

Self-Expansion and Knowledge Sharing in Cross-Group Interactions

by

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Abstract

This research considers the role of self-expansion motivation and knowledge sharing orientation on the effects of cross-ethnic interactions. Study 1, a correlational study, showed that a higher level of self-expansion motivation prior to an actual cross-group interaction was associated with higher levels of the more specific desire to acquire knowledge from a cross-group partner, which in turn was associated with more positive cross-group interaction experiences, which were associated with higher levels of reported self-change as well as more support for multiculturalism and support for action for intergroup equality. Study 2, using an imagined contact scenario, partially replicated these findings, showing that a high knowledge-sharing orientation (knowledge acquisition and knowledge provision orientation) during an imagined cross-group interaction was associated with a more positive imaged cross-group experience and this was associated with more reported self-change, and more positive intergroup feelings and a greater interest in future contact with the target outgroup.

Keywords: Self-expansion motivation, knowledge sharing, cross-group interactions, self-change, social equality.

Dedication

I dedicate this work to my loving husband, John. If it wasn't for him, I would not have made it this far. Thanks for believing in me and supporting me along the way.

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Chapter 1.

Introduction

In most Western cities, cross-ethnic interactions have become the new norm. Interactions between people from different ethnicities may occur in structured environments (e.g., the workplace), but they may also happen spontaneously in more informal settings (e.g., a coffee shop). Though cross-ethnic interactions can be challenging, they can also be positive and meaningful and it appears that at least some people may actively and willingly seek out these kinds of interactions. However, research in social psychology has tended to focus primarily on the difficulties associated with cross-group interactions (e.g., Bergsieker, Shelton, & Richeson, 2010; Shelton, Dovidio, Hebl, & Richeson, 2009; Vorauer, 2008), while neglecting people's genuine excitement and positive anticipation of these interactions (see Pittinsky, 2012). Even the extensive literature on the positive outcomes of cross-group contact (e.g., Pettigrew, 1998; Pettigrew, & Tropp, 2006) is founded on the premise that contact is likely to be unsuccessful if not supported by structural factors that mitigate the negative influences at work when members of different groups interact.

Clearly, it is critical to understand and seek to reduce the negative features of cross-group interaction, as the challenges are real; prejudice continues to exist; and discrimination remains a daily reality for many (e.g., Swartz, & Strutch, 1989; Leyens et al. 2003, Leyens, Demoulin, Vaes, Gaunt, & Paladino, 2007) . However, this simply cannot be the entire story. Even the most cursory survey of contemporary societies provides evidence that some of us are less bound by the negative side of cross-group interactions and engage in satisfying and exciting interactions and form meaningful relationships across group boundaries of many kinds – race, ethnicity, sexual orientation, nationality etc. In fact, some people experience allophilia (i.e., positive attitudes and positive feelings for a specific outgroup) and people often show a clear interest in

meeting and “getting to know” outgroup members (Pittinsky, 2012; Pittinsky, & Rosenthal, & Montaya, 2010.) Similarly, people may feel a sense of xenophilia that manifests itself in a positive orientation towards difference and “the other” and a genuine attraction to foreign people, cultures, or customs (Antweiler, 2009; Stürmer, Benhow, Siem, Barth, Bodansky, & Lotz-Schmitt, 2013).

1.1. Seeking out the Other: Self-Expansion and Cross-Group Interactions

It seems a more complete understanding of cross-group interactions must account for both the challenges and the appeal of cross-group interactions. We must seriously consider not just distrust and intolerance, but also admiration and an active seeking out of interactions with outgroup members. Over a decade ago, Wright, Aron and Tropp (2002) drew on Aron and Aron’s (1986) Self-Expansion Model to propose one potential psychological mechanism that should produce a positive, even preferential, predisposition towards outgroup members.

Aron and Aron (1986) propose that humans have a basic motivation to enhance their self-efficacy, which is the belief that one is capable of achieving new goals (Bandura, 1997). People can enhance their self-efficacy by acquiring new resources, perspectives, and identities to facilitate the achievement of present and future goals. Aron and Aron suggest that one of the primary means by which people satisfy this motive is through forming close relationships that allow for *Including the Other in the Self*. As we become close to another, a self-other overlap or a merging between the self and other occurs (Aron, & McLaughlin-Volpe, 2001). That is, the other person's perspectives, identities, and resources are increasingly experienced as belonging to the self (see Aron, Aron, & Smollan, 1992). The result of this is a sense of self-growth and an associated increase in self-efficacy (Aron, & Aron, 1986; Mattingly, McIntyre, & Lewandowski, 2012).

By this logic, if people seek relationships as a means to self-expand, those who share our current resources, perspectives and identities provide little that is new and

should be less appealing. Following this line of reasoning, Wright, Aron and Tropp (2002) extended this idea to intergroup relationships, proposing that because outgroup members, by definition, hold resources, perspective and identities not currently available to the self, forming relationships with them offers an especially attractive opportunity for self-expansion. Thus, as a basic human process that should inspire an appetitive interest in and interpersonal attraction to outgroup members as potential friends (Aron, & McLaughlin-Volpe, 2001), self-expansion motivation should stand in opposition to processes that inspire dislike or avoidance.

Recent research by Dys-Steenbergen, Wright and Aron (2016) expanded on this general line of thinking, showing that, in addition to influencing interest in cross-group interactions, self-expansion motivation also affects the experience during a cross-group interaction and the consequences for the self after a cross-group interaction. Specifically, this study found that participants who entered a cross-group interaction with a high self-expansion motivation experienced higher quality interactions and greater interpersonal closeness during the interaction, compared to participants who entered the same cross-group interaction with a lower self-expansion motivation. Furthermore, the higher quality of the interaction and greater interpersonal closeness were associated with stronger feelings of self-change (see Figure 1). In summary, this research showed that one's level of self-expansion motivation can influence both the success of the cross-group interaction and intrapersonal outcomes.

1.2. Knowledge Sharing Orientation

The broad goal of the current study is to expand on Dys-Steenbergen et al.'s (2016) research by examining the role of another psychological variable that may also help to explain the relationship between self-expansion motivation and these positive interpersonal and intrapersonal outcomes – knowledge sharing orientation.

Knowledge sharing has been defined broadly as the transfer or dissemination of knowledge from one person or one group to another (Chieu Hsu, 2008). Alternative terms include “knowledge distribution and knowledge diffusion” (Dixon, 2000);

“knowledge transaction” (Tyagi, & Shide, 2010); and “knowledge exchange” (Hsu, & Tzeng, 2010). Moreover, knowledge sharing can be defined by two interrelated processes: (1) knowledge provision and (2) knowledge acquisition. Knowledge provision is the process of offering new information to others (teaching); and knowledge acquisition is the process of receiving new information from others (learning). Cross-group interactions should provide an excellent opportunity for people to both acquire and to offer novel insights and ideas.

To date, knowledge sharing between people of different groups has primarily been studied in organizational settings (e.g., Quigley, Tesluk, Locke, & Bartol, 2007), with the focus on productivity and efficiency. This type of research has shown that knowledge sharing can contribute to new ideas and skill development among personnel, which can result in benefits to the organization. Another related line of research, based primarily in social psychology, has shown that cross-group contact can facilitate learning about the outgroup, and that this new knowledge can in turn reduce prejudice (Allport, 1954). For example, knowledge sharing has been examined in the context of cross-group interactions among children in multiracial classrooms (e.g., Jigsaw Puzzle Classrooms; Aronson, & Bridgeman, 1979) and in intergroup dialogue programs that encourage discussion about the different experiences associated with being a majority or minority group member (e.g., Nagda, Kim, & Truelove, 2004; Nagda, & Zuniga, 2003).

However, I propose that knowledge sharing may also happen in less structured settings and in more naturally occurring cross-group interactions. Some support for this idea can be found in recent work by Migacheva and Tropp (2013), who examined the differential effect of a learning orientation compared to a performance orientation on interest in and comfort during cross-group contact. A performance orientation was described as involving a desire to be perceived as competent and judged positively, whereas a learning orientation involves a desire to seek new knowledge and information (van Dick et al., 2004). Migacheva and Tropp measured participants’ learning and performance orientation regarding cross-group interactions, as well as their comfort during and interest in future intergroup contact. They showed that a learning orientation, compared to a performance orientation, predicted greater comfort during and interest in

intergroup contact. This link was demonstrated in a cross-sectional survey of European American and African American middle-school students (Study 1) and in a longitudinal survey with European American high-school students (Study 2).

In the current research, Study 1 will examine knowledge acquisition orientation, which is consistent with Migacheva and Tropp's (2013) concept of learning orientation, in the domain of cross-group interactions and more specifically during the development of cross-group friendships. Cross-group friendships have been shown to be one of the most effective forms of contact for enhancing positive intergroup attitudes (e.g., Davis, Tropp, Aron, Pettigrew, & Wright, 2011; Pettigrew, & Tropp, 2006; Wright, Brody, & Aron, 2005). In addition to knowledge acquisition orientation, Study 2 will also examine the role of knowledge provision orientation, thus examining the larger motivational construct – knowledge sharing orientation. Furthermore, rather than examining knowledge sharing as an orientation exclusively in terms of what people bring into a cross-group interaction, the current study also examines how knowledge sharing emerges as part of a cross-group interaction.

1.3. From Self-Expansion to Knowledge Sharing

Additionally, I propose that knowledge sharing has a direct relationship with Aron and Aron's (1986) concept of self-expansion motivation. While self-expansion may be a more general motivation (i.e., the manifestation of a general need for self-growth and self-efficacy), knowledge sharing may be a more specific orientation that emerges when it offers a means of achieving self-expansion. Thus, self-expansion motivation may be the more distal general motivation that is manifested in a more specific knowledge sharing orientation as people engage in interactions with outgroup members. Accordingly, a stronger need for self-expansion should produce a stronger desire to engage in knowledge sharing, because engaging in the latter is a means to satisfy the former. The current research investigates this proposed relationship between self-expansion motivation and knowledge sharing orientation.

In addition, a knowledge sharing orientation should consist of both a desire to, and an active engagement in, sharing knowledge with others. Thus, knowledge sharing orientation can be understood to include both a motivation and the resulting behaviours that emerge from that motivation. However, the degree to which the motivation will produce the relevant behaviours can be restricted or enhanced by contextual and situational factors.

In interpersonal interactions, especially those involving the development of interpersonal relationships (e.g., friendships), a knowledge sharing orientation should most often be expressed by the active engagement in, and the turn-taking of, both knowledge provision and knowledge acquisition. However, the degree to which knowledge acquisition orientation may be emphasized more than knowledge provision orientation or vice versa will depend on the specifics of the interpersonal relationship. For example, students attending a university lecture may be expected to engage in more knowledge acquisition than knowledge provision and the opposite would be true for the instructor. However, members of a team working together on a project may be expected to engage in both knowledge acquisition and knowledge provision as everyone is expected to contribute equally. Similarly, friends engaged in a conversation may expect a back-and-forth of knowledge acquisition and knowledge provision between partners to happen.

1.4. Knowledge Sharing Orientation and Self-Disclosure

Finally, in more informal interactions and in the formation of friendships (the focal context of the current study), knowledge sharing orientation is highly related to the concept of self-disclosure. Self-disclosure is the voluntary presentation of intimate or personal information to another person (Miller, 2002). Self-disclosure has generally been found to increase liking, closeness and friendship between interaction partners (Collins, & Miller, 1994). Moreover, research suggests that self-disclosure may be particularly beneficial in the development of cross-group relationships (Pettigrew, 1998) and interactions in which partners provide self-disclosing information also lead to prejudice

reduction (Bettencourt, Brewer, Croak, & Miller, 1992; Brewer, & Miller, 1984; Ensari, & Miller, 2002; Pettigrew, & Tropp, 2008) and an increase in perspective taking (Swart, Turner, Hewstone, & Voci, 2011).

Just as *mutual* self-disclosure is preferable to unidirectional self-disclosure in interactions that lead to meaningful interpersonal relationships (Miller, 2002), knowledge sharing should ideally be a reciprocal process where both partners engage in both provision and acquisition. Optimally, knowledge sharing suggests a sense of interdependence that allows both partners to be the recipient and the provider of knowledge (Berg, & Wright-Buckley, 1988). However, I propose that a mutual/shared desire for knowledge sharing, while preferable, is not essential for positive outcomes to emerge. Entering an interaction with a strong knowledge sharing orientation may be sufficient to produce positive perceptions and relationship building behaviours even when one's interaction partner does not share one's strong knowledge sharing orientation. In this way, one partner having a strong initial knowledge sharing orientation may influence the other in ways that heighten his/her knowledge sharing orientation as the interaction progresses. Thus, while it is likely that partners will profit most from cross-group interactions when they both hold a strong knowledge sharing orientation, in the current research.

1.5. Knowledge Sharing Orientation: Majority and Minority Group Interactions

However, the role of knowledge sharing orientation involves a reciprocal process may be particularly important for interactions between majority and minority group members. Knowledge sharing orientation, like self-expansion motivation, involves a general disposition towards interactions with others, rather than a desire for specific information. Thus, these motivations, both self-expansion and knowledge sharing, although motivated by a general desire for self-growth and self-efficacy do not involve an overtly strategic effort to take resources or knowledge from the other. The self-enhancing properties of self-expansion and knowledge sharing emerge as a result of forming meaningful relationships with the other and are thus contingent upon also

offering oneself to the other. Understood this way, knowledge sharing orientation represents a motivation and behaviour that could unite, rather than divide, majority and minority group members in the pursuit of similar goals (knowledge acquisition and knowledge provision).

There is evidence that majority and minority group members can have different concerns and motivations when entering cross-group interaction (see Murphy, Richeson, & Molden, 2011). For example, Shelton, Richeson and Slavatore (2005) have shown that, while Whites are often concerned about being perceived as prejudiced, ethnic minority group members are often worried about being the target of prejudice, or about behaving stereotypically, or about being perceived as incompetent. Although both of these sets of concerns can contribute to the avoidance of cross-group interactions and discomfort when contact does occur (Plant, & Devine, 2008), these different concerns can also lead to divergent impression management goals during cross-group interactions, with ethnic minority group members seeking to be respected and Whites seeking to be liked. Across four studies, Bergsieker, Shelton and Richeson (2010) showed that because ethnic minority group members seek respect, they use highly agentic and formal behaviour to convey their competence and expect responses from their interaction partner that express respect for their agency. Conversely, because majority group members seek liking, they engage in friendly/warm behaviour and expect high-warmth responses from their minority group interaction partner. Thus, the minority group member's more agentic behaviour is inconsistent with Whites' expectation of and desire for an affiliative and warm interaction. Similarly, the highly affiliative behaviour displayed by majority group members is discrepant with the minority group member's desire for deference and respect. Similarly, Saguy, Dovidio, and Pratto (2008) show that, during cross-group interactions, ethnic minorities prefer to talk about power differences between the groups (focus on changing power structure) while ethnic majorities prefer to talk about commonalities between the groups (focus on building relationship), resulting in a mismatch in communication.

Taken together, these findings demonstrate that majority and minority group members may have conflicting motivations that can hinder the development of positive

cross-group relationships. However, the current theorizing suggests that self-expansion motivation and the more specific knowledge sharing orientation may produce a motivational state and resulting behaviours that may be shared by members of both groups. Thus, though majority and minority group members may have different and possibly competing motivations (e.g. a need to be liked vs. a need to be respected), some motivations may also be shared (e.g. a need for self-expansion and an orientation to share knowledge). The current research emphasizes the value of examining motivations that may produce more converging and possibly more complementary behaviours.

1.6. Current Research

This research expands on previous research by Dys-Steenbergen, et al. (2016) on the positive effects of self-expansion motivation on cross-group interactions and intrapersonal outcomes (self-change). It also builds on research by Migacheva and Tropp (2013) on learning motivation in cross-group interactions. In addition, this research expands on the intergroup contact literature's extensive focus on prejudice reduction as the main outcome variable by considering a wider range of outcomes. In two studies, I will examine the extent to which knowledge sharing orientation which emerges from a more primary need for self-expansion is associated with both intrapersonal and intergroup outcomes that emerge from cross-group interactions. Thus, the two studies examine the links between self-expansion motivation and knowledge sharing orientation and the quality and closeness of cross-group interactions, and both the degree of perceived self-change and more inclusive, warmer and supportive intergroup attitudes.

Chapter 2. Study 1

Study 1 used a correlational design and expands on Dys-Steenbergen et al.'s (2016) research which demonstrated the positive effect of self-expansion motivation on self-growth as a result of higher quality/close cross-group interactions (see Figure 1). The current research included the additional mediator of knowledge sharing orientation, operationalized as knowledge acquisition orientation and also tested a new model that focuses specifically on intergroup outcomes. All participants engaged in a cross-ethnic interaction designed to generate feelings of interpersonal closeness. Both self-expansion motivation and knowledge acquisition orientation were measured and the relationship between these two constructs was examined, as well as their association with the perceived quality of the cross-group interaction, feelings of interpersonal closeness with the interaction partner and the subsequent impact on (1) self-change, and (2) support for multiculturalism and support for action for social equality.

As mentioned previously, the Self-Expansion Model suggests that people have a basic need to acquire new resources, perspective and identities to enhance their sense of efficacy (Aron, & Aron, 1986). Obtaining information from an outgroup member may offer a special opportunity to satisfy one's self-expansion need, as outgroup members may have knowledge that is novel and otherwise difficult to obtain. Thus, an orientation towards acquiring new knowledge (knowledge acquisition orientation) may flow directly from a more general need to self-expand and may be activated during a cross-group interaction. Consequently, being the recipient of new and interesting knowledge should lead people to perceive cross ethnic-group interactions as more positive (Berg, & Wright-Buckley, 1988).

The current research measures support for multiculturalism and support for action for social equality to tap participant's thoughts, feelings and behaviours towards outgroup members (i.e., intergroup attitudes). Multiculturalism highlights the importance of

appreciating differences and thus is likely to be very consistent with self-expansion motivation and knowledge sharing orientation (Sasaki, & Vorauer, 2013). Multiculturalism argues that group differences must not only be acknowledged but also valued (for review, see Plaut, 2010; Rosenthal, & Levy, 2010; Stevens, Plaut, & Sanchez-Burks, 2008). Research has shown that supporting multiculturalism may affirm group identity among minority group members and be associated with greater acceptance of outgroups among majority group members (Verkuyten, 2005; 2009). It has also been shown to lead to less prejudice and more recognition of intergroup bias (Apfelbaum, Pauker, Sommers, & Ambady, 2010; Richeson, & Nussbaum, 2004). More generally, multiculturalism suggests equal rights between groups and raises the issue of fairness. Thus, support for multiculturalism represents a measure of intergroup attitude that focuses on fairness and equality.

In addition, support for multiculturalism should be a particularly good predictor of willingness to support action designed to increase social equality, as it is based on the conviction that different cultural, ethnic and racial groups should be shown respect and offered equal rights. Thus, when inequality or mistreatment is made apparent, support for multiculturalism should lead to support for action to reduce this (see van Zomeren, & Yyer, 2009; van Stekelenburg, Klandermans, & van Dijk, 2009).

Thus, two models were tested. The first involved the impact of self-expansion motivation on intrapersonal outcomes of a cross-ethnic interaction. I predicted that higher levels of *Self-Expansion Motivation* prior to a cross-ethnic interaction would be associated with more *Self-Change* following the interaction and that this relationship would be mediated serially by *Knowledge Acquisition Orientation*, the perceived *Quality of the Interaction*, and the experienced *Interpersonal Closeness* with the cross-ethnic partner (see Figure 2).

The second model involved the impact of self-expansion motivation on intergroup outcomes of a cross-group interaction. I predicted that higher levels of *Self-Expansion Motivation* prior to a cross-ethnic interaction would be associated with more *Support for Action for Social Equality* following the interaction, and that this relationship would be

mediated serially by *Knowledge Acquisition Orientation*, the perceived *Quality of the Interaction*, the experienced *Interpersonal Closeness* with the cross-ethnic partner, and *Support for Multiculturalism* (see Figure 3).

2.1. Method

2.1.1. Participants

Participants were first-year undergraduate students at a large Canadian public university. Some participants (N=40) were recruited during a fall orientation for incoming students, and the remainder (N=168) agreed to participate for partial course credit in psychology classes. The final sample included 84 men and 124 women; $M_{\text{age}} = 18.88$; Ethnicity: 63 East Asian, 49 Caucasian, 44 South Asian, and 52 other.

2.1.2. Materials, & Procedure

Participants signed up for appointments and came to the lab in groups of four to six. They were assigned to a partner using a number-drawing procedure that, although random, allowed the researcher assistant to use participants' phenotypic cues to clandestinely create as many cross-ethnic partnerships as possible. Thus, all participants used in the analyses were paired randomly with someone they had never met before and who was an ethnic outgroup member. Those participants that ended up in same-ethnic partnerships were excluded from the current analysis. Following the pairing procedure, participants were temporarily separated from their partner to complete the pre-activity questionnaire.

Pre-activity questionnaire.

The pre-activity questionnaire included the *Self-Expansion Motivation Measure* ($\alpha = .90$), which was adapted from Lewandowski and Aron's (2002) *Self-Expansion Questionnaire*. It included 11 items (e.g., "I appreciate having new experiences."), and all

items were answered on a 7-point Likert scale (*not at all* = 1, *extremely* = 7)¹ (see Appendix A.)

Positive cross-ethnic group interaction.

Upon completion of the pre-activity questionnaire, the partners engaged in the *Fast Friends Procedure*. This activity was designed by Aron and colleagues (1997) and has been shown to effectively facilitate feelings of interpersonal closeness and friendship in a short period of time (i.e., 45 min.). Partners took turns answering questions and responding to requests that were printed on 36 cards. The questions and requests were designed to require increasing levels of personal self-disclosure as the participants progressed through the cards.

Post-activity questionnaire.

Finally, participants were separated from their partners and completed the post-activity questionnaire. Unless otherwise indicated, all items were answered on 7-point Likert scales (*not at all* = 1, *extremely* = 7) (see Appendix B).

2.1.3. Mediators

The *Knowledge Acquisition Orientation Measure* ($\alpha = .82$) included 5 items adapted from Migacheva, & Tropp's (2013) *Learning Orientation Scale* to make direct reference to participants' interaction partner (e.g., "During your interaction with our partner, how much did you focus on learning about him/her?").

The *Quality of the Interaction Scale* ($\alpha = .84$) included 5 items developed by Dys-Steenbergen et al. (2016) (e.g., "How positive was your interaction with your partner?")

The *Interpersonal Closeness Measure* consisted of the *Inclusion of Other in Self Scale*; a single-item measure consisting of a set of seven pairs of circles. One circle in each pair is labeled "Self" and the other circle is labeled "Other". Across the seven pairs

¹ The pre-activity questionnaire also consisted of a Trait Social Self-Efficacy measure; however, this measure was not included in the current analysis.

the circles become increasingly overlapped, from no overlap in the first image to extensive overlap in the seventh. Respondents select the pair of circles that best describes their relationship with their partner. This scale has been shown to be valid and reliable and functions as well as other multi-item measures of closeness (e.g., Aron, Aron, & Smollan, 1992).

2.1.4. Intrapersonal Outcomes

The *Self-Change Measure* ($\alpha = .89$) included 3 items adapted from Robitschek's (1998) *Personal Growth Initiative Scale* to make direct reference to participants' interaction partner (e.g., "I feel that I have grown as a person through meeting my partner.")

2.1.5. Intergroup Outcomes

The *Support for Multiculturalism Scale* ($\alpha = .71$) included 3 items based on Wolsko, Park and Judd's (2006) *Multiculturalism Measure* (e.g., "I believe that to create a harmonious society, we must respect each cultural group to maintain its own unique traditions.")

The *Support for Action for Social Equality Scale* ($\alpha = .85$), included 6 items based on van Zomeren, Saguy, and Schellhaas' (2013) *Collective Action Measure* (e.g., "I am willing to attend a protest which supports ethnic and racial equality in Canada.")

2.1.6. Demographics

Finally, participants were presented with a list of demographics that asked them about their personal background (see Appendix C).

2.2. Results

2.2.1. Test of Non-Independence

As participants were paired in dyads, we tested for non-independence between the partners on the variables of interest, computing the ANOVA Intraclass Correlation (Kenny, Kashy, & Cook, 2014). The non-independence in a variable refers to the degree of similarity between the two members of the dyad on that variable contrasted with the degree of similarity between the individuals across dyads. If there is no evidence of non-independence of the scores on the outcome variables, then the individual can be used as the unit of analysis. If there is evidence of non-independence, then the effect of dyad needs to be explicitly considered in the analysis. As the Intraclass Correlation for two variables (Quality of the Interaction and Interpersonal Closeness) were significant (see Table 1), we used the more conservative approach of treating dyads (not individuals) as the unit of analysis².

2.2.2. Preliminary Analysis³

Table 2 lists the mean scores, standard deviations, and the pairwise correlations for all variables. Significant correlations were found between most of the variables, except between: (1) support for action for social equality and self-expansion motivation, (2) support for action for social equality and interpersonal closeness and (3) interpersonal closeness and self-expansion motivation.

2.2.3. Mediation Analysis

Bootstrapping analysis, using PROCESS, (Preacher, & Hayes, 2008) was used to test the proposed mediation models. Model parameters were computed as unstandardized-regression weights with 5,000 bootstrap resamples.

² Self-Expansion motivation was not included in the analysis shown in Table 1 (ICC analysis) as this was measured before participants had any meaningful interaction with their cross-ethnic partner.

³ Analysis was collapsed across the different ethnic groups.

Intrapersonal outcome model.

I tested the proposed sequentially mediated effect of *Self-Expansion Motivation* on *Self-Change*, through *Knowledge Acquisition Orientation*, *Quality of the Interaction* and *Interpersonal Closeness* (see Figure 2). This analysis revealed a significant total effect (IE = .725, SE = .186, $t(96) = 3.89$, $p < .001$) and a non-significant direct effect (E = .209, SE = .168, $t(96) = 1.25$, $p = .22$) of *Self-Expansion Motivation* on *Self-Change*. As predicted, it also revealed a significant sequential indirect effect (see Figure 4) of *Self-Expansion Motivation* on *Self-Change* via *Knowledge Acquisition Orientation*, *Quality of the Interaction* and *Interpersonal Closeness* (IE = .082, SE = .045, 95% confidence interval [CI] = [.018, .195]).

The analysis also revealed two other significant indirect effects of *Self-Expansion Motivation* on *Self-Change*: (1) through *Knowledge Acquisition Orientation* (IE = .300, SE = .108, 95% confidence interval [CI] = [.126, .563]), and (2) through the *Quality of the Interaction* and *Interpersonal Closeness* (IE = .055, SE = .037, 95% confidence interval [CI] = [.008, .156]).

Intergroup outcomes model.

I tested the proposed sequential mediated effect of *Self-Expansion Motivation* on *Support for Action for Social Equality* mediated by *Knowledge Acquisition Orientation*, *Quality of Interaction*, *Interpersonal Closeness* and *Support for Multiculturalism* (see Figure 3). This analysis revealed a significant total effect (IE = .366, SE = .183, $t(91) = 2.00$, $p < .05$) and a non-significant direct effect (IE = .099, SE = .206, $t(91) = .481$, $p = .63$) of *Self-Expansion Motivation* on *Support for Action for Social Equality*. However, contrary to the predicted model, the serial mediation test of the indirect effect of *Self-Expansion Motivation* through *Knowledge Acquisition Orientation*, *Quality of Interaction*, *Interpersonal Closeness* and *Support for Multiculturalism* on *Support for Action for Social Equality* was not significant (IE = -.004, SE = .010, 95% confidence interval [CI] = [-.033, .011]). Additionally, *Interpersonal Closeness* did not emerge as a mediator in the current analysis (i.e., *Interpersonal Closeness* did not predict *Support for Multiculturalism* $\beta = -.03$, $p = .63$). However, the analysis revealed a sequential indirect

effect (see Figure 5) of *Self-Expansion Motivation* on *Support for Action for Social Equality* via *Knowledge Acquisition Motivation*, *Quality of Interaction* and *Support for Multiculturalism* (IE = .029, SE = .023, 95% confidence interval [CI] = [.002, .115]).

The analysis also revealed three other significant indirect effects of *Self-Expansion Motivation* on *Support for Action for Social Equality*: (1) through *Knowledge Acquisition Orientation* (IE = .212, SE = .113, 95% confidence interval [CI] = [.025, .474]), (2) through the *Quality of the Interaction* and *Support for Multiculturalism* (IE = .020, SE = .019, 95% confidence interval [CI]= [.002,.087]), and (3) through *Support for Multiculturalism* (IE = .112, SE = .083, 95% confidence interval [CI]= [.006,.334])

2.2.4. Supplementary Mediation Analysis ⁴

Alternative ordering of the two interpersonal relationship variables (Quality of the Interaction and Interpersonal Closeness).

Quality of the Interaction and *Interpersonal Closeness* are highly correlated (see Table 1) and they both tap into a larger construct – the perceived general positivity of the interpersonal relationships. Although Self-Expansion Theory (Aron, & Aron, 1986) and the model tested by Dys-Steenbergen et al. (2016) both suggest that *Quality of the Interaction* predicts *Interpersonal Closeness*, other research and theorizing in interpersonal relationships suggests that perceptions of relationship quality, rather than producing feelings of closeness, can be understood to be a product of partners' relationship building behaviours that promote closeness (Rusbult, 1980, 1983; Staffor, & Canary, 1991). Thus, *Interpersonal Closeness* could also be seen as the predictor and *Quality of the Interaction* as the outcome in the current model.

PROCESS can test serial mediation involving all possible variable combinations, but it is limited to a particular specified variable ordering. Thus, an additional analysis

⁴ The Total and Direct effects of Self-Expansion Motivation on Self-Change (Intrapersonal Outcome Model) and Support for Action for Social Equality (Intergroup Outcomes Model) are not reported as they were the same as the original models.

was required in order to test a different ordering of variables. Accordingly, supplementary analyses were carried out to test the reversed order of the two interpersonal relationship variables – *Interpersonal Closeness* preceding *Quality of the Interaction* – for both the Intrapersonal Outcome Model as well as the Intergroup Outcomes model.

Intrapersonal outcome model

Serial mediation analysis of the Intrapersonal Outcome Model with *Interpersonal Closeness* preceding *Quality of the Interaction* revealed a non-significant sequential indirect effect of *Self-Expansion Motivation* on *Self-Change* via *Knowledge Acquisition Orientation*, *Interpersonal Closeness* and *Quality of the Interaction* (IE = .016, SE = .017, 95% confidence interval [CI] = [-.009, .066]).

However, this analysis revealed two significant indirect effects (see Figure 6) of *Self-Expansion Motivation* on *Self-Change*: (1) through *Knowledge Acquisition Orientation* (IE = .300, SE = .108, 95% confidence interval [CI] = [.127, .570]), and (2) through *Knowledge Acquisition Orientation* and *Interpersonal Closeness* (IE = .082, SE = .053, 95% confidence interval [CI] = [.015, .222]).

This supplementary analysis of Intrapersonal Outcome Model provides some evidence that *Interpersonal Closeness* may play a more important role than *Quality of the Interaction* in predicting *Self-Change* and thus, it may call into question the need to include both relationship variables in this model. That is, both interpersonal relationship variable (*Interpersonal Closeness* and *Quality of the Interaction*) may play an equally important role in explaining the relationship between *Self-Expansion Motivation* and *Self-Change*.

Intergroup outcomes model

Serial mediation analysis of the Intergroup Outcomes Model with *Interpersonal Closeness* preceding *Quality of the Interaction* revealed a significant sequential indirect effect (see Figure 7) of *Self-Expansion Motivation* on *Support for Action for Social Equality* via *Knowledge Acquisition Orientation*, *Interpersonal Closeness*, *Quality of*

Interaction and Support for Multiculturalism (IE = .005, SE = .005, 95% confidence interval [CI] = [.001, .027]).

This analysis also revealed four other significant indirect effects of *Self-Expansion Motivation on Support for Action for Social Change*: (1) through *Knowledge Acquisition Orientation* (IE = .212, SE = .113, 95% confidence interval [CI] = [.026, .483]), (2) through *Knowledge Acquisition Orientation, Quality of the Interaction, and Support for Multiculturalism* (IE = .022, SE = .019, 95% confidence interval [CI] = [.001, .092]), (3) through *Quality of the Interaction and Support for Multiculturalism* (IE = .017, SE = .018, 95% confidence interval [CI] = [.001, .086]), and (4) through *Support for Multiculturalism* (IE = .112, SE = .083, 95% confidence interval [CI] = [.007, .341]).

Thus, reversing the order of the interpersonal relationship variables did lead to some evidence of the value of including both of *Interpersonal Closeness* and *Quality of the Interaction* in predicting an increase in *Support for Multiculturalism* and *Support for Action for Social Equality*. However, when *Interpersonal Closeness* was excluded from the model the sequential indirect effect remained significant, offering some indication of the redundancy in these two variables.

2.3. Discussion

Consistent with my predictions, a general need for self-expansion was positively associated with the more specific orientation to acquire knowledge from the outgroup partner in cross-ethnic interactions, and this in turn was related to both intrapersonal outcomes (i.e., self-change) as well as intergroup outcomes (i.e., support for multiculturalism and support for action for social equality). To my knowledge, this is the first study that establishes a link between self-expansion motivation and knowledge sharing orientation and shows the impact of this orientation on self-change in cross-ethnic interactions. Thus, this work successfully combines research by Dys-Steenbergen et al. (2016), which focused on the role of self-expansion motivation with work by Migacheva and Tropp (2013), which focused on the role of learning orientation in cross-group interactions. Moreover, the current research combines these two lines of research in a

novel way to show that these two motivations have an impact on both intrapersonal outcomes, the primary outcomes investigated by Dys-Steenbergen et al. (2016), and intergroup outcomes, the primary outcomes investigated by Migacheva and Tropp (2013).

Interestingly, the current study also shows a link between support for multiculturalism and support for action for social equality – a link which, to my knowledge, has also not been demonstrated before. Moreover, this link appears to be set in motion by people’s level of self-expansion motivation, knowledge sharing orientation, and experience of a positive cross-group interaction. Thus, self-expansion motivation and knowledge sharing orientation may be instrumental in enhancing the ability of positive cross-group interactions to mobilize people to support actions consistent with their endorsement of multiculturalism.

Additionally, the results of the supplementary analyses changing the order of the measures of quality of the interaction and interpersonal closeness as sequential mediators reveal a somewhat inconsistent story about the value of including both of these interpersonal relationship variables in the mediational models. For the Intrapersonal Outcome Model, the supplementary analysis is inconsistent with the primary analysis and suggests that quality of the interaction may be unnecessary in predicting the relationship between self-expansion motivation and self-change. These findings are not necessarily surprising as the Self-Expansion Model (Aron, & Aron, 1986) emphasizes the role of closeness (i.e., the inclusion of the other in the self) over other aspects of the quality of the interaction as the key determinant of whether an interaction with another can serve one’s self-expansion needs.

However, for the Intergroup Outcomes Model the supplementary analysis contradicts the primary analysis by suggesting that both variables may be useful in predicting the relationship between *Self-Expansion Motivation* and *Support for Action for Social Equality*. Thus, although there appears to be some evidence of overlap between these two interpersonal relationship variables, the question of whether they both are required in these models, and in what order, remains unanswered.

Although this study provides general support for the role of self-expansion motivation and knowledge sharing as important contributors to a number of key outcomes of cross-group interaction, a shortcoming of this study is that the primary independent variable, self-expansion motivation, is measured. While it is measured prior to the cross-ethnic interaction, the study remains correlational, and thus does not allow for strong causal inferences. In addition, knowledge sharing was operationalized only in terms of knowledge acquisition, thus ignoring possible specific influences of knowledge provision. Finally, the study was run at a university in a city with very high ethnic diversity. This context may encourage people to exhibit a strong self-expansion motivation and knowledge sharing orientation, but it also offers considerable opportunity for frequent cross-group interactions with a number of ethnic outgroups. Therefore, in order to improve the generalizability of the findings it would be fruitful to test these models when the interactions are with an outgroup that is underrepresented and where cross-group interactions occur much less frequently and are considered less normative.

Chapter 3. Study 2

Study 2 again tested the main hypothesis that higher self-expansion motivation leads to a stronger knowledge sharing orientation and that this produces more positive cross-group interaction, which in turn lead to greater perceived self-change and a more positive orientation towards the outgroup. However, Study 2 also expands on and complements Study 1 in five ways. First, in order to properly test the causal claims about the effect of self-expansion motivation on knowledge sharing orientation and subsequent interpersonal, intrapersonal and intergroup outcomes, I used a priming procedure designed to manipulate participants' level of self-expansion motivation.

Second, the actual direct cross-group interaction used in Study 1 was replaced by an imagined cross-group interaction. This was done primarily to consider cross-group contact with members of an outgroup with whom contact is much less frequent and is considered less normative.

Third, while Study 1 focused exclusively on knowledge acquisition orientation, Study 2 included a measure of knowledge sharing orientation that assessed both knowledge acquisition and knowledge provision orientation. Although knowledge acquisition orientation may appear to flow more naturally from a high self-expansion motivation, a need to self-expand may also lead to a desire to provide knowledge to others. Knowledge provision, especially in the case of mutual self-disclosure, may be essential for the development of interpersonal closeness and the experience of self-other overlap that is essential for the individual to experience the other's resources, perspectives and identities as one's own. Thus, knowledge provision may also be essential to meet self-expansion needs because it is critical to the development of closeness that produces self-other overlap. Further, knowledge provision may offer the opportunity to expand one's behavioural repertoire (e.g., teaching, trust-building, friend-making) and thus may also lead directly to a sense of self-growth and self-efficacy.

Fourth, two of the measures used in Study 1 were improved. Specifically, items were added to the interpersonal closeness measure, and to the self-change measure. Self-change, in this case, was measured using both a self-growth scale and a social self-efficacy scale. Social self-efficacy is the belief in one's ability to initiate and maintain various social relationships (Smith, & Betz, 2000; Suldo, & Shaffer, 2007). Based on the Self-Expansion Model, the self-growth associated with the inclusion of another in the self should be associated with increased self-efficacy (see also Mattingly, & Lewandowski, 2012). Furthermore, successful cross-group interactions may lead directly to an increase in efficacy. Specifically, interacting with outgroup members may challenge a person's social self-efficacy. If that challenging interaction then appears to go well and leads to feelings of interpersonal closeness, this should lead to an increase in one's social self-efficacy.

Fifth, the measures of support for multiculturalism and for action for social equality used in Study 1 were replaced with more traditional measures of intergroup attitudes, including two measures of intergroup feelings (an intergroup empathy scale and a feeling thermometer) and a measure of desire for future contact with members of the target outgroup.

3.1. Manipulating Self-Expansion Motivation.

The Self-Expansion Model (Aron, & Aron, 1986) proposes that the strength of one's current self-expansion motivation waxes and wanes as it competes with other motives and concerns. For example, theoretical perspectives like self-congruence (Sirgy, 1986) and self-coherence (e.g., Dissonance theory: Festinger, 1957) make clear that people also seek to maintain a stable and coherent sense of self. Similarly, Aron and Aron (1986) recognize that self-expansion motivation can be restrained by a need for self-integration. After a period of heightened self-expansion (i.e., hyper self-expansion) people may need time to integrate newly acquired self-aspects (Aron, Lewandowski, Mashek, & Aron, 2013). Thus, the ongoing competition between the need for self-expansion versus self-congruency and self-coherence means that one's current level of

self-expansion motivation will vary depending on recent experiences and messages in the local environment. In the current study, I take advantage of this by experimentally inducing different levels of self-expansion motivation using a priming task based on a procedure designed by Dys-Steenbergen et al. (2016). This use of an experimental manipulation of self-expansion motivation allows for confidence about the causal direction of the effects of self-expansion motivation on subsequent knowledge sharing orientation and the increase in intrapersonal and intergroup outcomes that may result from cross-group contact.

3.2. Imagined Cross-group Contact.

In the current study, the actual cross-group interaction used in Study 1 was replaced with a form of indirect contact – *imagined cross-group contact*. Imagined cross-group contact involves mentally simulating a social interaction with an outgroup member. The idea is that imagining a positive interaction with an outgroup member will activate psychological processes that are normally associated with real/direct positive interactions with outgroup members. Although imagined contact may have a weaker effect compared to real/direct contact (Crisp, Stathi, Turner, & Husnu, 2009), research has shown that it can lead to the same positive effects as direct contact on intergroup attitudes and can increase interest in future real/direct cross-group contact (Crisp et al., 2009). In this study we followed the established procedures in the imagined cross-group literature as closely as possible.

Imagined cross-group contact has often been described as a first step toward real/direct contact with outgroup members for which contact may be infrequent (Crisp et al., 2009). Research on imagined cross-group contact has included various target groups, such as the elderly and homosexuals (Turner, Crisp, & Lambert, 2007a), Muslims (Turner, & Crisp, 2010), and the mentally ill (West, Holmes, & Hewstone, 2011). For the current study, Canadian First Nations people were chosen as the target contact group, as historically First Nations people have been discriminated against and marginalized in Canada and contact between First Nations and non-First Nations Canadians remains

limited. Accordingly, non-First Nations participants were asked to imagine interacting with a student who was First Nations.

It has been shown that prejudice reduction is one of the mechanisms by which imagined contact can increase interest in future contact with a less frequently encountered outgroup (see Crisp, Stathi, Turner, & Husnu, 2009). Thus, the current study will include a measure assessing intergroup empathy (see Dovidio et al., 2004; Galinsky, & Moskowitz, 2000; Hasler, Hirschberger, Shani-Sherman, & Friedman, 2014) and warm/cold feelings (see Esses, Haddock, & Zanna, 1993) toward the outgroup as an additional mediator of the effect of self-expansion motivation on interest in future contact with Canadian First Nations people.

Imagined contact with a target outgroup member in an activity that suggests reciprocity should also provide an opportunity for the person to imagine both knowledge acquisition and knowledge provision. Knowledge sharing orientation involves a broad desire to acquire and provide new knowledge. Specifically, it involves a general intention to listen to what the other might offer and to talk about whatever aspects of one's own knowledge might be relevant when these opportunities arise. Thus, knowledge sharing orientation is a general orientation towards interactions with others, rather than a desire to offer or acquire any specific information. Following this line of reasoning, those who adopt this general orientation towards interactions with others should also be more likely to imagine an interaction involving mutual self-disclosure and information sharing.

In summary, in Study 2 the measurement of self-expansion motivation used in Study 1 is replaced with a manipulation to test the causal impact of self-expansion motivation on knowledge sharing orientation (knowledge acquisition and knowledge provision) during an imagined cross-group interactions with a member of a novel target contact group (i.e., Canadian First Nations people). It was predicted that those engaging in the imagined interaction with higher self-expansion motivation would show a stronger knowledge sharing orientation and imagine an interaction that was more positive and involved stronger feelings of closeness with their interaction partner. These more positive

interactions and feelings of closeness should be associated with stronger feelings of self-growth and social self-efficacy, and with more positive intergroup feelings and greater interest in future contact.

Again, two models were tested. The first model tested the prediction that priming high versus low *Self-Expansion Motivation* prior to an imagined cross-group interaction would lead to more reported *Self-Change* following the imagined interaction, and that this relationship would be mediated serially by *Knowledge Sharing Orientation*, the perceived *Quality of the Interaction*, and experienced *Interpersonal Closeness* with the First Nations partner (see Figure 8).

The second model tested the prediction that priming high versus low *Self-Expansion Motivation* prior to an imagined cross-group interaction would be associated with more *Interest in Future Contact* with the target group, and that this relationship would be mediated serially by *Knowledge Sharing Orientation*, the perceived *Quality of the Interaction*, experienced *Interpersonal Closeness*, and *Intergroup Feelings* (see Figure 9).

3.3. Method

3.3.1. Participants

Participants were first-year undergraduate students at a large Canadian public university. Participants agreed to participate for partial course credit in psychology classes. The sample included 70 men and 120 women; $M_{\text{age}} = 18.50$; Ethnicity: 75 East Asian, 39 South Asian, 36 Caucasian and 40 other.

3.3.2. Procedures, & Design

Participants signed up to take part in a *Self-Description and Social Interaction* study and were run in groups of three to six. Most components of the study were delivered on computers. Upon arrival at the lab, participants were seated at computers in separate cubicles. Instructions presented on the computer were supplemented with some

verbal instructions. Participants first completed a priming task to manipulate their level of self-expansion motivation. This was followed by instructions to imagine themselves having an interaction with a Canadian First Nations student they did not know. Finally, participants completed a questionnaire measuring the mediators and outcome variables in the two hypothesized models (see Figure 8 and Figure 9).

Self-expansion motivation manipulation (high, low or control)

The Self-Expansion Motivation manipulation was based on procedure designed by Dys-Steenbergen et al. (2016), and included three conditions (High Self-Expansion Motivation, Low Self-Expansion Motivation and Control). It was presented to participants as a *Self-Description Exercise* and they first read a passage that encourages a positive and appetitive orientation towards new experiences and self-change (High Self-Expansion Motivation condition) or a passage that encouraged an orientation focused on maintaining a stable sense of self (Low Self-Expansion Motivation condition). The passage was followed by a set of five leading questions and a writing exercise that encouraged answers and thoughts that would reinforce the relevant perspective (see Appendix D). Participants assigned to the control condition did not complete this exercise, and proceeded directly to the imagined cross-group interaction.

Imagined cross-group interaction

Based on instructions suggested by Crisp, Husnu, Meleady, Stathi, and Turner (2010) participants were asked to imagine having a positive interaction with a Canadian First Nations' student named *Dakota*, whom they did not know. The imagined partner was matched with the participant in terms of their gender. The participants were asked to view the imagined interaction from a third-person perspective, as previous research has shown that this leads people to more actively take on their role (Libby, Shaeffer, Eibach, & Slemmer, 2007). After listening to an audio recording of the instructions, participants were asked to close their eyes for one minute and to keep the image of the interaction in their minds, as this has been found to enhance the vividness of imagined scenarios (Narchal, & Broota, 1988). This was followed by a writing exercise in which the participants were asked to elaborate on their feelings and thoughts associated with their

imagined cross-group interaction (see Husnu, & Crisp, 2010a Experiment 3). Full instructions and the description of the imagined cross-group interaction are provided in Appendix E.

Final Questionnaire

After the imagined cross-group contact interaction, participants completed measures of the key mediators and outcome variables (see Appendix F) in the order listed below. All items were answered on 7 point Likert scales (*not at all* = 1, *extremely* = 7), and were modified to refer to the imagined contact situation, the target contact group (Canadian First Nations People) and the imagined contact partner (Dakota).

3.3.3. Mediators

Knowledge Sharing Orientation ($\alpha = .88$) was measured using a composite of the items of both Knowledge Acquisition Orientation and Knowledge Provision Orientation. The Knowledge Acquisition Orientation Measure ($\alpha = .86$) included four items (e.g., “How much did you focus on learning from Dakota?”). The Knowledge Provision Orientation Measure ($\alpha = .88$) also included four items (e.g., “How much did you share new information with Dakota?”).⁵

The *Quality of the Interaction Measure* ($\alpha = .81$) included three items (e.g., “How positive was your interaction with Dakota?”).

The *Interpersonal Closeness Measure* ($\alpha = .82$), consisting of five items, combined four items adapted from the PAIR Inventory developed by Schaefer and Olson

⁵ Although the *Knowledge Acquisition Orientation* items and *Knowledge Provision Orientation* items loaded as two separate factors, the reliability of the scale including both measures was good ($\alpha = .88$). This was not unpredicted as knowledge acquisition and knowledge provision are part of the larger construct – knowledge sharing – and in interpersonal interaction, they are likely to occur simultaneously in a back and forth exchange. Therefore, it was decided to collapse across the two measures to create a single *Knowledge Sharing Orientation Scale*.

(1981) (e.g., “How much do you like Dakota?”); with the *Inclusion of Other in Self Scale* used in Study 1.

3.3.4. Intrapersonal Outcomes

Self-change ($\alpha = .91$) was measured using a composite of a self-growth and a social self-efficacy scale.⁶ The *Self-Growth Measure* included five items (e.g., “Thinking about my interaction with Dakota makes me feel that I have grown as a person.”). The *Social Self-Efficacy Measure* adapted from a measure developed by Fan and Mak (1998), included three items (e.g., “Thinking of my interaction with Dakota, makes me feel *more* capable to deal with complex social interactions.”). The scores for these eight items were averaged to produce the final *Self-Change* measure.

3.3.5. Intergroup Outcomes

Intergroup Feelings ($\alpha = .73$) was measured using a composite of five items adapted from the *Ethno-Cultural Empathy Scale* (Wang, Davidson, Yakushko, Savoy, Tan, & Bleier, 2003), which measured intergroup empathy towards First Nations people (e.g., “I share First Nations in Canada people’s anger about the injustice that has been done to them.”), and a single-item *Feelings Thermometer* (Esses, Haddock, & Zanna, 1993), which measured feelings of warmth or coldness toward Canadian First Nations people.⁷

Interest in Future Contact ($r = .91$) was measured using a two-item scale (“Are you interested in meeting more First Nations in Canada people?” and “Would you like to spend more time with First Nations people in Canada?”) adapted from a measure developed by Tropp and Bianchi (2007).

⁶ An initial factor analysis showed that all items from both the Self-Growth and Social Self-Efficacy scales loaded on a single factor.

⁷ The *Feelings Thermometer* measures feelings of warmth ranging from 0 to 100 degrees. Thus, Z-scores were created for both the *Ethnocultural Empathy Scale* and the *Feelings Thermometer* in order that they could be combined to compute an *Intergroup Feelings* score. The resulting Z-score was used in subsequent analyses.

3.3.6. Demographics

Finally, participants were presented with a list of demographics that asked them about their personal background (see Appendix C).

3.4. Results

3.4.1. Preliminary Analysis⁸

Table 3 provides the mean scores, standard deviations, the pairwise correlations and the *F* scores for all mediators and outcome variables. All correlations were significant and some were quite high. Therefore, tests of multicollinearity were performed for predictors in both models: (1) *Self-Change* in the Intrapersonal Outcome Model, and (2) *Interest in Future Contact* in the Intergroup Outcome Model. These analyses revealed that multicollinearity did not exist as all Tolerance Statistics were above .1; and the Variance Inflation Factor (VIF) was less than 10 for all predictor variables in each model (see Table 4).

A series of univariate analyses of variance (ANOVA) testing the effects of the self-expansion motivation manipulation revealed no significant effects on any of the mediators or outcome variables (see last two columns of Table 3). Subsequent pairwise contrasts between the three conditions (High Self-Expansion, Low Self-Expansion, and Control) also yielded no significant effects. These results suggest that the manipulation may have been ineffective in creating meaningful differences in self-expansion motivation. Consequently, the manipulation was not included in any subsequent analyses, which will instead focus on the impact of reported knowledge sharing orientation as the primary predictor in the two models (Intrapersonal Outcome Model and Intergroup Outcomes Model).

⁸ All analyses were collapsed across the ethnic groups.

3.4.2. Mediation Analysis

Bootstrapping analysis, using PROCESS (Preacher, & Hayes, 2008), was used to test the predicted sequential mediation models. Model parameters were computed as unstandardized-regression weights with 5,000 bootstrap resamples.

Intrapersonal outcome model

I tested the predicted sequentially mediated effect of *Knowledge Sharing Orientation* on *Self-Change*, through *Quality of the Interaction* and *Interpersonal Closeness* (see Figure 10). This analysis revealed a significant total effect (IE = .664, SE = .091, $t(161) = 7.29$, $p < .001$) and a non-significant direct effect of *Knowledge Sharing Orientation* on *Self-Change* (IE = .209, SE = .125, $t(161) = 1.68$, $p = .09$). As predicted, it also revealed a significant sequential indirect effect of *Knowledge Sharing Orientation* on *Self-Change* via *Quality of the Interaction* and *Interpersonal Closeness* (IE = .121, SE = .043, 95% confidence interval [CI] = [.053, .220]).

This analysis also revealed a significant indirect effect of *Knowledge Sharing Orientation* on *Self-Change* through *Interpersonal Closeness* (IE = .181, SE = .067, 95% confidence interval [CI] = [.077, .350]).

Intergroup outcomes model.

I tested the predicted sequential mediated effect of *Knowledge Sharing Orientation* on *Interest in Future Contact* mediated by *Quality of the Interaction*, *Interpersonal Closeness* and *Intergroup Feelings*. Model parameters were computed as unstandardized-regression weights with 5,000 bootstrap resamples (see Figure 11). This analysis revealed a significant total effect (IE = .555, SE = .101, $t(164) = 5.51$, $p < .001$) and a non-significant direct effect (IE = -.133, SE = .115, $t(164) = -1.16$, $p = .25$) of *Knowledge Sharing Orientation* on *Interest in Future Contact*. As predicted, it also revealed a significant sequential indirect effect of *Knowledge Sharing Orientation* on *Interest in Future Contact* via *Quality of the Interaction*, *Interpersonal Closeness* and *Intergroup Feelings* (IE = .055, SE = .022, 95% confidence interval [CI] = [.021, .110]).

This analysis also revealed two additional significant indirect effects of *Knowledge Sharing Orientation* on *Interest in Future Contact*: (1) through *Quality of the Interaction* (IE = .298, SE = .095, 95% confidence interval [CI] = [.104, .480]), and (2) through *Interpersonal Closeness* and *Intergroup Feelings* (IE = .091, SE = .041, 95% confidence interval [CI] = [.030, .194]).

3.4.3. Supplementary Mediation Analysis⁹

Alternative ordering of the two interpersonal relationship variables (Quality of the Interaction and Interpersonal Closeness).

For the same reasons provided in the description of Study 1, I carried out supplementary analyses to test the reversed order of the two interpersonal relationship variables – *Interpersonal Closeness* preceding *Quality of the Interaction* – for both the Intrapersonal Outcome Model as well as the Intergroup Outcomes Model.

Intrapersonal outcome model.

Serial mediation analysis of the Intrapersonal Outcome Model with *Interpersonal Closeness* preceding *Quality of the Interaction* revealed that the sequential indirect effect of *Knowledge Sharing Orientation* on *Self-Change* via *Interpersonal Closeness* and *Quality of the Interaction* was not significant (IE = .059, SE = .040, 95% confidence interval [CI] = [-.010, .147]).

However, this analysis (see Figure 12) showed a significant indirect effects of *Knowledge Sharing Orientation* on *Self-Change* through *Interpersonal Closeness* (IE = .303, SE = .092, 95% confidence interval [CI] = [.132, .488]).

Thus, this supplementary test of the Intrapersonal Outcome Model supports the possibility that both relationship variables may not need to be included in this particular model and that *Interpersonal Closeness* may play a more important role than *Quality of*

⁹ The Total and Direct effects of *Knowledge Sharing Orientation* on *Self-Change* (Intrapersonal Outcome Model) and *Interest in Future Contact* (Intergroup Outcomes Model) are not reported as they are the same as the original models.

the Interaction in predicting *Self-Change*. That is, it appears that the relationships between *Knowledge Sharing Orientation* and *Self-Change* may be explained by *Interpersonal Closeness* alone.

Intergroup outcomes model.

Serial mediation analysis of the Intergroup Outcomes Model with *Interpersonal Closeness* preceding *Quality of the Interaction* revealed that the sequential indirect effect of *Knowledge Sharing Orientation* on *Interest in Future Contact* via *Interpersonal Closeness*, *Quality of the Interaction*, and *Intergroup Feelings* was not significant (IE = .023, SE = .021, 95% confidence interval [CI] = [-.016, .070]).

However, this analysis showed (see Figure 13) three significant indirect effects of *Knowledge Sharing Orientation* on *Interest in Future Contact*: (1) through *Interpersonal Closeness* and *Quality of the Interaction* (E = .119, SE = .041, 95% confidence interval [CI] = [.047, .208]), (2) through *Interpersonal Closeness* and *Intergroup Feelings* (E = .145, SE = .055, 95% confidence interval [CI] = [.050, .266]), and (3) through *Quality of the Interaction* (E = .180, SE = .066, 95% confidence interval [CI] = [.070, .334]).

Thus, reversing the order of the interpersonal relationship variables in the Intergroup Outcomes model did lead to some evidence suggesting that *Interpersonal Closeness* may be a better predictor of *Intergroup Feelings* than *Quality of the Interaction*. However, *Quality of the Interaction* also predicted *Interest in Future Contact* but this relationship was not mediated by *Intergroup Feelings*.

3.4.4. Separate analysis of Knowledge Acquisition Orientation and Knowledge Provision Orientation.

In order to consider the possibility that the pattern of result shown for *Knowledge Sharing Orientation* was driven primarily by either knowledge acquisition or by knowledge provision, both the Intrapersonal Outcome and Intergroup Outcomes Model were tested separately with *Knowledge Acquisition Orientation* and *Knowledge Provision Orientation* as the independent variable.

Intrapersonal outcome model.

Knowledge Acquisition Orientation

Serial mediation analysis of effect of *Knowledge Acquisition Orientation* on *Self-Change*, through *Quality of the Interaction* and *Interpersonal Closeness* controlling for *Knowledge Provision Orientation*, resulted in a significant total effect (IE = .491, SE = .095, $t(161) = 5.19$, $p < .001$) and a significant direct effect (IE = .252, SE = .105, $t(161) = 2.40$, $p < .05$) of *Knowledge Acquisition Orientation* on *Self-Change*. As predicted, it also revealed a significant sequential indirect effect (see Figure 14) of *Knowledge Acquisition Orientation* on *Self-Change* via *Quality of the Interaction* and *Interpersonal Closeness* (IE = .094, SE = .032, 95% confidence interval [CI] = [.046, .179]).

This analysis also revealed a significant indirect effect of *Knowledge Acquisition Orientation* on *Self-Change* through *Interpersonal Closeness* (IE = .061, SE = .038, 95% confidence interval [CI] = [.001, .153]).

Knowledge Provision Orientation.

Serial mediation analysis of the effect of *Knowledge Provision Orientation* on *Self-Change*, through *Quality of the Interaction* and *Interpersonal Closeness* controlling for *Knowledge Acquisition Orientation*, resulted in a significant total effect (E = .201, SE = .082, $t(161) = 2.44$, $p < .05$) and a non-significant direct effect (IE = -.003, SE = .087, $t(161) = -.00$, $p = .99$) of *Knowledge Provision Orientation* on *Self-Change*. As predicted, it also revealed a significant sequential indirect effect (see Figure 15) of *Knowledge Provision Orientation* on *Self-Change* via *Quality of the Interaction* and *Interpersonal Closeness* (IE = .044, SE = .019, 95% confidence interval [CI] = [.017, .093]).

This analysis also revealed a significant indirect effect of *Knowledge Provision Orientation* on *Self-Change* through *Interpersonal Closeness* (IE = .117, SE = .048, 95% confidence interval [CI] = [.042, .233]).

Except for the direct effect from *Knowledge Acquisition Orientation* on *Self-Change*, the separate tests of the Intrapersonal Outcome Models with *Knowledge Acquisition Orientation* or *Knowledge Provision Orientation* as the independent variable

(controlling for the other) produced very similar patterns. In addition, the unique patterns found for *Knowledge Acquisition Orientation* and *Knowledge Provision Orientation* separately were similar to the Intrapersonal Outcome Model tested with *Knowledge Sharing Orientation* (including both *Knowledge Acquisition Orientation* and *Knowledge Provision Orientation*) as the independent variable.

Intergroup outcomes model

Knowledge Acquisition Orientation

Knowledge Acquisition Orientation. Serial mediation analysis of the effects of Knowledge Acquisition Orientation on Interest in Future Contact, through Quality of the Interaction, Interpersonal Closeness, and Intergroup Feelings, controlling for Knowledge Provision Orientation, resulted in a significant total effect (IE = .48, SE = .103, $t(161) = 4.70$, $p < .001$) and a non-significant direct effect (IE = .067, SE = .095, $t(161) = .70$, $p = .48$) of Knowledge Acquisition Orientation on Self-Change. As predicted, it also revealed a significant sequential indirect effect (see Figure 16) of Knowledge Acquisition Orientation on Interest in Future Contact, through Quality of the Interaction and Interpersonal Closeness, and Intergroup Feelings (IE = .042, SE = .017, 95% confidence interval [CI] = [.015, .082]).

This analysis also revealed two additional significant indirect effects of *Knowledge Acquisition Orientation* on *Interest in Future Contact*: (1) through *Quality of the Interaction* (IE = .191, SE = .072, 95% confidence interval [CI] = [.058, .340]), and (2) through *Interpersonal Closeness* and *Intergroup Feelings* (IE = .031, SE = .020, 95% confidence interval [CI] = [.004, .086]).

Knowledge Provision Orientation

Serial mediation analysis of the effects of Knowledge Provision Orientation on Interest in Future Contact, through Quality of the Interaction and Interpersonal Closeness, and Intergroup Feelings, controlling for Knowledge Acquisition Orientation, resulted in a non-significant total effect (IE = .102, SE = .092, $t(161) = 1.11$, $p = .27$) and a significant direct effect of Knowledge Provision Orientation on Self-Change (IE = -.163, SE = .079, $t(161) = -2.06$, $p < .05$). As predicted, it also revealed a significant sequential indirect

effect (see Figure 17) of Knowledge Provision Orientation on Interest in Future Contact, through Quality of the Interaction and Interpersonal Closeness, and Intergroup Feelings (IE = .018, SE = .009, 95% confidence interval [CI] = [.006, .043]).

This analysis also revealed two additional significant indirect effects of *Knowledge Provision Orientation on Interest in Future Contact*: (1) through *Quality of the Interaction* (IE = .084, SE = .034, 95% confidence interval [CI] = [.030, .164]), and (2) through *Interpersonal Closeness* and *Intergroup Feelings* (IE = .056, SE = .027, 95% confidence interval [CI] = [.017, .122]).

Thus, the separate tests of the Intergroup Outcome Models with *Knowledge Acquisition Orientation* or *Knowledge Provision Orientation* as the independent variable (controlling for the other) produced very similar patterns. In addition, the unique patterns found for *Knowledge Acquisition Orientation* and *Knowledge Provision Orientation* separately were similar to the Intergroup Outcome Model tested with *Knowledge Sharing Orientation* (including both *Knowledge Acquisition Orientation* and *Knowledge Provision Orientation*) as the independent variable.

3.5. Discussion

To the degree that we can generalize the current findings involving imagined contact to real interactions, Study 2 sheds more light on the role of knowledge sharing orientation in cross-group interactions. The level of knowledge sharing orientation that participants reported during an imagined interaction, including both acquisition and provision of new knowledge, led them to perceive the interaction as more positive and to feel closer to their imagined cross-group partner. This, in turn, was associated with higher levels of perceived self-change as well as more positive intergroup feelings toward the contact outgroup and more interest in actual contact with members of the outgroup (i.e., Canadian First Nations people).

Additionally, the supplementary analyses of the Intrapersonal Outcome Model in which I reversed the order of the two interpersonal relationship variables produced a

pattern of results similar to the primary analysis, but which seems to support the claim that the degree to which a person feels close to an imagined cross-group partner may play a more important role in self-change than the degree to which they enjoyed the imagined interaction and perceived it as positive.

The supplementary analysis of the Intergroup Outcomes Model in which I reversed the order of the two interpersonal relations variables produced a pattern of results quite similar to the primary analysis, but also supports the claim that the degree to which a person feels close to an imagined cross-group partner may be a better predictor of how positive they feel towards the outgroup (i.e., intergroup feelings) than the perceived quality of the imagined cross-group interaction. However, the perceived quality of the interaction may nonetheless be an important predictor of people's interest in seeking out future contact with the target outgroup. Also, although there appears to be some evidence that interpersonal closeness and the quality of the interaction may be linked to different outcomes, these findings are still inconclusive as to whether these two variables should be considered separate predictors and the order in which they should be entered into the model. These questions could be the subject of future investigation.

Supplementary analyses also revealed that knowledge acquisition and knowledge provision orientation each play a role in promoting self-change and enhanced interest in future contact with a target outgroup following an imagined cross-group interaction, and that they both do so by increasing participants' perceptions of the quality of the interaction and feelings of closeness with the imagined cross-group partner.

To date, research on the impact of cross-group contact with Canadian First Nations people has been limited, and contact between First Nations and non-First Nations Canadians continues to be tenuous and infrequent due to the historical marginalization and continuing discrimination (see Denis, 2015). To my knowledge, the current study is the first to utilize an imagined cross-group contact paradigm in an effort to improve intergroup attitudes in this intergroup context.

It also appears that even when a cross-group interaction is imagined (not real), a knowledge sharing orientation can play a role in the process by which people's feelings

toward Canadian First Nations people can be changed. Although Canadian First Nations people continue to be the target of discrimination, recently they have also been recognized by some as valuable “knowledge keepers” and “experts” in certain domains such as environmental sustainability. Thus, it seems reasonable that in some situations both First Nations and non-First Nations people could enter interactions with a knowledge sharing orientation. The current research would support that claim that these situations may offer an excellent opportunity to forge meaningful interpersonal relationships and more positive intergroup feelings, and may also pave the way for increased intergroup collaboration.

In addition, Study 2, because it included improved measures and investigated a number of additional outcomes (particularly the measures of intergroup outcomes), offers a deeper and more complex understanding of the role of knowledge sharing orientation in cross-group interactions than provided by Study 1 alone.

However, the current study failed to replicate Dys-Steenbergen et al.’s (2016) work on the potential benefits of priming self-expansion manipulation. The manipulation used here failed to produce any meaningful differences in participants’ responses. Thus, I was unable to show a causal link between self-expansion motivation and knowledge sharing orientation. In comparing the current procedures with those of Dys-Steenbergen et al. (2016), I think that the main reason for the current lack of success was the way the manipulation was presented to the participants. In the current study, the participants engaged in the manipulation while working alone on a computer. The manipulation used by Dys-Steenbergen and colleagues, although similar in content, took place while the cross-group partners were actively engaged with one another as they discussed the content of the self-expansion prime (i.e., the benefits of a high or low self-expansion orientation). Thus, the current self-expansion manipulation did not take advantage of the social influence process that may occur when people consider these potential orientations with someone else.

Though the current study was unable to investigate the effect of people’s level of self-expansion motivation, it did replicate and extend the findings from Study 1 on the

potential value of a strong knowledge sharing orientation for improving the quality of cross-group interactions and the subsequent feelings of self-change as well as positive feelings towards and interest in the outgroup.

Chapter 4. General Discussion

Most of the research on intergroup relations has focused on the challenges associated with cross-group interactions. The research reported here offers an alternative and more encouraging view. The current findings suggest that both self-expansion motivation and knowledge sharing orientation may play key roles in creating more positive cross-group interactions, and in so doing can influence a variety of interpersonal and intergroup outcomes that may be critical in reducing intergroup inequality (e.g., support for multiculturalism and willingness to participate in actions for social equality) and in improving intergroup relations (e.g., empathy and warmth, and interest in future contact) .

Consistent with my theorizing, Study 1 showed that a general need for self-expansion leads to a specific desire to acquire knowledge from a cross-group partner. In turn, this greater interest in knowledge acquisition was associated with more positive perceptions of the quality of the cross-group interaction and stronger feelings of closeness with one's interaction partner. This in turn was associated with higher reported levels of self-change and also with more support for multiculturalism and for actions designed to increase group-based equality. Study 2 included both knowledge acquisition and knowledge provision and again showed that a higher knowledge sharing orientation leads to more positive imagined cross-group interactions and more perceived interpersonal closeness, as well as more subsequent self-change and more positive intergroup feelings and greater interest in future contact with a disadvantaged and often stigmatized target outgroup.

Additional investigation also demonstrated that although interpersonal closeness and the quality of the interaction seem in some cases to play a unique role in predicting intrapersonal or intergroup outcomes, these findings remain somewhat inconclusive. There is evidence that in some cases they overlap and thus could be considered related

parts of a larger interpersonal relationships construct. There is also some support for the claim that interpersonal closeness may be more important than the quality of the interaction in predicting self-change and intergroup emotions. However, continued research is needed to more clearly illuminate how these variables may operate together or separately in producing both intrapersonal and intergroup outcomes.

Building on the general idea presented by Wright, Aron and Tropp (2002) that the Self-Expansion Model (Aron, & Aron, 1986) can be applied to intergroup relations, the current research adds a new dimension by establishing a relationship between self-expansion motivation and knowledge sharing orientation in cross-group interactions. The present studies are also novel because they simultaneously test the impact of these on both intrapersonal and intergroup outcomes. Generally, these studies support the conclusion that self-expansion motivation and knowledge sharing orientation may stand in opposition to the numerous psychological impediments to positive cross-group contact. This may explain why people both seek out and succeed in cross-group interactions despite these impediments (e.g., anxiety, insecurity and avoidance).

Furthermore, these results may be useful to practitioners in contexts where the quality and outcomes of cross-group interactions may be of particular importance. For example, schools and other organizations interested in reaping the benefits of diversity may benefit from interventions designed to enhance people's self-expansion motivation and to encourage a knowledge sharing orientation. This could be facilitated by role modeling self-expansion motivation and knowledge sharing orientation by teachers and supervisors or by providing opportunities for students and staff to engage in novel activities with outgroup members. Even simply providing direct messages that increase the salience and describe the benefits of a high self-expansion motivation and knowledge sharing orientation may in some situations be sufficient for people to more keenly appreciate and more actively engage in cross-group interactions.

In addition to these contributions, the current research has some limitations that need to be addressed in future research. First, the self-expansion prime used previously by Dys-Steenbergen et al. (2016) proved to be ineffective in the computer-based

imagined contact design (Study 2). Therefore, it may be that this manipulation must be introduced as part of actual contact with an outgroup member. Additional research is needed to further investigate the utility and boundary conditions of this intervention.

Second, although the current samples consisted of both minority and majority group members, the numbers of each ethnic group was too small and the composition of the cross-ethnic partnerships was too diverse to allow for comparisons across the numerous different groups. Future research, therefore, may need to target particular groups to obtain large enough samples to consider differences in the endorsement of both self-expansion motivation and knowledge sharing across specific majority and minority groups and whether these differences influence their cross-group contact experiences and relevant outcomes.

Third, although knowledge sharing orientation was measured using a validated scale for both knowledge acquisition and knowledge provision, the current studies did not allow me to examine the actual content of the knowledge that was shared between cross-group partners. It could be, for example, that minority and majority group members may share different forms of knowledge (see Crandall, & Eshleman, 2003; Goff, Steele, & Davies, 2008; Monin, & Miller, 2001; Vorauer, & Kumhyr, 2001) or may engage in different levels of self-disclosure (Arkin, 1981; Dunton, & Fazio, 1997; Plant, & Devine, 1998; 2003; Stephan, Stephan, Wenzel, & Cornelius, 1996). Future research might address this by asking participants to report their level of self-disclosure or provide examples of the knowledge they shared with their cross-group partner, or perhaps interactions could be recorded, coded and content analyzed.

Additionally, it would be interesting to examine what may hinder the process of knowledge sharing between majority and minority group members. In some situations, majority group members may be disinclined to share knowledge with minority group members and vice versa, as this may be a threat to their collective identity. Collective identity is that part of individuals' sense of who they are that emerges from their group membership (Tajfel, & Turner, 1986). Threats to one's collective identity can be expressed in different ways (Ellemers, Spears, & Doosje, 2002; Turner, 1999). First,

both majority and minority group members may find that sharing knowledge with an outgroup member may threaten group distinctiveness (Tamir, & Nadler, 2007). Second, knowledge sharing may involve majority and minority group members providing each other with new ideas and information that could potentially pose a threat to “their” values and way of life (Howarth, 2006; Van Acker, Phalet, Deleernsnyder, & Mesquite, 2014). Third, knowledge sharing may also be perceived to threaten group status. In particular, high-status group members may fear that providing knowledge to the low-status group will undermine their position of power (Ellemers, Kortekaas, & Ouwerkerk, 1999).

Minority group members may also experience a threat to their status if majority group members engage in “paternalistic” knowledge sharing – knowledge sharing that is meant to demonstrate or increase the majority group’s status over minority group members (Social Dominance Theory: Sidanius, & Pratto, 1999). In these situations, minority group members may be apprehensive to engage in knowledge acquisition from majority group members. However, they may also be unsure about providing knowledge to majority group members as this could reduce their already limited resources. Historically many minority groups were colonized and resources (e.g., knowledge) were taken away from them. By providing knowledge to majority group members, minority group members may feel that they are continuing this disenfranchising cycle of the past. Finally, minority group members may be concerned that their knowledge provision will not be appreciated and perhaps even discounted by majority group members.

In short, collective identity threats and status concerns may hinder engagement in knowledge sharing. Thus, continued research is needed to further understand both the benefits and potential barriers to knowledge sharing between majority and minority group members.

In conclusion, these two studies provide support for the claim that self-expansion motivation and knowledge sharing orientation may play a role in creating positive cross-group interactions which can result in more positive experiences for the self and a more supportive orientation towards the outgroup. Thus, although cross-group interactions can

be challenging, entering them with the appropriate motivation and orientation can also allow them to be especially rewarding and meaningful.

Tables and Figures

Table 1 ANOVA Intraclass Correlations (ICC)

Variable	<i>N</i> (Dyads)	ICC
Knowledge Acquisition Orientation	101	.14
Quality of the Interaction	101	.24**
Interpersonal Closeness	101	.18*
Self-Change	104	.14
Support for Multiculturalism	104	.09
Support for Action for Social Change	99	.09

Note: ** $p < .01$, * $p < .05$

Table 2 Means, Standard Deviations and Pairwise Correlations

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. Self-Expansion Motivation	5.86	.57						
2. Knowledge Acquisition Orientation	5.90	.68	.43**					
3. Quality of the Interaction	6.20	.59	.46**	.74**				
4. Interpersonal Closeness	4.18	1.17	.18	.41**	.59**			
5. Self-Change	4.44	1.08	.35**	.63**	.58**	.50**		
6. Support for Multiculturalism	6.25	.67	.43**	.51**	.51**	.21*	.45**	
7. Support for Action for Social Equality	4.30	.97	.18	.29**	.10**	.01	.24*	.30**

Note: *N* ranged between 104 and 99 Dyads (see Table 1); ** $p < .01$, * $p < .05$

Table 3 Means, Standard Deviations, Pairwise Correlations, and F scores for tests of the effect of the self-expansion motivation manipulation

Variable	M	SD	Correlations					F	p
			1	2	3	4	5		
1. Knowledge Sharing Orientation	4.80	1.02						(2,183) = .30	.74
2. Quality of the Interaction	5.47	.98	.69**					(2,187) = .77	.47
3. Interpersonal Closeness	4.20	.94	.67**	.67**				(2,179) = .15	.87
4. Self-change	4.19	1.36	.50**	.50**	.56**			(2,174) = .41	.67
5. Intergroup Feelings ¹⁰	-.01	.89	.43**	.39**	.45*	.33**		(2,183) = 1.33	.27
6. Interest in Future Contact	4.79	1.46	.38**	.52**	.46**	.43**	.70**	(2,187) = .70	.50

Note: * $p < .05$, ** $p < .01$

¹⁰ Scores for *Intergroup Feelings* were converted to Z-Scores.

Table 4 ***Multicollinearity Test Results on Dependent Variables for both the Intrapersonal Outcome Model and Intergroup Outcome Model***

Intrapersonal Outcome Model	<i>Tolerance</i>	<i>VIF</i>
1. Knowledge Sharing Orientation	.47	2.15
2. Quality of the Interaction	.47	2.15
3. Interpersonal Closeness	.47	2.12
Dependent Variable: Self-change		
Intergroup Outcomes Model	<i>Tolerance</i>	<i>VIF</i>
1. Knowledge Sharing Orientation	.46	2.25
2. Quality of the Interaction	.46	2.16
3. Interpersonal Closeness	.44	2.29
4. Intergroup Feelings	.76	1.32
Dependent Variable: Interest in Future Contact		

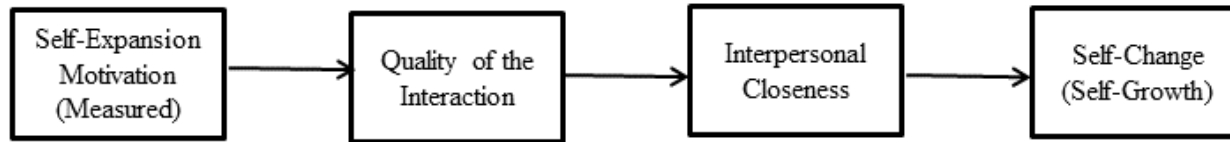


Figure 1 *Interpersonal and Intrapersonal Outcomes Model (Dys-Steenbergen, Wright, & Aron, 2016)*

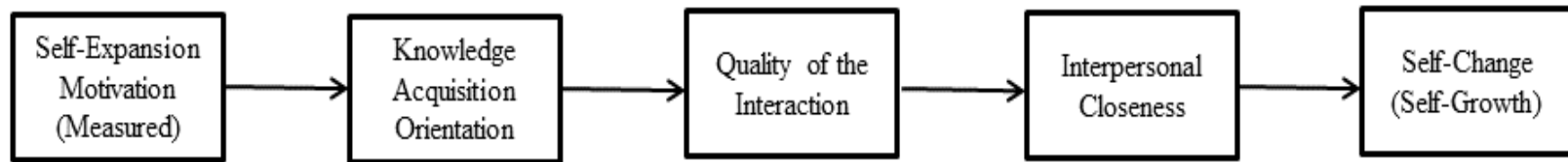


Figure 2 *Intrapersonal Outcome Model: Predicted serial mediation effect of Self-Expansion Motivation on Self-Change (Self-Growth).*

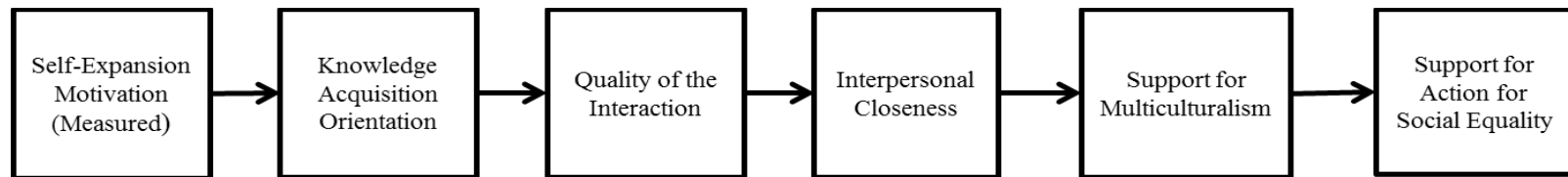


Figure 3 *Intergroup Outcomes Model: Predicted serial mediation effect of Self-Expansion Motivation on Support for Multiculturalism and Support for Action for Social Equality*

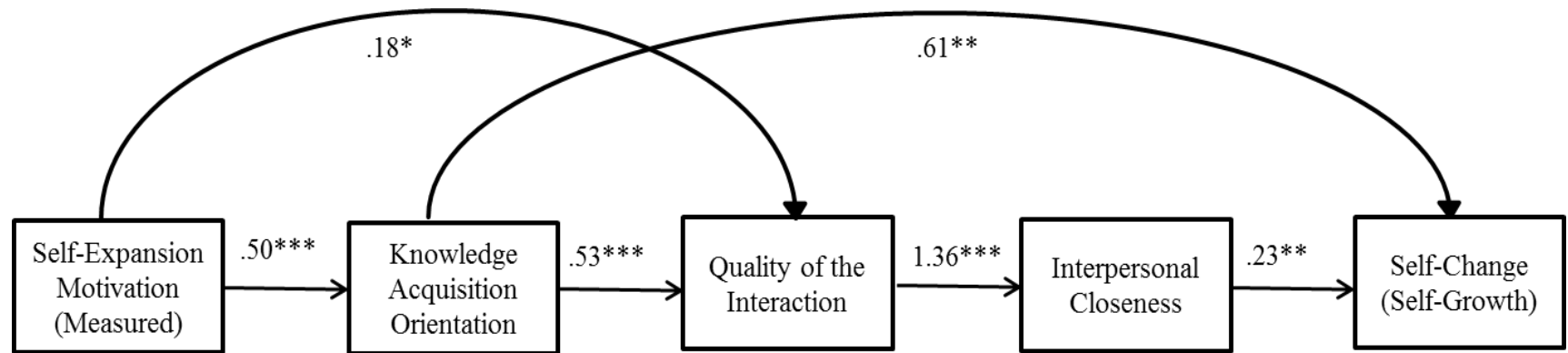


Figure 4 *Original mediation analysis of the Intrapersonal Outcome Model: Indirect serial mediation effect of Self-Expansion Motivation on Self-Change (Self-Growth) through Knowledge Acquisition Orientation, Quality of the Interaction and Interpersonal Closeness.*

Note: $***p < .001$, $**p < .01$, $*p < .05$

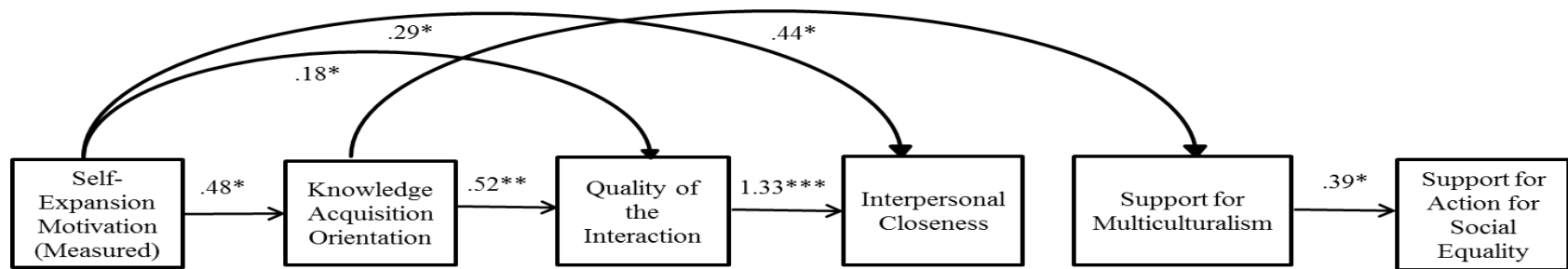


Figure 5 *Original mediation analysis of the Intergroup Outcomes Model: Indirect serial mediation effect of Self-Expansion Motivation on Support for Action for Social Equality through Knowledge Acquisition Orientation, Quality of the Interaction, and Support for Multiculturalism.*

Note: *** $p < .001$, ** $p < .01$, * $p < .05$

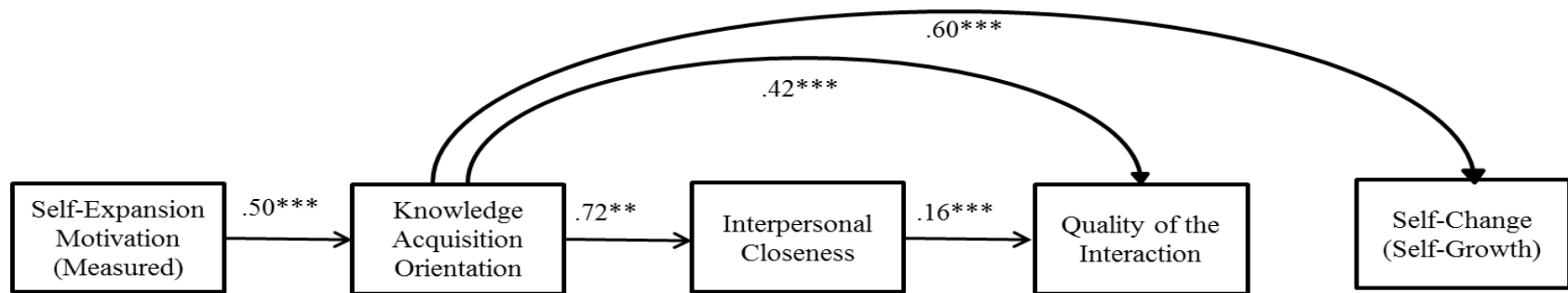


Figure 6 *Supplementary mediation analysis of the Intrapersonal Outcome Model: Indirect serial mediation effect of Self-Expansion Motivation on Self-Change (Self-Growth) through Knowledge Acquisition Orientation, Interpersonal Closeness and Quality of the Interaction.*

Note: *** $p < .001$, ** $p < .01$

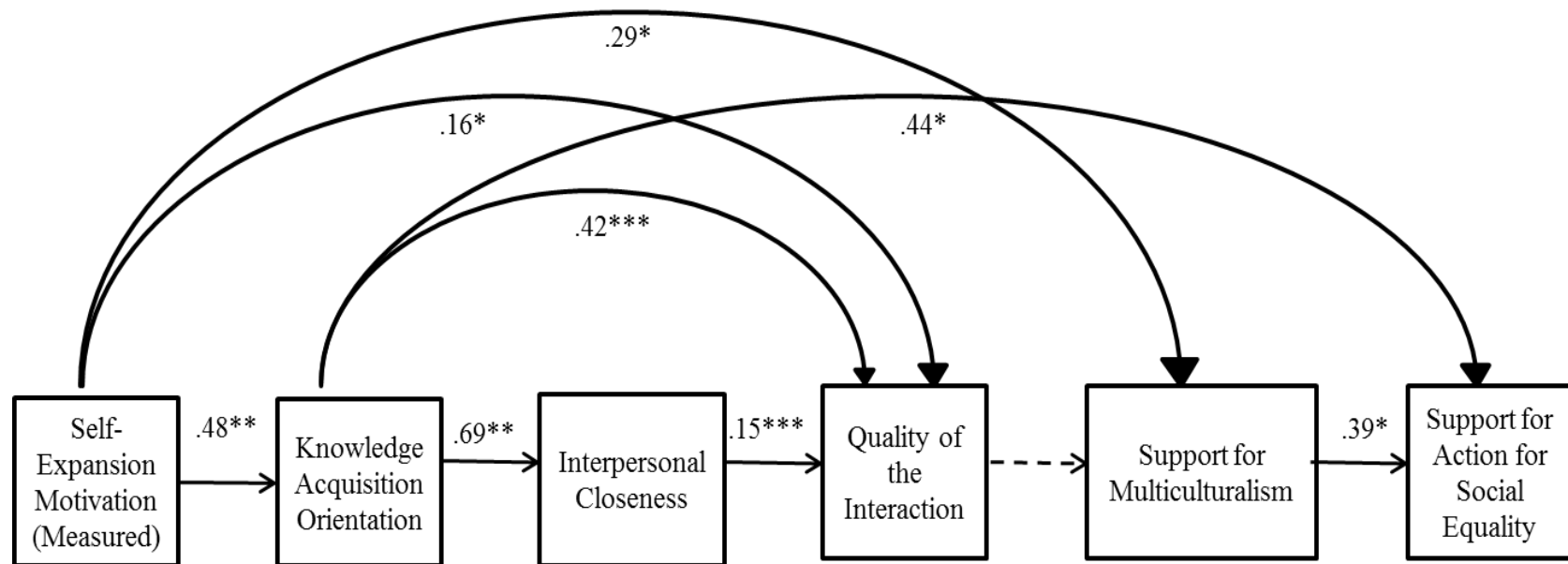


Figure 7 *Supplementary mediation analysis of the Intergroup Outcomes Model: Indirect serial mediation effect of Self-Expansion Motivation on Support for Action for Social Equality through Knowledge Acquisition Orientation, Interpersonal Closeness, Quality of the Interaction, and Support for Multiculturalism.*

Note: *** $p < .001$, ** $p < .01$, * $p < .05$

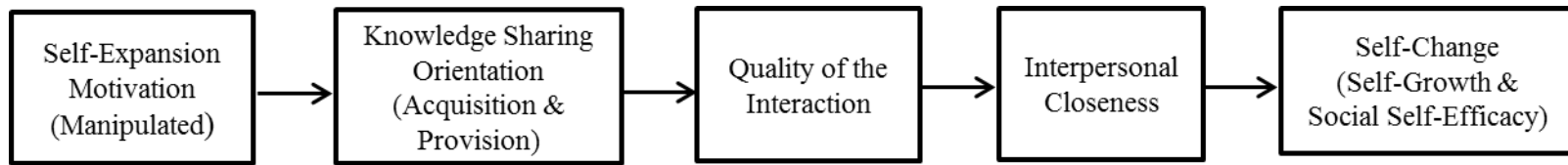


Figure 8 *Intrapersonal Outcome Model: Predicted serial mediation effect of Self-Expansion Motivation on Self-Change (Self-Growth, & Social Self-Efficacy).*

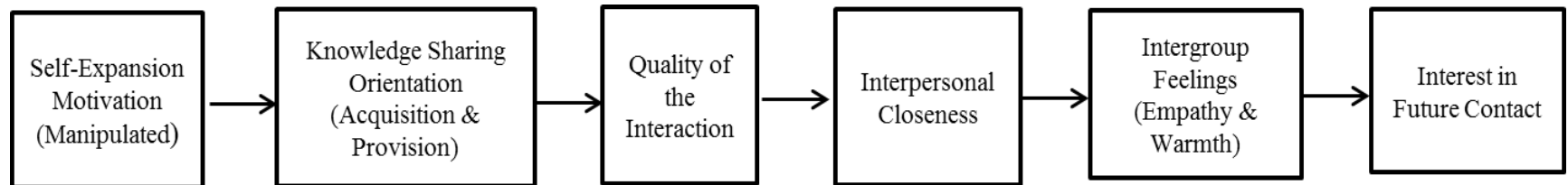


Figure 9 *Intergroup Outcomes Model: Predicted serial mediation effect of Self-Expansion Motivation on Intergroup Feelings (Empathy, & Warmth) and Interest in Future Contact.*

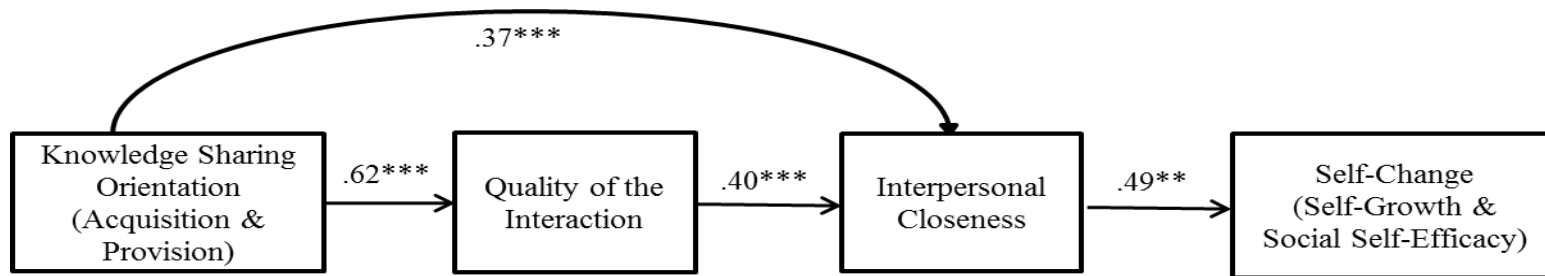


Figure 10 Original mediation analysis of the Intrapersonal Outcome Model: Indirect serial mediation effect of Knowledge Sharing Orientation (Acquisition, & Provision) on Self-Change (Self-Growth, & Social Self-Efficacy) through Quality of the Interaction and Interpersonal Closeness.

Note: *** $p < .001$, ** $p < .01$

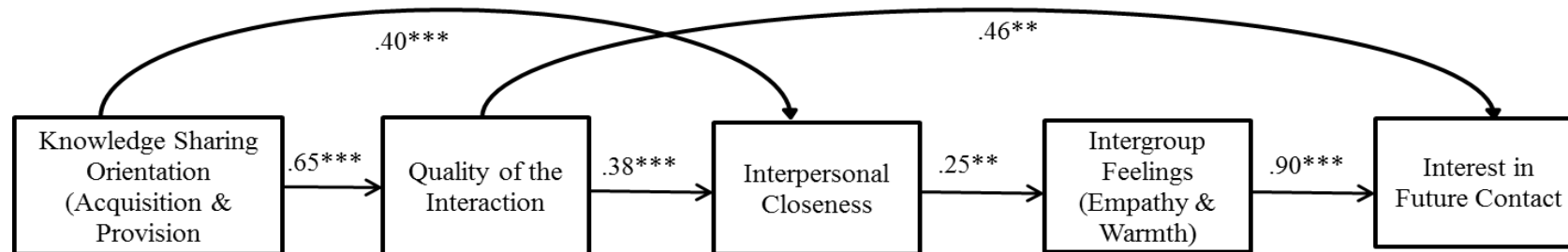


Figure 11 Original mediation analysis of the Intergroup Outcomes Model: Indirect serial mediation effect of Knowledge Sharing Orientation (Acquisition, & Provision) on Interest in Future Contact through Quality of the Interaction, Interpersonal Closeness and Intergroup Feelings (Empathy, & Intergroup Feelings).

Note: *** $p < .001$, ** $p < .01$

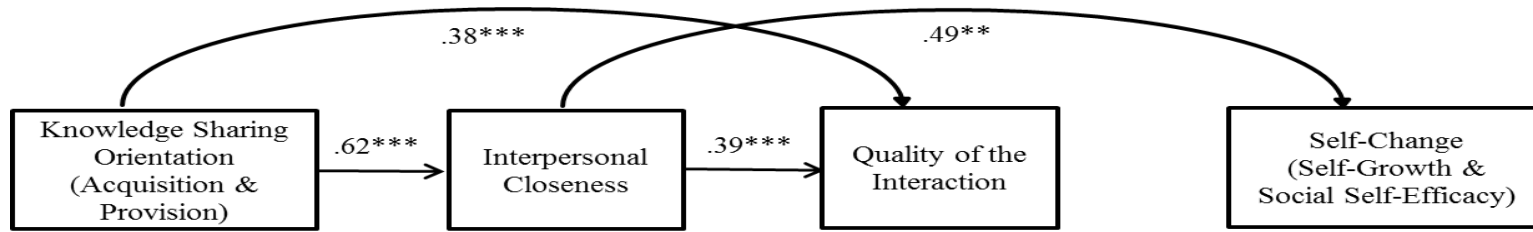


Figure 12 *Supplementary mediation analysis of the Intrapersonal Outcome Model: Indirect serial mediation effect of Knowledge Sharing Orientation (Acquisition, & Provision) on Self-Change (Self-Growth, & Social Self-Efficacy) through Interpersonal Closeness.*

Note: *** $p < .001$, ** $p < .01$

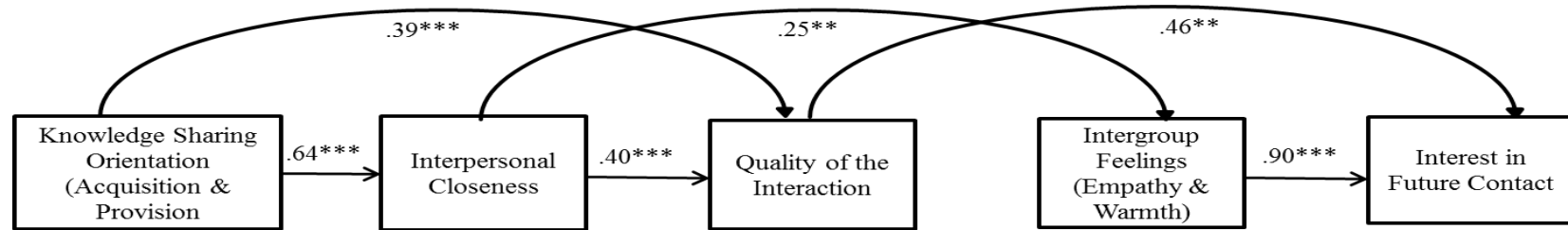


Figure 13 *Supplementary mediation analysis of the Intergroup Outcomes Model: Indirect serial mediation effect of Knowledge Sharing Orientation (Acquisition, & Provision) on Interest in Future Contact through Interpersonal Closeness, Quality of the Interaction, and Intergroup Feelings (Empathy, & Warmth).*

Note: *** $p < .001$, ** $p < .01$

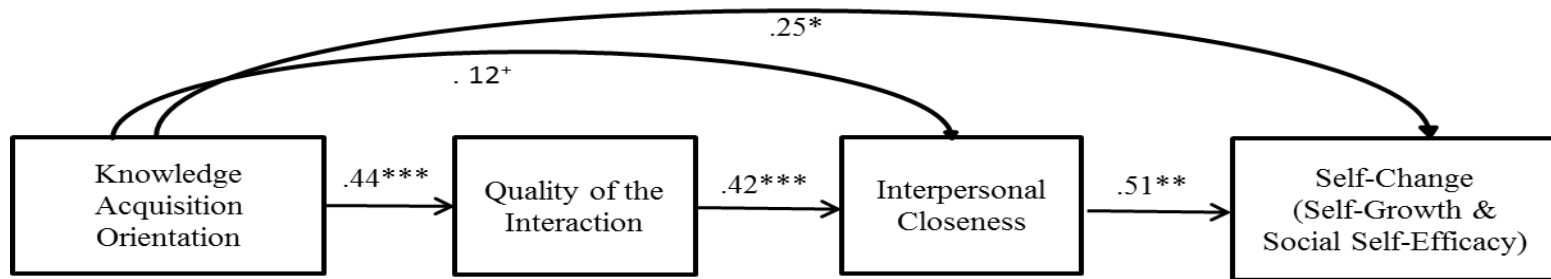


Figure 14 *Intrapersonal Outcome Model: Indirect serial mediation effect of Knowledge Acquisition Orientation, controlling for Knowledge Provision Orientation on Self-Change (Self-Growth, & Social Self-Efficacy) through Quality of the Interaction and Interpersonal Closeness.*

Note: ***p<.001, **p<.01, *p<.05, + p<.1

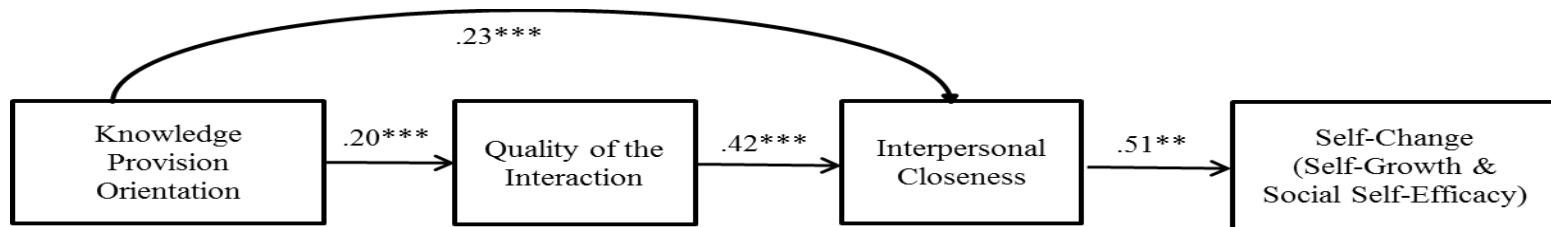


Figure 15 *Intrapersonal Outcome Model: Indirect serial mediation effect of Knowledge Provision Orientation, controlling for Knowledge Acquisition Orientation on Self-Change (Self-Growth, & Social Self-Efficacy) through Quality of the Interaction and Interpersonal Closeness.*

Note: ***p<.001, **p<.01, *p<.05

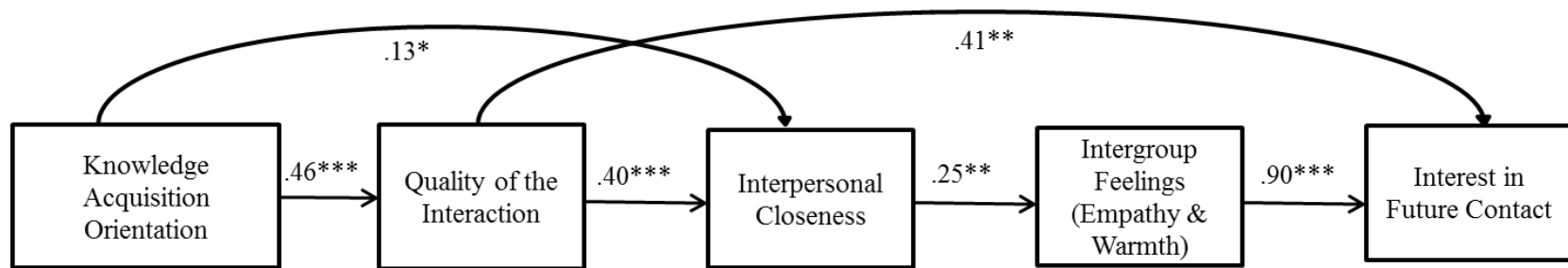


Figure 16 *Intergroup Outcomes Model: Indirect serial mediation effect of Knowledge Acquisition Orientation, controlling for Knowledge Provision Orientation on Interest in Future Contact through Quality of the Interaction, Interpersonal Closeness and Intergroup Feelings (Empathy, & Warmth).*

Note: $^{***}p < .001$, $^{**}p < .01$, $^*p < .05$

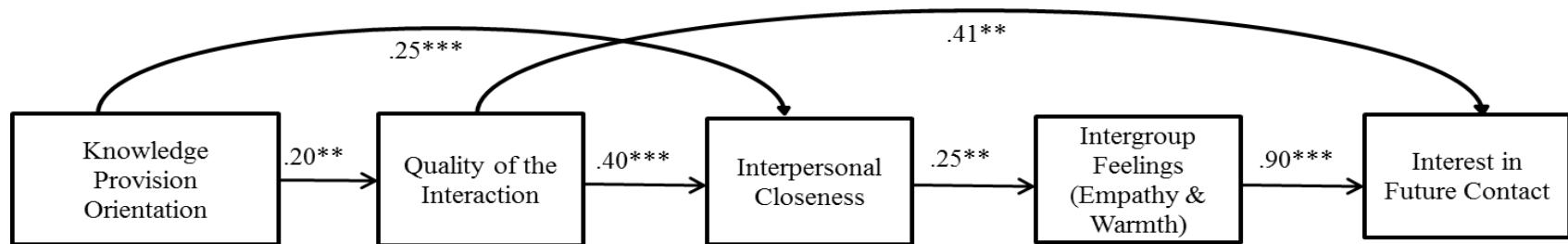


Figure 17 *Intergroup Outcomes Model: Indirect serial mediation effect of Knowledge Provision Orientation, controlling for Knowledge Acquisition Orientation on Interest in Future Contact through Quality of the Interaction, Interpersonal Closeness and Intergroup Feelings (Empathy, & Warmth).*

Note: $^{***}p < .001$, $^{**}p < .01$, $^*p < .05$

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Appendix A

Study 1: Pre-Activity Questionnaire

Self-Expansion Motivation Measure

*These statements are based on how you feel **RIGHT NOW**. Please rate how much you agree or disagree with each of these statements on the 1-7 scale below.*

Not at all 1 2 3 4 5 6 7 Very Much

1. I appreciate having new experiences
2. I like to expand my own capabilities.
3. I like to seek out different sources of exiting experiences.
4. I seek to become a better person.
5. I am interested in finding new things to try.
6. I like to seek out new opportunities.
7. I prefer to have more familiarity and stability (R).
8. I like to try new things that would motivate me and make me happy.
9. I place a lot of importance on experiencing new things.
10. I seek out self-improvement.
11. I would like to take up new activities.

Appendix B

Study 1: Post-Activity Questionnaire

There are several sections to this questionnaire. Please answer all the questions as accurately and honestly as you can. Be assured that your answers are completely confidential.

*The statements below are based on how you feel **RIGHT NOW**. Please rate how much you agree or disagree with each of these statements on the 1-7 scale below.*

Not at all 1 2 3 4 5 6 7 Very Much

Knowledge Acquisition Motivation Measure

1. During your interaction with your partner, how much did you focus on learning about him/her?
2. During your interaction with your partner, how much were you interested in his/her ideas and what he/she had to say?
3. During your interaction with your partner, how much did you feel curious about who he/she is?
4. During your interaction with your partner, how much did you focus on how you can learn from an experience like this?
5. During your interaction with your partner, how much did you try to learn about his/her perspective?

Quality of the Interaction Measure

1. How positive was your interaction with your partner?
2. How effective and successful were you in getting to know your partner?
3. It was fun to do this activity with my partner.
4. How much did you enjoy interacting with your partner during this activity?
5. How comfortable were you interacting with your partner?

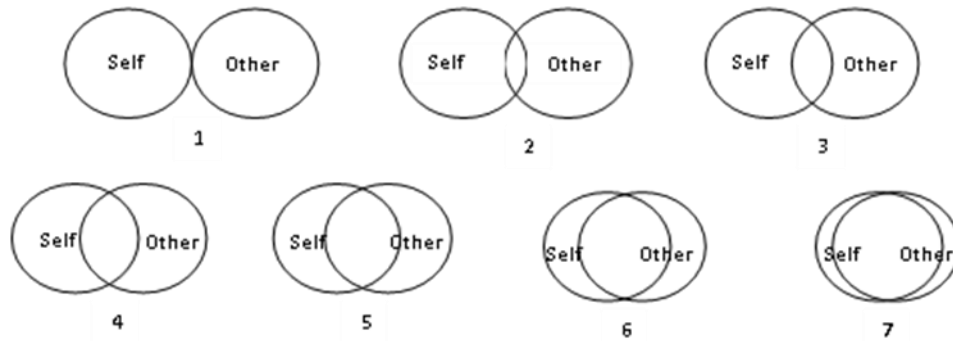
Interpersonal Closeness Measure

Inclusion of Other in Self Scale

Please select the pair of circles that you feel best describes your relationship with your partner after completing today's activity.

“Self” refers to **you**

“Other” refers to your **partner**.



Self-Change Measure

Self-Growth Scale

1. I feel that I have grown as a person through meeting my partner.
2. Meeting my partner has allowed me to gain new perspectives.
3. I feel somehow bigger and more flexible after spending time with my partner.

Support for Multiculturalism Measure

1. I believe that being exposed to different cultural groups is an important part of attending university.
2. I value the opportunity to learn about new cultures.
3. I believe that to create a harmonious society, we must respect each cultural group to maintain its own unique traditions.

Support for Action for Social Equality Measure

1. I am willing to sign a petition protesting policies which discriminate against ethnic and racial minorities in Canada.
2. I am willing to distribute information about policies which discriminate against ethnic and racial minorities around campus.
3. I am willing to attend a protest which supports ethnic and racial equality in Canada.
4. I am willing to join a group of activists who demand ethnic and racial equality in Canada.
5. I am willing to participate in peaceful demonstrations that call for the elimination of ethnic and racial inequality in Canada.
6. I am willing to attend protests which fight against ethnic and racial inequality, even if it means breaking the law.

Appendix C

Study 1 and Study 2: Demographics

This final series of questions ask about who you are and your personal background.

Gender: _____ Age: _____

Please select all of the following that apply to you:

- This is my first year of post-secondary education.
- I transferred to SFU from another post-secondary institution.
- I am returning to post-secondary education after several years off.

Are you an international or foreign exchange student? No Yes

What is your family's country or region of origin? _____

What country were you born in? _____

If you were not born in Canada, at what age did you move to this country? _____
years

Are you a Canadian citizen? No Yes

What city/town/village do you consider your "hometown" -- the place you feel like you grew up in? _____ , & _____ (if you can't pick only one, please include a second)

If English is NOT your first language, how old were you when you first began speaking English? _____ years

What is your ethnic heritage?

(We realize that selecting a broad ethnic category can be difficult for some people. Please choose one or more than one of the following categories that best identify how you would describe yourself.)

- Caucasian
- East Asian / East Asian Canadian (e.g., Japanese, Korean, Chinese)
- Pacific Asian / Pacific Asian Canadian (e.g., Philippines, Malaysia)
- South Asian / South Asian Canadian (e.g., India)
- Middle Eastern/Arab Canadian/Persian
- African / African Canadian/ Caribbean/ Caribbean-Canadian
- Latin / Latin Canadian
- Native Canadian/ First Nations
- If no combination of these describes your racial/ethnic heritage, please specify:

IN YOUR OWN WORDS, describe the racial/ethnic group you most closely identify with?

What is your religious affiliation?

- Muslim
- Jewish
- Buddhist
- Hindu
- Sikh
- Roman Catholic
- Protestant
- Christian Orthodox
- Other Christian denominations. Please specify: _____
- Atheist
- No religious affiliation; I do not belong to a particular religious organization, but subscribe to my own faith or spirituality

Appendix D

Study 2: Self-Expansion Manipulation

The on-line survey consisted of digital (text) and audio (sound) recorded instructions that were timed. Participants were asked to follow directions in the order as is shown below.

PART I

1. *To start today's survey we would like you to do a self-description exercise. It consists of 3 parts: a self-description scenario, some questions and a writing exercise. All three parts need to be completed before you can move on to the next section of the survey. Please listen carefully as I will read to you a self-description that pertains a typical university student.*

High Self-Expansion Condition

In general students who get the most out of university life find it an exciting challenge and an opportunity to broaden their horizons. These students are open to new discoveries and to do things that challenge their current views. They look for new and exciting experiences that help them to gain new insights about themselves and the world around them. Being a university student is an opportunity to develop and expand yourself as a person.

OR

Low Self-Expansion Condition

In general, students who get the most of university life are focused and clear about their personal goals. These students stay grounded and maintain a stable sense of who they are as a person. Because they know who they are, they are able to find the things that motivate them and that meet their particular needs. Being a university student is an opportunity to strengthen and deepen your self-identity.

2. *Next, I would like you to read the paragraph once more yourself, so that you are clear about the message. You have 1 minute.*

PART II

3. *Okay, now please proceed by showing your agreement (1= strongly disagree; 5=strongly agree) with the five statements listed on the screen. You have 1 minute.*

High Self-Expansion Condition

1. I embrace new possibilities and novel experiences.
2. I am open to different perspectives and ideas.
3. I try to take advantage of new things that come my way.
4. Change is good for me.
5. I believe that it is good to strive for personal growth and development.

OR

Low Self-Expansion Condition

1. As a student it is important to keep distractions to a minimum.
2. During social interactions I like people to see me the way I see myself.
3. I like for things to be predictable and consistent.
4. I strive to maintain a stable sense of self.
5. I like experiences that can provide me with meaningful information about myself.

PART III

High, & Low Self-Expansion

4. *Next, I would like you to describe in your own words, using the box below, how much this description relates to you as a student. You have 2 minutes.*

Appendix E

Study 2: Imagined Cross-Group Contact Interaction

The on-line survey consisted of digital (text) and audio (sound) recorded instructions that were timed. Participants were asked to follow directions in the order as is shown below.

PART I

1. *In the next activity we will ask you to imagine yourself interacting with someone you have never met before. [pause]*
2. *I would like you to imagine that you are watching a film of yourself and someone else, so you can both see yourself and the other person.[pause]*

Okay, I would like you to imagine that you have arrived early for class. As you are sitting down a new student takes the seat beside you. Her/his name is Dakota. S/he is in her first year at university. S/he is First Nations and she lives on the Musqueam Indian Reserve in Vancouver. Class does not start for another 10 minutes, so Dakota and you start a conversation. During the conversation imagine you find out some interesting and unexpected things about Dakota. [Pause]

3. *Imagine that the interaction is **positive, relaxed and comfortable**. [pause]*
4. *Okay, you can now click on “next” to go to the next page*

PART II

Participants will be faced with a blank screen

5. *Now, I would like you to close your eyes [pause]. I would like you to keep the image of Dakota and you interacting in your mind and hold it there for one minute, don't let go of it. I will let you know when you can open your eyes. One minute starts now.[1 min]*
6. *Okay, you can open your eyes now and click on “next” to go to the second part of the imagined interaction activity.*

PART III

7. *Next we would like you to take a few minutes to write down, using the box below, the things that you imagined took place during your interaction with Dakota (e.g., what did you talk about, what did you think about, how did it make you feel etc.). Feel free to write down whatever comes to mind. You have 2 minutes.*

Appendix F

Study 2: Final Questionnaire

Knowledge Sharing Orientation Measure

The following questions are based on your imagined interaction with your partner (i.e., Dakota, the Canadian First Nations student you met in your class in your imagined interaction).

Please rate how much you agree or disagree with each of these statements on the 1-7 scale below.

Not at all 1 2 3 4 5 6 7 Extremely

Knowledge Acquisition Orientation Scale

1. How much did you focus on learning from Dakota?
2. How interested were you in Dakota's ideas and what s/he had to say?
3. How much did you feel curious about Dakota?
4. How much did you feel you learned about Dakota's perspective?

Knowledge Provision Orientation Scale

1. How much did you communicate your perspective with Dakota?
2. How much did you provide Dakota with new knowledge?
3. How much did you share new information with Dakota?
4. How much did you explain new ideas to Dakota?

Quality of Interaction Measure

1. How positive was your interaction with Dakota?
2. How much fun was the interaction with Dakota?
3. How much did you enjoy the interaction with Dakota?

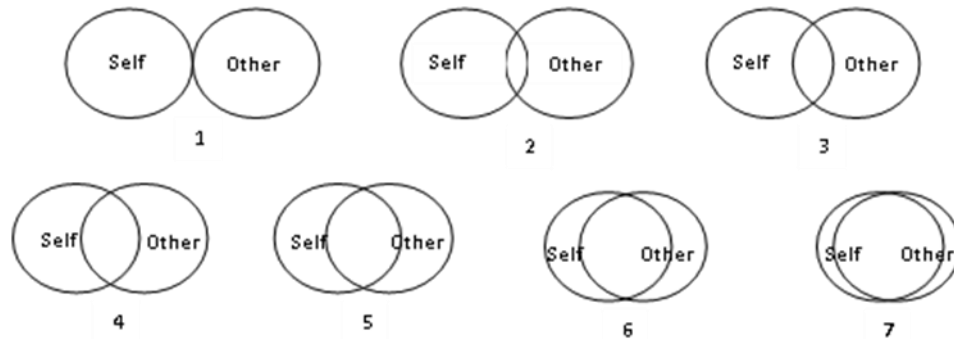
Interpersonal Closeness Measure

Inclusion of Other in Self Scale

Please select the pair of circles that you feel best describes how close you feel to your imagined partner (i.e., Dakota, the Canadian First Nations student you met in your class in your imagined interaction.)

“**Self**” refers to **you**

“**Other**” refers to your **partner**.



Closeness Scale (PAIR Inventory)

Please rate how much you agree or disagree with each of these statements on the **1-7 scale** below.

Not at all 1 2 3 4 5 6 7 Extremely

1. How close do you feel to Dakota right now?
2. How much did you understand Dakota's feelings?
3. How much do you like Dakota?
4. Do you feel Dakota understood your feelings?

Self-Change Measure

The following questions are based on your imagined interaction with your partner (i.e., Dakota, the Canadian First Nations student you met in your class in your imagined interaction).

Please rate how much you agree or disagree with each of these statements on the 1-7 scale below.

Not at all 1 2 3 4 5 6 7 Extremely

Self-Growth Scale

1. Thinking about my interaction with Dakota makes me feel that I have grown as a person.
2. Thinking about my interaction with Dakota makes me feel that I have changed as a person.
3. Thinking about my interaction with Dakota makes me feel somehow bigger and more flexible.
4. Thinking about my interaction with Dakota makes feel that I have gained new perspectives and ideas.
5. Thinking about my interaction with Dakota makes me feel that I am a better person.

Social Self-Efficacy Scale

1. Thinking about my interaction with Dakota makes me feel more confident seeking out opportunities to meet new people.
2. Thinking about my interaction with Dakota makes me feel more capable to deal with complex social interactions.
3. Thinking about my interaction with Dakota makes me feel excited to meet people who are different from myself.

Intergroup Feelings Measures

Ethno-Cultural Empathy Scale

Please rate how much you agree or disagree with each of these statements on the 1-7 scale below.

Not at all 1 2 3 4 5 6 7 Extremely

1. I share the First Nations people's anger about the injustice that has been done to them.
2. I don't understand why First Nations people want to keep their indigenous cultural traditions.
3. I share First Nation people's frustration of being oppressed.
4. It is difficult for me to relate to First Nations people's experience of discrimination.
5. When I see First Nations people be successful, I share their pride.

Feelings of Warmth Scale (Feelings Thermometer)

*It can be uncomfortable and even feel inappropriate to say how we feel about groups of people. However, the truth is that most people do feel differently about some groups compared to others. Please try to honestly assess your feelings towards **Canadian First Nations people**.*

Using the thermometer, select a number between 0 and 100 to represent the degree of warmth or coldness you feel towards this group and write that number in the box beside each group.

0° = Very Cold 50° = Neither Cold or Warm 100° = Very Warm



Canadian First Nations People

Interest in Future Contact Measure

Next we would like you to think about your intended FUTURE CONTACT with Canadian First Nations people.

Please rate your level of interest on the 1-7 scale below.

Not at all 1 2 3 4 5 6 7 Extremely

1. Are you interested in meeting more Canadian First Nations people?
2. Would you like to spend more time with Canadian First Nations people?