face (Cameron et al., 2011; Falvo et al., 2014) whilst one has delivered imagined contact via the internet (Lindau et al., under review), again with positive results found in all studies. It is not possible to determine from the literature available whether face-to-face delivery is more beneficial than when it is conducted at a distance, via the internet for example. However, a meta-analysis conducted by Miles and Crisp (2014) found that most design characteristics of the imagined contact task had no significant impact on the effect. It could be speculated that participants may be more actively engaged in the imagined contact task face-to-face vs. the internet as participants may be more likely to engage while being observed by the researcher. In the present study participants will be asked to submit their written notes to the researcher which may lead participants to be more actively engaged in the imagined

contact task. As the present study is aiming to replicate the original studies of imagined contact (Turner et al., 2007a; West et al., 2011), and as there is not enough of an evidence base to go forward with conducting imagined contact via the internet, the present study will deliver the interventions face-to-face with participants.

As well as the theoretical implications of advancing imagined contact theory by testing it in the LD field, it was hoped that the findings would also have practical implications, for example, informing policy makers and educators in the development of future interventions in order to improve public attitudes, reduce intergroup anxiety which would contribute to a reduction in the prejudice and discrimination experienced by people with LDs. If imagined contact is shown to work under these experimental conditions, this could be considered important evidence of the validity of imagined contact as a stigma-reducing intervention.

5.2.   Hypotheses

The following hypotheses were put forward:

1.   Participants in the imagined contact condition will report more positive attitudes, lower levels of intergroup anxiety, and lower levels of desire for social distance in relation to people with LDs post-intervention compared to participants in the control condition.

2.   Imagined contact will be at least as effective in reducing negative attitudes, improving intergroup anxieties, and desire for social distance as commonly used educational methods (such as education about LDs delivered in a written or film-based format used in isolation).

Additionally, the following research question was put forward:

1.   What are the effects of imagined contact at one-month follow-up, if any?

6. METHODOLOGY

This chapter details the research approach employed in the present study. I start by outlining my epistemological stance and then go on to describe the design of the study, providing information about the participants, recruitment, ethical considerations and procedure in data collection.

6.1. Epistemological Position

Epistemology is concerned with how individuals come to know information, obtain knowledge, and is defined as "a branch of philosophy concerned with the theory of knowledge" (Willig, 2009, p.2). Willig (2001) states that researchers need to be clear about the objectives of the research and adopt an epistemological position that is coherent with the choice of methodology and method.

There is a wide spectrum of epistemological positions adopted in research. At opposite ends of the spectrum are positivism (also known as empiricism), often adopted in quantitative research, and constructionism (also known as relativism), often adopted in qualitative research. Constructivism focuses on individual experiences or how concepts are developed and deployed within particular groups or cultures, for example. The present study is situated within a critical realist position as this fits with the experimental approach adopted, and the use of quantitative analysis of the data.

A realist position takes the approach that entities have an independent existence which means that it is possible to describe and characterise them in various ways, such as through numerical data, thus allowing us to understand the relationships between them. A quantitative approach is the most precise way of doing this. Quantitative research has been described as a formal, objective and systematic process of obtaining information about the world (Burns & Grove, 1997). Realism suggests that researchers should eliminate their biases, remain detached and uninvolved with the objects of their research and test or empirically justify their stated hypotheses (Tashakkori & Teddlie, 1998). However, our own presence as researchers influences what we are

trying to measure and as Scott (2005, p. 634) highlights "there are always likely to be practical and ethical constraints on collecting and analysing data, it is not so easy to dispense with philosophical concerns, such as data authenticity or the truthfulness of statements that the researcher makes".

By adopting a critical realist stance I have assumed that an independent reality exists and that the world is 'real' and made up of structures and objects that have cause-effect relationships with one another (Willig, 2001). However, this does not mean that absolute knowledge of the way it works is possible (Scott, 2005); instead any attempts at describing and explaining the world are bound to be fallible. The ways of ordering the world, its categorisations and the relationships between them, cannot be justified in any absolute sense and are always open to critique and replacement with a different set of categories and relationships (Scott, 2005). Within the present study my epistemological position is one that allows me to understand LDs to be real conditions that exist, however, I also believe that the phenomena of an LD is a social construct that is shaped by multiple factors, such as historical, cultural and social factors (Burr, 2003). As such the understandings of it are liable to differ and change across times and cultures (Rapley, 2004).

6.2.   Methodology

The present research aimed to explore the effectiveness of 'imagined contact' as an intervention to improve attitudes, and reduce intergroup anxiety and desire for social distance towards people with LDs. In light of this, and with the research hypotheses in mind, an experimental approach using quantitative analyses was employed. In addition, the written accounts of what participants imagined during the experimental tasks were analysed using content analysis in order ensure task compliance and also to provide insight into the process of imagining a contact.

6.3.   Design

An independent groups design was utilised. There were four conditions (imagined LD contact condition; imagined contact control condition; educational film condition; and education delivered as text condition) and two time points

(post-intervention and one-month follow-up). The dependent variables were attitudes, intergroup anxiety and desire for social distance.

Data were collected post intervention in order to assess whether imagined contact produced positive changes in attitudes, reduced intergroup anxiety and had a positive effect on behavioural intentions. The one-month follow-up measured whether these changes were maintained over time. While it is recognised that a repeated measures design would be stronger (for example, collecting baseline measures pre-intervention for comparison with the post measures) in order to attribute changes in attitudes, intergroup anxiety and desire for social distance to the specific intervention, such a design raises concerns about participant bias and demand characteristics (Everett et al., 2015; Swift et al., 2013).

There is a wealth of literature detailing the distorting effects of demand characteristics and participant bias on experimental findings, particularly in relation to mental imagery experiments (e.g. Goldston, Hinrichs, & Richman, 1985; Mitchell & Richman, 1980; Richman, Mitchell, & Reznick, 1979). Evidence in imagery studies has shown that a range of cognitive imagery processes are susceptible to subtly and unintentionally conveyed experimenter expectations (Intons-Peterson, 1983), as well as self-ratings of imagery vividness being affected (Di Vesta, Ingersoll, & Sunshine, 1971; Sheehan & Neisser, 1969). If these "demand" effects are not kept under control, experimental results may reflect the participants' desire to please much more than they provide any insight into the real mechanisms of cognition and the effects of imagery. In the present study, if participants had undertaken baseline measures they may have become aware, by the very nature of the questions in the measures, that the experiment was exploring attitudes towards people with LDs. For this reason, the present study employed an independent groups design and replicated previous imagined contact studies that have not used baselines measures (e.g. Turner et al., 2007a; West et al., 2011).

6.4. Selection and Recruitment of Participants

6.4.1. <u>Sample</u>

An opportunistic sample of undergraduate and postgraduate university students residing in the UK was used. See section 6.4.4 below for details on recruitment. Other studies similar in nature (Turner et al., 2007a; West et al., 2011) have relied on a student sample; therefore, the results of this study are comparable to them. In addition, using students only has allowed for educational attainment to be matched among participants.

6.4.2. <u>Inclusion And Exclusion Criteria</u>

In order for participants to take part in the study they had to meet the following inclusion criteria:

- Aged 18 and above

- Currently an undergraduate or postgraduate student

- A UK resident for at least two years

The exclusion criteria for participation were as follows:

- The study was delivered in English; therefore, participants were required to be English literate. As students attending a UK university have to demonstrate their good command of spoken and written English on admission it was not anticipated this exclusion criterion would exclude particular participants.

- Trainee Clinical Psychologists – due to the core teaching in LDs there were concerns that allowing this group of students to participate would positively skew the data.

6.4.3. <u>Power Analysis</u>

Power analysis was informed by several studies using the same measures as the ones used in the present study (Turner et al., 2007a; West et al., 2011), which showed medium to large effect sizes. Having considered previous effect sizes and the planned statistical analyses for this study, a power calculation

was carried out using the "G*Power 3" computer programme (Faul, Erdfelder, Lang, & Buchner, 2007), specifying alpha = 5% and desired power = 80%. The analysis revealed that the required sample size across all conditions was 179 participants.

6.4.4. Recruitment
6.4.4.1. University of East London Students: undergraduate and postgraduate students at the University of East London (UEL) were opportunistically recruited via a number of sources:

- Permissions were gained for recruitment emails to be circulated via the administrators and executive officers in the individual schools at the Stratford Campus, Docklands Campus and Birkbeck Campus at UEL (see Appendix 1 for the email sent);

- Posters advertising the study were displayed around the Stratford Campus, UEL (see Appendix 2);

- Flyers were handed out to students by the researcher at the Stratford Campus, UEL.

The recruitment emails, posters, flyers and online advertisements directed prospective participants to the webpage http://imageryonattitudes@jimdo.com. This allowed students to find more information on the study and allowed participants to read the information sheet (Appendix 3). From this webpage participants were able to book a day and time slot to take part in the study via Doodlepoll (an online scheduling tool that can be used to book a date and time to meet with multiple people).

6.4.4.2. *Students from other institutions:* as students from other institutions were not as readily available to the researcher a different approach to recruitment took place. An email was sent to the psychology departments at numerous institutions explaining the aims and purpose of the research and asking for students to participate (Appendix 4). In return the researcher offered to provide talks on a career in clinical psychology. The researcher was invited to attend

student lectures at the University of Buckingham to explain the research to potential participants and information sheets were handed out.

6.4.4.3. Allocation to conditions: the day and time slots were pre-assigned to one of the four conditions by the researcher and the respective condition was unbeknown to participants, therefore participants were quasi randomly allocated based on the slot they booked onto. Lecture slots were also pre-assigned to the conditions by the researcher.

6.4.4.4. Incentive: all participants were offered the chance to win a cash prize as an incentive for taking part in the research. Participants wishing to do so were entered into a prize draw for £100 in retail vouchers (for a retailer of their choice) following participation in the initial study and a second time following participation in the follow-up. Participants indicated at the end of the study if they wished to be entered into this prize draw by providing an email address. One participant was randomly selected at the end of data collection using a computerised random number selector.

6.5. Participants

A total of 107 undergraduate and postgraduate students, 33 males and 74 females, aged between 18 and 56 (M = 22.59 years, SD = 8.13), were included in the time 1 analysis. Seventy-four per cent of participants reported previous contact with someone with an LD.

6.5.1. Follow-up Study

All participants who consented to being contacted to participate in the follow-up study, and provided their email address (N = 89), were asked to complete the measures again four weeks after their initial participation in the study. The follow-up was completed as an electronic questionnaire.

In total 51 participants (48% of participants from time 1) participated in the follow-up study.

6.6. Materials – Stimuli and Measures

6.6.1. <u>Educational Film</u>
An educational film used in a previous study (Walker & Scior, 2013) was provided by my supervisor for use in the present study. For the purposes of the present study the film was edited from five minutes down to two minutes. The film contained four elements to explain to participants what is meant by the term 'learning disabilities'. These elements were: (1) people with LDs talking about what it means to them to have an LD, and expressing that they have had negative experiences and are treated differently to other people; (2) an expert informing participants that LDs can be more or less obvious depending what a person with an LD struggles with, for example communication; (3) photographs of people with LDs accompanied by advice that people with LDs should not be treated differently to others; and (4) advice on how to interact and communicate with people with LDs. The film was used to provide participants with a frame of reference for the imagined contact task to follow whilst controlling for participants imagining contact with the incorrect target group (for example, someone with dyslexia).

The sections of the film excluded for the purposes of the present study were: (1) a psychiatrist describing what causes an LD, for example genetic factors in the case of people with Down's syndrome; (2) a person with an LD describing her occupation as a valuing people support assistant. Although the purpose of the educational film was to raise awareness, increase knowledge and clarify what is meant by the term 'learning disability', there were concerns that if participants were provided with too much information then the education film may act as an intervention itself and create a ceiling effect for the imagined contact task to follow.

6.6.2. <u>Education In Text</u>
All participants were presented with a short written extract prior to filling out the measures (see Appendix 5). It detailed (1) what a LD is and how it was referred to in the past; (2) that LDs are different from specific learning difficulties such as dyslexia.

6.6.3. Intervention – Imagined Contact

The instructions for the imagined contact intervention task closely followed instructions by Turner et al. (2007a, Experiment 1) and West et al. (2011, Experiment 3), but were adjusted for people with LDs. See Appendix 6 for task instructions. The intervention asked participants to engage in an imagination task which was designed to either invoke participants imagining a positive interaction with a person with an LD (imagined contact), or imagining an encounter with someone without an LD (control). In addition, participants were asked to intermittently note down what they were imagining.

6.6.4. Measures

All participants, regardless of condition, were asked to complete the following measures, which were collated into one questionnaire (see Appendix 7).

6.6.4.1. Attitudes: the General Evaluation Scale (Wright et al., 1997) was used to measure attitudes. This scale is made up of six bipolar adjective pairs, for example cold-warm, positive-negative, friendly-hostile, which are rated on a seven-point Likert-scale. Participants were asked "Please describe how you feel about people with learning disabilities in general". A mean score for all items was produced for the scale (with a possible range from 1 to 7). A higher score indicated a more positive attitude. This scale has good internal reliability (Cronbach's a = .81) as reported by West (2010).

6.6.4.2. Intergroup anxiety: a five item measure was used to determine the extent to which participants would feel awkward, happy, self-conscious, competent, and relaxed, if they were to meet a person with an LD in the future (based on Stephan & Stephan, 1985). Participants rated the extent to which they agreed on a seven-point Likert-scale varying from not at all (1) to very (7). The positive items (happy, competent and relaxed) were reverse-coded and a mean score for all items was calculated (with a possible range from 1 to 7). A high score on the scale indicated higher levels of intergroup anxiety. This scale has good internal reliability (Cronbach's a=.78) as reported by Stathi et al. (2012).

6.6.4.3. Social distance: was measured using a scale developed by Link et al. (1999), and shown to be a reliable measure of social distance towards people with LDs by Scior and Furnham (2011). This scale measured participants desire for social distance from people with LD by asking them to rate to what extent they agree with five statements on a seven-point Likert-scale varying from not at all (1) to very (7). For example, "I would be happy to spend an evening socialising with someone with learning disabilities". Four of the items (live next door, spend an evening socialising, make friends, marry into family) were taken from Link et al. (1999), and a fifth item (work closely with the person) was added later. All item scores were reversed, and a mean score for all items was calculated as a final score for the social distance scale (with a possible range from 1 to 7). Higher scores indicated more desire for social distance. High internal consistency for this scale (Cronbach's a = .90) was reported by Scior and Furnham (2011) when used to assess social distance towards people with LDs.

6.6.4.4. *Demographic data:* participants were asked to provide demographic data including age, gender, ethnicity, and educational attainment. In addition, participants were asked if they had experienced contact with someone with an LD.

6.7. Ethical Issues

6.7.1. Ethical Approval
The study was granted ethical approval by the Research Ethics Committee of the School of Psychology, University of East London (Appendix 8). Ethical approval for amendments made to the design can also be found in Appendix 8.

6.7.2. Consent
An information sheet (Appendix 3) was provided to participants in two ways: (1) a copy was available via the webpage (as detailed in section 6.4.4.1) which allowed participants to read it before deciding to book onto the study, (2) participants were provided a paper copy to read on arrival at the study, given the opportunity to read through it and invited to ask any questions. They were then asked to sign a consent form (Appendix 9) which was co-signed by the

researcher. All participants were able to take the information sheet away with them. The information sheet contained the researcher's contact details should they have had any questions.

6.7.3. Confidentiality And Anonymity

Participants right to confidentiality and anonymity was outlined in the information sheet and consent form, and this was also explained verbally. The researcher was the only person to collect data, score all the measures and analyse results. In addition, an independent coder assisted with the analysis of written text collected from the imagined contact conditions; however, raw data was given to her anonymised. Participants were assigned an identification number (ID) on arrival. Details of names, email addresses and ID numbers were held on an encrypted memory stick and stored separately from the full data file. ID numbers, instead of participant names, were entered into databases and programmes used for analyses, thus ensuring confidentiality.

Participants were required to supply an email address in order to be entered into the prize draw. They were also asked if they would be willing to be contacted via this email address for the follow-up study. Email addresses and ID numbers were accessed in order to send emails to participants regarding the follow-up study. The email to participants included their ID number and they were asked to enter this into the relevant section when completing the follow-up questionnaire online. This allowed for pre and post measures to be matched.

Paper copies of consent forms and measures completed by participants were kept in a locked environment.

6.7.4. Debrief

On completion of the entire experiment, including follow-up, participants were emailed a full debrief (Appendix 10). It is possible that if participants had been debriefed after the initial experiment at time 1 they may have become sensitised to the measures which would have posed risks to the validity of the follow-up study. However, participants who did not give their consent to be involved in the follow-up study were handed a paper debrief following participation in the initial study. In addition, participants who had agreed to take part in the follow-up study but did not complete it were also emailed a full debrief.

6.8. Procedure

The procedure of this experiment followed closely the original studies by Turner et al. (2007a) and West et al. (2011) in both instruction set and dependent measures (intergroup anxiety and attitudes), however was adapted for an LD target group. This was to allow for the results obtained from this study to be compared with the results of studies that have used imagined contact to improve attitudes towards other stigmatised groups.

Potential UEL participants were sent an email, via administrators in their individual school, inviting them to take part in a psychological study exploring the use of imagery. The email contained a link to a website which allowed participants to view the aims of the study and read the information sheet. They were then able to follow a link to a booking page if they wanted to participate. Participants from other institutions were invited to remain at the end of a lecture, attended by the researcher, if they wished to participate in the study.

Participants were randomly allocated to one of four conditions (imagined LD contact, imagined contact control, educational film only and education in writing only). Participants were offered set date and time slots (which had already been pre-assigned to the conditions) that they could chose based on their own availability.

Participants were tested in groups of between 2 and 15; everyone in the same group received the same intervention.

On arrival participants were assigned an ID number so their results would not be identifiable as coming from them as individuals. The information sheet was presented to the participants on a written hand-out stating what the experiment would involve (Appendix 3). After reading this, participants were asked if they fully understood and had the opportunity to ask questions. At this point participants were asked to provide written consent to take part in the experiment and they were reminded of their right to withdraw from the study at any time (no participants withdrew). The researcher co-signed the consent forms.

The instructions for each task were given by the researcher. Detailed below is the procedure by condition.

40

6.8.1. Imagined LD Contact Condition

A total of 30 undergraduate and postgraduate students (10 males, 20 females) from both UEL ($N = 3$) and the University of Buckingham ($N = 27$) participated in the imagined LD contact condition. Participants were instructed to watch the two-minute educational film. They were then asked to engage in a five-minute imagination task in which they met and interacted with someone with LDs who had participated in the Paralympics (Appendix 6). Participants were informed they would have five minutes to spend on this task, and asked to write, from time to time, the things that they imagined. Participants were prompted throughout the five minutes to write down what they were imagining. The researcher informed participants intermittently how much of the five minutes remained and stopped the task once five minutes had lapsed. Following the imagined LD contact task participants were asked to complete the attitudes, intergroup anxiety and social distance scales (Appendix 7). Participants were asked to provide demographic information and answer questions regarding contact with people with LD. Of the 30 participants in this condition, 24 answered 'yes' to having contact with a person with an LD.

6.8.2. Imagined Contact Control Condition

A total of 29 undergraduate students (10 males, 19 females) from the University of Buckingham participated in the imagined contact control condition. Participants were instructed to watch the two-minute educational film. They were then asked to engage in a five-minute imagination task in which they met and interacted with someone (not specified as having an LD) who had volunteered in the Olympics (Appendix 6). Participants were informed they would have five minutes to spend on this task, and asked to write, from time to time, the things that they imagined. Participants were prompted throughout the five minutes to write down what they were imagining. The researcher informed participants intermittently how much of the five minutes remained and stopped the task once five minutes had lapsed. Following the imagined contact control task participants were asked to complete the attitudes, intergroup anxiety and social distance scales (Appendix 7). Participants were asked to provide demographic information and answer questions regarding contact with people

with LD. Of the 29 participants in this condition, 24 answered 'yes' to having contact with a person with an LD.

6.8.3. Educational Film Only Condition
A total of 20 undergraduate and postgraduate students (3 males, 17 females) from both UEL (N = 4) and the University of Buckingham (N = 16) participated in the educational film only condition. Participants were instructed to watch the two-minute educational film. They were then asked to complete the attitudes, intergroup anxiety and social distance scales (Appendix 7). Participants were asked to provide demographic information and answer questions regarding contact with people with LD. Of the 20 participants in this condition, 12 answered 'yes' to having contact with a person with an LD.

6.8.4. Education In Text Only Condition
A total of 28 undergraduate and postgraduate students (10 males, 18 females) from both UEL (N = 17) and the University of Buckingham (N = 11) participated in the education in text only condition. Participants were instructed to read a short text (Appendix 5). They were then asked to complete the attitudes, intergroup anxiety and social distance scales (Appendix 7). Participants were asked to provide demographic information and answer questions regarding contact with people with LD. Of the 28 participants in this condition, 19 answered 'yes' to having contact with a person with an LD.

Finally, all participants, regardless of condition, were invited to provide their contact details to enter a prize draw to thank them for their participation. They were then asked for their permission to be contacted for the follow-up study (time 2). Participants who provided their email address were contacted four weeks after completion of the initial study and were sent a link to an electronic version of the questionnaire. The follow-up consisted only of the attitude, intergroup anxiety and social distance scales, no demographic information was needed at time 2. On completion participants were asked to enter the ID number included in the email sent to them in order to match their data to their original responses. They were asked to tick a box if they wanted to be re-entered into the prize draw.

The entire experiment took an average of 15 minutes to complete. On completion of the entire experiment, including follow-up, participants were sent a full debrief by email (Appendix 10). Those who did not agree to take part in the follow-up study were given a paper copy of the debrief following participation in the initial study. Those who provided email addresses but did not take part in the follow-up study were emailed the debrief once eight weeks had lapsed since they had been sent the follow-up study email.

6.9. Statistical Analysis

The data were analysed using IBM SPSS version 22. All participants met inclusion criteria, and all data was complete with no outliers or reason to believe data was inaccurate, so it was not necessary to remove any data.

Although participants were allocated to conditions in a quasi-randomised manner, the four groups were compared on key demographics to rule out possible differences between groups that might affect the results.

6.10. Content Analysis

Content Analysis [CA] is a systematic and objective means of describing and quantifying written, verbal or visual information. Through CA it is possible for words to be organised into fewer content related categories. It is assumed that when classified into the same categories, words and phrases will share the same meaning (Elo & Kyngas, 2008).

During the imagined contact conditions participants were asked to write down, from time to time, the things they imagined. This was to allow the researcher to ensure participants understanding of, and compliance with, the task and also to provide insight into the process of imagining a contact. Across both imagined contact conditions 35 of the 59 participants (59%) handed in their written text to be analysed. Content analysis [CA] was used to condense the written text produced by participants in the imagined contact conditions in order to categorise and quantify the text so it could be analysed in SPSS. A number of authors have detailed how this is done and the present study followed a similar

procedure (Breakwell, 2012; Hsieh & Shannon, 2005; Neundorf, 2002; Yardley & Joffe, 2004) detailed below.

Themes were identified in an inductive manner and at a manifest level. This refers to themes that can be directly observed in the data. The goal of this level of analysis was to gather purely descriptive data, allowing the identification of patterns and frequencies of occurrences.

The written texts were read several times to ensure familiarity with the data and to identify themes and categories. Content categories with descriptors were developed (see Appendix 11) and working extract examples can be found in Appendix 12.

In order to check for consistency and reliability of coding a research assistant from Buckingham University acted as an independent coder. She was unaware of the research objectives. The research assistant was given the anonymised raw text and asked to categorise it using the already established categories. After the data had been coded I met with the research assistant to discuss and resolve any discrepancies in our coding. There was a high percentage of inter-rater agreement with only 10 per cent of items coded differently. In order to resolve the discrepancies we went back to the raw data together and, using the already established categories, discussed each item in turn until we were in agreement.

7. RESULTS

7.1. Initial Assumption Tests of the Data

A number of statistical tests were used in the analysis of the data and in each case appropriate checks were made to ensure the assumptions underlying the statistical analysis were satisfied. Initially histograms and normal QQ plots were used to assess deviations from normality (see Appendix 13). In addition, to test for problematic deviations, the Kolmogorov-Smirnov test of normality was carried out. The attitudes, $D(107) = 0.89$, $p = 0.136$, and intergroup anxiety, $D(107) = .077$, $p = .137$, mean scores appeared to be from a normally distributed population, however, the social distance scale, $D(107) = .197$, $p = .001$, violated the assumption of normal distribution. Transformation of the data was attempted but was unsuccessful and it was therefore necessary to use equivalent non-parametric analyses for this scale. The Levene test for homogeneity of variance of the examined data was also carried out prior to analysis and this proved non-significant in all cases (attitudes, $F(3, 103) = 1.89$, $p = .136$; intergroup anxiety, $F(3, 103) = 1.77$, $p = .158$; and social distance, $F(3, 103) = 1.44$, $p = .235$), suggesting that variances did not change systematically throughout the data.

7.2. Descriptive Characteristics

To ensure that any differences between conditions were not a result of differing group characteristics between participants, chi-square analyses and analyses of variance (ANOVA) were conducted. The majority of the demographic data were categorical, for example gender and ethnicity, so in order to compare frequencies and measure the relationship between categorical variables chi-square tests were used. An ANOVA is a parametric test that compares several (3 or more) means and several independent variables providing information on how these independent variables interact with one another and what effects these interactions have on the dependent variable. In order to compare participant's ages, the means were calculated and an ANOVA was conducted to see if there were significant differences between the four intervention groups.

Descriptive statistics for the total sample by intervention group can be found in Table 2.

No significant differences between conditions were found for gender composition, $\chi2(3)$ = 2.93, p =.402; and proportion reporting previous contact with someone with an LD, $\chi2(3)$ = 4.285, p =.232. Ethnicity, $\chi2(12)$ = 34.766, p=.001 violated chi-square assumption for having an expected frequency lower than 5 in some cells, thus creating a loss of statistical power.

There was a significant association between the experimental conditions for educational attainment, $\chi2(3)$ = 33.77, p =.001. This was a large effect size, r^2=0.56.

A significant difference was found between the conditions for age, $F(3, 103)$ = 15.71, p = .001. Post-hoc comparisons using the Bonferroni correction indicated that the mean ages for participants in the imagined contact condition (M = 19.20 years, SD = 4.09) and imagined contact control condition (M = 18 years, SD = 0) were significantly lower than the mean age of those in the educational film (M = 28.72 years, SD = 10.31) and the education in text conditions (M = 27.04 years, SD = 9.41).

Table 2.
Descriptive Statistics for Total Sample by Intervention Group

	Group 1 n (%)	Group 2 n (%)	Group 3 n (%)	Group 4 n (%)	Total Sample N
Gender					
Male	10 (33.3)	10 (34.5)	3 (15)	10 (35.7)	33
Female	20 (66.7)	19 (65.5)	17 (85)	18 (64.3)	74
Total	30	29	20	28	107
Ethnicity					
White British	28 (93)	29 (100)	9 (45)	22 (78)	88
White Other	0 (0)	0 (0)	4 (20)	1 (4)	5
Asian	-	-	3 (15)	2 (7)	5
Black	2 (7)	-	4 (20)	2 (7)	8
Did not disclose	-	-	-	1 (4)	1
Total	30	29	20	28	107
Education					
To age 18 (e.g. A Levels)	28 (93)	29 (100)	9 (45)	14 (50)	80
University degree	2 (7)	-	11 (55)	14 (50)	27
Post-graduate	-	-	-	-	-
Total	30	29	20	28	107
Previous Contact					
Yes	24 (80)	24 (83)	12 (60)	19 (68)	79
No	6 (20)	5 (17)	8 (40)	9 (32)	28
Total	30	29	20	28	107

Note. Group 1: Imagined LD contact condition; Group 2: Imagined contact control condition; Group 3: Educational film only condition; Group 4: Education in text condition.

7.3. Effects of the Interventions at Time 1

Overall the results showed that participants reported relatively positive attitudes, low levels of intergroup anxiety, and low levels of desire for social distance immediately after the brief interventions (time 1), see Table 3. As baseline

measures were not included in the study it is important to note that we cannot conclude that interventions caused a change in attitudes held prior to the interventions (see section 6.3).

Table 3.
Attitudes, Intergroup Anxiety and Social Distance: Means and Standard Deviations by Intervention Group at Time 1

Measure	Group 1 (n=30) M (SD)	Group 2 (n=29) M (SD)	Group 3 (n=20) M (SD)	Group 4 (n=28) M (SD)	Total Sample (N=107) M (SD)
Attitudes	5.48 (1.09)	5.72 (0.80)	5.83 (0.89)	5.75 (0.97)	5.69 (0.94)
Intergroup Anxiety	3.81 (1.19)	3.29 (0.86)	3.10 (.99)	2.92 (1.03)	3.30 (1.08)
Social Distance	2.07 (1.03)	1.83 (1.25)	1.72 (0.65)	1.71 (0.84)	1.84 (0.99)

As the dependent measures of attitude and intergroup anxiety met parametric assumptions, and there were three independent groups to compare, it was deemed appropriate to conduct a one-way between groups ANOVA to determine whether the intervention groups had any effects on participants' attitudes or intergroup anxiety immediately following the interventions.

No significant differences were found between the conditions for attitude, $F(3, 103) = 0.694$, $p = .558$, which indicates that intervention group had no significant effect on participants attitude scores.

A significant small effect size was found between the conditions for intergroup anxiety, $F(3, 103) = 3.854$, $p = .012$, $\eta2 = 0.10$. Post-hoc comparisons using the Bonferroni correction indicated that the mean score for the imagined contact condition ($M = 3.81$, SD = 1.19) was significantly different from the education in text condition ($M = 2.93$, SD = 1.03). This shows that participants in the imagined contact group reported experiencing higher levels of anxiety than participants in the education in text only condition.

As the social distance scores violated the assumption of normal distribution the non-parametric equivalent of an ANOVA, a Kruskall-Wallis test, was conducted on social distance scores. However, it revealed no significant differences

between the conditions, $\chi2$ (3) = 2.41, p =.49. This indicates that intervention group had no significant effect on participants' desire for social distance.

7.4. Effects of the Interventions at Time 2

The following statistical analyses were conducted to examine general differences in attitudes, intergroup anxiety and social distance at one-month follow-up (time 2). These statistical analyses were performed on the subsample who participated in the follow-up (N = 51).

7.4.1. Repeated Measures ANOVA
Repeated measures ANOVA's (for attitude and intergroup anxiety scores) were conducted as participants in each condition completed the same measures at different time points. In addition, the data met parametric assumptions of being normally distributed and having homogeneity of variance so repeated measures ANOVA's were deemed an appropriate statistical analysis for the data.

7.4.2. Wilcoxon Signed Ranks Test
A Wilcoxon signed ranks test (for social distance scores) was chosen as it is the equivalent non-parametric statistical analysis. The possibility of using a Mann-Whitney test was explored, however, data was matched across conditions thus ruling this test out.

7.4.3. Time 2 Results
Attitudes, $F(1, 50)$ = .179, p =.674, and social distance, Z = .584, p = .559, did not differ significantly between time 1 and time 2. See Tables 4 and 5 for attitude and social distance mean scores at time 1 and time 2.

Table 4.
Means and Standard Deviations for Attitudes at Time 1 and Time 2

Measure	Group 1 (n=14)	Group 2 (n=13)	Group 3 (n=9)	Group 4 (n=15)	Total Sample (N=51)
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Time 1	5.40 (1.09)	6.01 (0.77)	5.69 (0.85)	5.84 (1.05)	5.74 (0.97)
Time 2	5.35 (0.75)	5.36 (1.45)	5.95 (0.66)	6.11 (0.80)	5.67 (1.01)

Table 5.
Means and Standard Deviations for Social Distance at Time 1 and Time 2

Measure	Group 1 (n=14)	Group 2 (n=13)	Group 3 (n=9)	Group 4 (n=15)	Total Sample (N=51)
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Time 1	2.27 (1.03)	1.85 (0.99)	1.76 (0.59)	1.51 (0.55)	1.85 (0.86)
Time 2	2.11 (1.05)	2.12 (1.43)	1.97 (0.71)	1.55 (0.66)	1.93 (1.02)

A significant small effect size was found between the conditions for intergroup anxiety $F(1, 50) = 4.27$, $p = .044$, $\eta2 = 0.10$, suggesting a change in intergroup anxiety from time 1 to time 2. Post-hoc comparisons using the Bonferroni correction indicated at time 2, intergroup anxiety was significantly higher in the imagined LD contact condition ($M = 3.93$, SD = .98) compared to the education in text condition ($M = 3.24$, SD = 1.23) $p < .043$. See Table 6 for intergroup anxiety mean scores at time 1 and time 2.

Table 6.
Means and Standard Deviations for Intergroup Anxiety at Time 1 and Time 2

Measure	Group 1 (n=14)	Group 2 (n=13)	Group 3 (n=9)	Group 4 (n=15)	Total Sample (N=51)
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Time 1	4.01 (1.01)	3.34 (1.08)	3.22 (0.92)	2.71 (0.92)	3.32 (1.13)
Time 2	3.93 (0.98)	3.66 (1.09)	3.47 (0.94)	3.24 (1.23)	3.58 (1.08)

Participants in all conditions, apart from the imagined LD contact condition, reported higher levels of intergroup anxiety (see *Figure 1*) and more desire for social distance (see *Figure 2*) at time 2 compared to immediately after the brief interventions at time 1. This suggests that intergroup anxiety and social distance increased over time in the imagined contact control and the educational film conditions, but was relatively high and maintained at this level for the imagined LD contact condition, and relatively low at both time points for the education in text only condition.
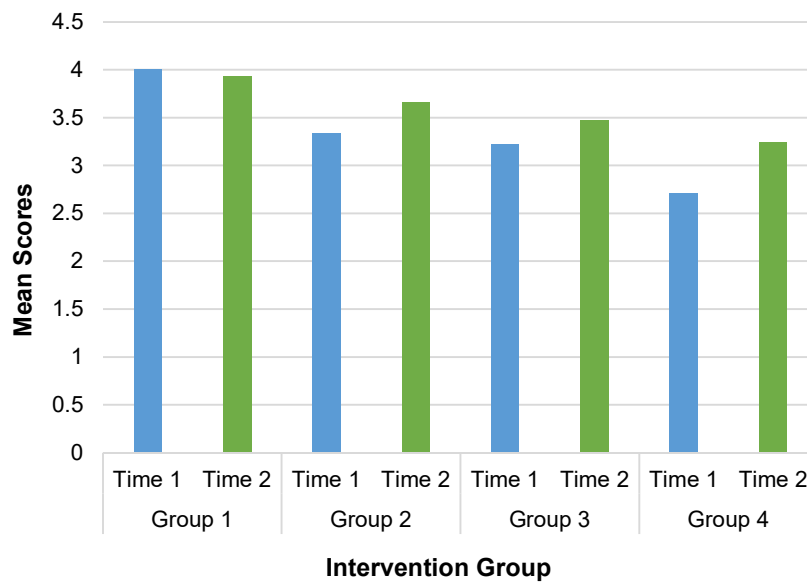
Figure 1. Intergroup Anxiety Scale. Shows the mean scores for intergroup anxiety at time 1 and time 2 by intervention group.
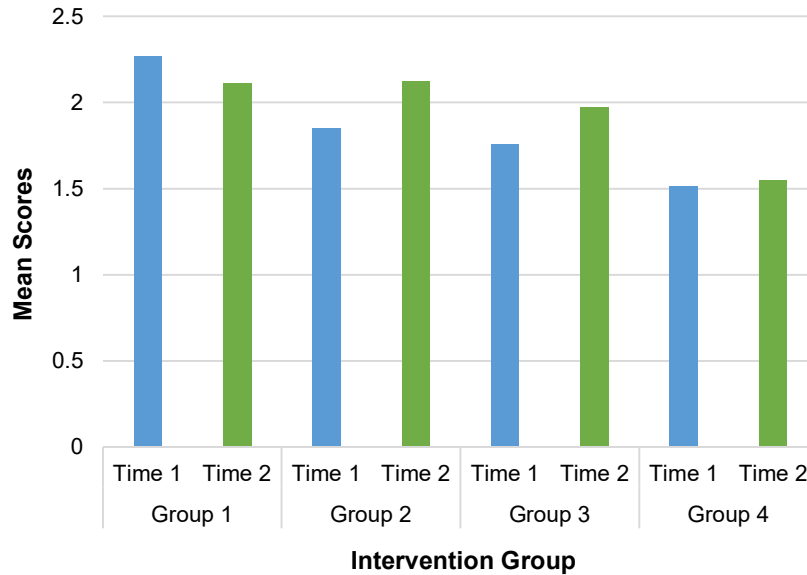

Figure 2. Social Distance Scale. Shows the mean scores for social distance at time 1 and time 2 by intervention group.

7.5. Analysis of Imagined Contact Written Text

The content of imagined contact written text was quantified into frequency data (detailed in section 6.10). See Table 7 for frequencies for each content category.

Chi-square analyses were conducted in order to ascertain whether there were any significant differences between the imagined LD contact and imagined contact control conditions, with respect to the content categories established. The categorical data violated chi-square assumption for having an expected frequency lower than 5 in some cells, thus creating a loss of statistical power (see Table 7). It was therefore deemed appropriate to calculate the means within each content category in order to compare whether there were any significant differences between the imagined contact conditions. As the data did not meet the parametric assumption for homogeneity of variance it was not possible to conduct t-tests. The equivalent non-parametric statistic test was therefore chosen and Mann-Whitney tests were conducted.

Table 7.
Content Categories: Frequencies by Intervention Group and Chi-square Analysis

Measure	Imagined LD contact (n=18)	Imagined contact control (n=17)	Chi-square
Lines of Text	80	76	$\chi2(8) = 11.29, p =.127$
Person Description	7	16	$\chi2(5) = 8.27, p =.082$
Olympics/Paralympics	21	24	$\chi2(5) = 4, p =.406$
Disability	12	0	$\chi2(4) = 9.75, p =.02$
Other Interests	1	9	$\chi2(4) = 4.17, p =.244$
Positive language	10	22	$\chi2(6) = 2.91, p =.713$
Negative language	6	3	$\chi2(3) = 3.11, p =.211$
Communication	16	3	$\chi2(5) = 5.64, p =.227$
Sameness	3	1	$\chi2(3) = 0.972, p =.615$
Truthfulness	3	0	$\chi2(3) = 2, p =.367$

No significant differences between the two conditions were found on lines of text overall, U = 152, Z = -.034, p = .981; person description, U = 110, Z = -1.68, p = .981; referring to Olympics/Paralympics, U = 150, Z = -.104, p = .933; positive language, U = 118.5, Z = -.127, p = .217; negative language, U = 129.5, Z = -1.28, p = .338; sameness, U = 144.5, Z = -.587, p = .868; and truthfulness, U = 136, Z = -1.39, p = .486.

However, Mann Whitney tests showed a medium effect size for disability, U = 85, Z = -3.06, p = .003, r = 0.52; and small effect sizes for other interests, U = 115, Z = -1.27, p = .053, r = 0.21; and communication, U = 104.5, Z = -1.95, p = .051, r = 0.33. These findings suggest that participants in the imagined contact control condition were more able to bring to mind having a conversation about interests outside the Olympics (imagined task given) with the person they were imagining. Participants in the imagined LD contact condition used more lines of text to imagine and describe the person's disability, as well as focusing on ways of communicating with the person.

It can be seen in *Figure 3* and *Figure 4* that participants in the imagined LD contact condition used less positive language and more negative language in the descriptions of their imagined scenarios which may have affected the way they scored on subsequent measures of intergroup anxiety and social distance. Results presented in section 7.3 show that participants in the imagined LD contact condition reported higher levels of intergroup anxiety.
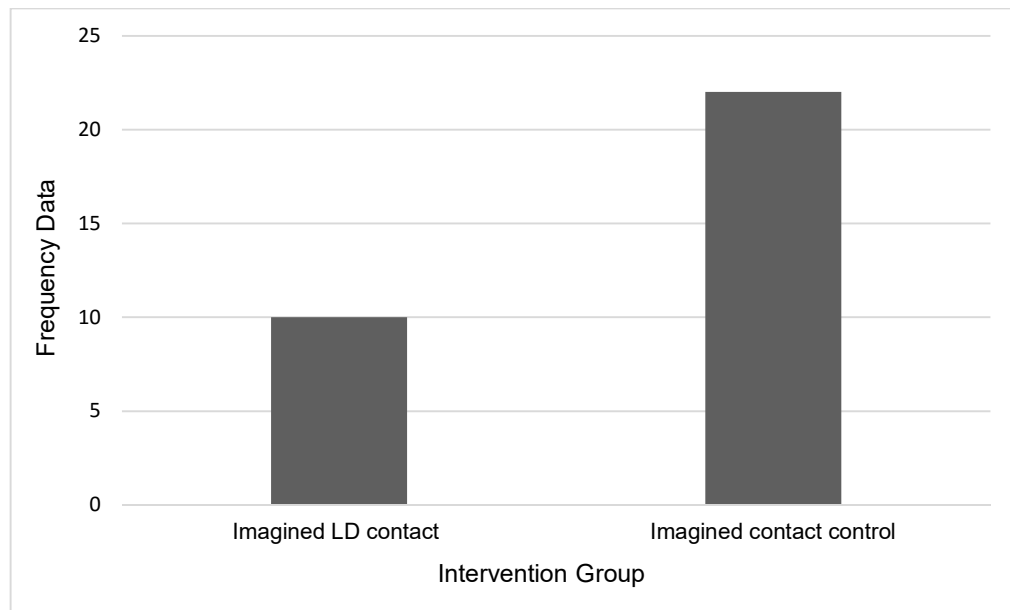
Figure 3. Positive Language. Shows the frequencies for content category positive language by intervention group.
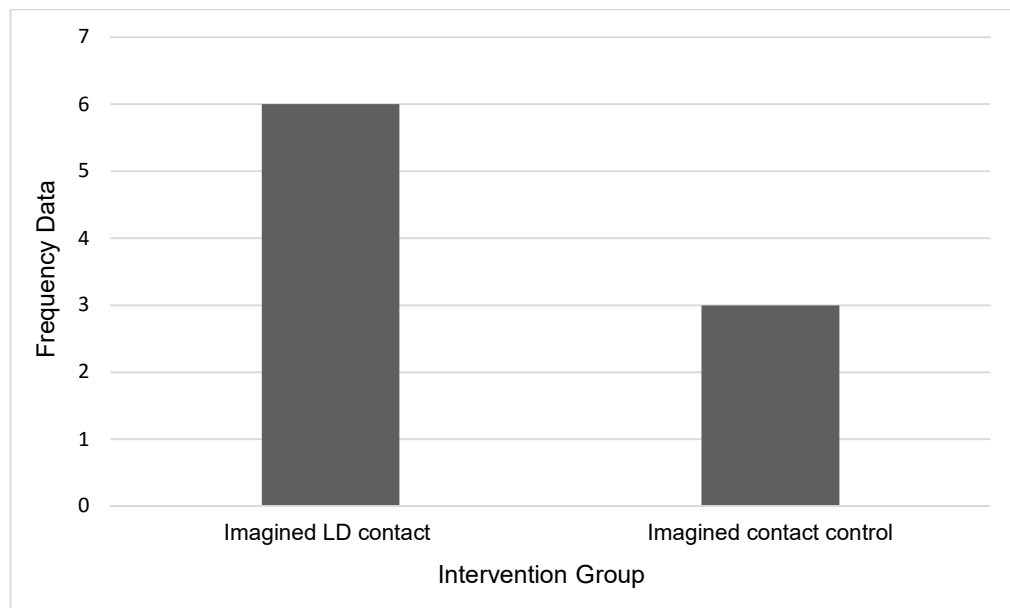

Figure 4. Negative Language. Shows the frequencies for content category negative language by intervention group.

8. DISCUSSION

This chapter summarises the results of the study and evaluates them in relation to the research hypotheses and the existing literature. I will then proceed to reflect on the limitations of the study, before discussing the implications of the findings and recommendations for future research.

8.1. Summary of Findings

The aim of the present study was to investigate the effectiveness of imagined contact as a means to improving attitudes and reducing intergroup anxieties towards people with LDs. It is worth noting at the outset that overall the results showed that participants reported relatively positive attitudes, low levels of intergroup anxiety, and low levels of desire for social distance towards people with LDs, regardless of experimental condition. Against predictions, imagined contact did **not** improve attitudes, reduce intergroup anxiety, or reduce participants desire for social distance towards people with LDs, compared to the other experimental conditions. As such, the results failed to support the original hypotheses and all were rejected. Instead the results indicated that imagined LD contact significantly increased participants' intergroup anxiety towards people with LDs immediately following the intervention (time 1), compared to the education in text only condition. However, at one-month follow-up intergroup anxiety and social distance had reduced in the imagined LD contact group from their time 1 levels. Nonetheless, both indicators were still higher, and thus in a less desirable direction, at time 2 compared to the other experimental conditions.

Immediately following the brief interventions (time 1), participants in the educational film only and education in text only conditions reported more positive attitudes, lower levels of anxiety, and less desire for social distance towards people with LDs than those in the imagined LD contact and imagined control conditions. However, at one-month follow-up (time 2), their intergroup anxiety and social distance had increased but still remained lower than intergroup anxiety and social distance among participants in both of the education only and the imagined contact control conditions.

The time 2 results showed that participants in the educational film only, education in text only, and control conditions reported higher levels of intergroup anxiety and more desire for social distance towards people with LDs compared to their time 1 scores.

The results of the analysis of written text in the imagined contact conditions found that, when asked to imagine a contact situation, participants in both the imagined LD contact and control conditions wrote similar amounts of text regarding the scenarios they were imagining. However, within the written text there were notable differences between the two conditions. For example, many of the notes by participants in the imagined LD contact condition focused on the person's disability, associated deficits and communication barriers. Additionally, participants in this condition used more negative language in their accounts. In contrast, participants in the control condition used more positive language and their notes focused more on talking about their conversation partner's interests.

8.2. Evaluation of the Findings

The results of the present study indicate that imagining contact with people with LDs could fundamentally be different from imagining other out-groups that have been investigated, such as older adults (Turner et al., 2007a), people with schizophrenia (Giacobbe et al., 2013; West et al., 2011), people with depression (Na & Chasteen, 2015), and minority ethnic groups (Stathi et al., 2014; Turner & Crisp, 2010). It is therefore important to explore the reasons why the present study failed to replicate the positive effects of imagined contact observed in many other studies.

8.2.1. Self-Report Measures
The present study used self-report measures which may have led to an inaccurate positive bias toward the self and social desirability. It is possible that, by being provided with an educational film and/or education in text about people with LDs, participants were primed to the target group which lead them to consciously attempt to regulate their behaviour to appear non-prejudiced (Crisp & Turner, 2009; Devine, Plant, Amodio, Harmon-Jones, & Vance, 2002). However, much of the imagined contact literature is based on participants self-

reports (Paolini et al., 2004) therefore it is questionable why this may have been an issue for the present study in relation to this particular out-group.

8.2.2. Differences In Group Characteristics

A tentative explanation could be the differences found in group characteristics for educational attainment of participants that took part in the study. The literature has highlighted that decreased levels of prejudice and more positive attitudes are associated with higher levels of educational attainment (Carvacho et al., 2013). Although the mechanisms of this are unclear it has been questioned whether higher educational attainments genuinely reduce prejudice towards out-groups, or instead help people to conceal prejudicial attitudes that are not deemed socially desirable (Carvacho et al., 2013). All of the participants in the present study were highly educated university students, however participants in the educational film only and education in text only conditions had higher educational attainment than those in the imagined contact conditions which could explain why those in the educational conditions reported more positive attitudes, lower levels of intergroup anxiety and less desire for social distance. I will discuss the use of university students further in the limitations section (8.3.2).

Additionally, group differences were found in relation to the ages of participants. Those in the imagined contact conditions were significantly younger than those in the two educational conditions. It has been found that younger adults hold less favourable attitudes towards out-groups (Chandra & Minkovitz, 2007), and more specifically, people with LDs (Beadle-Brown et al., 2014). This may go some way to explaining why participants in the education conditions reported more positive attitudes, lower levels of anxiety, and less desire for social distance towards people with LDs than those in the imagined contact conditions.

8.2.3. Follow-up Results

The one-month follow-up results of the present study showed that the imagined LD contact condition reduced intergroup anxiety and desire for social distance. In the absence of baseline data, it is possible that anxiety and desire for social distance increased at time 1 and then gradually decreased again, explaining the

lower scores at time 2. The reduction in intergroup anxiety and desire for social distance could be explained by participants' prior contact with people with LDs. Husnu and Crisp (2010) highlighted that prior contact with an out-group is positively related to the vividness and therefore effectiveness of imagined contact. During the follow-up more participants in the imagined LD contact condition reported previous contact with people with LDs than the other conditions and as result this may have reduced intergroup anxiety and desire for social distance.

Additionally, these results may suggest that some positive effects of imagined contact may take time to develop. It has been suggested that it may be more difficult to change perceptions towards people with LDs with imagined contact and therefore take longer for the intervention to have an effect (Falvo et al., 2014). Previous imagined contact research in others areas have not included a follow-up and only measured effects of imagined contact immediately after intervention (e.g. Crisp & Turner, 2009; Turner, et al., 2007; West et al., 2009). In contrast, the two studies examining imagined contact in relation to LDs have conducted one-month follow-ups. Falvo et al. (2014) found that the positive effect of contact lasted at least one-month after the imagination task. Similarly, Lindau et al. (under review) found that the positive effects found in the imagined contact condition were not only maintained at follow-up, but in fact further reduced participants' intergroup anxiety. It is still unclear what the mechanisms of imagined contact are that support a long-lasting effect.

8.2.4. Prior Contact With The Out-Group
Cameron et al. (2011) found that imagined contact had the most positive effects on intended friendship behaviour with children in the youngest age group. They suggest that imagined contact effects may be limited to those with little previous experience of the out-group. It is possible that as children get older and become adults it is more difficult to change intended inter-group behaviours because in-group and out-group friendship networks are likely to be more established (Dunn, 2004) and therefore intended behaviour responses are less likely to change as a result of imagined contact interventions. This might also explain why imagined contact has been found to be more effective in children than adults (Miles & Crisp, 2014). The findings imply that imagined contact is

moderated by prior experience with the out-group. In the present study there was a high percentage of participants who reported having previous contact with people with LDs (74%), with 44 per cent in the imagined contact conditions compared to 28 per cent in the educational conditions. It is therefore possible that the participants prior contact with people with LDs created a ceiling effect for the positive benefits of imagined contact. Previous studies of imagined contact (e.g. Turner et al., 2007; West et al., 2011) have not gathered information on prior contact with the out-group so it is unclear whether this may have played a factor in the present studies results.

8.2.5. Imagined Contact and Stigmatised Groups

It has been suggested that interactions with particularly stigmatised groups can reduce the effectiveness of imagined contact due to the high level of anxiety attached to these out-groups (Husnu & Crisp, 2011). However, West et al. (2011) found that adapting the imagined encounter to be positively toned reduced intergroup anxiety towards people with schizophrenia who are known to be a highly stigmatised group, and for whom neutral imagined contact had few, if any, positive effects. In addition, Stathi and Crisp (2008) concluded that integrating positivity into the imagined contact task produced more positive effects, but only for target groups with whom the neutral imagined contact task also produced positive effects. The present study did not include a neutral imagined contact task so it is not possible to infer if, in line with Stathi and Crisp's (2008) suggestion, a failure of neutral imagined contact to produce a positive shift in attitudes may have been the reason why the positively primed imagined contact task had no effect. However, in contrast to Stathi and Crisp's (2008) findings, Lindau et al.'s (under review) study into imagined contact with people with LD, found that despite a neutral imagined contact task resulting in increased intergroup anxiety, a positive imagined contact task yielded more positive effects. Why is it then that the present study, even with a positively primed imagined contact encounter, found increases in intergroup anxiety?

8.2.6. Imagined Contact Scenario

It is important to explore the possible impact of the imagined contact scenario chosen for the present study. In the imagined LD contact condition participants were asked to imagine a contact with a 'participant' in the Paralympics. In

contrast participants in the imagined contact control condition were asked to imagine a contact with a 'volunteer' in the Olympics. The decision to present these inequitable differences in the roles of the imagined person in the scenarios was made as it is a well-known fact that people with LDs are disempowered within society. In addition, it has been suggested that emphasising the capabilities of people with LDs can result in more positive attitudes (MacDonald & MacIntyre, 1999). Therefore, it was felt that describing the imagined person with an LD as a participant in the Paralympics would strengthen the positive imagery and emphasise the capabilities of people with LDs in a way I did not feel needed to be done with the contact target without LDs. However, role differences in the imagined scenarios may have affected the results, in particular intergroup anxiety, which I will go on to discuss.

Recent evidence has shown that the experience of threats, stresses, or anxieties in relation to intergroup contact is different for different groups (Greenland, et al., 2012). Participants are affected by the topic of conversation (Trawalter & Richeson, 2008) and the intimacy of the encounter (Blair, Park, & Bachelor, 2003; Bromgard & Stephan, 2006). It is possible that participants were greatly impressed with meeting a person with an LD who had participated in such a prestigious event such as the Paralympics. This may have led them to feel intimidated, when imagining interacting with this person, and experience anxiety about how to act, what to talk about and in particular what was expected of them given the scenario. This may go some way to explaining why participants in the imagined LD contact condition reported higher levels of intergroup anxiety. It is also possible that imagining an interaction with a person with an LD described in a high achieving position could have triggered an internal conflict/anxiety within participants due to the apparent mis-match between the categories presented to them – 'learning disability' and 'high achiever'. This tension may have been anxiety provoking.

Results from the written text in the imagined contact conditions could go some way to helping us understand what participants were imagining during the task which may have had an impact on the results, and provide some insight into the source of the anxiety reported in the imagined LD contact condition. The findings show that participants in the imagined LD contact condition used more

negative language than participants in the imagined contact control condition and focused on deficits in communication:

"Awkward…anxious…do they understand me?"

In addition, participants in the imagined LD contact condition detailed imagining a difficult and socially awkward interaction with a person with an LD. It is possible that participants may have been using terms such as 'awkward' and 'anxious' as a way of describing how they felt meeting a Paralympic athlete, and not because they were meeting a person described as having an LD. Therefore, participants in the imagined LD contact condition may have reported higher levels of intergroup anxiety as a result of the impact of role differences in the conditions. However, this alone does not explain the results of the written text that show participants in the imagined LD contact condition used less positive language and more negative language, as well as focusing on the person with LDs deficits in communication. It could be surmised that if participants were anxious that they were meeting a high achieving person with an LD in a position of power that despite feeling awkward and anxious they would imagine, and subsequently detail, a positive interaction with this person. However, this was not the case.

It is important to note that the study by Lindau et al. (in press) used an identical imagined contact scenario, with participants asked to imagine a contact with either a 'participant' in the Paralympics (imagined LD contact) or a 'volunteer' in the Olympics (imagined contact control condition). This study reported positive results of imagined LD contact in relation to desire for social distance, attitudes and intergroup anxiety. It is therefore unclear whether the imagined contact scenario affected the results in relation to the reported higher levels of intergroup anxiety as originally hypothesised.

8.2.7. Projection Theory
It has been theorised in the direct and extended contact literature that positive contact leads to greater self to out-group similarity which increases out-group liking through 'projection' (Stathi & Crisp, 2010). The projection theory has been described as the tendency to expect similarities between oneself and others (Robbins & Krueger, 2005). If out-group members appear more similar to in-

group members this can foster a more positive interaction and lead to positive 'projection of self' from in-group members towards the out-group (Eller & Abrams, 2004; Wright et al., 1997). Stathi and Crisp (2008) demonstrated that positively toned imagined contact leads participants to infer that out-group members share positive traits with themselves. It could be speculated that one reason imagined contact did not have the same effect in the present study is that participants were unable to 'project' and imagine that people with LDs have similar, positive, traits as themselves. It is possible that participants in other studies of imagined contact have been able to imagine the out-group as people like themselves even though they may be older, homosexual, or have a mental health problem. It may be easier for participants to imagine these people having interests, jobs and similarities to themselves, whereas participants may have struggled to do this for people with LDs. It is proposed that the key reason for the failure to replicate previous studies is the fact that the label of 'learning disability' is defined through the absence ('dis') of normative abilities, and in the public eye associated predominantly with difference and deficiency. This was evident in the following excerpts from participants notes on the imagined contact task:

"I would imagine the individual as physically or mentally impaired…the fact they are impaired would give me the impression that they are different"

"Trails off sometimes, incomprehensible at points, totally in his own world, I have to speak unnaturally slow and repeatedly"

Further support for this explanation comes from findings in a study exploring imagined contact and the humanisation bias towards people with LDs (Falvo et al., 2014). The results revealed a general tendency to assign a not fully human status to people with LDs, with them being perceived more in terms of feeling non-uniquely, than uniquely, human emotions. It has been suggested that these humanity attributions may be one of the factors which lead to the stigma experienced in society by people with LDs (Scior, 2011; Werner, Corrigan, Ditchman, & Sokol, 2012). Imagined contact was found to improve the humanity bias (Falvo et al., 2014), however, it is unclear which emotions are influential mediators in this effect.

Empirical evidence has found that if people have not had experience with a person with a disability they may regard the problems faced by them as insurmountable which may lead to exaggerated negative expectations (Wright, 1983). Additionally, members of the public attribute few capabilities to people with LDs (Siperstein, Norins, Corbin, & Shriver, 2003). It is possible that imagined contact is differently effective when the out-group portrayed have different degrees of intellectual impairment (Falvo et al., 2014). In the present study the educational film shown to participants depicted a range of people with LDs from those who were verbal to those shown in wheelchairs. It is possible that participants imagined people on the more severe end of the spectrum which may have impaired their ability to 'project' and imagine that people with LDs have similar, positive, traits as themselves. Researchers have argued and shown that efforts to improve attitudes must emphasise the capabilities of people with LD (MacDonald & MacIntyre, 1999; Sinson & Stainton, 1990). Arguably, this strategy stands at risk of further marginalising people with more severe LDs.

8.2.8. Educational Interventions

The present study found that at time 1 the educational film only and education in text only conditions were as effective, if not more so, than imagined contact in reducing intergroup anxiety and improving attitudes towards people with LDs. Misconceptions about what it means to have an LD, and about the capabilities of people with LD appear widespread, and may contribute to prejudice and discrimination towards this out-group. As a result, many studies have explored the use of education interventions through internet delivered brief films (Seewooruttun & Scior, 2014; Walker & Scior, 2013), university based lecture programs (Campbell et al., 2003), educational vignettes (MacDonald & MacIntyre, 1999), and knowledge provision (Rae, McKenzie, & Murray, 2011) in order to attempt to challenge misconceptions, and increase knowledge and awareness and ultimately to improve attitudes.

Educational interventions have demonstrated promising results such as an improvement in knowledge, more positive views of inclusion and more positive attitudes towards people with LDs (e.g. Corrigan, Morris, Michaels, Rafacz, & Rüsch, 2012; Melville et al., 2006; Morrison, Cocozza, & Vanderwyst, 1980). It

has been found that educational films that also provide indirect contact with people with LD have found to be effective in reducing desire for social distance and increasing inclusion attitudes (Walker & Scior, 2013). It is possible that the findings of educational intervention studies tap into one of Allport's (1954) optimal conditions - that gaining an increased knowledge of the out-group subsequently improves in-group member's intergroup attitudes.

Participants in the present study watched an educational film that aimed to provide them with a frame of reference for the imagined contact task whilst also raising awareness and increasing knowledge about what it means to have an LD. One section in the film instructed participants about how to interact with, and behave towards, people with LDs. It is possible that, consistent with the findings of previous educational studies, the film could have worked as an intervention in itself and made participants feel less anxious about future contact with people with LD. Interestingly, Lindau et al. (under review) found that an educational film yielded small to medium size positive effects on attitudes, intergroup anxiety and social distance when delivered via the internet. Adding a positive imagined contact task to the educational film reduced the desire for social distance towards people with LDs. These effects were maintained at one-month follow-up with further reductions in intergroup anxiety for the intervention integrating education with positive imagined contact. It is unclear why the present study found different results when it was almost identical in design to the Lindau et al. study albeit delivered face-to-face rather than via the internet. Differences in mode of delivery are explored in section 8.2.9 below.

An important question in relation to the findings of the present study is why the educational conditions alone yielded more positive results than when combined with the imagined LD contact condition.

It has been suggested that self-anxiety (anxiety about thinking or doing something that is prejudiced) impacts on what participants imagine as they are concerned with appearing to behave in a way that could be perceived as prejudiced causing increased anxiety (Greenland et al., 2012). It is possible that adding an imagined contact intervention may have had the opposite effect to the one desired and raised participants' anxieties and sense of discomfort about

interacting with people with LDs compared to participants who were not asked to imagine any contact with the out-group, such as those in the education in text only condition.

Kobe and Mulick (1995) found that integrating direct contact with formal education it did not affect attitude change. Although participants reported an increase in self-reported knowledge about LDs it did not influence attitudes or attitudinal change. The authors concluded that attitudes may develop as a product of cumulative experiences and therefore discrete attempts to provide education and contact may do little to alter them. It is possible that within the present study imagining a contact with an out-group member combined with education about them had the same effect as described by Kobe and Mulick (1995).

Educational studies in other areas, such as mental health stigma, have shown small but positive impact on participants' attitudes towards people with mental health problems (e.g. Pinfold, Toulmin, Thornicroft, Huxley, Farmer, & Graham, 2003), although measured impact of the intervention had weakened by the long-term follow-up. Additionally, it is reported that educational interventions do not have an impact on the 'them and us' phenomenon with few changes reported in social distance ratings (Pinfold et al., 2003).

It is important to be tentative about the results of educational intervention studies that explore the improvement of knowledge and reduction in negative attitudes towards people with LDs as the evidence is still limited and not robust enough (Seewooruttun & Scior, 2014). While educational approaches have been found to be useful in increasing knowledge, their impact on stigma change is short-lived and of limited magnitude (Brown, Macintyre, & Trujillo, 2003; Corrigan, Morris, Michaels, Rafacz & Rüsch, 2012; Sengupta, Banks, Jonas, Miles, & Smith, 2011; Scior & Werner, 2016). Additionally, educational studies have yet to examine the effects of such interventions on real life behaviours (Walker & Scior, 2013). Seewooruttun and Scior (2014) concluded that the evidence to date is not sufficiently robust to recommend one type of intervention over another in relation to improving attitudes towards people with LDs.

8.2.9. Delivery Of Imagined Contact

As has been highlighted throughout the evaluation of findings, the present study found different results to Lindau et al. (under review) who found positive imagined contact effects towards people with LDs. Due to the lack of imagined contact literature in the LD field, it is only possible to speculate about why these differences exist. One possible factor is that the present interventions were delivered face-to-face, whereas Lindau et al. delivered their interventions via the internet. There may have been differences in the active engagement in the imagined contact task face-to-face vs. the internet with participants being more likely to engage while being observed by the researcher. This face-to-face interaction with the researcher may in itself have induced anxiety and discomfort which could have had an impact on participants' responses on the measures. Additionally, being asked to submit their written notes to the researcher may have led participants in the present study to be more actively engaged in the imagined contact task, whereas the distance provided by conducting a study over the internet may have reduced participants' engagement with the task and thus reduced their anxieties.

8.3. Limitations

I will now describe and reflect on some of the limitations of the present study and how these may have affected the findings.

8.3.1. Small Sample Size

A power analysis (see section 6.4.3) indicated that the required sample size for the present study across all conditions was 179 participants. However, this study only reached 107 participants, which is 60 per cent of the participants required in order to show medium to large effect sizes as demonstrated in by Turner et al. (2007a) and West et al. (2011). Accordingly, the study was underpowered and it is conceivable that small effect sizes may have been further reduced (Button et al, 2013). However, as this was the first time imagined contact has been delivered as a face-to-face intervention in relation to people with LDs, the data yielded from the study may be useful in planning future studies and formulating hypotheses for later testing with larger samples.

8.3.2. Samples of Convenience

Another potential limitation of the study is the reliance on a convenience sample of undergraduate and postgraduate students, which may not be representative of the wider population. However, other studies similar in nature to this study (Lindau et al., under review; Turner et al., 2007a; West et al., 2011) have relied on student samples; therefore, the results of this study are at least comparable to those studies. In addition, most psychological research historically has utilised student populations and Sears (1986) did not believe that reliance on these populations has major consequences. However, he did state that it is important to be mindful that the strength of the relationship may be wrongly described and generalised to the wider population (Sears, 1986).

In thinking about the potential to generalise the results of the present study it is important to keep in mind that participants were generally young (M = 22.59 years) and the majority (70.1%) were psychology students who may have already had knowledge of, and held more positive attitudes, towards people with LDs than the general public. These respondent characteristics have consistently been found to be associated with more positive attitudes in previous studies (Scior, 2011).

8.3.3. Demand Characteristics

Participants may have been influenced by demand characteristics. For example, participants reported more favourable attitudes as they felt that is what the experimenter would expect based on the intervention they had taken part in (Swift et al., 2013). Additionally, the educational film may have made desirable answers more obvious to participants. However, Gapinski, Schwartz and Brownell (2006) state that demand-driven change may not be an undesirable outcome for prejudice reduction studies. It is important, however, to be mindful that outside the experimental situation attitudes may well remain quite negative. A way to overcome the issues associated with demand characteristics may be to use implicit measures, see section 8.4.3.3.

8.3.4. Self-Selection

Participants who took part in the present study were self-selected, so it could be argued that they had an interest in the area of study or possessed particular personality variables which do not represent the wider population. However,

adverts for the study stated it was an exploration into the "use of imagery on attitudes" so participants did not know prior to deciding to take part that the study was investigating attitudes towards people with LDs. It is important to note that of the students who took part at time 1, 74 per cent reported previous contact with people with LDs. While this figure seems high it is consistent with contact reported by other young adult samples (Cortiella & Horowitz, 2014). In the follow-up study, at time 2, 74.5 per cent of participants who took part ($N = 51$) reported contact with people with LDs. The high rate of participants' prior contact may have reduced potential for change in attitudes, i.e. created a potential ceiling effect, or in turn affected participants differently to intended, given that imagined contact interventions assume that participants will have had few if any prior opportunities for contact.

8.3.5. Measures

It is important to evaluate the measures used in the present study. This study followed closely the design of previous imagined contact studies (Turner et al., 2007a; West et al., 2011) and used the same measure of attitudes (Wright et al., 1997) and intergroup anxiety (Stephan & Stephan, 1985). Although these measures are valid and reliable it is important to note that they were not designed to measure attitudes and intergroup anxiety specifically towards people with LDs. Therefore, caution should be exercised in relation to the extent to which they measure the effectiveness of LD specific interventions (Seewooruttun & Scior, 2014).

The attitude scale asked participants to rate how they felt about people with LDs using bipolar adjective pairs. It is possible that participants may have hidden their true feelings on this scale as it is unlikely they would rate themselves as hostile, cold or suspicious towards people with LD, who are widely perceived as a vulnerable group. The intergroup anxiety scale did not offer these bipolar pairs so socially desirable answers may have been more ambiguous. However, during testing many participants asked me to clarify the meaning of particular words in the context of the intergroup anxiety scale, such as 'competent'. It is questionable to what extent participants understood what was being asked of them.

The present study included a valid and reliable measure of social distance (Link et al., 1999) which has been shown to have good psychometric properties in assessing social distance in relation to people with LD (Scior & Furnham, 2011). However, the data for this scale were not normally distributed. A potential reason for this may be that a high score on this measure denotes that participants have desire for social distance so the majority of participants rated themselves at the bottom of the scale, i.e. low desire for social distance from people with LDs. This created a floor effect and positively skewed the data.

8.3.6. Between-Subjects Design

As the present study did not include a baseline for the three measures, due to concerns about participant bias and demand characteristics, it is not possible to say whether changes or differences found between the conditions were as a result of the intervention conditions. Participants may already have held their reported attitudes, intergroup anxieties or desire for social distance prior to the taking part in the study.

8.4. Implications of Findings

In this section the implications of the findings are discussed, as are difficulties inherent in researching attitude change interventions. I will then highlight recommendations for future research.

8.4.1. Constraints On The Use Of Imagined Contact

8.4.1.1. Feasibility: it is questionable how feasible imagined contact is as an intervention to deliver to participants in a laboratory setting and potentially to the general public. In particular thinking about how it could be practically utilised as a way of improving attitudes towards people with LDs is going to be important. I found that meeting participants face-to-face to deliver the imagined contact task proved very time consuming and difficult to organise. It is therefore important to consider how anti-stigma interventions such as imagined contact could work on a larger scale. Lindau et al. (under review) reported positive results of imagined contact in relation to LDs delivered via the internet. Future studies should investigate further the use of the internet in delivering imagined contact as the

internet provides a platform to reach a much larger audience than a face-to-face intervention can.

8.4.1.2. Imagined contact task: it is not possible to have control over what participants are imagining during the imagined contact task. Although it is possible to gain an idea of what participants were imagining from the written information they provided it is still not possible to know if they were imagining the intended target group. Many participants in the imagined LD contact condition imagined people with physical impairments, in particular wheelchair users. Research has found that stigma towards people with LDs had been found to be related to misunderstanding and lack of knowledge of this population (McCaughey & Strohmer, 2005). It could be assumed that by imagining the incorrect target group, such as people with multiple disabilities, the effects of imagined contact are reduced.

8.4.2. Difficulties Inherent In Attitude Change Interventions

A key challenge for practitioners and policy makers in developing imagined contact as a workable intervention for use in schools and organisations is how to adapt it from an experimental paradigm to a practical method for promoting positive attitudes towards out-groups (Crisp & Turner, 2010). As a clinician and researcher it is important to be realistic about the goals and implications of change initiatives, particularly those focused on highly stigmatised groups such as people with LDs. Additionally, it is important to be mindful of what future researchers should focus on, what they should attempt to measure and how best they might pursue this (Seewooruttun & Scior, 2014).

It is important to keep in mind that there are multiple layers of power that affect the lives of people with LDs. It is questionable whether the aims of interventions such as imagined contact, namely to improve attitudes and reduce stigma and prejudice, can translate into broader societal change (Dixon, Durrheim, & Tredoux, 2005).

Some, such as Rittel and Webber (1973), have claimed that interventions designed to tackle societal problems are bound to fail. They talked of "wicked problems" that are unsolvable due to the complex nature of them in systems,

people and contexts. As a result, every social problem is considered a symptom of other social problems. There is a danger that solutions are suggested at the individual or interpersonal level as these are deemed 'resolvable' unlike population level interventions. Stigma research has been criticised for focusing too much on "individualism while neglecting social and cultural problems that exist in real history and real cultural and social settings" (Lee & Jussim, 2010, p. 130).

It could be argued that imagined contact has been found to demonstrate improved attitudes and intergroup anxieties in a set of extremely specific scenarios with one interactional partner with no real evidence of how this might translate into behaviours in real life towards members of the respective out-groups. However, a meta-analysis by Kraus (2005) found there is a substantial association between attitudes and behaviours. Additionally, Crisp and Turner (2009, p. 231) assert that "the value in imagined contact is in its ability to encourage people to seek out contact, to remove inhibitions associated with existing prejudices, and to prepare people to engage out-groups with an open mind". Therefore, imagined contact is seen more as a first step on a continuum of contact to reconcile and reduce prejudice and would require multiple sessions to develop sustainable changes in attitudes and behaviour (Crisp & Turner, 2009). Nonetheless more research is called for studies to test the impact of imagined contact on real life behaviour more directly, rather than relying on untested assertions. It is important to think about how imagined contact leads to use in the mainstream – after all, it is all well and good asking people to imagine contact with the expectation that positive changes will generalise to real contacts. However, if people only encounter members of the out-group under specific or restricted circumstances then there would appear to be very little opportunity to enact and build on any changes in attitude.

Cook, Purdie-Vaughns, Meyer, and Busch (2014) described the 'multi-level approach to reducing stigma'. This approach indicates that stigma interventions are most effective when combined across multiple levels (see *Figure 5*). These levels include the intrapersonal level (interventions directed at changing attitudes and behaviours of non-stigmatized individuals, such as educational programmes), interpersonal level (focus on the interactions of small social groups, such as intergroup contact), and structural levels (interventions directed

at enforcing legislation and policies). Each of these levels has reciprocal causality and affects one another; therefore, tackling stigma from a multi-level approach should prove most effective in order to reduce stigma and prejudice towards highly stigmatised target groups (Cook et al., 2014).
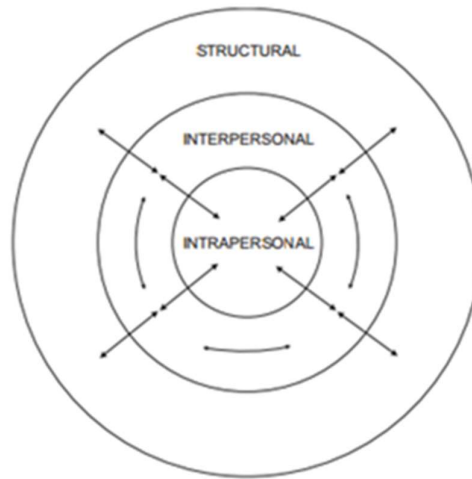

Figure 5. A multilevel approach to reducing stigma (diagram from Cook et al., 2014).

As clinical psychologists we need to raise awareness of the context of stigma and discrimination towards people with LDs and support efforts to challenge these in order to promote social inclusion. We are in a position to engage with, support and evaluate, particularly through our skills as scientist practitioners, anti-stigma campaigns. For the general public large scale contact interventions will be difficult to achieve, so greater indirect interventions will be important (Scior & Werner, 2015). For example, clinical psychologists could be involved in engaging in community structures such as education (Beadle-Brown, 2014), and community groups. Additionally, we can be involved in interventions such as advocacy, policy making, and the media in order to affect change at a societal level.

8.4.3. Recommendations For Future Research
Findings in the present study raise the question as to what may be realistic aims for change initiatives and interventions relating to LDs. Evidence in this area is in its infancy, and as such it is difficult to ascertain the direction future research

should take, particularly in terms of what researchers should attempt to measure and how this may be best pursued.

Based on the findings of the present study and those of Lindau et al.'s (under review) it could be argued that an intervention solely based on educating the public about LDs could be of value in improving attitudes and intergroup anxieties. However, in light of the evidence detailed in section 8.2.8 it is important to take a more tentative approach to thinking about how best to move forward with attitude change interventions and not to dismiss imagined contact and the positive effects found in over 70 studies conducted in other areas (e.g. Cameron et al., 2011; Crisp & Turner, 2009; Turner et al., 2007; West et al., 2011) as well as the two in the field of LDs (Falvo et al., 2014; Lindau et al., under review).

Educational interventions exploring improved attitudes towards people with LDs have not yet been found to be sufficiently robust enough to be recommended above other interventions (Seewooruttun & Scior, 2014). There is still limited evidence demonstrating the impact of education on behaviour change, and they have also been found to be short-lived (Brown, Macintyre, & Trujillo, 2003; Scior & Werner, 2016; Sengupta, Banks, Jonas, Miles & Smith, 2011). Additionally, studies have shown that even after providing participants with formal education about LDs it had little impact or influence on attitudes (Kobe & Mulick, 1995). Given the widespread misunderstanding regarding what constitutes an LD (Coles & Scior, 2012) and some of the positive results found in educational studies I think provision of educational information should be an essential part of any intervention designed to improve attitudes and reduce stigma towards people with LDs.

In contrast to the short-lived effects found in educational interventions, two studies of imagined contact with LDs as the out-group have found that positive effects found immediately after the intervention are maintained at follow-up (Falvo et al., 2014; Lindau et al., under review). Lindau et al. (under review) found further reductions in intergroup anxiety for the intervention integrating education with positive imagined contact. The present study also found a reduction in intergroup anxiety in the imagined contact condition at one-month follow-up.

It is clear from the evidence presented that an intervention needs to provide more than just education. With the positive results found in many imagined contact studies I think this is still an important attitude change intervention in relation to people with LDs. Miles and Crisp (2014) have highlighted that future imagined contact research move beyond the debate about whether imagined contact works, or whether it is a real effect, to focus on what prevents it from working, and what facilitates its effectiveness. At the current time there are not enough studies with similar results to the present study to be able to explore the mechanisms of imagined contact, the 'active ingredients', and what makes for a more effective intervention. I will go on to discuss potential adaptations that could be made to imagined contact in order to further explore the mechanisms of imagined contact in relation to people with LDs, and also to see if it is possible to yield positive results similar to Lindau et al. (under review) as well as studies conducted in other areas (e.g. Cameron et al., 2011; Crisp & Turner, 2009; Falvo et al., 2014; Turner et al., 2007; West et al., 2011).

I will now go on to discuss recommendations for future research in relation to imagined contact, and will highlight the need to for the inclusion of an educational component in future interventions.

8.4.3.1. *Sample:* it is recommended that future research replicates the study with samples representative of the general public, whose attitudes may be less favourable towards people with LDs and may be less likely to have had contact with people with LDs. Future studies could include a pre-test to identify people with negative attitudes in order to assign them to the interventions groups to ensure the attitude characteristic is matched and accounted for.

Additionally, imagined contact has been found to have a stronger effect for children than for adults (e.g. Cameron et al., 2011; Miles & Crisp, 2014; see section 4.5.1). It has been suggested that, at school age, children are at a formative stage where imagery is a key component of how they learn about the world (Cameron & Rutland, 2006). They are also less likely to have had contact with the target out-group and as a result are less likely to have experienced negative intergroup-contact. Future research could explore the use of imagined contact, in relation to people with LDs, with samples of children. Investigating

imagined contact with children has practical implications for extending the application, for example, use within schools as an attitude change intervention.

8.4.3.2. *Design:* in order for future research to conclude that interventions constituted a change from attitudes and intergroup anxiety held prior to the interventions, baseline measures should be taken. Seewooruttun and Scior (2014) concluded that of 21 studies included in their review of LD attitude change interventions, 16 had included a baseline measure of attitudes. However, studies of imagined contact are yet to include baseline measures due to concerns about participant bias and demand characteristics, i.e. participants may be overly primed to report more positive attitudes following delivery of a task. It is, therefore, important to think about the timings of baseline measure collection. Perhaps collecting pre-intervention measures a few days prior to the intervention could counteract these difficulties so participants are unable to remember exactly what they scored on baseline measures so they are unable to adapt their responses following the intervention.

8.4.3.3. *Measures:* due to the difficulties with self-reported measures used in this study it is recommended that future studies consider utilising implicit measures of attitudes. Implicit measures purport to tap into unintentional bias and are used as a way of testing attitudes that are resistant to deliberate attempts at presenting oneself in a positive light (Greenwald et al., 1998). Implicit attitudes are automatic, are not within an individual's awareness, and are elicited by the mere presence of the attitude object (i.e. the target group) (Hewstone, Rubin, & Willis, 2002). Studies have found that participants who have claimed to be non-prejudiced were found to hold race bias when assessed using implicit measures (Devine et al., 1999). There is evidence that imagined contact reduces prejudice even at the implicit level (Turner & Crisp, 2010). Additionally, it may be important to include a measure to take into account participant bias and demand characteristics. Rubin, Paolini, and Crisp (2010) have developed a "perceived awareness of the research hypothesis scale" which does just this.

It is important that future studies take into account individual differences, such as how vividly participants are able to generate a mental image, as this will

impact the effectiveness of the imagined contact task. One such measure is the "vividness of visual imagery questionnaire" (Marks, 1973) which consists of 16 items in which participant are invited to consider the image formed in thinking about specific scenes and situations.

8.4.3.4. *Imagined contact task:* imagined contact is an extremely flexible technique that can be adapted and tailored in order to yield the most effective outcome. Due to the embedded nature of stigma towards people with LDs it is likely that a more elaborated version of imagined contact is needed. Husnu and Crisp (2011) found that elaborating the imagined contact task, for example by providing participants with more specific information about what to imagine, improved the effect of the imagined contact task. When asked to generate more detail in their imagined encounter, participants reported greater intention in making out-group acquaintances in the future. Future studies of imagined contact in relation to people with LDs could use elaboration to guide participants more about the interaction with someone with an LD. This needs to emphasise the capabilities of people with LDs and could also include information akin to Allport's (1954) optimal conditions with participants imagining people with LDs as more equal to themselves. As discussed in section 8.2.7 it could be speculated that one reason imagined contact did not have the same effect in the present study is that participants were unable to 'project' and imagine that people with LDs have similar, positive, traits as themselves. Falvo et al. (2014) suggested that future research should focus on the humanisation of people with LDs. In line with these suggestions the imagined contact task could highlight that the imagined person with an LD feels secondary emotions, for example hope. This may increase the attribution of uniquely human features of people with LDs and subsequently improve attitudes and reduce discrimination. In addition, future studies should explore whether imagined contact is differently effective when the target out-group has different degrees of intellectual impairment (Falvo et al., 2014).

To date there has been no research within adult studies comparing the effect of imagined contact provided over multiple sessions vs. a single session (Miles & Crisp, 2014). It is possible that an extended programme of imaged contact

along with an elaborated task, as described above, may reinforce and sustain the effects in adults.

8.4.3.5. Educational film: as described in sections 8.2.8 and 8.4.3 the results from the present study suggest there is promise in continuing to employ brief film based interventions which incorporate education. It is, therefore, important that future studies continue to include an educational element to ensure participants have a frame of reference for the imagined contact task as it is known that the term 'learning disability' is a widely misunderstood concept (Coles & Scior, 2012; Gordon et al., 2004; Mencap, 2008).

However, it may be useful to edit the film, or only present text to inform participants what is meant by the term 'learning disability', without including information about how to interact with people with LDs. This would control for demand characteristics, and ensure the film/text only provides a definition and not an intervention in itself in order to be able to fully examine the mechanisms of imagined contact.

8.5.   Conclusions

The present study set out to investigate the effectiveness of imagined contact as an intervention to improve attitudes and reduce intergroup anxiety towards people with LDs. As it was the first time imagined contact interventions had been delivered face-to-face for this target group it replicated the design of original imagined contact studies (Turner et al., 2007a; West et al., 2011). However, the results found that imagined contact was not effective in improving attitudes, reducing intergroup anxiety and reducing the desire for social distance towards people with LDs. It is clear that more exploration of the mechanisms of imagined contact are needed, particularly for highly stigmatised groups such as those with LDs, in order for it to be shown to be effective above and beyond educational interventions. Due to the small sample size and convenience sample utilised, the findings in the present study should be viewed primarily as pointers for recommendations for future research.

Although the results of the present study do not support the effectiveness of imagined contact in its current form, there is plenty of evidence in other areas to suggest that imagined contact is an effective intervention. Due to the embedded nature of stigma towards people with LDs more thought will need to be given to what the mechanisms and the 'active ingredients' are for an effective intervention.

Given the widespread misunderstanding regarding what constitutes an LD (Coles & Scior, 2012), the provision of educational information should be an essential part of any intervention designed to improve attitudes and reduce stigma towards people with LDs.

As has been noted throughout this thesis very few interventions have been developed to tackle the difficulties people with LDs experience in relation to stigma, discrimination and abuse in society. Imagined contact should not be seen as a solution in isolation but, as with all psychological interventions, should be seen as part of a larger solution that integrates multiple interventions and approaches that are developed from multiple perspectives in order to reduce stigma and abuse (Crisp & Turner, 2010; Scior & Werner, 2015). As clinical psychologists we need to raise awareness of the context of stigma and discrimination towards people with LDs and support efforts to challenge these in order to promote social inclusion. We are in a position to engage with, support and evaluate, particularly through our skills as scientist practitioners, anti-stigma campaigns.

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10. APPENDICES

List of Appendices

Appendix 1: Email Sent to Administrators at UEL

Appendix 2: Poster Advertisement

Appendix 3: Participant Information Sheet

Appendix 4: Email Sent to Other Universities

Appendix 5: Education In Text

Appendix 6: Instructions for Imagined Contact Tasks

Appendix 7: Questionnaire - Attitudes Scale, Intergroup Anxiety Scale, and Social Distance Scale

Appendix 8: University of East London Ethical Approval

Appendix 9: Consent Form

Appendix 10: Debrief

Appendix 11: Content Categories and Descriptors

Appendix 12: Worked Extract Examples

Appendix 13: Histograms

Appendix 1: Email Sent to Administrators at UEL

Subject: Research - Participants required

Hi [NAME],

I'm a trainee clinical psychologist studying at UEL. As part of my training I am required to do research for my doctoral thesis. As such I will begin recruiting participants in October 2015.

I am emailing to find out whether it is possible for an email to be circulated to undergraduate and postgraduate students in your school to give them the opportunity to take part in this research.

The research aims to explore the use of imagery on attitudes. This information will help us to think about and develop interventions to improve public attitude and reduce prejudice experienced by particular social groups. If students agree to take part they will be asked to watch a 2 minute film, take part in a 5 minute imagination task and asked to fill out a questionnaire asking about their attitudes and feelings. It will take only 10 - 15 minutes in total. There are no risks involved in taking part in this study. Students will have the opportunity to enter into a prize draw for £100 of vouchers (store of their choice).

If you are able to circulate emails in order for me to recruit, the information to send them is below.

Thank you very much for taking the time to read this email and I look forward to hearing from you soon.

Alessia

Dear Students,

If you would like to take part in an interesting doctoral research project and be in with a chance of winning £100, please visit: http://imageryonattitudes.jimdo.com for more information and to book a date/time slot.

The research will be conducted at Stratford campus and will take no more than 15 minutes to complete. There are no risks involved in taking part and your data will be confidential.

I would be very grateful for your assistance.
Thank you,
Alessia

Appendix 2: Poster Advertisement

Appendix 3: Participant Information Sheet

Who am I?
My name is Alessia Price. I am a trainee clinical psychologist studying at the University of East London.

What is the research about?
My study aims to explore the use of imagery on attitudes. This information will help us to think about and develop interventions to improve public attitude and reduce prejudice experienced by particular social groups.

What is required of you if you decide to take part?
If you agree to take part, you will be asked to:
- Watch a 2 minute film
- Take part in a 5 minute imagination task
- Fill out a questionnaire asking you about your attitudes and feelings

The study will take 15 minutes in total. You are able to withdraw from the study at any time if you change your mind, even near the end of the study. The information you have provided will be destroyed and not used.

There are no risks involved in taking part in this study.

Who is eligible to participate?
If you can say yes to the following criteria you can take part in the study:
- You are aged 18 and above
- You are currently an undergraduate or postgraduate student
- You have been a UK resident for at least two years

Will you get anything in return for taking part?
At the end of the study you will have the opportunity to enter into a prize draw for £100 of vouchers (store of your choice). In addition, if you agree to participate in the one-month follow-up study you will be able to enter your details into the prize draw again, increasing your chance of winning.

What will happen to the information you provide?
Your data will be confidential and not identifiable as coming from you as an individual.

What will happen to the results of the research study?
The results obtained from this research will be incorporated into a doctoral thesis that will be submitted to the University of East London. The thesis may be published in an academic journal in the future, however any identifiable data about you will not be included in any report or publication.

What happens afterwards?
I will be available to discuss any concerns or questions you have throughout and after the study.

You will be asked to provide an email address if you wish to be entered into the prize draw, so that you can be contacted following the draw. You will also be

asked to provide an email address so you can be contacted about a one-month follow-up study. This would require you to fill out the same questionnaire, via email, as the one you will complete in this study.

Does the study have ethical approval?
Yes the study has been approved by The Research Ethics Committee of the School of Psychology, University of East London.

Who can you contact if you have any questions?

If you have any further questions, you can contact:

Alessia Price (Trainee Clinical Psychologist) – u1236156@uel.ac.uk
Kenneth Gannon (Research / supervisory tutor) - K.N.Gannon@uel.ac.uk

Thank you

Appendix 4: Email Sent to Other Universities

Hi [NAME],

I hope you don't mind me contacting you. I'm a trainee clinical psychologist studying at University of East London. As part of my training I am required to do research for my doctoral thesis, and as such am looking for psychology students to take part in my study.

The research aims to explore the use of imagery on attitudes. This information will help us to think about and develop interventions to improve public attitudes and reduce prejudice experienced by particular social groups. If students agree to take part they will be asked to watch a 2 minute film, take part in a 5 minute imagination task and asked to fill out a questionnaire asking about their attitudes and feelings. It will take 10-15 minutes in total. There are no risks involved in taking part in the study.

In return, I would be happy to present to, and discuss with the students, the role of a clinical psychologist, how this looks in practice and what experience they might need if it's a career they would like to pursue.

Thank you very much for taking the time to read this email and I look forward to hearing from you soon.

Thanks in advance,

Alessia Price
Trainee Clinical Psychologist

Appendix 5: Education In Text

This questionnaire asks you about how you feel towards people with learning disabilities. For the purposes of the questionnaire, the term 'learning disabilities' refers to people who have difficulties with thinking (intellectual function) and coping on their own on a day-to-day basis (social functioning). These difficulties would have started before adulthood (18 years old).

In some countries, a learning disability is referred to as an intellectual disability. In the past the terms 'mental handicap' and 'mental retardation' have also been used. Some specific syndromes and conditions like Down's syndrome, Fragile X and Autism may in some cases be associated with having a learning disability.

Learning disabilities are different from specific learning difficulties such as Dyslexia, which are NOT the focus of this study.

Please try to answer the following questions honestly. Your responses will be completely confidential and will remain anonymous. We realise that every person is unique and that it is hard to generalise about any group. However, based on your experience we would like you to indicate your feelings and attitudes towards individuals with learning disabilities in general. It is very important that you try to answer every question, being as open as you can. We are interested in your personal views; there are no right or wrong answers, so try not to dwell too long on any single question.

Appendix 6: Instructions for Imagined Contact Tasks

<u>Imagined Contact Condition</u>
"You have been invited to a charity event and are seated next to a person with a learning disability. This person tells you about their participation and achievements in the London 2012 Paralympics. I would like you to take 5 minutes to imagine having a positive, relaxed conversation with this person. Feel free to talk about anything. Imagine this person's appearance, mannerisms, and specific things that you find admirable."

"I want you to spend the time thinking, but also please write down, from time to time, the things that you imagine. Please write clearly and feel free to write down whatever springs to mind".

<u>Imagined Contact Control Condition</u>
"You have been invited to a charity event and are seated next to a person who tells you their stories about volunteering at the London 2012 Olympics. I would like you to take 5 minutes to imagine having a positive, relaxed conversation with this person. Feel free to talk about anything. Imagine this person's appearance, mannerisms, and specific things that you find admirable."

"I want you to spend the time thinking, but also please write down, from time to time, the things that you imagine. Please write clearly and feel free to write down whatever springs to mind".

Appendix 7: Questionnaire - Attitudes Scale, Intergroup Anxiety Scale, and Social Distance Scale

Please describe how you feel about people with learning disabilities in general:

Cold ←————|————|————|————|————|————|————|————→ Warm

Positive ←————|————|————|————|————|————|————|————→ Negative

Friendly ←————|————|————|————|————|————|————|————→ Hostile

Suspicious ←————|————|————|————|————|————|————|————→ Trusting

Respectful ←————|————|————|————|————|————|————|————→ Contempt

Admiration ←————|————|————|————|————|————|————|————→ Disgust

If you were to meet a person with a learning disability in the future, how do you think you would feel?

←——————————————————————————————————————→

1	2	3	4	5	6	7
Not at all						Very

Awkward	1	2	3	4	5	6	7
Happy	1	2	3	4	5	6	7
Self-conscious	1	2	3	4	5	6	7
Competent	1	2	3	4	5	6	7
Relaxed	1	2	3	4	5	6	7

Please indicate your agreement with the following statements using this scale:

1	2	3	4	5	6	7
Disagree Strongly	Disagree Moderately	Disagree Somewhat	Unsure	Agree Somewhat	Agree Moderately	Agree Strongly

I would be happy to move next door to someone with a learning disability	1	2	3	4	5	6	7
I would be happy to spend an evening socialising with someone with a learning disability	1	2	3	4	5	6	7
I would be happy to work closely with someone with a learning disability	1	2	3	4	5	6	7

I would be happy to make friends with someone with a learning disability	1	2	3	4	5	6	7
I would be happy for someone with a learning disability to marry into my family	1	2	3	4	5	6	7

Information about you

Gender:
    Male
    Female

Age:

Ethnicity:
White - British
Irish
Turkish / Turkish Cypriot
Any other White background, please specify:

Black or Black British-
Caribbean
African
Somali
Other Black background, please specify:

Mixed -
White & Black Caribbean
White & Black African
White & Asian
Any other Mixed background, please specify:

Asian or Asian British -
Indian
Pakistani
Bangladeshi
Any other Asian background, please specify:

Any other, please specify:

I do not wish to give my ethnic group

Please state your Occupation. If student what subject area are you studying?

Education (Please tick the highest)
To age 18 (e.g. A Levels)

University degree ☐
Post-graduate ☐

Country of birth:
UK ☐   Other   ☐

If other, please specify

If not born in UK, how long have you lived here?

Do you know anyone with learning disabilities?
    Yes ☐
    No ☐

If yes, in what capacity do you know them? (E.g. sibling, other relative, fellow pupil, colleague, etc.)

How often do you see this person? (If you know more than one person, please answer in relation to the person closest to you)

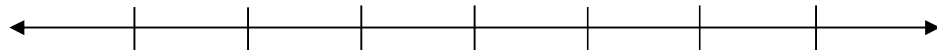On average   times per week ☐   month ☐   year ☐
                                  (please tick)

How close is this person to you? (please mark the corresponding point on the line)

Not at all close   Extremely close

←——|——|——|——|——|——|——|——→

Please leave your email address if you would like to be entered into the £100 prize draw:

If you would be willing to take part in a follow-study please leave your email address:

If you agree to take part in the follow-up study you will be asked, via email, to complete this same questionnaire again in a few weeks' time. Additionally you will be entered into the £100 prize draw again, increasing your chance of winning.

Thank you for your time!

Appendix 8: University of East London Ethical Approval

UEL
University of
East London

www.uel.ac.uk

School of Psychology

Professional Doctorate Programmes

To Whom It May Concern:

This is to confirm that the Professional Doctorate candidate named in the attached ethics approval is conducting research as part of the requirements of the Professional Doctorate programme on which he/she is enrolled.

The Research Ethics Committee of the School of Psychology, University of East London, has approved this candidate's research ethics application and he/she is therefore covered by the University's indemnity insurance policy while conducting the research. This policy should normally cover for any untoward event. The University does not offer 'no fault' cover, so in the event of an untoward occurrence leading to a claim against the institution, the claimant would be obliged to bring an action against the University and seek compensation through the courts.

As the candidate is a student of the University of East London, the University will act as the sponsor of his/her research. UEL will also fund expenses arising from the research, such as photocopying and postage.

Yours faithfully,

Dr. Mark Finn

Chair of the School of Psychology Ethics Sub-Committee

Approval for amendments:

TO BE COMPLETED BY REVIEWER		
Amendment(s) approved	YES	
Comments		

Reviewer: M Finn

Date: 08/10/15

TO BE COMPLETED BY REVIEWER		
Amendment(s) approved	YES	
Comments		

Reviewer: Mark Finn

Date: 4/12/15

Appendix 9: Consent Form

UNIVERSITY OF EAST LONDON
Consent to participate in a research study
Exploring the use of imagery on attitudes

I have read the information sheet relating to the above research study and have been given a copy to keep. The nature and purposes of the research have been explained to me, and I have had the opportunity to discuss the details and ask questions about this information. I understand what is being proposed and the procedures in which I will be involved have been explained to me.

I understand that my involvement in this study, and particular data from this research, will remain strictly confidential. Only the researcher involved in the study will have access to identifying data. It has been explained to me what will happen once the research study has been completed.

I hereby freely and fully consent to participate in the study which has been fully explained to me. Having given this consent I understand that I have the right to withdraw from the study at any time without disadvantage to myself and without being obliged to give any reason. I also understand that should I choose to withdraw, any data I have provided will be withdrawn from the study and not used in the final analyses.

Participant's Name (BLOCK CAPITALS)

……………………………………………………………………………………….

Participant's Signature

………………………………………………………………………………………..

Researcher's Name (BLOCK CAPITALS)

………………………………………………………………………………………..

Researcher's Signature

…………………………………………………………………………………………

Date: ……………………..…….

Appendix 10: Debrief

Thank you for taking part in this study.

It is well evidenced that people with learning disabilities (LDs) are exposed to multiple disadvantages including stigma and discrimination, however, few interventions have been developed to tackle this. The 'contact hypothesis', first described by Allport (1954), proposed that direct contact with members of stigmatized groups would reduce prejudice and hostility, leading to more positive intergroup attitudes. Subsequent research (Pettigrew, 1998; Pettigrew & Tropp; Zajonc, 2001) has supported the 'contact hypothesis' as an effective means of attitude change and as such contact has become one of the most widely used psychological interventions for the reduction of prejudice and the improvement of intergroup relations (Oskamp & Jones, 2000). The effects of direct contact have also been shown to have produced positive attitudes towards people with LDs (e.g. Rillotta & Nettelbeck, 2007). Despite the positive evidence for direct contact, it has important limitations in tackling negative attitudes towards people with LDs. Firstly, it is difficult to set up contact on a large scale and furthermore it requires the opportunity for contact (Turner et al, 2007). Imagined intergroup contact, which uses imagery rather than actual contact, addresses these concerns.

This study aimed to test and enhance our understanding of an intervention called 'imagined intergroup contact' in relation to people with LDs. Developed by Turner, Crisp and Lambert (2007), imagined intergroup contact is "the mental simulation of a social interaction with a member or members of an out-group category" (Crisp & Turner, 2009, p. 234).

The experiment consisted of three parts: watching a 2 minute film about individuals describing what it means to have a learning disability, one of four experimental conditions and a questionnaire made up of questions about attitudes, intergroup anxiety and social distance.

You were in one of four conditions: imagining a detailed interaction with a person with LDs, imagining a contact encounter with a person (not specified to have LDs), watching the film only, or reading written text only.

You were then asked to fill out the following measures:

- Attitudes – you were asked to respond to 6 items in relation to how you feel about individual learning disabilities in general (from Wright et al., 1997)
- Intergroup Anxiety – this was a shortened measure based on Stephan and Stephan (1985). You were asked to report your anxiety in relation to people with learning disabilities on a 7-point likert scale.
- Social Distance – this assessed your willingness to engage in contact with people with learning disabilities (Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999)

It was hypothesized that imagining a positive intergroup contact would reduce intergroup anxiety and improve attitudes towards people with LDs.

Your data will be confidential and not identifiable as coming from you as an individual and will only be identified by a participant number (the one assigned to you at the beginning of the experiment).

You may withdraw and remove your data at any time up until data analysis now that you know what the experiment was looking at. If you have further questions or concerns about your participation in the study, the tasks, or your results after the experiment, you can contact me:

U1236156@uel.ac.uk

Thank you!

References:
Allport, G. (1954). The nature of prejudice. Reading, MA: Addison-Wesley.

Crisp, R. J., & Turner, R. N. (2013). *Imagined intergroup contact: Refinements, debates, and clarifications* (pp. 135 – 151). In Hodson, G. & Hewstone, M. (Eds.) Advances in intergroup contact.

Link, B., Phelan, J., Bresnahan, M., Stueve, A., & Pescosolido, B. (1999). Public conceptions of mental illness: Labels, causes, dangerousness, and social distance. *American Journal of Public Health, 89*, 1328-1333.

Oskamp, S. & Jones, J. M. (2000). *Promising practice in reducing prejudice: A report from the President's Initiative on Race*. In S. Oskamp (Ed.) Reducing prejudice and discrimination (pp. 319 – 334). Mahwah, NJ: Erlbaum.

Pettigrew, T. F. (1998). Intergroup contact theory. *Annual Review of Psychology, 49*, 65–85.

Pettigrew, T. F., & Tropp, L. R. (2006) A meta-analytic test of intergroup contact theory. *Journal of Personality & Social Psychology, 90*, 751-783.

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 and Developmental Disability, 32*, 19–27.

Stephan, W. G. & Stephan, C. W. (1985). Intergroup anxiety. *Journal of Social Issues, 41*, 157-175.

Turner, R. N., Crisp, R.J., & Lambert, E. (2007). Imagining intergroup contact can improve intergroup attitudes. *Group Processes and Intergroup Relations, 10*, 427–441.

Wright, S. C., Aron, A., McLaughlin-Volpe, T., & Ropp, S. A. (1997). The extended contact effect: Knowledge of cross-group friendships and prejudice. *Journal of Personality and Social Psychology, 73*, 73-90.

Zajonc, R. B. (2001). Mere exposure: A gateway to the subliminal. *Current Directions in Psychological Science, 10*, 224–228.

Appendix 11: Content Categories and Descriptors

Category	Descriptor
Number of lines of text	Number of lines of text written by the participant.
Person Description	Anything to do with the person and their appearance. For example, gender, hair colour, eye colour, what they are wearing, etc. Example: 'She's got blonde hair, blue eyes, dresses in short white pleated skirt'.
Olympics/Paralympics	Any mention of the Olympics/Paralympics. For example, sport, event, training, athlete, sports person, winning, medal, etc. Example: 'Learn more about their part in the Olympics – training, difficulties'
Disability	Any mention of disability. For example, impaired, difficulties, what they have, their condition, what is affected, wheelchair, etc. Example: 'I would imagine the individual as physically or mentally impaired'; 'I would ask what is wrong with them'.
Other interests	Other interests and life outside Olympics/Paralympics. For example occupation, family, etc. Example: 'I would ask about themselves, their family and what they study in school'.
Positive language	Positive language used to describe the person, situation or feelings. For example, impressed, happy, eager, interested, admirable, interesting, passionate, friendly, enthusiastic, exciting, etc. Example: 'They are a friendly, honest and energetic person'.
Negative language	Negative language used to describe the person, situation or feelings. For example awkward, anxious, uncertain, uncomfortable, etc. Example: 'Feel awkward talking to him'; 'Some awkward silences'.
Communication	Description of communication. For example changes or differences, gestures, speech, etc.

|	Example: 'I have to speak unnaturally slow and repeatedly'; 'Very articulate and can communicate very clearly'.
Sameness	Any mention of things in common with person. For example, own experiences, etc. Example: 'Mention I'm an athlete - never know might have more in common than we think'.
Truthfulness	Questions what the person is telling them. Are they telling the truth? Example: 'Depending on the depth of what they say determine if they're lying or not'.

Appendix 12: Worked Extract Examples

<u>Coding</u>

Person description	1	Male
Disability	2	In a wheelchair
Olympics / Paralympics	3	Spoke about winning the medal
	4	Asked what the sport was
	5	What did it feel like winning a medal?
Negative Language	6	Awkward
	7	Why are they there?

Person description	1	Middle aged man, short greying hair
Positive Language	2	Worked on the cameras behind the scenes
Negative Language	3	Had to keep up with fast runners - admirable
	4	Feel a little awkward talking to him though
	5	Ask him what it's like to work on camera
Communication	6	Some awkward silences

Appendix 13: Histograms

The Evaluation Scale (Wright et al., 1997) – measure of attitudes:
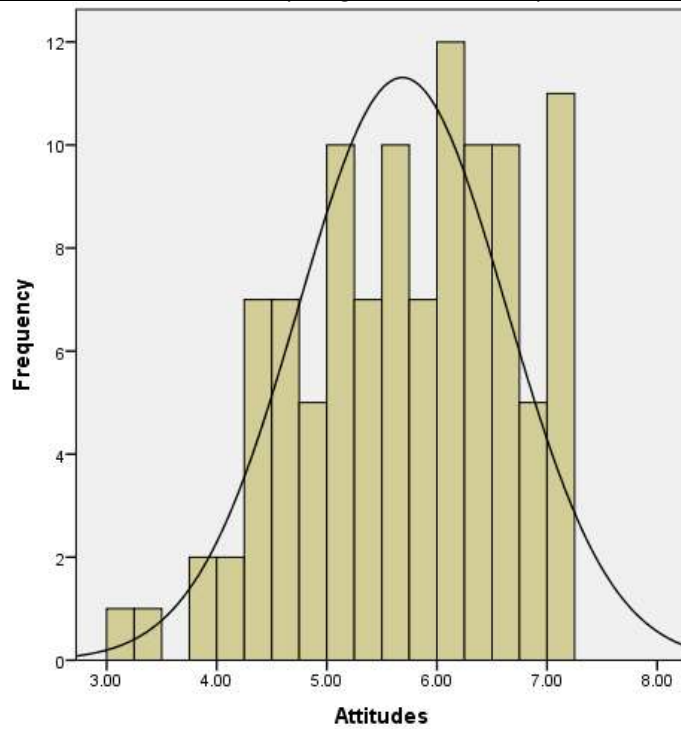
Intergroup Anxiety measure (based on Stephan & Stephan, 1985):
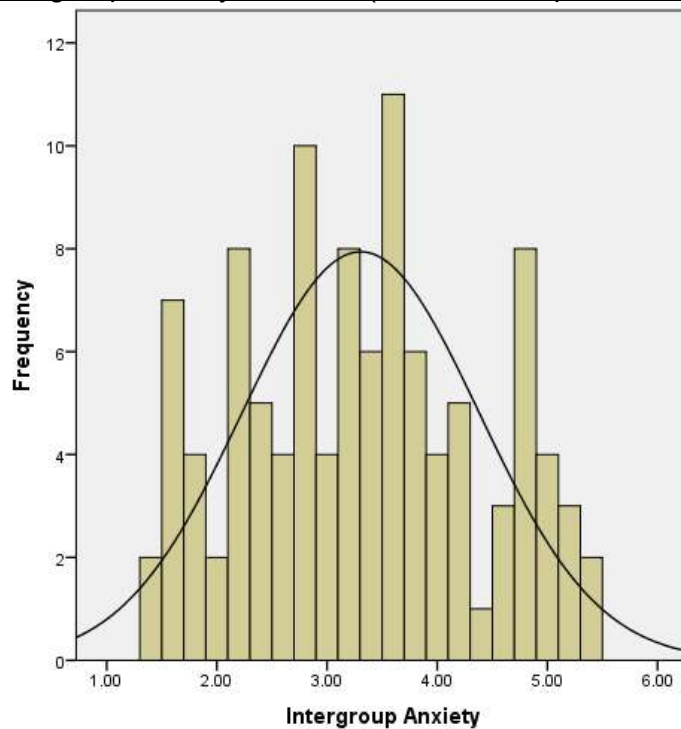
Social Distance measure (Phelan et al., 1999):