

## Comparing Direct and Extended Contact in Cyprus

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### Abstract

*The study assessed the changes in the attitudes of 52 Greek/Cypriot female students towards the Turkish/Cypriot community as a result of either direct or extended contact with a Turkish/Cypriot. The aim of the study was to compare direct and extended contact based on the magnitude of the attitudinal changes that each one caused. An experimental design was utilized in which the participants were randomly assigned to either the direct or the extended contact condition. Measures were taken before and after contact in order to capture the changes in the participants' attitudes and strength of attitudes towards the T/Cs. Also, the moderating role of a number of variables was examined. Possible moderators (mutual self-disclosure, intergroup anxiety, and attitude strength prior to contact) were expected to affect the relation between the type of contact and the main outcome variable (attitudes towards the T/Cs). The results show that pre to post test changes towards the positive end occurred in both conditions with direct contact having a greater impact on the attitudes towards the T/Cs but not on attitude strength. Two variables (mutual self-disclosure and attitude strength prior to contact) were found to significantly moderate the relation between contact type and the impact on attitudes towards T/Cs.*

### Introduction

Inter-group contact, the interaction between members of different social groups, has for long now been one of the main subjects of research in the area of inter-group relations (Pettigrew & Tropp, 2006). A bulk of intergroup studies conducted over many years provide support to Allport's (1954) intergroup contact hypothesis according to which contact between members of different groups can, under a given set of circumstances (e.g., equal status and common goals), be associated with more positive inter-group attitudes and stereotypes (Pettigrew & Tropp 2006). More recently, Wright, Aron, McLaughlin-Volpe, and Ropp (1997) introduced the extended contact hypothesis, which proposes that the mere knowledge of an in-group member having an out-group friend will have similar effects to the face-to-face (or direct) inter-group contact.

The results of studies that followed the postulation of the extended contact hypothesis provide support to it. They show that extended contact, just like direct contact, is associated with substantial reduction of out-group prejudice (for a review see Turner, Hewstone, Voci, Paolini, & Christ, 2007). The results

are consistent across experimental (e.g., Wright et al., 1997) and cross-sectional (see Pettigrew, Christ, Wagner, & Stellmacher, 2007) designs, across a number of out-groups, like the disabled (see Cameron & Rutland, 2006), refugees (Cameron, Rutland, Brown, & Douch, 2006), and the elderly (see Harwood, Hewstone, Paolini, & Voci, 2005), and across different age groups for the in-group, like children (e.g., Cameron & Rutland, 2006) and adults (see Pettigrew et al., 2003). Notably, extended contact was found to be associated with lower prejudice even in contexts of segregation and intergroup conflict like Northern Ireland (see Paolini, Hewstone, Cairns, & Voci, 2004).

Despite the consistent findings on the effectiveness of extended contact, the comparison between the two types of contact favours direct contact as far as the breadth and the magnitude of their outcomes are concerned (Turner et al., 2007). A number of studies (e.g. Paolini et al., 2004) found a stronger positive association between direct contact and more favourable out-group attitudes. Direct contact was also shown to relate to stronger out-group attitudes (see Vonofakou, Hewstone, & Voci, 2007). Attitude strength refers to various characteristics of attitudes

such as their certainty, their ambivalence and their importance. Fazio and Zanna (1978) contend that attitudes which develop out of a direct experience with the attitude-object will be stronger than attitudes that are formed based on non-direct experience. This hypothesis has only recently been explicitly tested and replicated by Christ et al. (2008) within the intergroup contact research arena.

The present study primarily aimed to experimentally compare the two types of contact with regards to their effectiveness in changing the attitudes and strength of attitudes of Greek/Cypriot (G/C) students towards the Turkish/Cypriots (T/Cs). The two groups, G/Cs and T/Cs, are the two main communities living in Cyprus at present and they have a long history of conflict. The first goal of this study was to assess whether contact of either type lead to better and stronger attitudes towards the out-group (T/Cs) and to compare the two conditions based on the size of the effect they had upon attitude change.

### **Moderators**

Pettigrew (2008) proposed that future studies on intergroup contact should focus on understanding how and when contact reduces prejudice. Current studies on intergroup contact have already made a shift from merely exploring contact's effectiveness to looking at which mechanisms underlie its effect on prejudice (mediators) and which circumstances hinder or strengthen this effect (moderators) (Dovidio, Gaertner, & Kawakami, 2003; Pettigrew, 2008). A number of variables such as intergroup anxiety, self-disclosure, and opportunity for contact have been studied as either mediators or moderators of direct and/or extended contact (see Turner et al., 2007 for a review).

The design of the present study allowed for the designation of a number of variables as potential moderators, in an attempt to complement the recently launched research on moderators of the contact-prejudice relationship. Therefore the second goal of the study was to assess the moderating role of the following variables: a) mutual self disclosure, b) anticipatory inter-group anxiety, and c) attitude strength prior contact.

Self-disclosure is defined as the voluntary presentation of information of personal nature (Miller, 2002). Bettencourt, Brewer, Croak, and Miller (1992) claim that when individuals of a group disclose personal information throughout an encounter to an out-group member, this contributes to the reduction of pre-existing negative bias against the out-group. The latter effect is expected to become even greater when there is mutual self-disclosure (i.e. disclosure of personal information from both sides). Since (mutual) self-disclosure can affect the quality of a relation, direct contact is typically expected to benefit from increased intimacy at the time of the interaction (see findings of Bettencourt et al., 1992;

Ensari & Miller, 2001). Similar effects should be expected for extended contact with the difference being that mutual self-disclosure is more likely to have a larger benefit on individuals who engage in the interaction (and are therefore self-disclosing) rather than for individuals outside the interaction who are merely informed about or observe the interaction.

Anticipatory anxiety refers to the anxiety that is experienced by in-group members at the thought of a prospective meeting with members of the out-group. This anxiety may stem from a number of reasons such as negative expectations for the consequences of a future contact event and fear that one may be unable to exhibit appropriate behaviour at the time of the interaction (Stephan & Stephan, 1985). Especially for groups that have undergone conflict, anxiety can be a debilitating factor prior to contact.

It is also known that direct contact as an event is more likely to cause anxiety because of its immediacy (see Pettigrew & Tropp, 2000; Stephan & Stephan, 1985); whereas extended contact provides the chance to the participants to experience contact while avoiding this negative feeling (Wright et al., 1997). A combination of the above information leads to the hypothesis that high (as opposed to low) levels of anticipatory anxiety can hinder the effects of direct contact, while extended contact will not be as much affected by high levels of anticipatory anxiety. Neuberg (1996) suggests that initial expectations and stereotypes are important in determining the outcome of contact. Based on this, one could argue that prior (to contact) attitude strength could be a component that determines contact's effectiveness. For individuals who hold firm attitudes towards an out-group, for instance, it should take a bigger effort and a more dramatic intergroup experience, to alter their strongly held attitudes (regardless of whether these attitudes are positive or negative). Extended contact, as an experience, is in general not as immense or as intimate as direct contact. Therefore, individuals with strong prior attitudes who have an indirect experience with the out-group would not benefit as much as individuals with weaker attitudes. On the other hand direct contact is expected to lead to better attitudes even for people who initially hold stronger attitudes. All in all, this study was designed in order to: a) depict the differences as well as the similarities between the two main contact types concerning their effectiveness in changing the attitudes and the strength of attitudes of G/C students towards the T/Cs and b) to examine whether specific third variables influence the effect of contact type on changing participants' attitudes towards the out-group. The hypotheses were the following: 1) a) both conditions would elicit positive changes on the dependent variables (i.e. attitudes and strength of attitudes towards T/Cs), yet, b) direct contact would have greater impact on these variables, 2) Anticipatory anxiety would hinder direct but not extended contact's impact on changes in attitudes

towards T/Cs, 3) Extended contact would be less effective for individuals with high attitude strength prior to contact, 4) High levels of mutual self-disclosure would yield a larger positive effect for direct compared to extended contact.

There are only a few studies reported in the literature that explicitly compare and contrast the effectiveness of both direct and extended forms of contact and the conditions under which they work better. It is important to study contact in Cyprus since Cypriots were given a chance for inter-group contact only recently. Studying both types of contact is interesting since direct contact has been extensively studied and its effectiveness is rarely contested whereas extended contact is a recently coined term and its effectiveness is not well-established yet. Establishing extended contact's effectiveness between communities with a history of conflict is a major support for the extended contact hypothesis and a hopeful message for contact and its outcomes in segregated societies where direct contact is often unfeasible.

## **Method**

### **Design**

The study utilised a 2 (type of contact: direct vs. extended) X 2 (time of measure: pre vs. post contact) mixed design, with the second factor being a within participants design. The main dependent variables were the attitudes and the strength of attitudes of G/C students towards the T/Cs. The pre-measures were taken a week prior to contact via an on-line questionnaire. The post measures were taken immediately after the intervention. The participants were randomly assigned to the two types of contact unless random allocation, as it will be mentioned later, was not possible.

### **Participants**

For the purposes of this study 30 pairs of G/C female students with a good knowledge of English and who were friends with each other were recruited. Four pairs were excluded from the final sample for the following reasons: one pair was excluded because one of the individuals of the dyad did not have the required knowledge of English and could not complete the experiment without the asset of a translator. The other three pairs were excluded because either one or both of the dyad members scored the maximum (9 or 10/10) at the pre-attitude measure which meant that they had no room for improvement at a post-test.

The final sample consisted of 52 participants (26 pairs). They were all students of the University of Cyprus. The majority (N=28, 52.8%) were Psychology students, ten (19.2%) studied Mathematics, seven (13.5%) Social and Political Sciences, two (3.8%) Business Management, two (3.8%) Classical studies, two (3.8%) Chemistry, and

one (1.9%) Physics. The age range was between 18 to 28 years and the mean age was 20 years and 6 months (SD=1.93).

### **Procedure**

The participants were recruited by letters or announcements in classes. The letters/announcements asked for pairs of participants who were friends or knew each other well, were students, and had a good knowledge of English. Participants were informed that the study was made up of two stages. At the first stage they were to complete an on-line questionnaire which they had to do by themselves, and at the second stage they had to attend, along with their friend, an experiment on 'interpersonal relations'. Instead of a payment, a lottery was to draw five pairs that would get 30 Euro each. Since a one week interval had to be kept between the pre-test and the experiment (intervention) and post-test, participants signed their names up for the experiment, and the pre-test was sent to them via e-mail a week prior to the day of the experiment.

For anonymity purposes and in order to match the pre- and post-measures of each individual, participants had to create a personal code before completing the pre-questionnaire. Since they had to remember the code (for use at the post test), they were instructed to create a code from their month of birth and the last four digits of their mobile phone number. A week after the completion of the first questionnaire, participants came to the Psychology Lab of the University of Cyprus for the experiment. The one-week interval was not achieved in several cases due to practical difficulties. For these cases a minimum interval of four days was kept.

Upon their arrival at the Lab, participants were welcomed by the experimenter and were given some initial information on the experimental procedure. Before proceeding with the allocation of the participants to the two conditions, they were asked whether they felt relatively comfortable with expressing themselves in English. If the answer was positive then there was random allocation of the two participants to the two conditions. However, some of the participants seemed to feel very uncomfortable with the idea of talking in English. In these cases the experimenter reassured them that the task they had to complete was a fairly easy one. With only few exceptions the procedure of randomly allocating participants to conditions was successful.

The participant of the direct contact condition was first led to the room where the T/C confederate was waiting. The confederate employed for the study was a female T/C called Ayşe (typical Turkish name) who had the same age as the G/C participants and was herself a university student. The two individuals were introduced to each other by name and following that they were explained the task they were to complete (the Closeness Induction Task, see Sedikides,

Campbell, Reeder, & Elliot, 1998). The instruction was to engage in a natural conversation by using three lists of questions that were taped on the two opposite sides of the table. They had to start with the first list and advance to the third list. They were given a minute to go through the first list which was comprised of simple questions like: 'What is your name?' The second and the third list consisted of more intimate questions like: 'What is one thing happening in your life that makes you stressed out?' for List Two, and 'What is one of your biggest fears?' for List Three. For the second and the third list they were given three and five minutes respectively. The experimenter indicated the end of each time-interval by entering the room and asking them to advance to the next list of questions. The answers of the confederate were the same for all pairs.

After the task was explained to the participant and the confederate, the experimenter left the room saying that she would give them a few minutes to look over the questions. In that time the experimenter led the participant of the extended contact condition to the second room. This room was equipped with a one way mirror and a baby talk device which allowed the participant to both watch and listen to the conversation in the other room. The participant was asked to carefully watch and listen to the conversation. Then the experimenter returned to the first room, asked if there were any questions, and told them to make a start with the first list of questions.

When the two individuals concluded the task the experimenter returned to signify the end of the task and to inform them that in order to complete the experiment they had to fill in one more questionnaire. The two participants were taken to two different rooms where they completed the respective questionnaires.

### **Measures-Questionnaires**

The first (or pre-) questionnaire had two main purposes: a) to take the baseline measures of the participants on the dependent variables and b) to control for the equality of the two groups on the variables under study and on the level of previous contact with T/Cs. The following measures were part of the first questionnaire:

**Previous Contact.** Contact that took place prior to the intervention was measured using one item for direct out-group friendships ('How many T/C friends do you have?'), one item for the frequency of contact with friends ('If you have T/C friends, how often do you meet up with them?'), and two items for the quality of the first contact they had with T/Cs (a) 'How would you describe your first contact with a T/C?' and b) The first contact you had with a T/C was: 1 very negative to 5 very positive. For all items a five-point Likert scale was used with lower scores indicating less quantity or quality of contact.

**Anticipatory Inter-group Anxiety.** A short version

of Stephan and Stephan's (1985) inter-group anxiety scale was used. The scale measured the extent to which participants would feel six different anxiety-related states if they found themselves in a group of T/Cs. The terms used in this study were: threatened, anxious, comfortable, awkward, safe, at ease. Response options ranged from 1 (not at all) to 5 (extremely) with high scores indicating more anxiety. Items were reverse coded where necessary and responses averaged. Cronbach's alpha for this scale was .87.

**Attitudes.** Attitudes towards T/Cs, Turks, economic immigrants, and asylum seekers were assessed using a thermometer-like scale (see Esses, Haddock, & Zanna, 1993) for which the lower point (0 degrees) stood for extremely unfavourable attitudes and the upper point (100 degrees) represented extremely favourable attitudes. The midpoint (50 degrees) indicated neither favourable nor unfavourable attitudes. Participants were asked to indicate a number on the scale representing how favourably or unfavourably they evaluated each group. Attitude strength was measured by using operationalizations that are typically found in attitude strength research. The scale was comprised of questions on attitude certainty (e.g., 'How certain are you about your feelings towards T/Cs?'), attitude importance (e.g., 'How important are T/Cs to you personally?'), and attitude ambivalence (e.g., 'How indecisive are your thoughts and feelings about T/Cs?'). A 7-point Likert scale was used; ranging from 0 (not at all) to 6 (extremely). After averaging all the items together and reversing the attitude ambivalence items the alpha for the attitude strength scale was .83.

The second (or post-) questionnaire aimed to measure the post-scores on the dependent variables and to capture how participants perceived the contact event. Of special interest were their perceptions on how stressful the experience was for them (episodic inter-group anxiety). The measures of attitudes and attitude strength were the same as the ones in the pre-test. The alpha for the attitude strength scale at post-test was .88.

**Episodic Inter-group Anxiety.** The scale was the same as the one used at the pre-test but with a different wording: 'To what extent did you feel the following (i.e. anxiety states) at the time of the interaction (or while watching your friend discussing with the second person)?'. The alpha was .61. Mutual self-disclosure: was measured with two items (one for each individual). The items were: 'How much information of a private nature to you did you tell to the person you conversed with?' and 'How much information of a private nature to her do you think that the other person told you?'. The phrasing of the two questions differed somewhat for the extended contact condition. The two items were significantly correlated ( $r = .68$ ) and averaged to create the mutual self disclosure score.

## Results

Table 1. shows all the means, the standard deviations and the intercorrelations among the main variables of the study at both the pre and the post test. Analyses were divided into four sections. First, direct and extended contact were compared on their pre-test ratings for all the dependent variables. This was done in order to. Second, the two conditions were compared on the pre-test and post-test differences for the dependent variables (i.e., attitudes and strength of attitudes towards the T/Cs. Third, direct and extended contact conditions were compared on the related to the interaction measures (i.e., mutual self-disclosure and episodic anxiety). Fourth, it was tested whether the pre-post difference between direct and extended contact was influenced by a number of potential moderating variables (i.e. mutual self-disclosure, anticipatory anxiety, and attitude strength prior to contact).

### Comparisons for pre-test ratings

The two contact conditions were compared at pre-test on the following measures: previous direct contact, frequency of meeting out-group friends, contact quality, attitudes towards T/Cs, attitude strength, and anticipatory intergroup anxiety. The groups were equal across all measures. It is worth mentioning that the amount of previous contact was very low. The means for the variables that measured previous contact were: Mdirect friendship=1.19, SD= .56, Mextended friendship= 1.65, SD = .84, Mproportion T/C friends= 1.12, SD= 0.32, indicating absence of previous contact. For this reason the effect of previous contact did not have to be controlled for in subsequent analyses.

### Comparison on pre to post test changes

To test hypothesis 1, the two conditions were compared based on the pre to post changes on the dependent variables. A within-subjects (repeated measures analysis) was used, in which the type of contact was set as the between-subjects independent variable and time was set as the within-subjects variable. Therefore a 2 (type of contact: direct vs. extended) x 2 (time: pre-test vs. post-test) mixed-model analysis of variance (ANOVA) was computed, with repeated measures on the second factor for the measures of attitudes and strength of attitudes towards the T/Cs .

A main effect of time was found for the attitudes towards the T/Cs,  $F(1, 50) = 29.21$ ,  $p < .001$ ,  $\eta^2 = 0.35$  and a type of contact x time interaction,  $F(1, 50) = 5.37$ ,  $p = .025$ ,  $\eta^2 = 0.06$ . Post hoc comparisons revealed a significant difference between pre- and post-test ratings, in both direct,  $t(25) = 4.78$ ,  $p < .001$ , and extended conditions,  $t(25) = 2.62$ ,  $p = .015$ , with

the effect being greater for the direct-contact condition. As seen in Figure 1, at pre-test, there was no significant difference between the two conditions,  $t(50) = 0.55$ ,  $p = .58$ , but at post-test the difference between direct and extended contact approached significance,  $t(50) = 1.67$ ,  $p = .10$  (pre-test: Mdirectcontact = 5.00; Mextendedcontact = 5.31; post-test: Mdirect contact = 6.73; Mextended contact= 6.00).

For the strength of the attitudes of the participants towards the T/Cs, only the main effect of time was significant,  $F(1, 50) = 13.55$ ,  $p = .001$ ,  $\eta^2 = 0.21$ . The means at the post test ( $M = 2.97$ ) were higher than the means at the pre-test; ( $M = 2.64$ ) showing stronger attitudes towards the T/Cs.

### Comparisons during contact

In order to examine how each type of contact was perceived by participants, the two contact conditions were compared in terms of perceived self-disclosure and episodic intergroup anxiety. There were no differences between the two conditions on the aforementioned measures. For episodic anxiety not only were there no differences between the two conditions but the mean scores for both conditions were very low (Mdirect contact = 1.47; Mextended contact= 1.50). On the contrary, reported self disclosure levels were moderately high (Mdirect contact = 3.37; Mextended contact= 3.44).

### Moderation of pre- to post-test differences

To test hypotheses 2-4, a series of moderated regression analyses were computed (see Aiken & West, 1991), in which a post-test minus pre-test difference score for the out-group attitudes measure was regressed on condition (coded as -1, direct contact, and +1, extended contact), the moderator (as a continuous variable), and the product of the two. Prior to multiplication, the means of the terms were zero-centered in order to avoid problems of multicollinearity (see Cronbach, 1987).

This analysis was done, in turn, for the following moderators: attitude strength prior to contact, anticipatory intergroup anxiety, and mutual self-disclosure. Two significant moderation effects were detected. First, the effect of type of contact on attitude change was moderated by pre-test attitude strength ( $\beta = -.28$ ,  $p = .038$ ; correlation between attitude strength and difference score, rdirect contact = .17,  $p = .41$ , rextended contact = -.49,  $p = .012$ ): in the extended contact condition results showed that the stronger the participants' pre-test attitude, the less impact extended contact had on their post-test attitudes, while direct contact had an impact irrespective of the strength of pre-test attitudes. As shown in Figure 2, when pre-test attitude strength was low, there was no effect of type of contact; whereas, when pre-test

Table 1. Means, Deviations, and Intercorrelations for the Main Variables

	1	2	3	4	5	6	7	Mean	SD
Anticipatory intergroup anxiety	--	-.28	-.13	-.03	-.23	-.44*	-.28	3.37	.86
Pre-attitudes T/C	-.55**	--	.02	.23	.02	.34	.27	5.00	1.72
Pre-attitude strength	-.63**	.35	--	.16	.24	.23	.77**	2.55	1.02
Episodic Intergroup Anxiety	.54**	-.02	-.23	--	-.20	-.16	.01	1.47	.33
(Self-) Disclosure	-.18	.47*	-.04	.15	--	.50**	.44*	3.37	.61
Post-attitudes T/C	-.47*	.80**	.08	-.08	.35	--	.44*	6.73	1.46
Post-Attitude Strength	-.68**	.48*	.89**	-.27	.00	.26	--	2.94	1.01
Mean	3.31	5.31	2.74	1.50	3.44	6.00	3.00	--	--
SD	.96	2.26	1.16	.40	.71	1.70	1.19	--	--

Note. \* < 0.05; \*\* < 0.001. Upper part of the table descriptive statistics and correlations for the direct contact condition; bottom part for the extended contact condition

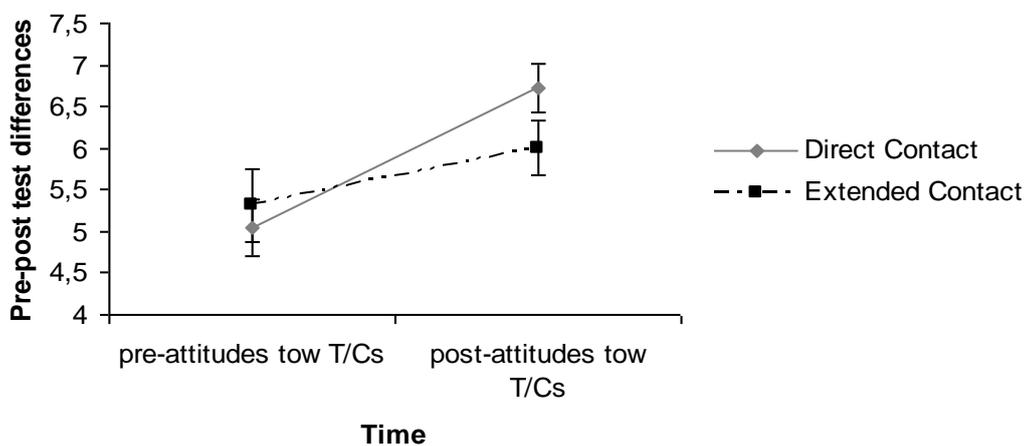


Figure 1. Type of Contact X Time Interaction for attitudes towards T/Cs

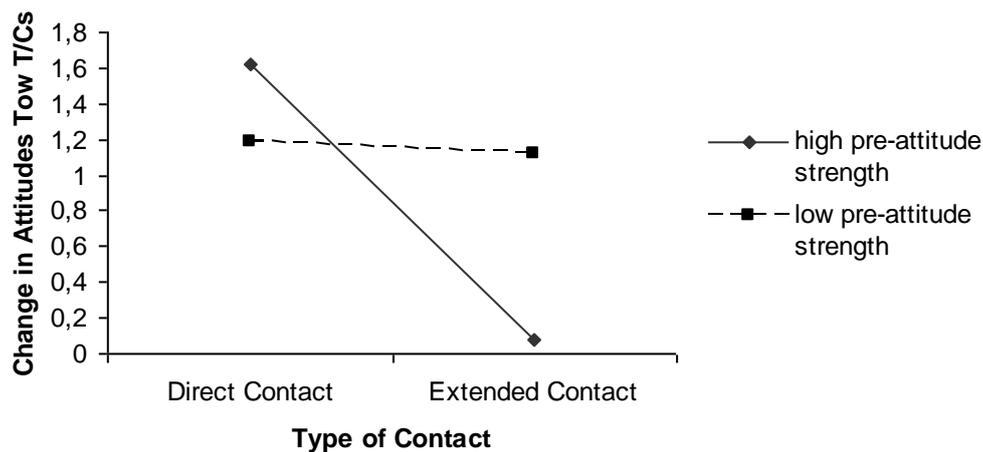


Figure 2. Moderation Effect of Pre-Attitude Strength

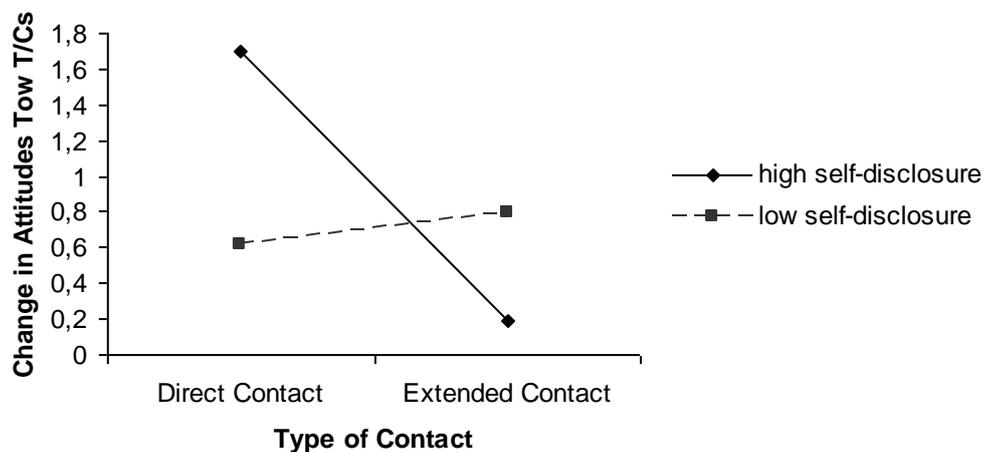


Figure 3. Moderation Effect of Self- Disclosure

attitude strength was high, direct contact had a greater impact than extended contact. Second, the effect of type of contact on attitude change was moderated by disclosure during contact, ( $\beta = -.35$ ,  $p = .009$ ; correlation between disclosure and difference score,  $r_{\text{direct contact}} = .38$ ,  $p = .059$ ,  $r_{\text{extended contact}} = -.35$ ,  $p = .077$ ). As shown in Figure 3, when disclosure was low, there was no effect of type of contact; whereas, when disclosure was high, direct contact had a more positive impact than extended contact.

## Discussion

This study compared two types of inter-group contact; direct and extended contact, with regards to: a) their effectiveness in changing the attitudes and strength of attitudes of G/C students towards T/Cs, b)

the circumstances under which these effects were advanced or hindered.

### *Effects on attitudes and strength of attitudes towards T/Cs*

The results show that both conditions advanced more positive and stronger attitudes towards the T/Cs (Hypothesis 1a). As expected, direct contact yielded a greater pre to post change in attitudes towards T/Cs (Hypothesis 1b). This, however, was not the case with the strength of out-group attitudes. The finding of no-difference between the two conditions on the measure of attitude strength is in contrast with the findings of Christ et al. (2008) and Fazio and Zanna (1978) for which the attitudes formed through direct experience were stronger than the ones formed from non-direct experience with the object of prejudice. Despite the discord with results of previous studies,

one should take into account when interpreting the results of the present study the fact that attitude strength pertains to characteristics of attitudes like certainty and importance for which one could argue that they should be given some time before they manifest. Individuals may have to reflect first on the contact experience before changing the strength with which they feel or think about the experience and whoever this involves. In the present study the post-test took place immediately after the interaction. The participants were not given enough time to actually reflect on what they had experienced. In contrast to the change in attitude valence which is a more immediate and more noticeable reaction perhaps, the strength of attitudes may need its time before it changes.

Time aside, attitude strength is more likely than attitude valence to be affected by the number of previous interactions with the out-group. A single event may not be capable of influencing more deep rooted qualities of attitudes like certainty for example. The participants of this study had literally no previous contact; hence the interaction (direct or indirect) with the T/C confederate was the first intergroup experience they had ever had. Taking the above into consideration, an obvious suggestion for a future study would be to include one more post-test (a delayed post test) so as to give time to the participants to think on the experience and further shape their attitudes.

#### *The effect of moderating variables*

Despite some words of caution that have been articulated in the past regarding the identification of moderators of the contact-prejudice relation (see Pettigrew, 1998); meta-analyses (e.g., Pettigrew & Tropp, 2006) as well as reviews on the intergroup contact research (Pettigrew, 2008) encourage the identification of moderating variables as long as the study on moderators is governed by strong theoretical underpinnings. This study aimed at identifying moderators that would cause distinct effects on the type of contact-attitudes relationship for the two conditions. This was part of the attempt to uncover the differences between the two types of contact not only with regards to their effect on out-group attitudes but also with regards to the circumstances under which they are more or less effective in comparison to each other.

Out of the variables assessed the only variable that was not found to have a moderating role was anticipatory intergroup anxiety. The hypothesis for the moderating effect of this variable was primarily based on the pre-assumption that direct contact elicits greater feelings of anxiety. Departing from that, it was expected that individuals with high levels of anticipatory anxiety who were assigned to the direct contact condition (a potentially stressful situation) would experience that much anxiety that it would hamper the encounter and its effects in turn. On the other hand extended contact's effects were

presumably less likely to be affected by anticipatory anxiety since extended contact per se does not cause stressful reactions to the individuals.

As seen from the episodic-anxiety measure though, the two conditions did not differ at the reported anxiety at the time of contact. In addition, the overall reported anxiety was surprisingly low. As a result, since the pre-assumption which was central to the hypothesis for the moderating role of anticipatory anxiety was not met, the chances that this variable had to actually have a moderating effect at the end were by all means limited.

The moderation analysis yielded significant results for the two remaining variables. As expected the extended contact condition did not benefit individuals who originally held strong attitudes. More specifically for high levels of pre-attitude strength, direct contact lead to a greater attitude change compared to extended contact. Notably, for direct contact the impact tended to be larger for people who held strong rather than weak attitudes whereas for extended contact it was exactly the opposite; it was low attitude strength that was advancing greater change. As argued above, extended contact as an incidence is not as stimulating as direct contact and thus for individuals with very well rooted attitudes it doesn't comprise a great challenge (i.e. it does not challenge them to re-assess and change their attitudes).

It should be underlined that in this study there were no individuals who were severely prejudiced in the first place. This is evident from the pre-measures of the sample's attitudes towards the T/Cs (Moverall= 5.15). Accordingly, the individuals who held strong attitudes were people who had rather positive attitudes towards the out-group and not individuals with firmly grounded prejudice. This group of people (i.e. individuals with strong and apparently positive attitudes) ended up benefiting more from direct contact. It appears that this category of people was in a way ready for contact. It seems then that if a person is ready for intergroup interaction the best condition to be in is direct and not extended contact. As for individuals who are unsure about their attitudes the type of contact does not make a big difference.

An interesting moderating effect was found for mutual self-disclosure. In line with the original hypothesis increased levels of self-disclosure yielded larger changes in attitudes towards T/Cs for the direct contact condition. Since self-disclosure is a good indicator of the closeness of a relationship it was assumed that increased amount of self-disclosure would promote positive changes in both conditions when compared to low levels of disclosure. Results yielded, however, that it was lower reported disclosure that had a larger effect on attitude change for the extended contact condition.

It is true that the interaction was structured in such a way that it encouraged maximum self-disclosure, thus individuals at direct contact felt comfortable enough

to disclose many and very personal information to the confederate. This was useful as they felt close to the out-group member and this affected their attitudes too. However, the increased amount of disclosed information must have been viewed as 'excessive' by some of the individuals at the extended condition. Taking into consideration that the two in-group members were friends with each other it must have been uneasy for the observers to see their friends exchanging so much information of personal nature with a 'stranger' who happened to be an 'out-grouper' too.

Although this latter moderation effect is not of direct use to intergroup contact as such, since it has a more interpersonal touch into it, it can serve as a useful reminder to the researchers who study intergroup relations that interpersonal factors (even among in-groupers) can have an effect in every-day life situations. Furthermore, the improvisations that were included in this study regarding self-disclosure, i.e. the study of mutual and not one-way self-disclosure and the effect of disclosure on extended contact may serve as a trigger for further studies on this measure.

*Present limitations and future directions*  
The major strength of this study lies in its experimental nature which allowed reference to causality, as well as the use of an alternative operationalisation of studying extended contact. Previous studies have attempted to operationalise extended contact in a number of ways. For example Turner, Crisp, and Lambert (2007) have studied extended contact as the mere imagination of out-group members, Liebkind and McAlister (1999) explored extended contact as the peer modelling of positive intergroup contact, and Cameron, Rutland, Brown, and Douch (2006) had their participants reading stories portraying specific out-groups. This study had a member of a friends' dyad observing her friend interacting with an out-group member. This improvisation in the operationalisation of extended contact serves as another successful paradigm of extended contact.

However, despite the fact that an experimental design was used, no control group was introduced. The usefulness of a control group is obvious in this study as a control group would ensure above all that the pre to post differences were solely an outcome of contact (of either type). It would also contribute to a more detailed examination of the abilities of the two conditions because it would serve as a basis for comparison.

Apart from a control group a delayed post-test as indicated earlier could also have offered significant information. It would be valuable to know, for instance, whether the effects of the two conditions were maintained throughout time or whether any of these effects decayed because of time. A delayed post-test could also have been utilised to investigate whether the differences of the two conditions accentuated or even more counter intuitively reversed

at a later stage (i.e. extended contact developing to have greater impact on attitude change). Furthermore, attitudes were measured with only one item (feeling thermometer). More measures that tackle the same construct need to be added in future studies. A significant addition would be the introduction of implicit measures of prejudice (see Vonofakou et al., 2007) which allow for the measure of very subtle forms of prejudice and are also respondent-bias free.

## Conclusion

This study aimed to compare the effectiveness of the two main types of contact in producing more favourable and stronger attitudes of G/C students towards T/Cs. Despite the well-established effectiveness of direct contact which was reproduced here, extended contact's ability to lead to positive changes in the outcome variables even in segregated contexts with groups that underwent conflict was verified.

Furthermore, this study shed some light on the differences between the two conditions especially concerning the circumstances that hamper or enhance their effectiveness. Pettigrew (2008) supported the need to systematically examine how each type of contact reduces prejudice. Evident from this study is that the two types of contact do not work equally well under certain circumstances. It is important to know which conditions may either boost or on the other hand reduce the effectiveness of each type of contact as information of this kind is needed for the construction of well updated interventions for the reduction of prejudice.

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