

Extended Contact through Story Reading in School: Reducing Children’s Prejudice toward the Disabled

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The aim of this study was to develop and assess a prejudice-reduction intervention for young children based on a relatively recent psychological concept, extended contact. A number of extended contact interventions were tested based on different models of generalized intergroup contact. A 3 (type of extended contact: neutral, decategorization, and “intergroup”) × 2 (time of interview: pre- vs. post-extended contacts) mixed design was used, with the latter variable being within participants. Non-disabled children (N = 67) aged 5–10 years took part in a 6-week intervention involving reading stories featuring disabled and non-disabled children in friendship contexts. The main dependent variables were children’s attitudes and intended behavior toward non-disabled and disabled people. Results showed that extended contact led to increased positivity toward the disabled, and this was most pronounced in the intergroup-extended contact condition. These findings suggest that extended contact can provide a prejudice-reduction intervention tool that can be used with young children in contexts in which the opportunity for direct contact is low. The findings also add to the psychological literature, providing support of the Hewstone and Brown (1986) “intergroup” model in the context of extended contact.

Intergroup bias is by no means unusual among children in early and middle childhood (e.g., Aboud, 1988; Brown, 1995; Nesdale, 2001). Within the developmental social psychology literature, the emphasis of research has been on developing theoretical accounts of childhood prejudice (e.g., Aboud, 1988; Aboud & Amato, 2001; Brown, 1995; Hirschfeld, 1996; Katz, 1976; Rutland, 2004; Rutland, Cameron, Milne, & McGeorge, 2005; Schofield, 1982). In contrast, within the fields of education and educational psychology, the major thrust of research has been on interventions to reduce childhood prejudice. Unfortunately, the connection

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between theories of prejudice and educational interventions has been weak (Aboud & Levy, 2000; Bigler, 1999; Oskamp, 2000). Indeed, some researchers have argued that the failure to design effective intervention programs is due in large part to the fact that theoretical frameworks are often sidelined in the development of intervention strategies (Stephan, 1999).

The aim of the present article is to evaluate the effectiveness of a prejudice-reduction intervention, which is based on a recent theoretical development in the adult social psychology literature, namely the “indirect cross friendship hypothesis” or “extended contact effect” (Wright, Aron, McLaughlin-Volpe, & Ropp, 1997). This suggests that reduced bias might result from “vicarious” experiences of friendship, that is, knowledge of ingroup members being friends with outgroup members. Research suggests that “direct contact” between adult group members can reduce intergroup bias (Allport, 1954; Pettigrew, 1997; Pettigrew & Tropp, 2000). However, there are a number of advantages in using “extended contact” rather than “direct contact” when attempting to reduce intergroup bias (Wright et al., 1997). A possible side effect of *direct* contact is anxiety (Pettigrew & Tropp, 2000; Stephan & Stephan, 1985). *Extended* contact allows participants to experience contact while avoiding this negative feeling. Extended contact can also be used in contexts in which there is little opportunity for direct contact. This type of intervention could allow widespread reduction in prejudice to occur without the need for everyone to have an outgroup friend. The use of extended contact is also advantageous because it can be applied effectively prior to direct outgroup contact. Research suggests that outgroup attitudes formed prior to direct contact with the outgroup are more malleable (Fazio & Zanna, 1981). Therefore, providing an extended contact intervention prior to direct contact could make change in intergroup attitudes more likely.

There is evidence to support the effectiveness of extended contact in adults and older children aged 13 years and above (e.g., Liebkind & McAlister, 1999; Paolini, Hewstone, Cairns, & Voci, 2004; Wright et al., 1997). However, little research has been conducted examining the usefulness of extended contact when used with younger children and in conjunction with attitudes toward the disabled. Extended contact may depend on the ability to “include other in the self” (Wright et al., 1997) which is the capacity to include a member of one’s own social group in one’s own self-definition. Developmental research suggests that young children may have the ability to engage in inclusion of other in the self. There is evidence that social categories (e.g., ethnicity, gender, and nationality) are meaningful for young children (e.g., Aboud, 1988; Abrams, Rutland, & Cameron, 2003). Indeed, from the beginning of middle childhood, the acquisition of a social identity is a primary goal of social development and children readily incorporate category memberships (i.e., an “other”) into their collective selves (Ruble et al., 2004). Given these research findings, in the present study it was predicted that extended

contact would effectively change young children's intergroup attitudes toward the disabled.

The second aim of the present research was to further theoretical knowledge regarding one issue surrounding intergroup contact, namely generalization. The question of generalization concerns whether the change in outgroup attitude following contact with an outgroup member can be generalized and extended from the outgroup member one interacts with in the contact situation, to the whole outgroup. In response to this question, a number of different approaches to intergroup contact and generalization have been developed, which may have implications for the characteristics of successful extended contact. The two models of interest in the present study were the decategorization model (Brewer & Miller, 1984) and Hewstone and Brown's (1986) "intergroup" contact model. Hewstone and Brown (1986) contend that the positive effects of contact will be generalized to the outgroup, during contact, only if ingroup and outgroup boundaries remain salient (Brown & Hewstone, 2005; Gonzalez & Brown, 2003; van Oudenhoven, Groenewoud, & Hewstone, 1996). In addition, the typicality of the outgroup member should be emphasized (Brown, Vivian, & Hewstone, 1999), so limiting the possibility of subtyping in contact situations. Furthermore, Wright et al. (1997) suggest that perceived typicality is important in order to obtain the extended contact effect.

In contrast, according to the "decategorization" approach, in order to generalize the effects of contact from that specific outgroup member to the whole outgroup, contact should be constructed so that outgroup members are individuated and not perceived as being members of a group (Brewer & Miller, 1984). Brewer and Miller (1984) argue that following *interpersonal* contact, the positive effects of contact will be generalized to the whole outgroup because the group boundaries will become redundant and people will be treated as individuals rather than group members (Bettencourt, Brewer, Rogers-Croak, & Miller, 1992; Bettencourt, Charlton, & Kernahan, 1997). According to this approach, therefore, the decrease in prejudice following decategorized contact should also be associated with a decrease in outgroup homogeneity (and increase in outgroup variability). Research on the decategorization model of contact has produced mixed results (Bettencourt et al., 1992; Gonzalez & Brown, 2003; Maras & Brown, 2000). In support of the decategorization model, there is evidence that greater perceived variability within the outgroup is associated with lower outgroup prejudice in children (Aboud & Fenwick, 1999). In addition, research suggests that although contact with the outgroup in general is linked to lower prejudice, close personal friendships with particular outgroup members are especially related to lower levels of prejudice toward that group (Aboud, et al., 2003; Pettigrew & Tropp, 2000). This link between cross-group friendships and prejudice arguably provides some support for the decategorization approach.

In the present research, two extended contact interventions were specifically designed to address the issue of generalization. These extended contact interventions were constructed so as to meet the requirements laid out in the above two theoretical approaches to generalization of contact. There has been little research in generalization and contact in young children (cf. Maras & Brown, 1996) but given previous findings in the adult-related literature (e.g., Gonzalez & Brown, 2003), it was predicted that intergroup-extended contact would be the most successful extended contact intervention. Thus, in addition to informing practitioners on the characteristics of extended contact that produces maximum effects on outgroup attitudes, the results of the present research could also inform psychological theory concerning intergroup contact and generalization.

Evaluating Interventions

A limitation of previous evaluations of prejudice-reduction intervention programs is the wide variety of the duration and frequency of interventions. Interventions can range from one-off sessions lasting 15 minutes (Katz & Zalk, 1978) or several hours (Byrnes & Kiger, 1990) to several sessions lasting 15 to 20 minutes that take place over a number of days (Bigler & Liben, 1992), weeks (Maras & Brown, 1996; 2000), or months (Aboud & Fenwick, 1999). Little research has systematically examined the effects of duration and frequency of sessions on the success of interventions. However, a number of authors have suggested that long-term interventions are required to produce any real, long-lasting change in outgroup attitudes and behaviors (e.g., Duckitt, 1992; Hill & Augustinos, 2001). Indeed, there is evidence that large-scale interventions, such as desegregation of schools, can lead to long-term improvements in intergroup relationships (Stephan & Stephan, 1996). In response to this, the present study will involve a systematic examination of the effectiveness of a 6-week extended contact intervention at changing 5- to 10-year-old non-disabled children's views of an outgroup, specifically the disabled.

Disability and Prejudice Reduction

The present research focused on encouraging positive attitudes in non-disabled children toward people with disabilities. Children's attitudes toward the disabled have recently become more significant within the United Kingdom, with more direct contact between non-disabled and disabled children through the British government's policy of "inclusion" in education (see Grubbs & Niemeyer, 1999; Norwich, 2002). "Inclusion" is the enrollment of disabled children in mainstream schools, as opposed to separate "special schools." The philosophy of "inclusion" is that by providing equal educational opportunities for disabled children, and challenging children's stereotypical views of disabled people, this will, in later

years, lead to a more inclusive society in which disabled and non-disabled people have equal opportunities (Department for Education and Skills, 2001).

However, the limited body of research into the effect of direct contact on children's attitude toward the disabled has produced mixed findings (Maras & Brown, 1996, 2000). There is some evidence that direct contact can have a positive effect on non-disabled children's attitudes toward people with disabilities (Maras & Brown, 1996; Krajewski & Hyde, 2000). In contrast, other studies suggest that direct contact does not always lead to a positive change in non-disabled children's attitudes toward the disabled (e.g., Furnham & Pendred, 1983; Hastings & Graham, 1995; Nabors, 1997).

The introduction of extended contact prior to the arrival of disabled children may help "inclusion" become more successful in terms of providing a positive educational experience for disabled children and changing non-disabled children's views of the disabled. Indeed, one of the advantages of extended contact is that it can be administered in the absence of outgroup members. This means that interventions based on this theory can be implemented prior to the arrival of disabled children; thus easing their transition into mainstream schools by promoting more positive outgroup attitudes in non-disabled children prior to their arrival. To our knowledge, no study to date has examined the potential impact of extended contact on children's attitudes toward people with disabilities.

There is mixed evidence regarding whether or not children recognize the distinction between people with learning difficulties and the physically disabled. A number of studies have found children do not make a distinction between these two groups (Abrams, Jackson, & St Claire, 1990). In contrast, other studies have found that children do understand the difference between physical and learning disabilities and hold distinct attitudes toward these groups (Magiati, Dockrell, & Logotheti, 2002). Therefore, in the present research attitudes toward the physically disabled and those with learning difficulties were examined separately.

Summary of Study Design

An intervention was devised that could be implemented in British primary (elementary) schools with children. This consisted of reading several stories to children that portrayed friendships between non-disabled and disabled children. In some of these stories, the category memberships of the protagonists were little emphasized and their individual identities were stressed (de-categorization); in other stories, the category memberships were stressed and typicality emphasized ("intergroup"); in still other stories, there was no emphasis placed on the individual qualities of the characters or the group memberships of the story characters (neutral). After reading the story, and still in their small groups, the non-disabled children took part in a group discussion of the story, which was led by the first author. The intervention occurred once a week for six consecutive weeks.

The main dependent variables were outgroup attitude and intended behavior and ingroup attitude and intended behavior and these measures were obtained prior to and subsequent to the intervention (i.e., pre- and post-intervention phases of interviews). In addition, in the post-intervention phase, there were two manipulation checks: perceived typicality of the disabled story character and outgroup homogeneity. The former measure was included in order to ensure the typicality manipulation in the “intergroup” condition did indeed increase perceived typicality in this condition, while the latter measure was included to check that following the decategorization condition, children did perceive the outgroup as being more variable, and less homogenous.

The children’s explicit intergroup attitudes were measured using a stereotype trait attribution task based upon an adaptation of the Multiple-Response Racial Attitude (MRA) measure (Aboud, 2003; Doyle & Aboud, 1995). This intergroup attitude measure was designed to overcome a limitation associated with previous methods that have typically confounded ingroup and outgroup attitudes (Aboud, 2003; Cameron, Alvarez, Ruble, & Fuligni, 2001; Nesdale, 2001).

In the current research, there is evidence that explicit intergroup attitudes and behavioral measures, such as friendships and playmate preferences, can be dissociated (Fishbein & Imai, 1993; Nicolaraizi & de Reybekiel, 2001). On the other hand, Aboud et al. (2003) found that children who were less biased held more cross-race friendships. It is important to evaluate the effect of extended contact on both outgroup attitudes and intended behavior, since the aim of all prejudice reduction interventions should be to encourage interaction between the groups and so limiting social exclusion. In the current research, intended behavior was measured using a sociometric test in which children rated how much they would like to engage in different activities with non-disabled and disabled children. Research suggests that outgroup intended behavior may be substantially more difficult to change than outgroup attitudes in prejudice-reduction interventions (e.g., Katz & Zalk, 1978). Therefore, it could be predicted that extended contact will have a lesser effect on outgroup intended behavior.

It was hypothesized that explicit outgroup attitudes and intended behavior would be more favorable after all the extended contact interventions, and this would be most pronounced in the intergroup-extended contact condition. It was also predicted that the effect of the intervention on outgroup intended behavior would be more limited than outgroup attitude.

Method

Participants

Sixty-seven non-disabled children (27 boys and 40 girls) from two elementary schools were tested. The age of the children ranged from 5 years 0 months to

10 years and 2 months and their mean age was 8 years and 2 months, $SD = 9.36$ months. The children attended schools in mixed social class suburban or rural areas outside a large metropolitan city in the south-east region of England. The vast majority of children attending the schools were non-disabled. There were three conditions: neutral ($n = 20$), decategorization ($n = 25$), and "intergroup" ($n = 22$). In order to create a truly random sample, rather than assigning conditions to whole school classes, children in each class were individually and randomly assigned to any of the three conditions. Schools volunteered to take part in the project and headteachers and teachers were briefed on the aims and purpose of the research project. They were informed that they could stop the school participating in the research project at any time if they wished. Permission was sought and obtained from participant's parents or guardians.

Design

The study was a 3 (condition: neutral, decategorization, and "intergroup") \times 2 (phase of interview: pre- and post-interventions) \times 3 (disability of target: learning difficulty, physically disabled, and non-disabled) mixed design with the latter two factors being within participants.

Procedure

Initially, and in all conditions, the term "disabled" was explained using educational materials. The researcher explained the terms "learning difficulty" and "physically disabled" to children using pictures and examples of possible physical characteristics, for example, uses a wheelchair, or particular behaviors.

There were three types of extended contact intervention, based on the decategorization and "intergroup" theories of intergroup contact, and also a neutral extended contact condition. The extended contact interventions each entailed reading stories with the children, which involved ingroup members who had close friendships with outgroup members. These stories were based on pre-existing children's fiction books obtained from a local teacher training college library. Stories were chosen to match the reading ability of the two age groups. The stories involved non-disabled and disabled children in friendship situations and followed them on adventures, for example, a day exploring in the woods. The disabled and non-disabled characters were all presented in a positive light. Children read the stories with the experimenter in groups of 2 or 3. After reading the story, and still in their small groups, children took part in a group discussion of the story, which was led by the researcher. These intervention sessions occurred once a week for six consecutive weeks.

Text in the story and post-story discussions were varied to construct the different conditions required for successful contact, according to the differing theories

of intergroup contact. The neutral condition consisted of basic extended contact and stories featured non-disabled and disabled children in friendship situations with no extra individuating information, or increased salience of category membership. The category membership of the characters (disabled and non-disabled) was stated only once and this was done at the beginning of the story. In the decategorization condition, as in the neutral condition, stories featured non-disabled and disabled children in friendship situations, but in addition the text within the story emphasized individual characteristics of the story characters such as preferences and qualities, for example, they are kind, like chocolate, enjoy playing computer games. The post-story discussion focused on individual characteristics. As in the neutral condition, the group membership of the characters was given only once at the beginning of the story. In the "intergroup" condition, the stories and post-story discussion were identical to that used in the interpersonal condition but in addition category salience was maintained and the typicality of the story characters was stressed. Throughout the stories, it was emphasized that the characters were typical of their category and many others in their group were similar to them. In the post-story discussion, children were asked to remember what they had learned about the characters in the story and the group membership of the story characters and typicality was emphasized. A summary of one of the stories used can be found in the Appendix.

Dependent Measures

There were two phases of interview: pre- and post-interventions. Participants were interviewed 1 week before beginning the intervention and again approximately 1 week after the intervention ended. They were interviewed individually. The pre-intervention interview took approximately 20 minutes and post-intervention interview took approximately 25 minutes. Each interview took place over two interview sessions in order to shorten individual interview length. Explicit measures of outgroup attitude and intended behavior measures were obtained both prior to and post-intervention. The post-intervention interview schedule also included measures of typicality and outgroup homogeneity as manipulation checks. The administration of materials was counterbalanced.

Intergroup Attitude Measure

This measure was a modified version of the MRA (Aboud, 2003; Doyle & Aboud, 1995). Children were presented with 10 positive and 10 negative attributes. The positive words were clean, happy, friendly, good, hardworking, helpful, kind, nice, unselfish, and polite and the negative words were bad, dirty, nasty, unhelpful, unkind, sad, selfish, rude, lazy, and unfriendly. These adjectives were taken from the Preschool Racial Attitude Measure II (Pram II) Series A (Williams,

Best, Boswell, Mattson, & Graves, 1975) or chosen after a small sample of 7- to 9-year-old children underwent an open-ended interview about their attitudes toward disabled people.

Children were presented with three copies of each word. Participants were also presented with three cups which were used to represent the following target disability categories: not disabled, physically disabled, and learning difficulty. Children were asked to place the words in the cups if they thought that word could be used to describe that group. Each category was dealt with individually and the order in which the categories were dealt with was randomized. Participants were first told that they would be asked about the three groups, non-disabled, physically disabled, and learning difficulty. The researcher said, "Now, can you think about non-disabled people, people with learning difficulties, and the physically disabled? I want to ask you some questions about people who are not disabled, people who are physically disabled and people with learning difficulties." This preceding introduction was important as it helped create an intergroup comparative context for this task; thus ensuring compatibility with the MRA measure (Aboud, 2003; Doyle & Aboud, 1995) that used a simultaneous presentation of ingroup and outgroup. The researcher then said, "Let's talk about people with learning difficulties first/now [depending upon order of administration]. Do you think people with learning difficulties are...[trait]." Practice sessions and prompts from the researcher ensured children understood they could assign the trait to a group, or not. Children were told that they could assign traits to each of the categories. The order in which the traits were administered was randomized.

Pre- and post-intervention ratings for physically disabled, learning difficulty, and non-disabled positive and negative traits were subjected to separate reliability analyses. For the pre-intervention phase, physically disabled, learning difficulty, and non-disabled ratings were reliable (Cronbach's alpha for physically disabled positive and negative traits = .89 and .80, respectively; for learning difficulty positive and negative traits = .89 and .81, respectively; for non-disabled positive and negative traits = .80 and .88, respectively). For post-intervention phase, physically disabled, learning difficulty, and non-disabled ratings were reliable (Cronbach's alpha for physically disabled positive and negative traits = .84 and .84, respectively; for learning difficulty positive and negative traits = .82 and .85, respectively; for non-disabled positive and negative traits = .81 and .87). Given these satisfactory reliabilities, the ratings were collapsed to form single indices by calculating composite scores resulting in six measures for each child: non-disabled positive, non-disabled negative, physically disabled positive, physically disabled negative, learning disabled positive, and learning disabled negative. These scores ranged from 0 to 10.

An ingroup attitude score was calculated by subtracting the negative trait score for the non-disabled from the positive trait score for the non-disabled. Two

outgroup attitude scores were also calculated by subtracting the negative trait score for each disabled group from the positive trait score for that disabled group. In- and outgroup attitude scores had a minimum value of -10 and maximum value of $+10$, with a higher score indicating a more positive attitude toward the group in question.

Intended Behavior Measure

This was a measure of how the children intended to behave, in a hypothetical situation, toward other children who had no disability, physical disability, and learning difficulty. Children were presented with three hypothetical scenarios in which they were asked to imagine that they were at the park and that they met a child they knew from school. The three scenarios were identical and differed only in the disability of the child in the story who was either non-disabled, physically disabled, or had a learning difficulty. The order in which these three scenarios were presented was randomized. After each scenario was read by the researcher, children were asked to indicate that how much they would like to play with the target, how much they would like the target, and how much they would like to have them over for a meal and to stay overnight. Participants responded on 5-point Likert-type scale using smiley faces to indicate the extent they would like to engage in that behavior with the target (Abrams et al., 2003). The scale went from “not at all” (big frown) through neutral (face not smiling or frowning) to very much so (big smile).

The reliability of the intended behavior items was examined separately for learning difficulty, physically disabled, and non-disabled and for interview phase and all proved reliable (Cronbach’s alpha for pre-intervention learning difficulty, physically disabled, and non-disabled was .68, .71, and .77, respectively, and Cronbach’s alpha for post-intervention learning difficulty, physically disabled, and non-disabled was .86, .86, and .78, respectively). Given these satisfactory reliabilities, the ratings were collapsed to form single indices by calculating composite means resulting in three measures of intended behavior for each child.

Manipulation Checks—Outgroup Homogeneity

This is a measure of perceived homogeneity within the outgroups and is based on a technique used by Bigler, Jones, and Lobliner (1997). Participants were presented with 10 positive and 10 negative words. The positive words were clean, friendly, good, happy, hardworking, helpful, kind, nice, unselfish/sharing, and polite. The negative words were bad, nasty, dirty, unhelpful, unkind, sad, selfish, rude, lazy, and unfriendly. Next, the researcher said, “Now, can you think about physically disabled people and people with learning difficulties? I want to ask you some questions about physically disabled and people with learning difficulties.

Let's talk about physically disabled people first/now [depending upon order of administration]. Can you point to the picture which shows how many physically disabled people you think are . . . [trait]." Children responded on a scale from "none" to "all," by circling "none," "some," "most," or "all." Response options were also presented pictorially using different numbers of stick men figures to illustrate the different proportions of people corresponding to the different responses (Abrams et al., 2003). This measure was given in the post-intervention phase only. To calculate outgroup homogeneity, "all" or "none" responses were coded as "1" and "some" and "most" responses were recoded as "0." The ratings for physically disabled and learning difficulty traits were subjected to separate reliability analyses and all proved reliable (Cronbach's alpha for physically disabled traits = .82; for learning disabled traits = .83). Therefore, the ratings were collapsed to form single indices by calculating composite scores resulting in two measures for each child—physically disabled and learning difficulty within group homogeneity. These scores ranged from 0 to 20. High scores indicated that the outgroup was perceived as more homogenous, while a lower score indicates greater perceived heterogeneity and variability within the group. Outgroup homogeneity scores were submitted to a 3 (Condition: neutral, decategorization-extended contact, and "intergroup"-extended contact) \times 2 (disability: physically disabled and learning difficulty) mixed design analysis of variance (ANOVA), with the latter variable within participants. There was a non-significant main effect of condition and disability on outgroup. There was a non-significant effect of condition, $F(2, 59) = .84$, $p = ns$, and disability, $t(64) = -.6$, $p = ns$ on outgroup homogeneity.

Typicality

Participants were instructed to think about real disabled children and were asked, "How many real disabled children are like/similar to the disabled children we read about in the stories?" Children responded on a scale from "none" (1) to "almost all" (5) by circling either "none," "hardly any," "quite a few," "a lot," and "almost all." Response options were also presented pictorially using different numbers of stick men figures to illustrate the different proportions of people corresponding to the different responses. This measure was given in the post-intervention interview phase only. Perceived typicality scores were submitted to a one-way (Condition: neutral, decategorization-extended contact, and "intergroup"-extended contact) ANOVA between participants. There was a significant main effect of condition, $F(2, 59) = 4.08$, $p < .05$. Contrasts revealed that typicality scores were significantly lower in the neutral ($M = 3.25$, $SD = 1.65$) compared to the decategorization condition ($M = 4.29$, $SD = .86$, $t(62) = -3.09$, $p < .001$) and the "intergroup" condition ($M = 4.29$, $SD = .64$, $t(62) = -2.98$, $p < .001$).

Results

Analysis was first conducted with target disability and gender as independent variables.¹ Given the limitations of space, this is not reported here. Due to non-significant findings, the analysis was conducted with the main independent variables, condition, and phase of interview, only. Learning difficulty and physically disabled outgroup attitude and intended behavior were highly correlated ($r = .37, p < .01$; $r = .57, p < .001$, respectively). Thus, in order to obtain a general outgroup attitude score and intended behavior scores, scores toward the two target disabilities were combined to form a composite mean outgroup attitude score and mean outgroup intended behavior score.

Outgroup Attitude

Outgroup attitude scores were submitted to a 3 (Condition: neutral, decategorization, and “intergroup”) \times 2 (Interview phase: pre- and post-interventions) mixed design ANOVA with the latter variable being within participants. Analysis showed a significant main effect of interview phase, $F(1, 58) = 7.59, p < .01$. Post-intervention outgroup attitudes ($M = 4.38, SD = 3.64$) were significantly higher than pre-intervention outgroup attitudes ($M = 3.24, SD = 3.60$).

The main effect of interview phase was qualified by a significant interaction between interview phase and condition, $F(2, 58) = 11.3, p < .001$. Paired sample t -tests showed that there was a significant effect of interview phase on outgroup attitude in the “intergroup” condition ($t(18) = -5.30, p < .001$) with outgroup attitude significantly higher post-intervention, compared with pre-intervention (See Table 1). In contrast, there was a non-significant effect of interview phase in the decategorization, $t(23) = .28, p = ns$, and neutral conditions, $t(17) = -.41, p = ns$.

One-sample t -tests were used in order to examine whether outgroup attitude scores were significantly different from the midpoint (zero) in each condition in both pre- and post-intervention phases of interview. If scores are significantly lower or higher than the midpoint, this indicates outgroup prejudice or outgroup

¹ The analysis was conducted with disability of the target as a between subjects variable (physically disabled and learning difficulty). The data were submitted to a 4 (condition) \times 2 (target disability) \times 2 (phase of interview) mixed design ANOVA, with the latter two variables being within participants. There were no significant main effects and interactions involving target disability for outgroup attitude and outgroup intended behavior. Therefore, the analysis was conducted without target disability as an independent variable. The analysis was also conducted with participant gender as a between participants variable. The data were submitted to a 4 (condition) \times 2 (participant gender) \times 2 (target disability) \times 2 (phase of interview) mixed design ANOVA, with the latter two variables being within participants. There were no significant main effects and interactions involving participant gender for outgroup attitude and outgroup intended behavior. Therefore, the analysis was conducted without gender as an independent variable.

Table 1. Means and Standard Deviations for Measures of Out-group Attitude and Intended Behavior and In-group Attitude and Intended Behavior as a Function of Condition and Phase of Interview

Measure	Phase of interview	Condition		
		Neutral	Decategorization	Intergroup
Outgroup attitude	Pre-test	4.0 (3.04)	4.02 (3.01)	1.6 (4.29)
	Post-test	4.36 (4.06)	3.19 (3.68)	6.00 (2.7)
Ingroup attitude	Pre-test	4.5 (4.88)	4.04 (4.13)	2.9 (5.7)
	Post-test	3.94 (4.84)	4.04 (3.71)	2.9 (5.65)
Outgroup intended behavior	Pre-test	4.07 (1.19)	3.91 (.64)	3.71 (.73)
	Post-test	3.83 (.68)	4.22 (.69)	4.3 (.68)
Ingroup intended behavior	Pre-test	4.11 (1.19)	4.09 (.6)	3.81 (.62)
	Post-test	4.11 (1.15)	4.11 (.83)	4.38 (.44)

Note. Outgroup and ingroup attitude scores could range from a minimum value of -10 and a maximum value of +10. The higher the children’s scores the more positive their evaluations. Intended behavior scores could range from a minimum value of +1 and a maximum value of +5. The higher the children’s scores the more positive their evaluations.

favoritism. However, if scores are not significantly different from the midpoint, this suggests that the participants are ambivalent toward the outgroup. In the neutral condition, scores were significantly higher than the midpoint in pre- and post-intervention interviews ($t(18) = 5.90, p < .001$ and $t(24) = 4.53, p < .001$, respectively). In the decategorization condition, scores were significantly higher than the midpoint in pre- and post-intervention interview phases ($t(24) = 6.79, p < .001$ and $t(24) = 4.24, p < .001$, respectively). In the “intergroup” condition, pre-intervention scores were not significantly different from zero ($t(19) = 1.59, p = .13$) and post-intervention outgroup attitude scores were significantly higher than the midpoint ($t(19) = 10.2, p < .001$) (see Table 1). This finding suggests that the children were significantly positive toward disabled children, except at the pre-intervention phase in the intergroup condition.

Outgroup Intended Behavior

Outgroup intended behavior scores were submitted to the same 3 (Condition: neutral, decategorization, and “intergroup”) × 2 (Interview phase: pre- and post-interventions) mixed-design ANOVA, with the latter variable being within participants. There was a significant main effect of interview phase ($F(1, 61) = 4.78, p < .05$). Outgroup intended behavior scores were significantly higher in the post-intervention ($M = 4.13, SD = .86$) compared to the pre-intervention phase ($M = 3.89, SD = .71$).

The main effect of interview phase was qualified by an interaction between interview phase and condition ($F(2, 61) = 5.38, p < .01$). Simple main effects of interview phase were examined within each condition. There was a non-significant main effect of interview phase in the neutral condition, $t(18) = -.94, p = .36$

(see Table 1). In the decategorization and “intergroup” conditions, intended behavior scores were significantly higher in post-intervention as compared to pre-intervention [$t(23) = 2.27, p < .05, t(20) = 4.33, p < .001$, respectively]. This is shown in Table 1.

Ingroup Attitude and intended behavior

Ingroup attitude and intended behavior were both submitted to a 3 (Condition: neutral, decategorization, and “intergroup”) \times 2 (Interview phase: pre- and post-interventions) mixed-design ANOVA with the latter variable being within participants. There were non-significant effects of condition and interview phase on both ingroup attitude and ingroup intended behavior.

Discussion

The present research demonstrates the effectiveness of extended contact as an intervention to change young children’s outgroup attitudes toward the disabled. This finding is consistent with the limited research on extended contact in the adult-related literature (see Brown & Hewstone, 2005; Paolini et al., 2004; Wright et al., 1997). The study also shows that, of the extended contact conditions, intergroup-extended contact was the most effective since it led to the greatest change in children’s attitudes toward the disabled. These results are both significant and original, since to our knowledge research has not previously shown the effectiveness of extended contact and especially intergroup-extended contact among young children. Furthermore, the effect of extended contact on outgroup attitude was mirrored in outgroup intended behavior as both intergroup- and decategorization-extended contact were effective interventions. Importantly, following the intervention children’s positive attitudes toward their ingroup were not significantly different. Thus, as planned, the intervention had an effect on outgroup attitudes only.

Our findings have both practical and theoretical implications. In terms of psychological theory, this study provides support for the Hewstone & Brown (1986) “intergroup” contact theory in the context of extended contact. The findings highlight the importance of maintaining group boundaries and heightening perceived typicality in order to obtain generalization from the contact situation to the whole outgroup. Previous research has shown the effects of group salience in direct contact settings only; our findings demonstrate the benefits of group salience in extended contact settings also. This finding also concurs with Wright et al. (1997) and Liebkind and McAlister (1999) who also point to the importance of typicality in extended contact. One explanation for the lesser effect of the decategorization condition is that the manipulation was insufficient to induce individuation of the outgroup. The outgroup homogeneity measure and manipulation check suggest that children in the decategorization condition did not perceive the outgroup as

more variable and group memberships were still relatively salient. This may be due to cognitive limitations in children of this age. According to Aboud (1988), children below 8 years of age are pre-occupied with the self and with group memberships. It is not until after this age that children begin to make evaluations of people based on individual characteristics rather than focusing solely on group memberships. This has implications for interventions to reduce prejudice since interventions should match children's cognitive abilities (Bigler, 1999). Therefore, interventions that focus on individual qualities in young children may be ineffective since children could have difficulty attending to this information. Therefore, the non-significant effects of decategorized-extended contact may be limited to the age group sampled here. Children in this age group may respond better to explicit training in attending to individual characteristics of outgroup members (Aboud & Fenwick, 1999) and training on categorizing people along multiple dimensions (Bigler & Liben, 1992).

In terms of policy and practical implications, our findings have significant repercussions for social inclusion policies toward disabled children within the education system. Research suggests that the inclusion of disabled children into mainstream schooling may have some negative consequences for their self-concept and emotional security (e.g., Crabtree & Rutland, 2001; Santich & Kavanagh, 1997; Stinson, Whitmore, & Kluwin, 1996). The experience of inclusion for disabled children could be improved by interventions that create a positive environment prior to the arrival of children with disabilities. Extensive direct contact between disabled and non-disabled children in advance of inclusion may be desirable but is often unrealistic and may also cause a "backlash" effect if children experience anxiety from these interactions (Paolini et al., 2004). Furthermore, research suggests that initial expectations and stereotypes are important in determining the outcome of direct intergroup contact (e.g., Brown, 1995; Brown et al., 1999). Therefore, inducing more positive affect toward an outgroup prior to direct contact could lead to more positive outcomes of actual contact between groups. Our intergroup-extended contact intervention could be used as part of an educational program designed to prepare schools for the inclusion of disabled children that can be administered prior to their inclusion. Extended contact could be used to encourage a more positive attitude toward the disabled in non-disabled children. This may create a more harmonious school environment and so limit some of the negative consequences of inclusion (e.g., poor self-esteem) and also obtain the positive benefits for the child's social and cognitive development, in addition to causing greater changes in non-disabled children's outgroup attitudes.

Limitations and Future Research

Significantly, the present research demonstrates the effectiveness of extended contact at changing children's attitudes toward a group they had no prior contact

with. Research suggests that attitudes formed prior to direct contact may be more embryonic and malleable (Fazio & Zanna, 1981). Therefore, future research should focus on testing whether the extended contact intervention is equally effective when children have had direct contact with or been exposed to negative stereotypes of the outgroup. Indeed, there is evidence that the extended contact effect may be generalizable to other stigmatized groups, such as refugees (Rutland, Cameron, & Brown, 2005). It would also be interesting to examine the effect of extended contact interventions on subsequent interactions between disabled and non-disabled children.

One limitation of the current research was that, according to the manipulation check, perceived typicality was heightened in both the “intergroup” and decategorization interventions, which is surprising given that group boundaries and typicality were only emphasized in the former intervention. This finding in the intergroup condition could possibly be due to a ceiling effect since the mean score in this condition was near to the maximum point of the scale. Perhaps future research needs to examine the importance of perceived typicality using a more sensitive scale.

Another limitation is that the extended contact interventions and the pre- and post-intervention interviews were delivered by the same researcher. This raises the possibility of social desirability effects in all extended contact conditions. However, the intergroup-extended contact intervention was more successful than the decategorization and neutral interventions in changing outgroup attitudes. This suggests that the extended contact effect is not merely a result of social desirability. Future research could also investigate possible underlying mechanisms of intergroup-extended contact and the conditions under which intergroup-extended contact is most effective. “Inclusion of other in the self” (Wright et al., 1997) and perceived group norms for intergroup relationships (Turner, Hewstone, & Voci, 2005) may be important for the extended contact effect. Investigation of these possible mediators and moderators could further improve the extended contact intervention, leading to more effective interventions based on this technique.

Conclusions

The present research demonstrates the effectiveness of a prejudice-reduction intervention based on psychological theory and research. It also adds to social psychological literature on intergroup contact, providing support for the “intergroup” model of direct contact (Hewstone & Brown, 1986) in the context of extended contact. Extended contact has not previously been used with pre-adolescent children to change attitudes toward the disabled and this current study demonstrates its potential as a prejudice-reduction tool, especially intergroup-extended contact. This research points to the importance of closer collaboration between practitioners and

educators, and developmental and social psychologists in order to design effective prejudice-reduction interventions for young children.

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APPENDIX

Example of an Extended Contact Story

One story concerns a physically disabled boy, Bryn, who uses a frame to walk, and his non-disabled friend. Together with their class, the two boys go on a day trip to a ruined castle. Bryn's non-disabled friend is too frightened to climb the tower of the castle, but with Bryn's help they manage to do it together. The class cheers them when they reach the top of the tower (This story was adapted from Sullivan & Howells, 1999. Full transcripts of the stories are available upon request from the authors.)