



Internal use 404218

Application for a Grant

Identification				
This page will be made available to selection committee members and external assessors.				
Program name Standard Research Grants program				
Joint or special initiative				
Application title Opportunity Hypothesis of Cross-group Friendship: Cause or Confound?				
Applicant family name Page-Gould		Applicant given name Elizabeth		Initials EP-G
Org. code 1350911	Full name of applicant's organization and department University of Toronto Psychology (Scarborough Campus)			
Org. code 1350911	Full name of administrative organization and department University of Toronto Psychology (Scarborough Campus)			
Scholar type	Regular <input type="radio"/>	New <input checked="" type="radio"/>	Preferred adjudication committee (Standard Research Grants only)	
If New, specify category	1 <input checked="" type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
			41010	
Does your proposal involve human beings as research subjects? If "Yes", consult the <i>Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans</i> and submit your proposal to your organization's Research Ethics Board. Yes <input checked="" type="radio"/> No <input type="radio"/>				
Does your proposal involve activity that requires a permit, licence, or approval under any federal statute; or physical interaction with the environment? If 'Yes', complete Appendices A and B. Yes <input type="radio"/> No <input checked="" type="radio"/>				
	Year 1	Year 2	Year 3	Total
Total funds requested from SSHRC (from page 7)	<u>13,681</u>	<u>42,044</u>	<u>36,575</u>	<u>92,300</u>



Participants

List names of your team members (co-applicants and collaborators) who will take part in the intellectual direction of the research. Do not include assistants, students or consultants.

Role Co-applicant <input type="radio"/> Collaborator <input type="radio"/>		CID (if known)	
Family name		Given name	Initials
Org. code	Full organization name		
Department/Division name			
Role Co-applicant <input type="radio"/> Collaborator <input type="radio"/>		CID (if known)	
Family name		Given name	Initials
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Role Co-applicant <input type="radio"/> Collaborator <input type="radio"/>		CID (if known)	
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Family name		Given name	Initials
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Role Co-applicant <input type="radio"/> Collaborator <input type="radio"/>		CID (if known)	
Family name		Given name	Initials
Org. code	Full organization name		
Department/Division name			



Family name, Given name
Page-Gould, Elizabeth

Research Activity

The information provided in this section refers to your research proposal.

Keywords

List keywords that best describe your proposed research or research activity. Separate keywords with a semicolon.

cross-group friendship; intergroup relations; psychophysiology; interpersonal relationships; social interaction; quantitative methods

Disciplines

Indicate and rank up to 5 disciplines that best correspond to your proposal. Duplicate entries are not permitted.

Rank	Code	Discipline	If "Other", specify
1	63024	Social Psychology	
2	63000	Psychology	
3	63099	Other Psychology	Psychophysiology
4			
5			

Areas of Research

Indicate and rank up to 3 areas of research related to your proposal. Duplicate entries are not permitted.

Rank	Code	Area
1	300	Multiculturalism and ethnic studies
2		
3		

Temporal Periods

If applicable, indicate up to 2 historical periods covered by your proposal.

From	To
<p style="text-align: center;">Year</p> <p style="text-align: center;">_____ BC AD</p> <p style="text-align: center;">_____ ○ ○</p> <p style="text-align: center;">_____ ○ ○</p>	<p style="text-align: center;">Year</p> <p style="text-align: center;">_____ BC AD</p> <p style="text-align: center;">_____ ○ ○</p> <p style="text-align: center;">_____ ○ ○</p>



Family name, Given name
Page-Gould, Elizabeth

Research Activity (cont'd)

Geographical Regions

If applicable, indicate and rank up to 3 geographical regions covered by or related to your proposal. Duplicate entries are not permitted.

Rank	Code	Region
1		
2		
3		

Countries

If applicable, indicate and rank up to 5 countries covered by or related to your proposal. Duplicate entries are not permitted.

Rank	Code	Country	Prov./ State
1	1100	CANADA	
2			
3			
4			
5			



Family name, Given name

Page-Gould, Elizabeth

Response to Previous Critiques - maximum one page

Applicants may, if they wish, address criticisms and suggestions offered by adjudication committees and external assessors who have reviewed previous applications.

Empty response area for addressing criticisms and suggestions.



Family name, Given name

Page-Gould, Elizabeth

Summary of Proposed Research - maximum one page

The summary of your research proposal should indicate clearly (a) the problem or issue to be addressed and (b) the potential contribution of the research both in terms of the advancement of knowledge and of the wider social benefit (e.g., Will this research be of interest outside the academic community? How will it be used and by whom?)

Canada has rapidly increased in diversity over the last few decades. Walking through the streets of Toronto, you can hear a myriad of languages and have the opportunity to taste even more types of foods. However, the key to a successfully diverse society is one where people of different backgrounds interact with each other as neighbours and friends, so that, together, everyone will contribute to the growth of the community. Indeed, the development of friendship between people of different ethnicities is related to benefits at both the intergroup (Akinola & Mendes, 2008; Wright, Brody, & Aron, 2005) and individual levels (Page-Gould & Mendoza-Denton, in press; Page-Gould, Mendoza-Denton, & Tropp, 2008). Despite the apparent value of cross-group friendship for members of diverse societies like Canada, little is known about what causes these friendships to form in the first place. Moreover, despite the diversity and spirit of multiculturalism of Canada, most Canadian friendships are still formed with ethnic ingroup members (Smith & Schneider, 2000). Research on cross-group friendship formation is a vital first step to discovering the pathways toward this important mechanism for social cohesion.

Cross-group friendship formation has been primarily discussed at the theoretical level. The predominant theory of why cross-group friendship begins is the "opportunity hypothesis" (Blau, 1977; Hallinan & Smith, 1985). The opportunity hypothesis posits that lower rates of cross-group friendship among majority group members relative to ethnic minorities can be explained by minority group members having greater opportunity to interact with the other group. This hypothesis is widely accepted and cited across both the sociological and social psychological literatures, and a good deal of survey research has been devoted to it. However, the opportunity hypothesis has never been tested in an experimental manner. As such, we do not know if opportunity for cross-group friendship is the cause of its formation. In fact, the intergroup anxiety literature (Stephan & Stephan, 1985) suggests that anxiety during intergroup interactions leads to avoidance of outgroup members by majority group members, and research involving real intergroup interactions suggests anxiety is particularly prominent among majority group members who are concerned about appearing prejudiced to minority group members (Dovidio, Gaertner, Kawakami, & Hodson, 2002; Vorauer, Hunter, Main, & Roy, 2000). As such, an experimental approach to this literature is desperately needed to understand the causal impact of opportunity and anxiety on the development of cross-group friendship.

The proposed research will directly address this fundamental gap in the literature by applying three experimental paradigms to the opportunity hypothesis. The first two studies examine the opportunity hypothesis within the context of social perception experiments. Studies 3 - 4 employ a multi-method approach to examine the moderating role of motivation and physiological threat on opportunity to become friends with people of different ethnicities. Study 5 adapts the "Speed Dating" paradigm (Finkel, Eastwick, & Matthews, 2007) to the context of platonic friendship. Participants will be recruited for "Speed Friending" sessions that hold the opportunity to make new friends through a series of short social interactions. The ethnic composition of each Speed Friending session will be experimentally varied to manipulate the opportunity for cross-group friendship. All interactions will be videotaped to code for nonverbal signs of anxiety. After the sessions, participants will indicate if they would like to exchange contact information with the other people in their session, which will serve as the dependent variable of friendship interest and provide the opportunity to forge real cross-group friendships.

Altogether, this project will experimentally test the factors that predict cross-group friendship formation. The results have the potential for high impact within the fields of social psychology and sociology due to the ubiquity of the opportunity hypothesis and the lack of experimentation thereof.

Objectives

Cross-group friendship research is experiencing a renaissance in the field of intergroup relations due to the application of experimental methods to this topic (Page-Gould & Mendoza-Denton, in press). Experiments conducted over the last few years demonstrated that cross-group friendship holds benefits for social functioning (Page-Gould, Mendoza-Denton, Alegre, & Siy, in press), intergroup attitudes (Akinola & Mendes, 2008; Wright, Aron, & Tropp, 2002; Wright, Brody, & Aron, 2005; Wright & van der Zande, 1999), and physiological responses that predict long-term health (Page-Gould et al., in press; Page-Gould, Mendoza-Denton, & Tropp, 2008). Despite the positive outcomes of cross-group friendship, relatively little is known about what causes these relationships to be initiated in the first place (Page-Gould & Mendoza-Denton, in press). Across both the psychological and sociological literatures, however, the predominant theory of cross-group friendship formation is the *Opportunity Hypothesis* (Blau, 1977, 1994; Hallinan & Smith, 1985; Hallinan & Williams, 1989), which states that cross-group friendship will increase as the opportunities for such friendship increases. Despite never being experimentally tested, this theory remains the forerunner in explaining differential rates of cross-group friendship among ethnic majority and minority group members. The primary objective of the proposed research is to experimentally test the opportunity hypothesis and the moderating role of intergroup anxiety through the application of causal methods to the study of cross-group friendship formation.

Context

The diversity of Canada has grown rapidly over the last 3 decades. Since 1981, the number of visible minorities in Canada has increased by a factor of 4.5 (Bélanger & Malenfant, 2005). Toronto is considered the most diverse city in the world, because half of its population was born outside of Canada (Citizenship and Immigration Canada, 2006). While this diversity has positioned Canada as an economic powerhouse (Zumbrun, 2008), changing community profiles also present the need for social programmes that are adapted to this multiculturalism. Fundamental to a functionally diverse community is an environment where people of different backgrounds interact and interrelate instead of merely coexisting.

My research suggests that cross-group friendship (e.g., friendship between people with different ethnic backgrounds) provides both intergroup and health-related benefits for individuals who live in diverse societies. People who are prejudiced against other groups exhibit physiological stress responses during intergroup interactions that have serious health implications if chronically activated (Mendes, Gray, Mendoza-Denton, Major, & Epel, 2007; Page-Gould et al., 2008). In diverse societies, most individuals have intergroup interactions each day (Page-Gould et al., 2008), which suggests that aversive physiological responses to intergroup interaction pose health risks for prejudiced individuals who live in diverse communities (Page-Gould & Mendoza-Denton, in press). However, laboratory-induced cross-group friendship abates these stress reactions among prejudiced individuals and increases their interest in future intergroup interactions (Page-Gould et al., 2008). Moreover, my work has shown that close relationships with people of other ethnic groups predicts healthy physiological responses during intergroup interactions that are indicative of long-term health and resilience (Page-Gould et al., in press). Individuals with close intergroup contact respond cardiovascularly to stressful intergroup encounters in ways that predict lower rates of heart disease (Page-Gould, Mendes, & Major, under review). Merely thinking about a cross-group friend before intergroup interactions yields hormonal responses related to physiological thriving (Page-Gould et al., in press). Altogether, this work demonstrates the power of cross-group friendship for not only attenuating aversive physiological reactions to intergroup interactions, but also facilitating healthy, resilient responding in diverse societies like Canada.

Nonetheless, people mostly form friendships with ingroup members (Tatum, 1999; Tuch, Sigelman, & MacDonald, 1999). It was first noted in the 1970s that ethnic minority group members tend

to have higher rates of cross-group friendship than majority group members (de Souza Briggs, 2007; Marsden, 1987; 1988; St. John & Lewis, 1975; Tuch et al., 1999). Theorists across the domains of social psychology, sociology, developmental psychology, and public policy have tried to explain why that might be. The theory that came to the forefront was the “opportunity hypothesis,” which states that minority group members have more cross-group friends than majority group members because their minority status means that they have more opportunity to interact with members of the majority group (Blau, 1977, 1994; Hallinan & Smith, 1985; Hallinan & Williams, 1989). Although this widely-cited hypothesis is the most accepted explanation for greater cross-group friendship among minority group members, there is a reasonable level of dissent, as well (Hallinan & Smith, 1985; Joyner & Kao, 2000). The tenor of intergroup interactions may create a barrier to the formation of cross-group friendships (Page-Gould & Mendoza-Denton, in press; Vorauer & Sakamoto, 2006). In particular, affective components of intergroup interactions like intergroup anxiety (Stephan & Stephan, 1985) predict intergroup avoidance and withdrawal among majority group members (Dovidio, Kawakami, & Gaertner, 2002; Page-Gould et al., 2008; Page-Gould & Mendoza-Denton, in press; Plant & Devine, 2003). Majority group members are likely to experience physiological threat during intergroup interactions due to the stigmatized identity of their partner (Mendes, Blascovich, Lickel, & Hunter, 2002). Moreover, ethnically-inexperienced majority group members overestimate the degree of friendship interest they communicate to ethnic minority group members, leading to defensive distancing when they perceive that their friendship overtures have been rejected (Vorauer & Sakamoto, 2006). The strong relationship between these experience of intergroup anxiety and avoidance of outgroup members (Dovidio et al., 2002; Page-Gould et al., 2008; Plant & Devine, 2003) presents a compelling moderating factor that may limit the effects of opportunity on cross-group friendship formation.

This debate has been active for decades, yet developments have been fundamentally stunted by a lack of experimental research in the literature. The closest approximations to experimental tests of the opportunity hypothesis were two cross-sectional studies (Hallinan & Smith, 1985; Joyner & Kao, 2000). Hallinan and Smith examined rates of cross-group friendship among majority and minority groups members in classrooms that varied in diversity, and found that schools which were more diverse had greater rates of cross-group friendship among majority group members. Joyner and Kao took a similar approach by examining rates of cross-group friendship among multiple ethnic groups as a function of the proportion of outgroup members within a single school. They found that members of minority groups that were relatively very small had the most cross-group friendships, but that more sizeable minority groups exhibited a bias toward befriending members of their own ethnicity. This latter finding suggests that other factors interact with opportunity for intergroup contact to explain rates of cross-group friendship. Although these were important papers in the opportunity hypothesis literature, alternative explanations for the findings exist. Namely, the diversity of classrooms and schools were not manipulated by the researchers, and many factors likely affect why some school environments are more diverse than others. More diverse school districts tend to be more urban, have different socio-economic profiles, and represent the greater diversity of the neighbourhoods that they serve. As such, it is unclear if opportunity for friendship explained the findings. The opportunity hypothesis remains the most widely-cited theoretical explanation of the discrepancy in cross-group friendship between minority and majority members, and thus an experimental test of the opportunity hypothesis is long overdue.

The present research will employ three experimental paradigms to provide an answer to this long-standing question in intergroup relations. The proposed set of studies will systematically test the opportunity hypothesis while also considering the moderating role of intergroup anxiety and threat. Studies 1 and 2 examine the opportunity hypothesis and intergroup anxiety within the context of a social

perception experiment. Study 3 will examine physiological threat and correlates of behavioural approach in the autonomic nervous system while participants give a speech which they believe will be distributed to potential interaction partners. The proportion of ethnic outgroup members represented among the potential interaction partners will be systematically varied to examine participants' engagement as a function of opportunity to interact with outgroup members. Study 4 will manipulate states of physiological threat through the Trier Social Stress Test (Kirschbaum, Pirke, & Hellhammer, 1993) and observe participants' subsequent interest in potential interaction partners of different ethnic groups. Study 5 adapts a paradigm developed for romantic attraction research to the context of cross-group friendship to test these competing hypotheses in a context where the potential for forming real cross-group friendships exists. In concert, these five studies will form the basis of an experimental approach to a question that has permeated the cross-group friendship literature for more than 3 decades.

Methodology

Study 1

Study 1 will examine how the proportion of ethnic ingroup members represented among an array of people affects interest in cross-group friendship. Participants will be recruited for a computer-based study on social perception. They will read twelve short person descriptions of people of their own sex. In order to test the opportunity hypothesis, the proportion of person descriptions that are said to be of the participants' ethnic group will be systematically varied such that there will be 100% ingroup person descriptions, 75% ingroup descriptions, 50% ingroup description, 25% ingroup descriptions, and 0 ingroup descriptions. After reading each person description, participants will complete brief personality questionnaires about each person (Gosling, Rentfrow, & Swann, 2003). After reading all of the person descriptions, participants will be presented with the descriptions again and asked to rate their degree of friendship interest with each person.

Interest in cross-group friendship will be calculated in two ways: 1) the mean friendship interest expressed for ingroup members versus outgroup members; and, 2) a measure of "outgroup homiphily" (Laumann, Gagnon, Michael, & Michaels, 1994) that captures bias in friendship choices by examining interest in cross-group friendship weighted by opportunity for such friendship. In accord with the opportunity hypothesis, I hypothesize that interest in friendship with outgroup members will increase as the proportion of ingroup members represented among the person descriptions decreases. As such, Study 1 will provide the first experimental answer to the question of whether opportunity for cross-group friendship leads to its formation.

Study 2

Study 2 will use an anxious mood induction to investigate the moderating role of intergroup anxiety on opportunity for cross-group friendship. Half of the participants will be asked to write for 5 minutes about the stressor that is currently causing them the most anxiety, and the other half of participants will write about a neutral topic (i.e., the aesthetics of campus buildings as they were coming to the study). After this manipulation, the procedures of Study 2 will be identical to those of Study 1. Interest in friendship will be examined as a function of mood induction and opportunity for cross-group friendship. The primary hypothesis of Study 2 is that intergroup anxiety will moderate the effects of opportunity in explaining interest in friendship with outgroup members, such that participants who are in an anxious mood will show less interest in cross-group friendship formation than the neutral mood condition even when the opportunity for cross-group friendship is high.

Study 3

Study 3 will examine the relationship between physiological stress, approach motivation, and social engagement as a function of opportunity to interact with outgroup members. 150 participants will

be brought to the laboratory for what they believe is the first part of a two-session study. They will be told that we are interested in first impressions and friendship, and that the second session will involve a friendship-building interaction with another participant. Physiological sensors that measure autonomic nervous system responding will be applied (electrocardiograph, vascular impedance, blood pressure, and electrodermal measures), and the participants will sit for a 5-minute baseline period.

Participants will then complete a personal profile, after which they will read a series of profiles of other “participants.” They will be told that they will interact with one of the other participants represented in the profiles. Minority/majority status will be manipulated by presenting varying degrees of ethnic outgroup members among the array of potential interaction partners as in Studies 1 and 2. After reading all of these profiles, participants will be asked to give a videotaped speech that will later be shown to a few of their potential interaction partners, supposedly so the potential partners can choose whether they want to interact with the participant. Physiological responses during the speech will be continuously recorded to measure correlates of behavioural approach and avoidance (Pre-ejection period and respiratory sinus arrhythmia, respectively; Brenner, Beauchaine, & Sylvers, 2005) and patterns of physiological threat (cardiac output, blood pressure, vascular contractility, and total peripheral resistance; Blascovich, Mendes, Tomaka, Salomon, & Seery, 2003). The speeches will also be coded by independent judges for nonverbal cues of anxiety, engagement, and overall quality of the speech. Participants will then be debriefed and compensated, as there will be no second session.

The sample size requested is based on 5 opportunity conditions (same distributions of ingroup members as Studies 1 and 2) with 30 participants in each cell. The rule of thumb of 30 participants per cell is being used due to the typically large effect size found in opportunity hypothesis studies. Differences in rates of cross-group friendship among minority and majority group members are about 23% with a margin of error averaging 0.72% (Joyner & Kao, 2000). This large effect size should be easy to capture, and thus 30 participants per cell are requested for Study 3.

I hypothesize that approach motivation and physiological threat during the speech will vary as a function of the proportion of outgroup members that may view the speech. Specifically, I hypothesize that participants who are in the “majority” (i.e., have a greater proportion of ingroup members than outgroup members among their potential interaction partners) will exhibit physiological patterns of approach and challenge, less anxious behaviours, greater engagement, and higher quality speeches. For participants who believe their potential interaction partners are mostly outgroup members, I hypothesize greater physiological threat and avoidance. Study 3 will provide a nuanced look at how the relative opportunity for friendship with ingroup and outgroup members affects physiological patterns related to threat and behavioural approach.

Study 4

Study 4 will manipulate physiological threat and examine the impact of this state on interest in friendship with outgroup members. As with Study 3, participants will believe they are taking part in the first session of a 2-session study. Physiological sensors that measure autonomic nervous system responding will be applied upon arrival at the laboratory, and participants will sit for a 5-minute baseline. Saliva will also be collected to assess stress hormones, specifically cortisol and dehydroepiandrosterone-sulphate (DHEA-S) that have been shown to be reactive in social interactions (Page-Gould et al., in press). After the baseline period, participants will complete a personality profile. Next, participants will take part in the *Trier Social Stress Test (TSST)* (Kirschbaum et al., 1993), which consists of giving a speech and doing verbal math for 10 minutes in front of two evaluators. The evaluators are trained to give positive or negative feedback, depending on experimental condition. The negative feedback condition has been shown to reliably activate the hypothalamic pituitary adrenal cortical axis of the

endocrine system, whereas both conditions reliably engage the sympathetic nervous system (Kirschbaum et al., 1993). Thus the TSST is a reliable method of invoking physiological states of threat and challenge (Mendes et al., 2007). Participants will provide a second saliva sample at the end of the task to reflect hormonal responses at the start of the TSST.

After the stress manipulation, participants will be presented with an array of personality profiles which they believe are potential partners with whom they might undergo a friendship-building task. Like Study 3, these profiles will vary systematically in the proportion of ethnic outgroup members represented among the profiles to manipulate opportunity for cross-group friendship (4 Opportunity Conditions: all ingroup, 25% ingroup, 50% ingroup, and 75% ingroup). Participants will be asked to rate their interest in interacting with each of the potential partners in session 2. After this period, participants will sit for a final recovery period during which their autonomic responses will be continuously recorded, and recovery saliva sample will be collected.

The data will be analysed as a 2 (Threat: Positive or Negative Trier) x 4 (Opportunity Condition) factorial design with a total of 240 participants (30 per cell; see explanation of expected effect size for Study 3). According to the intergroup anxiety literature, participants should be less interested in interacting with ethnic outgroup members following a stressful social task (the negative condition of the TSST). It is expected that participants who are in the negative condition of the TSST and are presented with an array of potential interaction partners who are mostly outgroup members will be less able to recover physiologically from the stressful task. By directly manipulating both physiological stress and opportunity for friendship with people of different ethnicities, the relative importance of each factor in cross-group friendship formation can be simultaneously examined.

Study 5

Study 5 will test all of these variables during real social interactions. This study will draw upon recent methodological advances in the romantic attraction literature to experimentally test the opportunity hypothesis. The “Speed Dating” paradigm adapted for psychological research by Eli Finkel and colleagues (Finkel & Eastwick, 2008) will be applied to the context of platonic friendships, in what will be called “Speed Friending” in this proposal. First-year Arab- and European-Canadian students will be recruited for Speed Friending sessions where they will have the potential to make new friends on campus. Interested participants will be scheduled into same-sex groups of 12 where the ethnic compositions of each group are systematically varied into groups of: all the same ethnicity, 9 people of the same ethnicity, 6 people of the same ethnicity, or 3 people of the same ethnicity. Procedures will then follow the basic Speed Dating paradigm (Finkel, Eastwick, & Matthews, 2007), where participants rotate around a room for 5-minute “get to know you” social interactions until all participants have interacted with each other. 12 cameras will be positioned on the interaction stations such that only one participant can be seen in each video. These video tapes will be coded by independent judges for nonverbal behaviour such as body posture and anxious behaviours. At the end of the session, participants will be emailed a list of first names with headshots of the other participants in their Speed Friending session. Participants will say either “Yes” or “No” to whether they want to exchange contact information with each person they met. If both people say “Yes” to each other, then a web server will exchange their contact information. This “Yes”/“No” response will serve as the dependent variable of desire for friendship formation. The Ingroup session will be used as a comparison for base rates of “yes” responses in the absence of an intergroup component. This study will provide a systematic test of the Opportunity Hypothesis in a social setting where participants have the potential for future friendship.

A pre-survey will be administered over the internet at least 48 hours prior to the Speed Friending session to examine relevant individual differences. The pre-survey will be programmed using Inquisit 3.0

Web Edition, which allows for the simultaneous and secure collection of reaction time data over the internet. The particular measures of interest will be Big 5 Personality characteristics (John, Donahue, & Kentle, 1991), explicit measures of prejudice as captured through a “feeling thermometer” (Greenwald, Nosek, & Banaji, 2003), and reaction time tasks designed to measure perceptions of emotions in outgroup members (Hugenberg & Bodenhausen, 2003) and “implicit” or automatic prejudice (Greenwald et al., 2003). Each of these variables have been related to success of social interactions in general, and intergroup interactions in particular. As such, these factors will be examined as potential individual differences that might differentially predict friendship formation within the context of different levels of opportunity for cross-group friendship.

Study 5 is designed to test the Opportunity Hypothesis during actual social interactions. As such, the primary hypothesis of this study is that the proportion of ingroup members within a Speed Friending session will be inversely proportional to rates of cross-group friendship interest. I predict that nonverbal cues of anxiety during cross-ethnic interactions will moderate the effects of opportunity on cross-group friendship interest, such that participants displaying anxious behaviours will give lower proportions of “yes” responses to potential cross-group friends.

Analytic plan. The responses of participants from the same Speed Friending session are not assumed to be independent, and so the data will require the use of advanced statistics to account for the violation of assumptions of independent cases. The shared variance of participants in the same Speed Friending sessions can be handled by multilevel techniques that “nest” participants within their Speed Friending sessions. I have extensive experience with multilevel modelling that began with my B.Sc. in statistics (Reynolds, Helgeson, Seltman, Janicki, Page-Gould, & Wardle, 2006), and continued through my graduate and postdoctoral research (Page-Gould et al., 2008; Page-Gould et al., In Press).

Sample size and characteristics. 180 participants will be recruited for 15 12-person Speed Friending sessions. This sample size estimate is based on the samples of Speed Dating studies that have used between 60 to 156 participants (Eastwick & Finkel, 2008; Eastwick, Richeson, Son, & Finkel, 2009). As previously described, the large effect of opportunity for cross-group friendship should be easy to capture, and so the sample sizes of previous Speed Dating studies is used as a guide in selecting the current sample size. By restricting the sample to participants of European Canadian and Arab Canadian background -- two prevalent ethnic groups on the University of Toronto Scarborough campus -- the proportion of one’s ingroup will be reciprocal, thus maximizing the power to find effects. That is, a Speed Friending session that serves as the 25%-Ingroup condition for European Canadians will simultaneously serve as the 75%-Ingroup condition for Arab Canadians. Each ethnic group will need their own set of all-Ingroup sessions. As such, 15 sessions will provide 6 all-Ingroup sessions (3 all-Ingroup sessions per ethnic group), as well as 3 sessions of each of the 75%-Ingroup, 50%-Ingroup, and 25%-Ingroup conditions.

Communication of Results

The results will be submitted to high-impact, peer-reviewed journals (e.g., *Journal of Personality and Social Psychology* and *Psychological Science*), and integrated into refereed chapters in later years. In addition, results will be presented to the academic community through refereed conferences each year of study (e.g., *Society for Personality and Social Psychology*) as well as being communicated through invited colloquia. I will have the opportunity to share the results of the proposed research with the media through the University of Toronto media relations. Through this outlet, I will communicate results to policy makers as well as the general public. Due to the breadth of disciplines that draw on the opportunity hypothesis, this work has the potential for high impact as it will inform research on cross-group friendship in social psychology, developmental psychology, public policy, and sociology.

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A. Description of the Research Team

n/a

B. Description of Proposed Student Training Strategies

Assistance from graduate students and undergraduate research volunteers will be critical for this project. Studies 3 and 4 will involve training in psychophysiological theory and methods. Study 5 will involve recruiting and correctly scheduling participants for each Speed Friending session, ensuring that participants attend the sessions, debriefing and paying participants individually, and amalgamating data from the web pre-survey, Speed Friending paper surveys and behavioural data, and final contact information exchange data. The recruitment, attrition, and data management aspects of Study 5 is expected to require the greatest daily attention, and these aspects of the study will be primarily administered by graduate student project coordinators. Undergraduate students will assist in data collection across all 5 studies, as well as provide the behavioural video coding for Studies 3 and 5. All students will be encouraged to present findings at relevant research conferences.

Graduate students will serve as project coordinators, where they will be responsible for developing and organizing project materials and data, managing volunteer undergraduate researchers, and helping to administer research sessions. They will also be actively involved in data collection, amalgamation, and analysis. They will gain advanced training in psychophysiological theory, inference, data collection, and post-processing. This specialized training is becoming an increasingly attractive and sought-after skill for a researcher to possess. Their responsibilities as project coordinators will also give them an intimate knowledge of rigorous administration of large-scale research projects. I will also personally train them in multilevel modelling to analyse the data from the Speed Friending sessions. As a part of this training, they will be assigned readings related to multilevel modelling, and then will be trained on how to implement these techniques in SAS with the dataset for Study 5. Graduate students will also be encouraged to develop their own research questions and include measures within the methods of the proposed studies, which will form the basis for conference posters and journal articles where they will be the first author. This will not only help them develop skills in communicating research results, but also prepare them to be involved members of the academic community. In service of this goal, I am budgeting funds for them to travel to the Society for Personality and Social Psychology each year, which will be vital for establishing themselves within the field of social psychology. Graduate students will be strongly encouraged to attend and present findings at this conference every year, as well as take advantage of the conference's student programmes like the mentorship luncheon and professional development seminars.

Undergraduate student volunteers will be involved in data collection for all studies of the proposed project. The University of Toronto Scarborough has many students with high achievement goals who are interested in volunteering in research labs to prepare themselves for graduate school. Each semester, approximately 4 to 8 undergraduate volunteers will be accepted into the laboratory. They will be trained in ethical and rigorous data collection with human participants, and have the opportunity to be engaged in a variety of research-related tasks. For Studies 1 and 2, they will develop their skills working with human participants and administering traditional computer-based studies. For Studies 3 and 4, undergraduates will be trained in the rigorous application of physiological sensors that assess electrocardiograph, vascular impedance, blood pressure, and electrodermal responding. They will also be trained in the safe handling of saliva samples for Study 4 at Biosafety Level 1 by myself and certified by the University of Toronto Biosafety Officer. Undergraduate researchers will be the primary agents of participant recruitment for Study 5, as well as facilitate the efficient administration of each Speed Friending session. They will also be trained to detect nonverbal cues of anxiety and other nonverbal

behaviours as a part of their roles as behavioural coders for Studies 3 and 5. Undergraduate thesis students will be encouraged to present their findings at the University of Toronto Scarborough's annual undergraduate research conference.

All members of the research team will attend weekly lab meetings in which we will discuss the status of ongoing projects and review plans for the upcoming week. This meeting will also be used to discuss research papers and theoretical ideas that are relevant to the projects. Lab members will each lead one lab meeting per semester where they will be responsible for choosing a topic of interest, assigning a relevant paper, and facilitating discussion among the lab group. Weeks where no undergraduate or graduate lab members are presenting will be used to train lab members in advanced research and quantitative methods or discuss issues related to academic professional development. In addition to the project meetings, graduate students will participate in biweekly breakfast laboratory meetings held in conjunction with a social neuroscience laboratory where theoretical and empirical ideas will be discussed. Altogether, this project will provide graduate and undergraduate students with advanced research skills within the context of a stimulating and supportive lab environment.

C. Description of Previous and Ongoing Research Results

As a graduate student at the University of California Berkeley, I was awarded 4 highly competitive fellowships and awards. During my second year of graduate school, I was awarded both the National Science Foundation Graduate Fellowship (awarded to only 3 social psychologists in the US that year) and the University of California Berkeley Greater Good Science Center's Graduate Research Grant. Receiving this funding allowed me to focus my efforts on a longitudinal, experimental test of cross-group friendship. This project resulted in two publications in my field's top journals (*Journal of Personality and Social Psychology* and *Psychological Science*) -- with the single-study *JSPS* being a first-author publication -- as well as a refereed chapter. Since the publication of Page-Gould, Mendoza-Denton, and Tropp (2008) last November, this paper has already been cited at least 16 times. For this work, I was also awarded the Christina Maslach - Phillip Zimbardo Award for Outstanding Student Research in Social Psychology from the Western Psychological Association. My dissertation involved the development of another new experimental paradigm for studying cross-group friendship, and has since been accepted for publication in *JSPS*. My dissertation work was also awarded the Graduate Student Poster Award from the Society for Personality and Social Psychology.

For my postdoctoral research, I was awarded a prestigious Harvard Mind/Brain/Behaviour Postdoctoral Fellowship. Early on in my postdoctoral research, I examined the relationship between close intergroup contact and recovery from intergroup stressors across the autonomic nervous system and the neuroendocrine system, and the paper that arose from this project is currently under review. In my one year at Harvard, I collected a full dataset for my postdoctoral research that included psychophysiological, neuroendocrine, social cognitive, self-report, and behavioural data from a community sample of 129 same-race and cross-race dyads (258 total participants) from the greater Boston, MA, US area. I have recently completed post-processing the psychophysiological data, and have begun data analysis. Portions of these data have already yielded interesting results that I will be presenting in a refereed symposium at the 2010 meeting of the Society for Personality and Social Psychology. Moreover, between myself and my postdoctoral sponsor, we are working on 3 manuscripts from these data, 2 of which are being spear-headed by me as the first author. Also during my postdoctoral research period, I was invited to be the first author on a refereed chapter on cross-group friendship and social interaction for an edited volume on pathways to positive intergroup relations. That chapter is currently in press.

Since arriving at the University of Toronto Scarborough as a new faculty member this last July 2009, I have been primarily involved in setting up my laboratory in a way that will facilitate the research described here. The “Embodied Social Cognition Laboratory” has been built from the ground up for dyadic psychophysiological and traditional social cognitive paradigms. As such, the psychophysiological equipment required for Studies 3 and 4 have already been secured, including a super low -80°C freezer for storing saliva samples collected in Study 4.

I already have a growing and vibrant laboratory of undergraduate research volunteers and thesis students who are facilitating a speedy instantiation of a number of relevant research projects. In particular, I am examining the role of cross-group friendship in anxiety reduction in academic contexts, as well as the impact of self-serving biases on interpersonal processes like friendship interest in the context of intra-cultural and intercultural intergroup interactions. I expect that this research activity will lead to a number of papers and professional presentations over the next few years. In addition to analysing data and preparing 3 manuscripts related to my postdoctoral dataset, I am writing three manuscripts from my graduate school data, one of which is an invited, sole-authored methods chapter on friendship research in an edited volume on friendship. Given my background in research on cross-group friendship, psychophysiology, and intergroup interaction, I am eager to embark on the proposed research project, as I know it will inform and progress research across a number of disciplines.



Family name, Given name
Page-Gould, Elizabeth

Funds Requested from SSHRC

For each budget year, estimate as accurately as possible the research costs that you are asking SSHRC to fund through a grant. For each Personnel costs category, enter the number of individuals to be hired and specify the total amount required. For each of the other categories, enter the total amount required.

	Year 1		Year 2		Year 3	
Personnel costs	No.	Amount	No.	Amount	No.	Amount
Student salaries and benefits/Stipends						
Undergraduate						
Masters	1	7,661	1	7,661	0	0
Doctorate	0	0	1	9,850	2	19,700
Non-student salaries and benefits/Stipends						
Postdoctoral						
Other						
Travel and subsistence costs						
	Year 1		Year 2		Year 3	
Applicant/Team member(s)						
Canadian travel	1,220		1,220		1,220	
Foreign travel	1,700		1,700		1,700	
Students						
Canadian travel	0		0		0	
Foreign travel	1,100		2,200		2,200	
Other expenses						
Professional/Technical services						
Supplies	500		1,500		1,500	
Non-disposable equipment						
Computer hardware						
Other	0		5,613		7,555	
Other expenses (specify)						
Participant Payments	1,500		4,650		2,250	
Extra Participant Costs	0		7,650		450	
Total	13,681		42,044		36,575	

Personnel Costs

Student Salaries and Benefits/Stipends. I have budgeted funds to support two graduate students over the grant period, with 1 graduate student joining the project during the first year of the grant and another graduate student joining in the second year of the grant period. Each graduate student would start as a Masters Level student for one year, and then move on to a Doctoral Level student in subsequent years. The University of Toronto Scarborough Psychology Department requires professors to provide partial support (10 hours per week for 48 weeks) for graduate student funding. Masters students are paid \$14.00 per hour plus \$1.96 per hour in benefits, and Doctoral students are paid \$18.00 per hour plus \$2.52 per hour in benefits. In total, each year of Masters level support will require approximately \$7661, and each year of Doctoral student support requires about \$9850 in funding. I will require this level of research support due to the administrative demands of the proposed project.

Travel and Subsistence Costs

Applicant. I have budgeted for one Canadian (i.e., *Canadian Psychological Association*) and one international (e.g., *Society for Personality and Social Psychology* or *Association for Psychological Science*) conference per year to disseminate research results. I have budgeted for \$1220 per year for Canadian conferences and \$1700 per year for international conferences. The costs for the Canadian Psychological Association are based on estimates provided by departmental colleagues, and include airfare or trainfare (~\$350), hotel costs (~\$150/night for 4 nights), daily food expenses (\$50/day for 4 days), and conference registration fees (\$70). The budget for international travel is based on my past expenses at these conferences, which include airfare to the US (~\$650), hotel costs (~\$150/night for 4 nights), daily food expenses (\$50/day for 4 days), and conference registration fees (~\$250).

Students. An integral component of preparing our graduate students to be leaders in the field will be a regular attendance at the *Society for Personality and Social Psychology's* annual meeting. Student expenses for this international conference will be similar to applicant expenses, except the conference registration fee is approximately \$100 less expensive. Anticipated costs for each graduate student over 4 days include airfare (~\$650), lodging (~\$150/night), food expenses (~\$50/day), and registration (~\$150). I will encourage students to apply for travel awards and other conference funding for the prestige that comes with these awards. I anticipate each student will secure \$500 per year toward conference funding, and have requested a total of \$1100 per year for each student to attend this international conference.

Other Expenses

Supplies. The office supplies required for the proposed research will be minimal in the first year of the project, as Studies 1 and 2 can be run entirely on computers. My research lab already has the psychophysiological and computer equipment required for studies 1 - 4. \$500 is being requested for the first year to cover costs associated with photocopying consent/debriefing materials and disposable psychophysiological supplies for Study 3 (i.e., spot and band electrodes). Study 4 will require the purchase of saliva vials, and Study 5 will require printed materials for data collection, the printing of colourful recruitment posters and flyers, as well as basic office supplies. I am requesting \$1500 to cover Study 4 and 5 supplies for the latter 2 years of the grant period.

Non-disposable Equipment

Other. My lab is a full dyadic psychophysiological laboratory, and so no equipment is required for studies 1 - 4. There are 4 components of the requested non-disposable equipment that will all be used to support Study 5. In year 2 of the grant period, 12 Canon DC310 camcorders (\$250 each) will be purchased to capture video for behavioural coding. Twelve camcorders are needed so that front-view, full-body videos of each participant in the Speed Friending sessions can be captured for behavioural coding. The Canon DC310 is a high-definition video camera known for its superior image quality, and

yet the DC310 is at least \$100 less than the high definition camcorders manufactured by Sony and Panasonic. In addition, 12 Canon 53" lightweight tripods (\$23.99 each) will be purchased so that the camcorders can be set-up prior to the start of the Speed Friending sessions. These tripods are ideal due to their portability and height, as well as their competitive price.

Also in year 2, a Web License for Millisecond Inquisit software (\$3295) will be purchased to administer the online pre-experiment survey for Study 5. Inquisit is reaction time software that is reliable and widely-used. Inquisit is the only reaction time software in the industry that provides an option to collect reaction time data over the internet. As Millisecond provides server and web administration in the cost of the web license, it is not necessary to purchase an in-house web server, which enhances data security and saves money on hardware and server administration costs. Millisecond has agreed to provide a \$1000 in-kind contribution for this license, so the total funds requested are \$2295.

In the final year of the grant period, one license of the Noldus Observer XT video coding software (\$15,050.00) will be purchased. Noldus Observer XT is an advanced behavioural coding software package that allows researchers to prepare coding projects that systematize the coding process through per-project coding schemes and data input interfaces and allows for advanced video editing and coding features. There is no other software package like it on the market. Noldus has agreed to provide an in-kind contribution of \$1881.25 toward the purchase of this license in addition to the educational discount of \$5643.75, so the total funds requested for this software package is \$7525.00.

Study 5 will require a computer script programmed by myself to send reminder emails to the participants and administer the final exchange of contact information between participants. This script will require a hosting service, NearlyFreeSpeech.net. NearlyFreeSpeech allows users to run scripts on a secure, administered server. NearlyFreeSpeech bases costs on bandwidth usage instead of monthly fees, making it the most affordable hosting service. Based on my past experience using NearlyFreeSpeech.net to administer research projects, I estimate that \$30 per year will be required in bandwidth costs.

Other Expenses

Participant Payments. Studies 1 - 4 will recruit participants through the Psychology Department's Introductory Psychology Participation Pool, and so those participants will be compensated with course credit. However, participants in Studies 3 and 4 will be taking part in a psychophysiological study (which typically pays \$20 per hour), and they will believe they are coming back for a second session. As such, I have allotted an additional \$10 per participant in addition to the course credit for the mildly invasive procedures of the study. In total, I am requesting \$10 per participant in funds for 150 participants in Study 3 (year 1: \$1500) and 240 participants in Study 4 (year 2: \$2400). The procedures of Study 5 are longitudinal and involved, so participants must be paid in order to successfully recruit participants and minimize attrition. Participants will be offered \$5 for the pre-survey (based on a 1/2-hour commitment), \$15 for the Speed Friending session (1.5-hour commitment), and \$5 plus a bonus gift certificate (see next section) for completion of the study. In total, there will be 180 participants over the course of years 2 and 3, with each participant being paid \$25 for their participation. As such, \$2250 is requested per year to cover participant payments.

Extra Participant Costs. \$30 per Study 4 participant (3 samples per participant with 2 hormones each at \$5/hormone/sample) is required to assay the saliva samples in Study 4 for cortisol and DHEA-S, for a total of \$7200 in year 2. In addition, based on my past experience with longitudinal research, it is important to provide a bonus for completing all aspects of the study in order to minimize participant attrition. Using this method, the most attrition I have had in past studies was a rate of 6% for a 5.5-week study, which is very low for a longitudinal paradigm. 180 Study 5 participants will be offered \$5 gift certificates to Tim Hortons for completing the study, which totals \$450 in years 2 and 3.



Funds from Other Sources

You must include all other sources of funding for the proposed research. Indicate whether these funds have been confirmed or not. Where applicable, include (a) the partners' material contributions (e.g. cash and in-kind), and (b) funds you have requested from other sources for proposed research related to this application.

Full organization name Contribution type	Confirmed	Year 1	Year 2	Year 3	
Millisecond Software In Kind	<input checked="" type="checkbox"/>	0	1,000	0	
Noldus Information Technology In Kind	<input checked="" type="checkbox"/>	0	0	1,881	
	<input type="checkbox"/>				
	<input type="checkbox"/>				
	<input type="checkbox"/>				
	<input type="checkbox"/>				
	<input type="checkbox"/>				
	<input type="checkbox"/>				
	<input type="checkbox"/>				
	<input type="checkbox"/>				
Total funds from other sources		0	1,000	1,881	

Personal information will be stored in the Personal Information Bank for the appropriate program.

Application WEB



Family name, Given name

Page-Gould, Elizabeth

Suggested Assessors - List up to 3 Canadian or foreign specialists whom SSHRC may ask to assess your proposal. List keywords that best describe the assessor's areas of research expertise. Please refer to the Suggested Assessors section of the detailed instructions for more information on conflicts of interest.

Family name Kawakami		Given name Kerry		Initials KK	Title Professor
Org. code	Full organization name York University		Keywords intergroup interaction; social cognition; implicit prejudice; stereotyping; social categorization		
Department/Division name Psychology			Address 324 BSB York University 4700 Keele Street		
	Country code	Area code	Number	Extension	City/Municipality
Telephone number	1	416	736-2100	40563	Toronto
Fax number	1	416	736-5814		ON
E-mail kawakami@yorku.ca			Postal/Zip code M3J1P3		
Country CANADA					
Family name Vorauer		Given name Jacque D		Initials JDV	Title Professor
Org. code	Full organization name University of Manitoba		Keywords intergroup interaction; metaperceptions; barriers to cross-group friendship; social interaction		
Department/Division name Psychology			Address Department of Psychology University of Manitoba		
	Country code	Area code	Number	Extension	City/Municipality
Telephone number	1	204	474-8250		Winnipeg
Fax number	1	204	474-7599		MB
E-mail vorauer@cc.umanitoba.ca			Postal/Zip code R3T2N2		
Country CANADA					
Family name Finkel		Given name Eli J.		Initials EJF	Title Professor
Org. code	Full organization name Northwestern University		Keywords speed dating methods; initial attraction; self-regulation; romantic relationships		
Department/Division name Psychology			Address Northwestern University 2029 Sheridan Road Swift Hall, Room 102		
	Country code	Area code	Number	Extension	City/Municipality
Telephone number	1	847	491-3212		Evanston
Fax number	1	847	491-7859		IL
E-mail finkel@northwestern.edu			Postal/Zip code 602082710		
Country UNITED STATES					

Personal information will be stored in the Personal Information Bank for the appropriate program.

Application WEB



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Internal use	CID (if known)
954517	

Identification
Only the information in the Name section will be made available to selection committee members and external assessors. Citizenship and Statistical and Administrative Information will be used by SSHRC for administrative and statistical purposes only. Filling out the statistical and Administrative Information section is optional.

Name			
Family name	Given name	Initials	Title
Page-Gould	Elizabeth	EP-G	Professor

Citizenship - Applicants and co-applicants must indicate their citizenship status by checking and answering the applicable questions.			
Citizenship status	<input type="radio"/> Canadian	<input type="radio"/> Permanent resident since (yyyy/mm/dd)	<input checked="" type="radio"/> Other (country)
			Have you applied for permanent residency?
		<u>UNITED STATES</u>	<input checked="" type="radio"/> Yes <input type="radio"/> No

Statistical and Administrative Information				
Birth year	Gender	Permanent postal code in Canada (i.e. K2P1G4)	Correspondence language	Previous contact with SSHRC? (i.e. applicant, assessor, etc.)
1980	<input checked="" type="radio"/> F <input type="radio"/> M	M1C1A4	<input checked="" type="radio"/> English <input type="radio"/> French	<input checked="" type="radio"/> Yes <input type="radio"/> No
Full name used during previous contact, if different from above				

Contact Information							
The following information will help us to contact you more rapidly. Secondary information will not be released by SSHRC without your express consent.							
Primary telephone number				Secondary telephone number			
Country code	Area code	Number	Extension	Country code	Area code	Number	Extension
1	416	2082795					
Primary fax number				Secondary fax number			
Country code	Area code	Number	Extension	Country code	Area code	Number	Extension
1	416	2877642					
Primary E-mail <u>elizabeth.page-gould@utsc.utoronto.ca</u>							
Secondary E-mail							

Signature	
I certify that the information provided is accurate and complete; that I have read and understood the references to the Access to Information and Privacy Acts, and that I consent to the uses and disclosures described.	
Signature	Date

Personal information will be stored in the Personal Information Bank for the appropriate program.

Checked

Web CV

2009/10/12



Do not photocopy this page.

Family name, Given name

Page-Gould, Elizabeth

Research Expertise (optional)

The information provided in this section refers to your own research expertise, not to a research proposal. Filling out the following 4 sections is optional. This page will not be seen by selection committee members and external assessors. This section will be used for planning and evaluating programs, producing statistics, and selecting external assessors and committee members.

Areas of Research

Indicate and rank up to 3 areas of research that best correspond to your research interests as well as areas where your research interests would apply. Duplicate entries are not permitted.

Rank	Code	Area
1	300	Multiculturalism and ethnic studies
2	220	Health
3	360	Science and technology

Temporal Periods

If applicable, indicate up to 2 historical periods covered by your research interests.

From				To			
Year				Year			
		BC	AD			BC	AD
_____		<input type="radio"/>	<input type="radio"/>	_____		<input type="radio"/>	<input type="radio"/>
_____		<input type="radio"/>	<input type="radio"/>	_____		<input type="radio"/>	<input type="radio"/>

Geographical Regions

If applicable, indicate and rank up to 3 geographical regions covered by your research interests. Duplicate entries are not permitted.

Rank	Code	Region
1	0000	Not subject to geographical classification
2		
3		

Countries

If applicable, indicate and rank up to 5 countries covered by your research interests. Duplicate entries are not permitted.

Rank	Code	Countries	Prov./ State
1	1100	CANADA	
2	1200	UNITED STATES	
3			
4			
5			



Family name, Given name

Page-Gould, Elizabeth

Curriculum Vitae

Language Proficiency

	Read	Write	Speak	Comprehend aurally	Other languages
English	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
French	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Work Experience

List the positions, academic and non-academic, you have held beginning with the current position and all previous positions in reverse chronological order, based on the start year.

Current position				Start year (yyyy)	
Assistant Professor				2009	
Org. code	Full organization name				
1350911	University of Toronto				
Department/Division name					
Psychology					
Position type	<input type="radio"/> Tenured	<input type="radio"/> Non-tenure	Employment status	<input checked="" type="radio"/> Full-time	<input type="radio"/> Part-time
	<input checked="" type="radio"/> Tenure-track	<input type="radio"/> Non-academic		<input type="radio"/> Non-salaried	<input type="radio"/> Leave of absence
Position			Start year (yyyy)	End year (yyyy)	
Postdoctoral fellow or associate			2008	2009	
Org. code	Full organization name				
9927102	Harvard University				
Department/Division name					
Psychology					
Position			Start year (yyyy)	End year (yyyy)	
Org. code	Full organization name				
Department/division name					
Position			Start year (yyyy)	End year (yyyy)	
Org. code	Full organization name				
Department/Division name					

Personal information will be stored in the Personal Information Bank for the appropriate program.

Web CV



Academic Background				
List up to 5 degrees, beginning with the highest degree first and all others in reverse chronological order, based on the start date.				
Degree type	Degree name	Start date (yyyy/mm)	Expected date (yyyy/mm)	Awarded date (yyyy/mm)
Doctorate		2002/08	/	2008/05
Disc. code	Discipline	Did SSHRC support enable you to get this degree?		
63024	Social Psychology	<input type="radio"/> Yes <input checked="" type="radio"/> No		
Org. code	Organization			
9983101	University of California, Berkeley			
Country UNITED STATES				
Degree type	Degree name	Start date (yyyy/mm)	Expected date (yyyy/mm)	Awarded date (yyyy/mm)
BA Hon.		1998/08	/	2002/05
Disc. code	Discipline	Did SSHRC support enable you to get this degree?		
51299	Statistics	<input type="radio"/> Yes <input checked="" type="radio"/> No		
Org. code	Organization			
9933112	Carnegie-Mellon University			
Country UNITED STATES				
Degree type	Degree name	Start date (yyyy/mm)	Expected date (yyyy/mm)	Awarded date (yyyy/mm)
BA Hon.		1998/08	/	2002/05
Disc. code	Discipline	Did SSHRC support enable you to get this degree?		
63000	Psychology	<input type="radio"/> Yes <input checked="" type="radio"/> No		
Org. code	Organization			
9933112	Carnegie-Mellon University			
Country UNITED STATES				
Degree type	Degree name	Start date (yyyy/mm)	Expected date (yyyy/mm)	Awarded date (yyyy/mm)
		/	/	/
Disc. code	Discipline	Did SSHRC support enable you to get this degree?		
		<input type="radio"/> Yes <input type="radio"/> No		
Org. code	Organization			
Country				
Degree type	Degree name	Start date (yyyy/mm)	Expected date (yyyy/mm)	Awarded date (yyyy/mm)
		/	/	/
Disc. code	Discipline	Did SSHRC support enable you to get this degree?		
		<input type="radio"/> Yes <input type="radio"/> No		
Org. code	Organization			
Country				



Family name, Given name
Page-Gould, Elizabeth

Credentials

List up to 6 licences, professional designations, awards and distinctions you have received and feel would be the most pertinent to the adjudication of your application. List them in reverse chronological order, based on the year awarded.

Category	Name	Country	Year awarded (yyyy)
Postdoctoral Fellowship	Harvard Mind/Brain/Behavior Postdoctoral Fellow	UNITED STATES	2008
Academic Prize	SPSP Graduate Poster Award	UNITED STATES	2008
Academic Prize	Maslach-Zimbardo Award for Outstanding Research	UNITED STATES	2006
Fellowship	Greater Good Science Center Graduate Fellowship	UNITED STATES	2004
Fellowship	National Science Foundation Graduate Fellowship	UNITED STATES	2004
Academic Prize	Phi Beta Kappa, Early Inductee	UNITED STATES	2001

Research Expertise

The information provided in this section refers to your own research expertise, not to a research proposal.

Keywords

List keywords that best describe your areas of research expertise. Separate keywords with a semicolon.

cross-group friendship; psychophysiology; intergroup relations; social cognition; social interaction; quantitative methods

Disciplines

Indicate and rank up to 5 disciplines that best correspond to your research interests. Duplicate entries are not permitted.

Rank	Code	Discipline	If Other, specify
1	63024	Social Psychology	
2	63099	Other Psychology	Psychophysiology
3			
4			
5			



Family name, Given name
Page-Gould, Elizabeth

Funded Research

List up to 8 grants or contracts you have received from SSHRC or other sources. List them in reverse chronological order, based on the year awarded. If you are not the applicant (principal investigator), specify that persons' name.

Org. code 1	Full name of funding organization Harvard Mind/Brain/Behavior Initiative	Year awarded (yyyy) 2008	Total amount (CAN\$) \$3,000
Role Applicant		Completion status <input checked="" type="checkbox"/> Complete	
Project title Understanding the Intergroup Benefits of Cross-group Friendship			
Applicant's family name		Applicant's given name	
Applicant's family name Mendoza-Denton		Applicant's given name Rodolfo	
Initials RM-D			
Org. code 1	Full name of funding organization Hellman Family Faculty Fund	Year awarded (yyyy) 2006	Total amount (CAN\$) \$35,000
Role Student		Completion status <input checked="" type="checkbox"/> Complete	
Project title Physiological approaches to overcoming intergroup conflict			
Applicant's family name Mendoza-Denton		Applicant's given name Rodolfo	
Initials RM-D			
Org. code 1	Full name of funding organization Greater Good Science Center	Year awarded (yyyy) 2004	Total amount (CAN\$) \$3,000
Role Applicant		Completion status <input checked="" type="checkbox"/> Complete	
Project title Friendship & Adjustment to College			
Applicant's family name		Applicant's given name	
Applicant's family name Mendoza-Denton		Applicant's given name Rodolfo	
Initials RM-D			
Org. code 1	Full name of funding organization Greater Good Science Center	Year awarded (yyyy) 2003	Total amount (CAN\$) \$35,000
Role Student		Completion status <input checked="" type="checkbox"/> Complete	
Project title Assessing the benefits of cross-race friendships			
Applicant's family name Mendoza-Denton		Applicant's given name Rodolfo	
Initials RM-D			



Family name, Given name
Page-Gould, Elizabeth

Funded Research (cont'd)

Org. code 1	Full name of funding organization Carnegie Mellon Small Undergraduate Research Grants	Year awarded (yyyy) 2001	Total amount (CAN\$) \$500
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Role Applicant	Completion status <input checked="" type="checkbox"/> Complete
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Project title Views of Self and Others

Applicant's family name	Applicant's given name	Initials
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Org. code 1	Full name of funding organization Carnegie Mellon Small Undergraduate Research Grants	Year awarded (yyyy) 2000	Total amount (CAN\$) \$1,500
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Role Applicant	Completion status <input checked="" type="checkbox"/> Complete
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Project title The Carnegie Mellon Roommate Study

Applicant's family name	Applicant's given name	Initials
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Org. code	Full name of funding organization	Year awarded (yyyy)	Total amount (CAN\$)
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Role	Completion status <input type="checkbox"/> Complete
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Project title

Applicant's family name	Applicant's given name	Initials
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Org. code	Full name of funding organization	Year awarded (yyyy)	Total amount (CAN\$)
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Role	Completion status <input type="checkbox"/> Complete
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Project title

Applicant's family name	Applicant's given name	Initials
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1. RESEARCH CONTRIBUTIONS OVER THE LAST 6 YEARS

Refereed Contributions:

R: Page-Gould, E., Mendoza-Denton, R., & Tropp, L. R. (2008). With a little help from my cross-group friend: Reducing anxiety in intergroup contexts through cross-group friendship. *Journal of Personality and Social Psychology*, *95*, 1080 - 1094.

R: Mendoza-Denton, R., & Page-Gould, E. (2008). Can cross-group friendships influence minority students' well being at historically White universities? *Psychological Science*, *19*, 933 - 939.

Role as Coauthor: This is a second paper to come out of the Page-Gould, Mendoza-Denton, & Tropp (2008) study cited above. Study 2 of this paper examines different outcomes (academic) than Page-Gould et al., (2008), and Study 1 was collected entirely by Rodolfo Mendoza-Denton while he was a graduate student at Columbia. For this paper, I reanalysed the Columbia data and compared it to academic outcomes measured in the Page-Gould et al (2008) study, which was my second-year project (equivalent of a masters thesis). This was a true collaboration in which myself and Dr. Mendoza-Denton jointly developed the theory, reanalysed the data from Studies 1 and 2 together, and co-wrote the manuscript.

Page-Gould, E. (2008). Understanding the intergroup benefits of cross-group friendship. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, *69 (9-B)*, 5834.

R: Mendoza-Denton, R., Page-Gould, E., & Pietrzak, J. (2006). Mechanisms for coping with status-based rejection expectations. In S. Levin and C. van Laar (Eds.), *Stigma and Group Inequality: Social Psychological Perspectives*. Mahwah, NJ: Lawrence Erlbaum Associates.

Role as Coauthor: This was primarily a theoretical piece, although some early data from Page-Gould et al (2008) was reported. As such, my role on this project was in the writing of the chapter, primarily the section on cross-group friendship, and preliminary data analysis.

R: Reynolds, K. A., Helgeson, V. S., Seltman, H., Janicki, D., Page-Gould, E., & Wardle, M. (2006). Impact of interpersonal conflict on individuals high in unmitigated communion. *Journal of Applied Social Psychology*, *36*, 1595 - 1616.

Role as Coauthor: I was involved in study design, data collection, and data analysis for this paper. My work was primarily done under the supervision of my undergraduate research supervisor in psychology, Dr. Vicki Helgeson, and my undergraduate mentor in statistics, Howard Seltman. This paper was my first use of diary methods and multilevel modelling of diary data.

Other Refereed Contributions:

Page-Gould, E. (2010, January). Physiological threat while cooperating with low-status interaction partners. In N. Maisel & P. Piff (Chairs), *Social Psychology for an Economic Recession: Examining the Effects of Socioeconomic Status on Psychological Processes*. Symposium to be conducted at the annual scientific meeting of the Society for Personality and Social Psychology, Las Vegas, NV, US.

Page-Gould, E. (2009, October). *Effects of cross-group friendship on intergroup interaction*. York University, Social Psychology Brown Bag Series.

Mendoza-Denton, R., & Page-Gould, E. (2009, May). Hormonal correlates of stress in cross-group dyads. In S. S. M. Townsend & B. Major (Chairs), *Getting Under the Skin: How Psychophysiology is Advancing Understanding of Intergroup Threat*. Symposium conducted at the annual scientific meeting of the Association for Psychological Science, San Francisco, CA, US.

Page-Gould, E. (2009, February). *When "Them" Becomes "Us": Unpacking the Benefits of Cross-group Friendship*. University of Massachusetts Amherst, Social Psychology Speaker Series.

Mendoza-Denton, R., & Page-Gould, E. (2008, February). Implications of the interpersonal environment for academic outcomes. In R. Mallett (Chair), *Overcoming the Obstacles of Racial Prejudice*. Symposium conducted at the annual scientific meeting of the Society for Personality and Social Psychology, Albuquerque, NM, US.

Page-Gould, E. (2007, November). *Causal effects of cross-group friendship: Understanding the intergroup benefits of closeness across group boundaries*. University of California Berkeley, Institute of Personality and Social Research.

Mendoza-Denton, R., & Page-Gould, E. (2007, August). Interpersonal and intergroup impacts of intergroup friendship. In H. Smith & R. Mendoza-Denton (Chairs), *Intergroup contact, relational justice, and historically under-represented students' educational engagement*. Paper presented at the annual convention of the American Psychological Association, San Francisco, CA, US.

Mendoza-Denton, R., Page-Gould, E., & Tropp, L. R. (2007, January). Stress-reducing effects of cross-race friendship. In T. Saguay & L. R. Tropp (Chairs), *Intergroup Relations in the Eye of the Beholder*. Symposium conducted at the annual scientific meeting of the Society for Personality and Social Psychology, Memphis, TN, US.

Page-Gould, E., Mendoza-Denton, R., & Tropp, L. R. (2006, June). Repeated cross-race contact attenuates anxiety in cross-race interaction. In L. R. Tropp (Chair), *Anxiety and Trust in Intergroup Relationships*. Symposium conducted at the biennial scientific meeting of the Society for the Psychological Study of Social Issues, Long Beach, CA, US.

Page-Gould, E. (2006). Repeated cross-race contact attenuates anxiety in cross-race interaction. Paper presented at the annual meeting of the Berkeley-Stanford Graduate Conference.

Forthcoming Contributions:

R: Page-Gould, E., Mendoza-Denton, R., Alegre, J. M., & Siy, J. O. (In Press). Understanding the impact of cross-group friendship on interactions with novel outgroup members. *Journal of Personality and Social Psychology*.

R: Page-Gould, E., & Mendoza-Denton, R. (In Press). Friendship and social interaction with outgroup members. In L. R. Tropp and R. Mallett (Eds.), *Beyond Prejudice Reduction: Pathways to Positive Intergroup Relations*. Washington, DC, US: APA Press.

R: Aceves, M. J., Hinshaw, S. P., Mendoza-Denton, R., & Page-Gould, E. (In Press). Seek help from teachers or fight back? Student perceptions of teachers' actions during conflicts and responses to peer victimization. *Journal of Youth and Adolescence*.

Role as Coauthor: This paper is the first to come from a collaboration between myself and the coauthors. I was involved in every step of the research process. Specifically, I was involved in the theory development, study design, study implementation, data aggregation, data analysis and interpretation, and writing process for this manuscript. I am the last author simply because this piece of the overall project is

not my primary research area. Other publications are forthcoming from this project where I will be first author.

R: Page-Gould, E., Mendes, W. B., & Major, B. (2009). *Benefits of intergroup contact*. Manuscript submitted for publication.

R: Page-Gould, E. (2009). *Modern methods in friendship research: From covariation to experimentation*. Invited chapter to appear in F. Columbus (Ed.), *Friendships: Types, cultural variations, and psychological and social aspects*. Manuscript submitted for editorial review.

R: Aceves, M. J., Mendoza-Denton, R., Hinshaw, S. P., & Page-Gould, E. (2009). *Teacher responses to victimization influence trust in school authority and academic achievement*. Manuscript submitted for publication.

Role as Coauthor: Related to Aceves et al. (In Press), this was a large collaboration that I am currently developing with my colleagues. I was involved in the theoretical development, study design, data collection, data analysis and interpretation, and writing that went into this article.

2. OTHER RESEARCH CONTRIBUTIONS

Although I am relatively early in my career, I have been asked to serve as a reviewer for a number of high-profile journals and scientific granting organizations. I have been an ad-hoc reviewer for *Psychological Science* (2009), *Personality and Social Psychology Bulletin* (2009), *International Journal of Psychophysiology* (2009), *European Journal of Social Psychology* (2009), *Social Science and Humanities Research Council of Canada* (2009), *US National Science Foundation* (2009), *Journal of Experimental Social Psychology* (2008, 2009), *Group Processes and Intergroup Relations* (2008, 2009), *Basic and Applied Social Psychology* (2007, 2008, 2009), *South African National Research Foundation* (2007), *Journal of Social and Personal Relationships* (2007), and the *Society for the Psychological Study of Social Issues* 2006 meeting submissions. I have also served as a member of the *Society for the Psychological Study of Social Issues Website Committee* since 2008.

3. MOST SIGNIFICANT CAREER RESEARCH CONTRIBUTIONS

1. Page-Gould, E., Mendoza-Denton, R., & Tropp, L. R. (2008). With a little help from my cross-group friend: Reducing anxiety in intergroup contexts through cross-group friendship. *Journal of Personality and Social Psychology*, *95*, 1080 - 1094.

2. Mendoza-Denton, R., & Page-Gould, E. (2008). Can cross-group friendships influence minority students' well being at historically White universities? *Psychological Science*, *19*, 933 - 939.

3. Page-Gould, E., Mendoza-Denton, R., Alegre, J. M., & Siy, J. O. (In Press). Understanding the impact of cross-group friendship on interactions with novel outgroup members. *Journal of Personality and Social Psychology*.

The three studies listed above comprised some of the first experimental tests of the long-standing hypothesis that cross-group friendship (e.g., friendship between people of different racial backgrounds) would lead to improved intergroup experiences. They also represent some of the first work to examine psychophysiological responses to intergroup interaction using dyadic paradigms (i.e., two real participants). The impact of this research on the field is evidenced through the fact that the Page-Gould et

al. (2008) study has already been cited at least 16 times since its publication last November, and the Mendoza-Denton & Page-Gould (2008) paper has been cited 5 times since its publication last November.

4. Mendoza-Denton, R., Page-Gould, E., & Pietrzak, J. (2006). Mechanisms for coping with status-based rejection expectations. In S. Levin and C. van Laar (Eds.), *Stigma and Group Inequality: Social Psychological Perspectives*. Mahwah, NJ: Lawrence Erlbaum Associates.

This chapter was the theoretical chapter that gave rise to Page-Gould et al. (2008), Mendoza-Denton & Page-Gould (2008), and Page-Gould et al. (In Press). It has been cited 9 times since its publication.

4. CAREER INTERRUPTIONS AND SPECIAL CIRCUMSTANCES

This section is being completed because I am a new scholar. I received my Ph.D. from the University of California, Berkeley in 2008, completed a postdoctoral fellowship at Harvard University from 2008 - 2009, and have just joined the faculty at the University of Toronto Scarborough as an Assistant Professor in July of 2009. As such, my publication list is smaller than more seasoned scholars. All the same, my publications are well cited given their recency, and my early recognition in the field is evidenced by being invited to submit 3 edited chapters (2 first author), review for 8 journals and 3 research granting institutions (including SSHRC and the US National Science Foundation), and being invited to give 3 colloquia at institutions in both the US and Canada. I was also the recipient of competitive fellowships including the National Science Foundation Graduate Fellowship and Harvard Mind/Brain/Behaviour Postdoctoral Fellowship, and have won recognition for my research through the Christina Maslach - Phillip Zimbardo Outstanding Student Research in Social Psychology Award and the Society for Personality and Social Psychology's Graduate Student Poster Award.

5. CONTRIBUTIONS TO TRAINING

I began my assistant professorship in July 2009, and so I have not had the opportunity to be the primary mentor for graduate students. However, my promise in this area is evidenced through the success of the undergraduate students I mentored directly while I was a graduate student. While at the University of California, Berkeley (UC Berkeley), I had the pleasure of being the close mentor for 3 honours thesis students, because undergraduates work with graduate students on their honour theses instead of with professors. Out of the 3 undergraduate students I mentored, two of them, Jan Marie Alegre and John Oliver Siy, are now graduate students at Tier 1 research universities (Princeton University and the University of Washington, respectively), and were both awarded the National Science Foundation (NSF) Graduate Fellowship this past spring. The NSF Graduate Fellowship is a highly competitive fellowship awarded to the top graduate students in science across the US. Each year, less than 20 psychology graduate students receive the NSF fellowship, so it is outstanding that both of my students received this fellowship in their first year of graduate school. These two mentees are also coauthors on Page-Gould, Mendoza-Denton, Alegre, & Siy (In Press). I was also given a commendation by the Undergraduate Research Office at UC Berkeley for my mentorship of John O. Siy.

I also directly supervised 12 undergraduate research assistants over the course of my graduate career. Of these 12 students, 4 students went on to graduate school in psychology, 5 are currently completing their medical doctorates at prestigious universities, 1 student is a paid research assistant at the University of California San Francisco and is applying to graduate schools in psychology this year, and the remaining 2 are currently in East Asia engaging in service work in underprivileged areas. Finally, I led a psychophysiological reading group and lab practicum for my graduate lab during my last year of graduate school.