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Exploring Qualities Present in Current Versus Dissolved Cross-Group Friendships

Elena Buliga^a, Phuong Nguyen^a, Cara C. MacInnis^a

[a] Department of Psychology, University of Calgary, Calgary, Canada.

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Corresponding Author: Elena Buliga, University of Calgary, 2500 University Dr NW, Calgary, AB, Canada, T2N 1N4. E-mail: ebuliga@ucalgary.ca

Supplementary Materials: Materials [see Index of Supplementary Materials]



Abstract

In general, cross-group friendships are less stable than same-group friendships. What conditions are present in currently existing versus dissolved cross-group friendships? In order to examine qualities that may influence cross-group friendship stability we compared current and dissolved friendships, including cross-group friendships. Cross-group friendships exist in various group domains, some more easily categorizable than others. That is, sometimes it is easy to tell that a relationship is cross-group (e.g., cross-race), and other times this is less clear (e.g., cross-socio-economic status). Thus, we compared current and dissolved friendships across both a more and a less easily categorizable group domain. In this study, participants reported on their current and dissolved friendships, and we found that, overall, friendship influencing qualities such as closeness, similarity, and social network integration (i.e., becoming friends with the friends of one's own friends) were present to a greater extent in current versus dissolved friendships. This was the case for both cross-group and same-group friendships. These qualities may influence cross-group friendship stability.

Keywords

cross-group friendships, social class, SES, friendship, social network integration

Close relationships with people belonging to social groups other than one's own—i.e., cross-group friendships—are associated with positive outcomes including lower prejudice (Davies, Tropp, Aron, Pettigrew, & Wright, 2011), reduced anxiety during intergroup



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interactions (Page-Gould, Mendoza-Denton, & Tropp, 2008) and heightened empathy and trust toward outgroup members (Turner, Hewstone, & Voci, 2007). Although cross-group friendships can be effective in reducing prejudice they are often challenging to maintain (e.g., Aboud, Mendelson, & Purdy, 2003). We were interested in determining conditions present in current versus dissolved cross-group friendships, examining two cross-group friendship domains, one more (e.g., cross-ethnicity friendships) and one less easily categorizable (e.g., cross-SES friendships). Qualities present in current versus dissolved cross-group friendships may be those that promote cross-group friendship stability.

Cross-Group Friendship

Decades of research demonstrate that contact between members of different social groups can lead to more positive intergroup attitudes (Pettigrew & Tropp, 2006). Among explanatory processes leading to reduced prejudice are learning about outgroups from a personal perspective, increased trust, reduced intergroup anxiety, increased empathy, and positive emotions toward outgroup members (Pettigrew, 1998; Pettigrew & Tropp, 2008; Wright, Aron, & Tropp, 2002). Intergroup contact is not a cure-all for challenging intergroup relations, however. When intergroup contact is negative, it leads to more prejudice, an effect that is stronger than the prejudice reducing effect of positive contact (Barlow et al., 2012). Further, intergroup contact is more effective in reducing prejudice for advantaged than disadvantaged group members (Dixon, Levine, Reicher, & Durrheim, 2012) and intergroup contact can diminish interest for collective action or policies in support of minority groups (Tausch, Saguy, & Bryson, 2015; Tropp, Hawi, Van Laar, & Levin, 2012).

Fortunately, cross-group friendships are a powerful form of contact that can overcome many of these drawbacks of intergroup contact more generally. When intergroup contact occurs in the form of friendship, it involves many of the conditions considered optimal for contact to reduce prejudice (e.g., equal status, cooperation, Allport, 1954; friendship potential, Pettigrew, 1998; recurring positive interactions, MacInnis & Page-Gould, 2015; positive contact, Barlow et al., 2012). Cross-group friendships are also effective in reducing prejudice for both advantaged and disadvantaged group members (Davies et al., 2011) and are associated with increased psychological well-being among disadvantaged group members including people with physical disabilities (Bagci, Turnuklu, & Bekmezci, 2018) and minority racial/ethnic groups (Benner & Wang, 2017; Mendoza-Denton & Page-Gould, 2008). Cross-group friendships in which group inequalities are acknowledged have also been proposed as a means to increase support for collective action among both advantaged and disadvantaged groups, further leading to positive social change (MacInnis & Hodson, 2019).

Unfortunately, cross-group friendships are relatively rare (Smith, McPherson, & Smith-Lovin, 2014), and data from child and adolescent cross-group friendships suggest that when they do form they do not tend to last as long as same-group friendships

(Aboud et al., 2003; Schneider, Dixon, & Udvari, 2007). Among Canadian school children, cross-race friendships were less likely to be reported at a second assessment point in a 6-month longitudinal study (Aboud et al., 2003). These results are consistent with another Canadian study assessing friendships retained over time, finding that the proportion of cross-ethnic friendships was significantly smaller than the proportion of reported same-ethnic friendships (Schneider et al., 2007). Even after accounting for demographic characteristics, extracurricular activities, school attitudes, substance use, reciprocity and closeness (e.g., shared activities, time spent together), interracial friendships were found to be less stable than same-race friendships (Rude & Herda, 2010). Although there is ample research on cross-group friendships among adults generally (e.g., see Davies et al., 2011), there is little research on the *stability* of adults' cross-group friendships. Given our interest in adult cross-group friendships, we extrapolate from data on children that adult cross- (vs. same-) group friendships may be similarly less stable. These findings raise questions about how cross-group friendships can be maintained in order to produce positive intergroup outcomes. In order to realize the positive outcomes of cross-group friendships, these friendships need not only form but last; but what qualities might influence cross-group friendship stability? As an initial step in answering this question, we examined conditions that may be present to a greater extent in current (vs. dissolved) cross-group friendships among adults.

Potential Qualities Influencing Cross-Group Friendship Stability

Demonstrating qualities that are present to a greater extent in current than dissolved cross-group friendships may be suggestive of qualities promoting cross-group friendship longevity. Such qualities could then be promoted in cross-group friendships, especially in interventions such as mentorship (Ensher & Murphy, 1997) or diversity-related initiatives (Denson, 2009). Informed by literature on friendships generally as well as cross-group friendships, we identified four qualities that may be present to a greater extent in current than dissolved less easily categorizable cross-group friendships. We expected that these qualities would exist to a greater extent in current versus dissolved cross-group friendships as well as current versus dissolved friendships generally.

Similarity

Consistent with the similarity attraction hypothesis (Byrne, 1971), similarity promotes friendship stability (Hafen, Laursen, Burk, Kerr, & Stattin, 2011). This has been examined in the context of personality similarity as well as similarity among other characteristics (Cemalcilar, Baruh, Kezer, Gizem Kamiloglu, & Nigdeli, 2018; Jugert, Noack, & Rutland, 2013). Perceived similarity may matter most, with perceived and not actual similarity associated with greater friendship intensity (Selphout, Denissen, Branje, & Meeus, 2009) and likeability toward a friend (Cemalcilar et al., 2018). We therefore examined perceived general similarity and personality similarity in current versus dissolved friendships.

Closeness

Higher perceived closeness is typically reported in within-group friendships than in cross-group friendships (Schneider et al., 2007; Smith & Henry, 1996). Lower closeness in cross-group friendships may therefore be a reason for their higher probability of dissolution. Potentially, cross-group friendships can be similar to within-group friendships in terms of stability to the extent that these friendships are close. Indeed, subjective closeness strongly predicted friendship retention in cross-race friendships (Rude & Herda, 2010). We examined closeness using a face valid self-report measure and by assessing inclusion of other in self (IOS), a measure tapping the degree to which one considers another to be included in their own self-identity (Aron, Aron, & Smollan, 1992). Higher IOS is associated with lower dissolution of romantic relationships (Le, Dove, Agnew, Korn, & Mutso, 2010) and IOS has been identified as a means by which cross-group friendship reduces prejudice. The cross-group friend as well as the friend's group become included into the self, leading to more positive attitudes toward the group as a whole (Sinclair, Fehr, Wang, & Regehr, 2016; Welker, Slatcher, Baker, & Aron, 2014; Wright et al., 2002). Thus, greater closeness and/or IOS may be present in current than dissolved cross-group friendships.

Salience of Group Differences

During cross-group contact, individuals may or may not be aware of their group membership, especially given that some group memberships are less visible and/or categorizable. Even when there is an awareness of group memberships, they may not be salient in the relationship. When the cross-group nature of the relationship and differences between group members are salient (i.e., explicitly recognized) in the relationship, it contributes to positive outcomes, facilitating the generalization of positive attitudes toward an individual (generated through intergroup contact) to the group as a whole (Brown & Hewstone, 2005; Hewstone & Brown, 1986) and strengthening the relationship between positive contact on reducing intergroup anxiety and increasing positive attitudes (Voci & Hewstone, 2003). Cross-group relationships involving more positive intergroup attitudes may be more likely to last. Thus, salience of group differences may be present to a greater extent in current versus dissolved cross-group friendships.

Social Network Integration

Defined as integrating a friend into one's group of friends, social network integration is an important component of successful relationships. Social network integration happens less in cross-group friendships than in same-group friendships (Reagans, 1998). When an individual has many within group friendships and only one outgroup friend, that cross-group friendship is less likely to last, due to other friends' perceived or actual disapproval (Reagans, 1998). Thus, there are challenges to introducing a cross-group friend to ingroup companions (Aboud & Sankar, 2007). Interestingly, when one's other friends

have positive feelings toward one's outgroup friend and their cross-group friendship, the cross-group relationship becomes more stable (Reagans, 1998). This is, of course, more likely when the outgroup friend is introduced into one's social network. Thus, we examined whether social network integration is more likely to be present in current (vs. dissolved) cross-group friendships.

It is worth noting that even though cross-group contact has been found to be beneficial in reducing intergroup prejudice, its effects are not consistent across both advantaged and disadvantaged groups. The presence of optimal conditions suggested by Allport (1954) contributes to reduced intergroup prejudice only among advantaged group members (Saguy, Tropp, & Hawi, 2012). Moreover, cross-group contact experiences seem to be dependent upon group membership, with advantaged and disadvantaged group members reporting different goals and evaluations of intergroup contact. In addition, findings from longitudinal studies conducted with adolescent samples suggest a greater general preference for ethnic homophily among advantaged group members when compared to disadvantaged group members (Wölfer & Hewstone, 2018). Interestingly, when cross-group contact does occur, advantaged but not disadvantaged group members prefer to discuss similarities rather than group differences (Saguy et al., 2012). Therefore, when salience of group differences does occur during intergroup interactions, one's group membership might play an essential role in determining its effects on cross-group relationship outcomes. Considering these outlined research findings, it is worth exploring if relationship qualities that are reported as present to a greater extent in current versus dissolved cross-group friendships are different across advantaged and disadvantaged group members.

The Current Research

We compared current and dissolved cross-group friendships in two group domains, including both more and less easily categorizable types of cross-group friendships. Cross-group friendships have been largely explored between groups where people differ in visible (e.g., ethnicity) or less visible but relatively easily categorizable (e.g., sexual orientation, religion, nationality) ways. Cross-group friendships also exist, however, between groups where group memberships are both less visible and less easy to categorize given that they exist on a continuum such as social class (Côté et al., 2017). Prejudice exists in this group domain (Bullock, 1999; Cozzarelli, Wilkinson, & Tagler, 2001; Horwitz & Dovidio, 2017) that cross-group friendships may reduce. Thus, we examined cross-ethnicity and cross-SES friendships.

Social class can be measured objectively or subjectively. Three correlated objective markers of social class include income, education, and occupation (Kraus & Stephens, 2012). Subjective social class is typically measured using the MacArthur Scale of Subjective Social Status (Adler, Epel, Castellazzo, & Ickovics, 2000). There is no particular best measure that can fully capture social class in its holistic nature (Kraus & Stephens,

2012). As recommended by Rubin et al. (2014) and given that the current work focused on university students (who may not yet have occupations), we examined subjective markers of social class.

There are also multiple means of measuring cross-group friendships. Recommendations suggest that an indirect social network approach where participants are first asked to list their friendships followed by questions about friends' demographic information is more accurate (Davies et al., 2011). Smith (2002) proposed that people tend to overestimate their cross-group friends when asked about them directly and therefore, a network approach is preferred. Although this approach may produce increased fatigue among participants, which can lead to lower numbers of listed friends (see Brashears, 2011), we opted to use this more indirect route in an attempt to minimize demand characteristics. Overall, we sought to compare the qualities between current and dissolved cross-group friendships, with a sub-interest in examining any potential differences as a function of the categorizability of the friendship group domain.

Preliminary Study (When Is a Friend a Cross-Subjective SES Friend?)

Given our sub interest in examining less easily categorizable cross-group friendships, we wanted to understand how cross-socioeconomic status (SES) is defined.¹ Undergraduate students at a Canadian university ($N = 308$, $M_{Age} = 20.49$; $SD = 2.81$, 79.2% female participants) provided information about their own socioeconomic status.

Subjective Socioeconomic Class

The MacArthur Scale of Subjective Social Status was used (Adler et al., 2000). This visual analogue scale shows a ladder with 10 rungs, with the lowest rung representing "the people who have the least money, least education, and the least respected jobs or no job" and the highest rung representing "the people who have the most money, the most education, and the most respected jobs." Participants were asked to choose the rung that best represents their social status in comparison with other people living in Canada.

After providing information about their socioeconomic status, participants were then asked where a friend would have to fall on the same indicator scale in order for them to consider the friend to be of different SES than the self. Participants were able to select more than one response for each. For example, a participant who selected 6 for subjective SES might select those who are 4, 3, 2, and 1 to be lower than oneself in subjective SES.

1) The surveys used for both studies included additional measures that were not examined (and not intended to be examined) for this research article.

Results

Analytic Strategy

Difference scores were computed between self and friend SES measures. For defining friends of lower SES, the maximum score indicated for a friend to be of lower SES (e.g., 4 if the participant chose 1, 2, 3, and 4) was subtracted from one's own score (e.g., 6). Any obtained difference scores lower than zero (e.g., participant's score was 6 and maximum score for friend was 7) were excluded ($n = 5$). These participants were assumed to have misunderstood the question. For defining friends of higher SES, the minimum score indicated for a friend to be of higher SES (e.g., 8 if the participant chose 8, 9, and 10) was subtracted from one's own score (e.g., 6). These difference scores were transformed into absolute values such that higher scores indicated greater distance between the self and where a friend would have to fall to be considered different in SES. Then, these absolute difference scores were averaged into an overall score of perceptions of where a friend would have to fall to be considered a different SES (i.e., the distance between the self and where a friend would have to fall to be lower SES and the distance between the self and where a friend would have to fall to be higher SES were averaged).

Perceived Definitions of Cross-Subjective SES Friendships

Based on participants' responses, it was found that participants on average considered friends to be cross-SES when there was a difference between the self and a friend of $|2|$ scale points. This difference was used to define cross-subjective SES friendships in the study.

Main Study

Method

Participants and Procedure

Sample size was based on an a priori power analysis for main effects (e.g., relationship status effects). It was determined that a sample of approximately 300 was needed to detect small to medium effects with a power of .80 and α (two-tailed) of .05. Three-hundred and twenty-five students at a Canadian university completed an in-person survey for course credit (273 women; 49 men; 3 other gender or missing, $M_{Age} = 20.6$, $SD = 3.67$; 49.2% White, 18.6% East Asian, 14.2% South Asian, 3.4% Middle Eastern, 2.5% Black/African-American, 1.2% Hispanic, 0.6% Aboriginal Peoples of Canada and 10.2% mixed race).

Measures

Participants completed the following measures in the following order:¹

Ethnicity — Participants selected their ethnic background from the following list: White/Caucasian/European, Black/African-American, East Asian, South Asian, Aboriginal Peoples of Canada, Middle Eastern, Hispanic/Latino/South American, Mixed race or other. Participants were instructed to choose all that apply to them.

Socioeconomic status — Participants provided information about their subjective SES on measures as described above for the pilot study.

Friendships — A social network approach was used asking participants to name up to six of their current close friends with the lead in: “Many people have some good friends they feel close to. Think about your closest friends. The next questions will be in regards to up to 6 of your current closest friends.” This indirect method of assessing cross-group friendships was recommended for minimizing any potential biased responses from participants (Davies et al., 2011; Smith, 2002). Participants then answered questions about each named friend including friend’s age, ethnicity, and subjective socioeconomic class (measured as described above), as well as other demographic questions. If participants were unsure of answers to any of these questions about their current friends, they were encouraged to send text messages to their friends for verification during their participation. Following this, participants were asked to name and answer the same questions about up to six of their *past* close friends with the following lead in: “Many people have past friends. That is, friends that they were close with in the past, but are no longer close with. The next questions will be in regards to up to 6 of your past close friends.”

Friendship qualities — For each current and past friend, the following variables were assessed.

Similarity — Participants indicated how similar the friend is/was to oneself on a scale ranging from 1 “Not at all similar” to 7 “Very similar.” Similarity in personality was also assessed using the revised version of the Ten-Item Personality Inventory, a bipolar scale with single item assessments of five personality traits for both the self and the friend (e.g., for extraversion from 1 “Extraverted and enthusiastic” to 7 “Reserved and quiet”; Denissen, Geenen, Selfhout, & van Aken, 2008). Absolute differences were computed between participants’ and each friend’s score on all five trait items, reversing each value such that higher values represent more similarity versus dissimilarity, and averaging across personality traits to create a composite score of personality similarity for each listed friend.

Closeness — Participants indicated current or past closeness with the friend on a scale ranging from 1 “Not at all close” to 7 “Very close” and with the use of the Inclusion of the Other Scale (IOS; Aron et al., 1992) which assesses overlap between the self and

the friend by asking participants to choose one out of the seven gradually overlapping circles.

Social network integration — Participants were asked whether they became friends with any of the listed friends' other friends. If they responded positively, they indicated the number of friends with whom they became friends.

Salience of socioeconomic class — Five questions about recognition and discussion of social class differences within the friendship assessed *socioeconomic class* salience. Example questions are as follows: "How often do/did you discuss socioeconomic class differences during encounters with [friend's name]?" ; "How often do/did you and [friend's name] discuss your socioeconomic backgrounds?" These questions were adapted from previous research (Harwood, 2005). A mean score was created for each cross-social class friendship, $\alpha = .77$.²

Cross-group friendships — We coded whether any current or dissolved friendships were cross-ethnic or cross-subjective SES. Cross-ethnic friendships were defined as friendships between individuals belonging to different ethnic groups (e.g., White and East Asian). Among mixed-race participants, any friend that did not hold identical group membership to the participant was considered a cross-ethnic friend (e.g., a White/East Asian participant's White/ Hispanic friend). Cross-subjective SES friends were coded based on the findings of the pilot study reported above such that absolute difference values were calculated based on the participant's selected rung on the subjective SES scale and each friend's perceived SES on this scale. When there was a difference of more or equal to |2| rungs, a friendship was considered a cross-subjective SES friendship.

Results

Preliminary Analyses

The number of current friendships reported ranged from 0 to 6 with a mean of 3.38 ($SD = 1.57$). The number of dissolved friendships reported ranged from 0 to 6 with a mean of 1.48 ($SD = 1.50$). For current friends, approximately 43% listed only same-subjective SES friendships and 42.1% listed only same-ethnic friendships. When the prevalence of cross-group friendships were calculated based on participants' total number of listed friendships (i.e., [one's number of cross-subjective friendships/ one's total friendships]*100), the mean for cross-subjective SES was 29.34 ($SD = 33.00$) and the mean for cross-ethnic friendships was 34.81 ($SD = 37.30$).

To examine whether cross-group friendship qualities differ between advantaged and disadvantaged group members, we coded participants' advantaged/ disadvantaged status

2) Salience of group differences was not computed for current and dissolved cross-ethnic friendships.

for each domain. In the ethnicity domain, we coded participants who identified as being White/Caucasian ($n = 160$) as advantaged group members and participants belonging to other ethnic groups ($n = 161$) as disadvantaged group members. For the subjective SES subset, we divided our sample into two groups based on SD values: 1 SD below the mean ($n = 54$) and 1 SD above the mean ($n = 60$). Groups whose reported subjective SES was one SD below the mean were considered relatively more disadvantaged and groups whose social class indicator was 1 SD above the mean were considered relatively more advantaged. We examined whether there were any differences in the proportion of current cross-group friendships between advantaged and disadvantaged group members across the two domains. In both domains, disadvantaged group members reported a higher proportion of cross-group friendships than advantaged group members, $t(266.18) = 7.27$, $t(95.05) = 3.58$, $p < .001$, respectively.

Analytic Strategy

Each friendship was coded in terms of whether it was ethnically crossed (coded as -1) or not (coded as 1). Similarly, each friendship was coded for whether it was subjective SES crossed (-1) or not (1). Relationship status was coded as -1 if it was a dissolved friendship and as 1 if it was a current friendship. A series of multilevel models in which 1578 friendships were nested within participants were conducted (see Table 1). For each friendship quality as the outcome, the following uncentered terms were tested into one model: 1) whether the friendship was ethnically crossed or not; 2) whether the friendship was subjective SES crossed or not; 3) relationship status (dissolved vs. current); 4) an interaction term between 1) and 3); and 5) an interaction term between 2) and 3). These analyses were conducted in R (R Core Team, 2018) and models were tested using the lme4 package (Bates, Mächler, Bolker, & Walker, 2015).

Table 1
Multilevel Mixed-Effects Regression Results

Friendship Quality / Predictor	b	SE	t / z value	p	OR [95% CI]
Closeness					
Cross or same-ethnic friendship	-0.00	0.04	-0.06	.956	
Cross or same-subjective SES friendship	0.03	0.04	0.91	.364	
Relationship status (dissolved vs. current)	0.26	0.04	7.05	< .001	
Cross or same-ethnic friendship*Relationship status	0.07	0.04	1.91	.057	
Cross or same-subjective SES friendship*Relationship status	-0.04	0.04	-1.15	.252	
IOS					
Cross or same-ethnic friendship	0.03	0.05	0.60	.550	
Cross or same-subjective SES friendship	0.05	0.05	1.02	.308	
Relationship status (dissolved vs. current)	0.05	0.04	1.14	.257	
Cross or same-ethnic friendship *Relationship status	0.08	0.04	1.96	.050	
Cross or same-subjective SES friendship *Relationship status	-0.06	0.04	-1.32	.188	
Perceived similarity					
Cross or same-ethnic friendship	0.07	0.04	1.71	.087	
Cross or same-subjective SES friendship	0.16	0.04	4.01	< .001	
Relationship status (dissolved vs. current)	0.20	0.04	5.16	< .001	
Cross or same-ethnic friendship*Relationship status	0.05	0.04	1.30	.195	
Cross or same-subjective SES friendship*Relationship status	-0.04	0.04	-1.09	.275	
Personality similarity					
Cross or same-ethnic friendship	-0.03	0.02	-1.47	.143	
Cross or same-subjective SES friendship	0.10	0.02	4.53	< .001	
Relationship status (dissolved vs. current)	0.13	0.02	5.93	< .001	
Cross or same-ethnic friendship *Relationship status	-0.02	0.02	-1.03	.301	
Cross or same-subjective SES friendship *Relationship status	-0.05	0.02	-2.37	.018	

Friendship Quality / Predictor	<i>b</i>	SE	<i>t/z value</i>	<i>p</i>	OR [95% CI]
SNI					
Cross or same-ethnic friendship	-0.02	0.08	-0.19	.847	0.98 [0.84, 1.15]
Cross or same-subjective SES friendship	-0.01	0.08	-0.13	.898	0.99 [0.85, 1.15]
Relationship status (dissolved vs. current)	0.78	0.08	10.00	< .001	2.19 [1.88, 2.56]
Cross or same-ethnic friendship*Relationship status	0.02	0.07	0.29	.775	1.02 [0.89, 1.18]
Cross or same-subjective SES friendship*Relationship status	0.01	0.07	0.15	.882	1.01 [0.88, 1.17]
Number of SNI					
Cross or same-ethnic friendship	0.30	0.19	1.61	.108	
Cross or same-subjective SES friendship	0.00	0.18	0.00	.999	
Relationship status (dissolved vs. current)	0.45	0.18	2.48	.013	
Cross or same-ethnic friendship*Relationship status	-0.13	0.17	-0.78	.438	
Cross or same-subjective SES friendship*Relationship status	0.08	0.17	0.45	.650	
Salience of socioeconomic status					
Cross or same-subjective SES friendship	-0.16	0.03	-5.39	< .001	
Relationship status (dissolved vs. current)	0.14	0.03	5.43	< .001	
Cross or same-subjective SES friendship*Relationship status	0.01	0.03	0.47	.635	

Note. *b* = slope, SE = standard error, *z* = regression coefficient divided by the standard error, OR = odds ratio, IOS = Inclusion of Other in self, SNI = Social network integration.

Main Effects

Across all examined friendship qualities, no main effects were found for whether the friendship was ethnically crossed or not. That is, there were no differences in terms of closeness, IOS, perceived similarity, personality similarity, or both social network integration indicators between same- and cross-ethnic friendships. Main effects for whether the friendship was SES crossed or not were found for perceived similarity, personality similarity and salience of socioeconomic status, whereby a greater similarity was reported among same-subjective SES friendships. As expected, greater salience of socioeconomic status was reported among cross-subjective SES friendships. Significant differences between dissolved and current friendships irrespective of crossing were observed for all friendship qualities apart from the IOS measure. Current friendships were 2.19 times (95% CI = 1.88, 2.56) more likely than dissolved friendships to include social network integration. These relationships were also significantly higher in closeness, perceived similarity, personality similarity, and salience of socioeconomic status.

Interactions between examined factors — Among all tested moderating effects, no significant interactions were observed between predictors apart from one interaction between whether the friendship was subjective SES crossed or not and relationship status, $b = -0.05$, $SE = 0.02$, $p = .018$, such that the effect of dissolution was greater for cross-subjective SES when personality similarity was examined as the outcome.

Considering participant status as advantaged or disadvantaged — As noted above, intergroup contact does not always operate in the same way for advantaged and disadvantaged group members. As such, we conducted analyses taking this into account. Within each cross-group friendship type (based on ethnicity or subjective-SES status), we completed these analyses separately for all examined friendship qualities. That is, using multilevel mixed-effects regression analysis with relationships nested within participants, each model included the following terms: 1) whether the friendship was cross- or same-group; 2) relationship status (dissolved vs. current); 3) participant's advantaged or disadvantaged status; 4) an interaction term between 1) and 2); 4) an interaction term between 1) and 3); 5) an interaction term between 2) and 3) and 6) a three-way interaction between the three predictors. Across both group domains, overall, similar main effects for relationship status were observed, with current relationships reported being greater in friendship qualities than dissolved friendships. Overall, participants' advantaged or disadvantaged status was not found to play a significant moderating role across explored relationships between relationship status and friendship qualities (see Supplementary Materials).

Discussion

In the interest of reducing prejudice and promoting positive intergroup relations (see Davies et al., 2011; Turner, Hewstone, Voci, Paolini, & Christ, 2007), it is important to understand the dynamics of cross-group friendships. Cross-group friendships tend to be less stable than within group friendships (Jugert et al., 2013; Rude & Herda, 2010). The findings of this study highlight that qualities such as closeness, similarity, personality similarity, group salience, and social network integration may contribute to lasting friendships in general, including both less and more easily categorizable cross-group friendships.

Our identification of qualities present to a greater extent in current than dissolved cross-group friendships was not unique to cross-group friendships. Rather, we demonstrate that these qualities are present to a greater extent in current than dissolved friendships. These findings can nonetheless inform future cross-group relationship studies in determining potential factors that could contribute to the success of promoting positive cross-group contact between members of different social groups. Furthermore, it suggests that these factors should be recognized and nurtured in programs aimed at promoting cross-group relationships, such as community or mentoring activities. Of course, it is unknown whether the qualities identified contribute to a lasting friendship or whether, when a friendship lasts, these qualities are more likely to develop. Experimental and longitudinal work is necessary to uncover the direction of these relationships.

Findings also highlight that there were no differences based on categorizability, such that the group domain did not seem to play a significant factor in how cross- or same-friendships are experienced in terms of friendship qualities. However, these results call for a clearer focus in future work on potential differences within cross-ethnic friendships (e.g., specific types of cross-ethnic friendship that may be more or less visible or more or less challenging). It is possible that some cross-ethnic friendship types (e.g., Asian-White friendships, Black-White friendships) are more common than others and may even be experienced in different ways when it comes to friendship qualities. On the same note, cross-group friendships can be more or less common within ethnic groups, such that differences might arise between ethnic sub-groups (e.g., Asian sub-groups; Chen & Graham, 2015).

In general, across the examined cross-group friendship types, cross- (vs. same) group friendships were less common, which is consistent with previous research (Aboud et al., 2003; Gibson, 2004; Schneider et al., 2007). Interestingly, both cross-ethnic and cross-subjective SES (vs. same-) friendships were not more likely to be reported as dissolved (vs. current) friendships. Social group domains, such as ethnicity and socioeconomic status can sometimes overlap, and, in some circumstances, the effects of one social domain on interpersonal attitudes or friendship experiences can be influenced by other more salient group memberships (Crisp & Hewstone, 2007). Therefore, we opted to look at cross-ethnic and cross-subjective SES friendships separately but control for one another.

Apart from perceived similarity, personality similarity and salience of socioeconomic status, the same- or cross-subjective SES nature of a friendship did not seem to matter across examined friendship qualities. We also found that participants' status as a more or less advantaged group member did not increase the likelihood for a relationship to be reported as current or influence friendship qualities reported to a greater extent in current versus dissolved friendships. These results are inconsistent with prior research, but our retrospective means of assessing current and dissolved friendships is atypical as is considering multiple types of cross-group friendships simultaneously. Our primary study goals were not to answer these questions, but rather to determine qualities present to a greater extent in current versus dissolved cross-group friendships. We suspect in studies designed specifically to answer these questions, results would be more consistent with existing work.

A major limitation of the research is our retrospective means of asking participants about dissolved friendships. This method could result in favoritism toward current friends and more biased views toward dissolved friends. Nonetheless, this research provides information on subjective experiences of these processes and represents a critical first step to establish whether differences might exist between friendship qualities in current versus dissolved friendships (including cross-group friendships). This opens the door for future longitudinal work examining how friendships grow and dissolve over time to observe whether results are consistent.

Another limitation is our use of difference scores to assess personality similarity. The variance of a difference score is dependent on the relative variance of the two scores used to create the difference score. Further, the difference score approach that has been criticized for potential low reliability might pose challenges during the interpretation of study results (Edwards, 2002; Peter, Churchill, & Brown, 1993; Shanock, Baran, Gentry, Pattison, & Heggestad, 2010). In light of these limitations, alternative approaches have been suggested such as response surface modelling (Edwards, 2002).

Some have suggested, however, that the problems associated with difference scores have been overstated (e.g., Trafimow, 2015). Given that personality similarity was only a small component of our overall examination of differences in friendship qualities between current and dissolved friendship, we opted to use difference scores despite the limitations. Nonetheless, we recognize these limitations and would like the reader to recognize them as well when interpreting our results.

Further, in this paper, we considered social class differences as less discernible than other group differences. It is worth noting that SES differences may be more visible in some countries than others. For example, these differences might be less visible in countries where income inequality is low (e.g., Iceland) as compared to countries where income inequality is high, such as in the United States (Côté, House, & Willer, 2015; Kraus, Park, & Tan, 2017; World Economic Forum, 2018). In this study, social class differences were examined in Canada, a country with an income inequality that is not

situated at any of the extreme ranges (i.e., neither a very low nor a very high income inequality index when compared to other countries; [World Economic Forum, 2018](#)).

Even though the study is strong in its use of a social network approach to examine friendships, it is limited due to its reliance on participants' reporting of their friends' subjective socioeconomic status. Although people typically know this information about those they know very well (i.e., close friends), knowledge of this information is lower for those known less well ([DiPrete, Gelman, McCormick, Teitler, & Zheng, 2011](#)). Thus, whereas participants may have known this information about their top ranked friends, they may have been less accurate about less close friends. Although participants were asked to contact their friends for information they did not know, presumably some participants chose not to do this or were unable to reach their friends. Further, for those cross-SES friendships that were also cross-ethnic friendships, it is known that perceptions of others' social class can be biased due to racial stereotypes ([Weeks, 2019](#)). Nonetheless, consistent with others who study friendship networks ([DiPrete et al., 2011](#)), we consider *perceptions* of differences between oneself and a friend more important than *actual* differences that exist. A person is a cross-group friend if the perceiver considers the friend to be in a different group.

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Data Availability: Datasets used for these studies are not available to be shared online. As a result of a wording used in the consent forms, authors do not have participants' permission to make the data available online.

Supplementary Materials

Supplementary materials include additional analyses where one's advantaged / disadvantaged status was examined as a moderator of the main effects (for access see Index of Supplementary Materials below).

Index of Supplementary Materials

Buliga, E., Nguyen, P., & MacInnis, C. (2020). *Supplementary materials to "Exploring qualities present in current versus dissolved cross-group friendships"* [Additional analyses]. PsychOpen.
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