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## Discrimination is in the Eye of the Beholder: Perception of Discrimination and Microaggressions

Sarah E. Moroz, *The University of Western Ontario*

Supervisor: Dr. Lorne Campbell, *The University of Western Ontario*

A thesis submitted in partial fulfillment of the requirements for the Master of Science degree in  
Psychology

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DISCRIMINATION IS IN THE EYE OF THE BEHOLDER: PERCEPTION OF  
DISCRIMINATION AND MICROAGGRESSIONS

(Thesis Format: Monograph)

by

Sarah Moroz

Graduate Program in Psychology

A thesis submitted in partial fulfillment  
of the requirements for the degree of  
Master of Science

School of Graduate and Postdoctoral Studies  
University of Western Ontario  
London, Ontario, Canada

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## Abstract

The present work sought to examine the perception of discrimination toward sexual and romantic minorities. In particular, microaggressions (subtle messages of hostility based on group membership) were examined as a potential factor in varying reports of discrimination frequency. Findings showed that both minority and majority group members agreed that the minority group experienced more discrimination in their day-to-day lives than did the majority group; the minority and majority groups also showed agreement regarding the frequency of this day-to-day discrimination. An indirect model of influence was found, in which frequency ratings of discrimination toward the minority group were impacted by frequency ratings of discrimination toward the self; frequency ratings of discrimination toward the self were predicted by sensitivity toward microaggressions, which in turn was predicted by minority vs. majority group status. These findings represent a first step in understanding the role of perception of microaggressions in the identification of discrimination.

## Keywords

Discrimination, microaggressions, LGBT, gay, lesbian, structural equation modelling

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## List of Nomenclature

LGB	lesbian, gay, and bisexual; often used as shorthand for sexual and romantic minorities
LGBT	lesbian, gay, bisexual and transgender
Romantic orientation	describes the gender(s) to which one feels romantic attraction (i.e., with whom they could fall in love), but not necessarily sexual attraction
Sexual orientation	describes the gender(s) to which one feels sexual attraction, but not necessarily romantic attraction
Heterosexual	one who feels sexual attraction only to individuals of a different gender
Heteroromantic	one who feels romantic attraction only to individuals of a different gender
Homosexual	one who feels sexual attraction only to individuals of the same gender
Homoromantic	one who feels romantic attraction only to individuals of the same gender
Bisexual	one who feels sexual attraction to individuals of the same gender or of a different gender
Biromantic	one who feels romantic attraction to individuals of the same gender or of a different gender
Pansexual	one who may feel sexual attraction to any individual, regardless of gender

Panromantic	one who may feel romantic attraction to any individual, regardless of gender
Asexual	one who feels no sexual attraction to any gender
Aromantic	one who feels no romantic attraction to any gender
Unsure/Questioning	one who is not yet sure of their sexual or romantic orientation
Fluid	one whose sexual or romantic orientation has changed or may change over time
Sexual or Romantic Minority	one who identifies their orientation as being anything other than heterosexual and heteroromantic

## Chapter 1

### 1 Introduction

Attitudes toward sexual and romantic minorities have been a topic of much interest in the greater community for the past several decades. As LGB individuals have become increasingly visible in Western societies, so have debates about the acceptability of sexual and romantic minorities, among both the general population and law-makers. However, the question of whether our society has truly become more accepting and tolerant remains.

LGB visibility has certainly increased in recent decades; more and more gay characters have been appearing in television (Hart, 2000), more sexual and romantic minorities have appeared in advertisements (Hester & Gibson, 2007), and an increasing number of celebrities and major public figures have “come out” as homosexual or bisexual (Valentine, Skelton & Butler, 2003). Within the general public, research has shown that homosexual women of the “Millennial” generation (i.e., young individuals) have self-identified as gay at a younger age, engaged in same-sex relationships and sexual acts at a younger age, and have reported engaging in significantly fewer heterosexual relationships than their older counterparts (Nosti, 2010).

However, increased visibility does not guarantee increased acceptance, and acceptance may be seen differently by in-group or out-group members. For instance, a non-LGB individual may consider our society to be quite tolerant of sexual or romantic minorities, given that violent or aggressive discrimination is no longer considered socially acceptable in most areas of North America, and that same-sex couples can now marry in every North American country. However, an LGB individual may view the

same society as quite intolerant, given (for instance) that most American states still legally allow workplace discrimination based on sexual or romantic orientation.

It seems, therefore, that differing groups may have different ideas of what constitutes discrimination, and that the perception of events may impact the degree to which one labels the events as discriminatory. This thesis aims to address the importance of group membership and perception in judgments of discrimination.

## 1.1 Sexual and Romantic Minorities

In questioning whether group membership has any bearing on judgments of discrimination, it is necessary to strictly define the groups to be compared. The aim of this group definition was to distinguish between those who feel attracted only to members of a different sex (the majority group) and those who may feel attracted to members of the same sex, potentially among others (the minority group).

Attraction was defined in terms of both sexual orientation and romantic orientation. Recent work has suggested that sexual orientation may, in fact, be independent of romantic orientation (e.g. Diamond, 2003); that is, sexual attraction differs from the romantic attraction that is associated with falling in love. This model posits that one's sexual and romantic orientations may be aligned (for instance, a woman who is sexually attracted to men, and falls in love with men), but they might also be misaligned (for instance, a man who is sexually attracted to men, but falls in love with both men and women). Diamond (2003) suggests that the experience of romantic attraction may in fact be rooted in infant-parent pair bonding, rather than adult mating, and as such may not be gendered at all; that is, an individual could fall in love with anyone, regardless of gender. In order to accommodate this possibility, and to ensure that

all minority-identifying individuals were included in the minority group, the present study distinguishes romantic and sexual orientation as separate constructs.

As such, the working definition for the minority orientation group includes any individual who identifies as a minority in terms of their sexual *or* romantic orientation, or both.

## 1.2 Recent Documentation of Discrimination

Although many polls on public attitudes toward homosexuality exist (e.g., Altemeyer, 2001; Hicks & Lee, 2006; Hollekim, Slaatten & Anderssen, 2011), a relatively small number have polled sexual and romantic minorities themselves about how accepting they believe the general population is. However, reports of discrimination and harassment among sexual and romantic minorities have been noted.

### 1.2.1 Studies of Sexual and Romantic Minorities

#### **Workplace Discrimination**

Woods and Lucas (1993) reported that nearly one third of lesbians and gay men have experienced serious discrimination at work, and 60% often or always experience job stress due to their orientation (as cited in Lewis & Taylor, 2001); meanwhile, Badgett (1996) indicates that the proportion of sexual minorities who believe that they have faced discrimination in the workplace ranges from 13-62%. A more recent study indicates that 49% of gay men reported experiencing some kind of workplace homonegativity (Christman, 2012). LGB individuals may also feel indirect pressure to act or behave in a way that disguises their sexuality, particularly in the workplace. In one study, LGB respondents noted a clear divide between “normal” and “not normal” behaviours at work, with many harmless behaviours (such as “flaunting” or “announcing” one’s sexuality)

being placed in the category of “not normal” (Williams, Giuffre & Dellinger, 2009). Respondents indicated that these abnormal behaviours made individuals vulnerable to danger and harassment, and seemed to disparage these behaviours themselves. As one participant put it, “... I’m not one of those flag toting, banner wearing fags” (Williams et al., pp. 35). This is perhaps indicative of a lack of peer acceptance among many sexual and romantic minorities, who feel that “normal means invisible” (Williams et al., pp 35).

### **School Discrimination**

A report from the Gay, Lesbian and Straight Education network (Kosciw, Greytak, Diaz & Bartkiewicz, 2010) identified many issues faced by young sexual and romantic minorities in American schools. 88% of participants indicated that they experienced relational aggression, such as being deliberately excluded by their peers. On a more direct level, nearly 90% reported being verbally harassed because of their orientation, which correlates well with other reports (e.g. Christman, 2012). Nearly 20% reported being physically assaulted (e.g. punched, kicked, or injured with a weapon) during the past year because of their orientation (Kosciw et al., 2010). Nearly 75% of LGBT students reported hearing homophobic or sexist remarks often at school, and almost 90% had often heard the word “gay” used in a negative way. 60% said that they felt unsafe at school due to their orientation. One cannot simply attribute this to the immaturity of students, either; nearly two thirds of students had heard homophobic remarks from school personnel (Kosciw et al., 2010).

Christman (2012) indicated that gay men reported high levels of homonegative victimization from teachers and professors in addition to peers, and that school-based homonegativity was extremely prevalent. In the face of this knowledge, it is particularly

disturbing to note that public school districts in the United States have been notoriously unreliable in implementing recommended policies or programs to address the needs of sexual and romantic minority students (Rienzo, Button, Sheu & Li, 2006).

### **Violence and Crime**

One poll of sexual minority adults indicated that roughly 40% of all gay men, and around 12-13% of lesbians, have reported being the target of violence or property crime due to their sexual orientation (University of California-Davis News and Information, 2007, as cited in Sue, 2010). Hate crimes against LGBs in the United States have also increased in frequency in recent years, with 1,017 in 2005, 1,195 in 2006, and 1,265 in 2007 (Hansen-Weaver, 2009).

### **Generational Rates of Discrimination**

One study, examining differences between generations of gay women, found that discrimination based on sexuality had reportedly been experienced by 60.0% of the 'Baby Boomer' generation, 38.8% of those born in 'Generation X', and 38.6% of 'Millennials' (the youngest generation included in the sample; Nosti, 2010). While this does indicate an increase in general acceptance over time, it is still troubling that nearly four in ten gay women within the younger (and hypothetically, most accepting) generation experienced discrimination. It is also noteworthy that in the same study, there were no significant distinctions between groups on perceived familial or social support; while the younger generation may have noted less institutional or societal discrimination, they did not seem to receive any more support from their close family and friends. Along a similar vein, Pendragon (2010) indicated that young sexual minority females reported receiving harassment from their families and communities, in addition to churches and



schools. These young women identified harassment, violence, and a lack of acceptance as major challenges associated with their experience as sexual minorities; it is troubling to know that these challenges may be coming from people that young LGB individuals depend upon.

### **Meta-Analysis**

A large-scale meta-analysis by Katz-Wise and Hyde (2012) examined studies of LGB victimization from 1992-2009. Based on over 500,000 participants, they determined that reports of victimization were still substantial, with 55% of sexual minorities reporting experiences of harassment, and 41% reporting experiences of discrimination. Sexual and romantic minorities did experience significantly more victimization than heterosexuals ( $d=.58$ ), but the effect size was relatively small, giving rise to the suggestion that our culture may be moving away from complete heteronormativity. However, the authors also noted that since a previous meta-analysis (Berill, 1990), there was not a significant pattern of decreased incidence of discriminatory behaviours. Some even had a higher incidence in the more recent study (property violence, being followed, and physical/weapon assault), although some were lower as well (threats, verbal harassment, target of objects, and being spat on; Katz-Wise & Hyde, 2012).

### **The Impact of Discrimination**

Although the current research does not directly examine the impact of discriminatory experiences, it is worth discussing these lasting consequences, if only to demonstrate why research on discrimination is important. Research shows that a lack of acceptance at school was associated with suicide attempts in LGB individuals (Plöderl, Faistauer & Fartacek, 2010). One study found that roughly one third of sampled LGB

youth had attempted suicide, and about half of these attempts were directly related to their sexual orientation (d'Augelli et al., 2005). LGB individuals suffering from social stigma are also vulnerable to alienation from their family and friends, impaired psychological development, and depression (Coleman & Remafedi, 1982). Sexual and romantic minorities may also suffer particular psychological distress as a result of heterosexist harassment, rejection, and discrimination, as reported by Szymanski (2009). Kuyper and Fokkema (2009) found that the experience of discrimination contributed significantly to the degree of loneliness felt by elderly LGB individuals. Further, LGB students who experience victimization at school because of their sexual orientation have also been shown to have lower levels of self-esteem, be less likely to pursue higher education, and have higher levels of depression and anxiety (Kosciw et al., 2010; Ellis, 2012).

Overall, these findings present a bleak picture of current support for sexual and romantic minorities. An overwhelming majority of sexual and romantic minorities appear to have experienced discrimination due to their orientation, and many are still the targets of violence and harassment. However, it is interesting to note that recent surveys of the general public seem to be relatively positive.

### 1.2.2 Polling Data

Altemeyer (2001) noted that between 1984 and 1998, the score for every item on his "Attitudes Toward Homosexuals Scale" dropped (indicating a significant positive shift in opinion over just 14 years). Other research has shown that as early as 2003, 99% of polled individuals thought that homosexual individuals should have equal rights in terms of job opportunities (Hicks & Lee, 2006), and that by 2010, the majority did not

disagree with marriages between homosexuals (compared with 71.9% in 1988; Baunach, 2012). One study of heterosexual boys in English schools even found that cultural homophobia had reached relatively low levels of significance, and that homophobic language was more commonly stigmatized than endorsed by participants (McCormack, 2011).

However, in 2010, 44% of an American sample still believed that sexual behaviour between two adults of the same gender was always wrong (Smith, 2011). Research has also noted that attitudes toward same-sex adoption are still quite negative, particularly toward lesbian couples (Rye & Meaney, 2010). Further, a study by Norton and Herek (2012) using feelings thermometers showed that people still respond less positively to sexual and romantic minorities than men or women in general. Participants were asked to indicate their feelings of warmth, or favour, toward various groups, on a scale from 1-100; they were told that if they felt neither warmly nor coldly toward a particular group, they should give them a rating of 50. Men in general were rated 65.71, gay men were rated 44.02, and bisexual men were rated 37.88; women in general were rated 67.74, lesbian women were rated 42.55, and bisexual women were rated 39.04. This significant difference in ratings does not seem indicative of a society that has truly accepted sexual and romantic minorities.

It is worth noting that although attitudes are not typically viewed as concrete behaviours, they have important meaning in discussions of discrimination against sexual minorities. Badgett (1996) discusses the idea that attitudes may translate into actual discrimination against LGB individuals, and Kite and Deaux (1986) explain how behaviours in discussions with homosexuals vary as a function of tolerance or intolerance

toward them. Research on racial prejudice has also shown strong connections between racial biases and behavioural outcomes (Dovidio, 2001). As such, attitudes should play an important part in any discussion of prejudice or discriminatory behaviours, and it is for this reason that I review such research here.

The studies presented above suggest that there is certainly some disagreement in terms of the prevalence of discrimination in contemporary society. Public polling data on societal attitudes toward sexual and romantic minorities seem to conflict with the high rates of discrimination still reported by sexual and romantic minorities; further, many of these reports by sexual and romantic minorities conflict with each other, with prevalence rates ranging wildly across studies. Prior to examining why this might be the case, it is useful to review the existing objective studies of discrimination.

### 1.2.3 Objective Studies of Discrimination

As suggested by Hebl and Dovidio (2005), recent research conducted on various forms of social stigma has been primarily noninteractive – that is, it relies on the experiences of one individual, rather than on situations that include both the stigmatized individual and the stigmatizer. Behavioural studies that examine stigma in real-life contexts are sorely needed. Crow, Fok and Hartman (1998) also suggest that there is a significant lack of reliable statistical evidence of discrimination based on sexual orientation, and that objective studies in the literature have been few and far between.

That being said, a small amount of research has examined objective measures of discrimination. One study of workplace discrimination presented participants with a list of eight potential employees, asking them to choose six of them to hire (Crow, Fok & Hartman, 1998). The eight potential candidates covered a range of racial identities (Black

and White), genders (men and women), and sexual orientations (heterosexuals and homosexuals). They found that of the eight candidates, the four who were identified as homosexual were the least likely to be hired. They also noted specifically that candidates who were Black and homosexual were even less likely to be hired than White homosexuals, highlighting the interaction of stigmatization due to race and sexuality. However, based on the results of this study, it was more harmful to an individual's job prospects to be homosexual than it was to be Black or female.

Researchers have also found that as recently as 1995, gay and bisexual male employees were earning 11-27% less than heterosexual male workers who had the same experience, education, and occupation (Badgett, 1995). A study conducted in Ontario also found that when a job applicant handed in a résumé indicating that they were active in their local Gay People's Alliance, they generated fewer offers than résumés that were otherwise identical (Adam, 1981).

A more recent study measured acts of discrimination against subjects who pretended to apply for a job, when the subject either presented as a stigmatized individual (i.e., wore a hat bearing the words "Gay and Proud") or a non-stigmatized individual (i.e., wore a hat bearing the words "Texan and Proud"; Hebl, Foster, Mannix & Dovidio, 2002). The subjects themselves were not identified in the original article as being minority or majority group members. The authors noted that the stigmatized group did not experience more formal discrimination than the non-stigmatized group – for instance, they were no less likely to be told that a job was available or allowed to complete an application. However, the stigmatized group did experience significantly more *informal* or interpersonal discrimination: fewer words were spoken to them, their interaction length

with the potential employer was shorter, and the applicants (who were blind to their condition) perceived the potential employer to be more negative. Perhaps these more subtle acts of discrimination have some impact on the differing opinions regarding discrimination rates.

### 1.3 Microaggressions

Along a similar line, one form of discrimination that has recently garnered attention is the expression of microaggressions – brief, commonplace exchanges that communicate hostile, derogatory, or negative messages to certain individuals based on group membership (Sue et al., 2007). Microaggressions may involve verbal comments, gestures, behaviours, or even staring or glaring. The term “microaggression” has a weak connection to classical definitions of aggression, which typically include a willful intent to cause harm; for instance, Baron and Richardson (1994, p. 7) suggest that the term “aggression” should be defined as “any form of behavior directed toward the goal of harming or injuring another living being who is motivated to avoid such treatment.” However, microaggressions do not necessarily involve a goal or intent to harm others; they may be unintentional and even unconscious. As such, the term “microaggression” should be viewed in a different light than classical “aggression”.

However, small and seemingly harmless microaggressive behaviours can communicate much larger themes: sexual objectification, ascription of intelligence (or lack thereof), assumption of abnormality (which Sue et al. note as being particularly relevant to sexual minorities, but which has been questioned by subsequent research; Platt & Lenzen, 2013), and so on. For instance, Sue et al. (2007) cite the example of two

men holding hands in public and being stared at by strangers. Although this behaviour (looking or staring) may be unintentional and even unconscious, it communicates to the couple that they are being judged as “abnormal” or “weird”.

Recent work has indicated that although relatively few gay men report frequent direct homonegative discrimination, many report very frequent experiences of indirect or subtle discrimination, with nearly all participants indicating that they had experienced indirect homonegativity in the form of stereotyping or assumptions of heterosexuality, which can be classified as microaggressions (Christman, 2012). In fact, 89% of gay men reported experiencing victimization from strangers and in public; given that these strangers had no knowledge of the participants aside from their clothing and appearance, these experiences of discrimination may have been based on stereotypes and assumptions (Christman, 2012). One could interpret these instances of subtle discrimination as being microaggressions.

Microaggressions have even been reported by psychotherapy clients within the therapeutic environment (Shelton, 2011). Clients identified several different types of microaggressions based on sexual orientation (for instance, their therapist attempting to overidentify with their LGB clients, or assuming that all of their presenting problems stemmed from their orientation), and revealed that these microaggressions led to feelings of anger, discomfort, and being misunderstood by the therapist; many reported that they lost trust for their therapist, and some even ended their therapy prematurely. Overall, microaggressions were quite detrimental to the therapeutic process (Shelton, 2011).

### 1.3.1 Categories of Microaggressions

Nadal et al. (2011) identifies several categories of microaggressions experienced by sexual and romantic minorities. These categories are discussed briefly here, in order to explain the nature of microaggressions.

**Use of heterosexist terminology.** This may take the form of jokes or comments, which may or may not be intended to hurt sexual and romantic minorities. For instance, in focus groups, participants described terms such as “faggot” or “dyke” as being denigrating to them (Nadal et al., 2011).

**Endorsement of heteronormative culture/behaviours.** Sexual and romantic minorities are often expected to look like, act like, or simply be like heterosexual individuals in a number of ways. Participants in Nadal et al.’s 2011 study recall feeling forced to change their dress, behaviour, and communication styles.

**Assumption of universal LGB experience.** Heterosexual individuals may infer that all sexual and romantic minorities are the same, or enjoy the same things. For instance, the stereotype that gay men are interested in fashion is an example of this category of microaggressions.

**Exoticization.** This category of microaggressions describes instances wherein sexual and romantic minorities feel that they are being dehumanized or treated like an object. For instance, the assumption that gay men live a more cultured or glamorous life is an instance of exoticization. Alternatively, bisexual women frequently report sexual objectification by heterosexual men (Nadal et al., 2011).

**Discomfort/disapproval of the LGB experience.** Perhaps more overtly negative than other categories of microaggressions, this form of discrimination includes religious or



moral objections to sexual and romantic minorities. An overt example would be of a parent reminding their minority-identifying child of the Bible's views on homosexuality; a less obvious example would be of someone glaring at a same-sex couple in disapproval.

**Denial of reality of heterosexism.** Of particular relevance to this thesis, this category entails behaviours that demonstrate a lack of belief in the existence of heterosexism or heterophobia. This may be particularly hurtful when an individual enacts a heterosexist or heterophobic behaviour and then denies that they were doing any such thing (Nadal et al., 2011).

**Assumption of sexual pathology/abnormality.** This category includes behaviours such as presuming that a gay man has HIV/AIDS, assuming that bisexual individuals would be interested in threesomes or other unusual sexual acts, or believing that sexual and romantic minorities should not be trusted with children due to their sexual abnormality.

**Threatening behaviour.** These behaviours could range from verbal intimidation to physical assault, and as such, may come from very different intentions on the behalf of the perpetrator. However, all of these behaviours made sexual and romantic minorities feel unsafe (Nadal et al., 2011).

### 1.3.2 Impact of Microaggressions

Microaggressions *seem* relatively harmless, and are, in fact, routinely left out of reports of bias and harassment by school psychologists (McCabe, Dragowski & Rubinson, 2013). They can, however, be quite harmful to stigmatized groups. They are often characterized as constant, continuing experiences, and the weight of these summed experiences can be considerable. In fact, microaggressions have been shown to produce

lower self-esteem, anger and frustration, lower feelings of subjective well-being and value, shorter life expectancies, and even physical health problems (Nadal et al., 2011; Sue, 2010). One study found that hearing the phrase “That’s so gay!” was associated with feelings of isolation and physical health symptoms such as headaches and poor appetite (Woodford, Howell, Silverschanz & Yu, 2012). Another recent study showed that microaggressive experiences were linked with posttraumatic symptoms in LGB participants, indicating that the strong sense of helplessness created by systemic discrimination may be categorized as trauma (Robinson, 2014).

## 1.4 Differences in Perception

Perhaps, then, it is the differential perception of microaggressions that is driving the conflict in ratings of the prevalence of discrimination. For instance, sexual and romantic minorities might be keenly aware of microaggressions, and may take these behaviours into account when reporting rates of discrimination; meanwhile, those in the majority group may be completely unaware of the existence of microaggressions, and may simply see the lack of formal or obvious discrimination present in current society. Theoretically, this skewed perception of discrimination follows logically from both the availability heuristic and Error Management Theory.

### 1.4.1 Availability Heuristic

First, the well-known availability heuristic proposed by Tversky and Kahneman (1973) suggests that, when faced with the difficult task of judging the frequency of an event, individuals use “mental shortcuts” to quickly and efficiently solve the problem. One such tool is the availability heuristic, wherein individuals judge the frequency of an

occurrence by the ease with which they can readily bring instances of the event to mind (Tversky & Kahneman, 1973). For instance, when judging how often discrimination against sexual and romantic minorities may occur, a participant might try to recall discriminatory behaviours that they have witnessed or experienced in the past, and base their rating on the ease with which they can do so. It stands to reason that sexual and romantic minorities who have experienced discrimination in the past may recall these instances vividly; being personal and potentially hurtful, they may be quite salient. However, a heterosexual and heteroromantic individual who witnesses those same acts of discrimination against sexual and romantic minorities may not recall them nearly as well. Without the personal and emotional experience of the minority experiencing discrimination, heterosexual individuals may indeed forget these events quickly, or recall them as being less significant than they were. Additionally, in the case of microaggressions, those in the majority group may not even be aware of the event occurring. This in turn may lead to heterosexual individuals rating discrimination against minorities as less prevalent than minorities do.

### 1.4.2 Error Management Theory

Secondly, one can consider the error management theory (EMT) proposed by Haselton, Buss and DeKay (1998, as cited in Haselton & Buss, 2000). EMT is based on the principle that, when judgments or decisions are made under uncertainty, both Type I (false positive) and Type II (false negative) errors are possible. Usually, the likelihood of committing these types of errors is not equivalent, and the likelihoods are affected by each other. For instance, imagine an engineer trying to determine at what level of smoke density a smoke alarm should activate. As the probability of Type I error (false positive;

the alarm goes off even though a fire is not present) decreases, the probability of Type II error (false negative; the alarm fails to go off even though a fire is present) increases. In this particular case, a Type II error would be much more costly than a Type I error; as a result, the engineer is likely to set the activation level with a bias toward Type I errors. That is, they will increase the probability of a false positive and decrease the probability of a false negative, in order to protect the safety of the users. This, in short, is the premise of EMT – that we should be biased toward making errors that are less costly. One can extrapolate how this adaptive error management might apply to social situations. For instance, Haselton and Buss (2000) applied the theory to cross-sex mind-reading biases, inferring that men tend to overestimate women's sexual intentions because it would be more costly to miss a sexual opportunity than to invest time and energy into an opportunity that did not arise.

Using EMT as a conceptual framework for the current study, it is possible that sexual and romantic minorities may tend to judge discrimination toward minorities as being more prevalent than it truly is, because it is less costly to make an error in the direction of overestimation (Type I) than underestimation (Type II). Consider, for example, a gay man who believes discrimination against gay individuals is common. This belief would likely encourage cautionary behaviour, such as concealing his sexual identity or avoiding certain individuals and groups for safety. These behaviours are designed to reduce the risk of costly outcomes, such as emotional pain or abuse. Although these behaviours have costs of their own (for instance, a feeling of distance from family or friends, or shame for concealing one's identity), they are viewed as less costly, and therefore, more palatable.

Conversely, a belief that discrimination against sexual and romantic minorities is relatively infrequent may lead to maladaptive behaviours. An individual with this belief might feel confident in revealing their identity to all they meet, engaging in public displays of affection, and the like. While these behaviours reduce the likelihood of feeling isolated and shameful, they also increase the likelihood of being criticized or abused. Given the relative costliness of these outcomes, it stands to reason that beliefs encouraging these behaviours may be viewed as maladaptive. Therefore, an overestimation of discriminatory behaviour toward sexual and romantic minorities may in fact be beneficial to those whom it would directly affect.

## 1.5 The Present Research

The present study examined the potential effect of group membership (i.e., sexual and romantic minority vs. majority members) on their ratings of the frequency of discrimination toward sexual and romantic minorities in current Canadian society. Furthermore, in order to test the theoretical underpinnings of this effect, measures of discrimination frequency against the self and judgments of microaggressive scenarios were also administered. Although this study is somewhat exploratory in nature, as no previous research has examined perceptions of microaggressions toward sexual and romantic minorities, several hypotheses were made based on the theoretical framework of the availability heuristic and EMT.

### 1.5.1 Hypothesis 1: Group Differences

It is first hypothesized that both sexual and romantic minorities, as well as the majority group, will rate discrimination against the minority group as being more prevalent than discrimination against the majority group (hypothesis 1A). Secondly,

reasoning from the availability heuristic (Tversky & Kahneman, 1973) and EMT (Haselton & Buss, 2000) suggests that sexual and romantic minorities should rate discrimination against their group as more prevalent than does the majority group (hypothesis 1B).

### 1.5.2 Hypothesis 2: Personal Discrimination Mediation

According to the theoretical framework of the availability heuristic (Tversky & Kahneman, 1973), sexual and romantic minorities should rate discrimination against the minority group as more prevalent in part because they can easily recall experiences of discrimination against themselves. It is therefore hypothesized that ratings of discrimination frequency toward the self will act as a mediator of the relationship between group status and perceived discrimination frequency toward the minority group.

### 1.5.3 Hypothesis 3: Sensitivity to Microaggressions

#### Mediation

If it is true that the evaluation of microaggressions contributes in part to the difference in frequency ratings of discrimination against the minority group, then this evaluation should act as a mediator. It is hypothesized that a participant's sensitivity to microaggressive scenarios will mediate the relationship between group membership and discrimination frequency ratings toward the group.

## Chapter 2

### 2 The Current Study

#### 2.1 Method

##### 2.1.1 Study Preregistration

This study was preregistered on the Open Science Framework (OSF). Study measures and a priori hypotheses are available at <https://osf.io/fx64p/>.

##### 2.1.2 Recruitment

The sample comprised 255 individuals recruited from the local university and surrounding community. Participants were first recruited from a large pool of university students, who completed the study online for course credit. This recruitment process yielded 214 participants, of whom 23 were categorized as a sexual or romantic minority. In order to detect meaningful group differences, a goal of recruiting at least 27 additional sexual or romantic minorities was set (to have at least 50 individuals per group). Further recruitment was conducted using posters on the University of Western Ontario campus, as well as advertisements placed in the university newspaper, which specified sexual and romantic minorities as the population of interest. A further 47 individuals were recruited in this manner, of whom 37 identified as sexual or romantic minorities.

##### 2.1.3 Participants

255 participants between the ages of 17-52 ( $M_{years} = 19.5$ ,  $SD_{years} = 3.78$ ) completed the study. 98 (38.4%) participants identified as male, 154 (60.4%) identified as female, and 1 (0.4%) identified as another gender.

60 (23.5%) participants were categorized as a sexual or romantic minority; the remaining 195 (76.5%) were categorized into the majority group. A full breakdown of participants' sexual and romantic orientations may be found in Table 1.

### 2.1.4 Materials and Procedure

Recruitment materials were circulated via the university research pool, posters on the university campus, and advertisements in the university newspaper. These materials indicated that participants were needed for a study on perceptions of discrimination. Participants who were recruited through the university research pool completed the study online at their leisure. Participants who were recruited through posters and newspaper advertisements were asked to complete the same questionnaires using the same web-based tool; however, these participants were compensated with cash, and as such were required to come in to the lab to complete the measures and receive their compensation. These participants were greeted by the researcher and escorted to a private room where they completed the study. Aside from this deviation in protocol, procedures were the same among all participants.

Participants first completed a general background questionnaire that asked them to provide their gender, ethnicity, romantic relationship status, and the gender of their relationship partner (if applicable). Participants then answered separate questions about their romantic orientation and sexual orientation (set to appear in random order to participants). They also indicated whether the majority of their friends, family members, and social media contacts were aware of their sexual and romantic orientation, as well as their significant other.



Next, participants completed a modified version of the Everyday Discrimination Scale (Clark, Coleman & Novak, 2004). The scale asks about the frequency of nine different discriminatory behaviours (for example, “How often are [members of this group] treated with a lack of courtesy?” and “How often are they threatened or harassed?”). Each item is rated on a scale from 1 (“Almost every day”) to 6 (“Almost never”). The scale has been shown to possess high internal reliability ( $\alpha=.87$ ). This scale was developed for use in studies of racial discrimination, and was modified slightly to assess discrimination based on sexual and romantic orientation. Modification entailed slight changes in wording, and the addition of one item: “How often do people act as if they are disgusted by them?” Participants completed the Everyday Discrimination Scale a total of three times: once about heterosexual/heteroromantic individuals, once about sexual and romantic minorities, and finally, once about themselves personally. In the current study, the Everyday Discrimination Scale was found to have an excellent internal reliability of  $\alpha=.94$  for all three iterations.

Participants then completed a series of control measures. They first answered Rosenberg’s Self-Esteem Scale (Rosenberg, 1965); previous studies have reported reliability scores ranging from .72 to .88 (Gray-Little, Williams & Hancock, 1997). In the current study it showed a good reliability of  $\alpha=.84$ . Participants then completed a scale of socially desirable responding (Crowne & Marlowe, 1960), which was found to have a reliability of .88. In the current study, the scale showed a good reliability of .73. Finally, participants completed a scale of social anxiety (Mattick & Clarke, 1998), which has previously shown a reliability of .89. In the current sample the scale’s reliability was an excellent .93. These constructs were selected as controls due to their potential relevance

in affecting people's beliefs about how others regard them (this is of particular importance for the Everyday Discrimination Scale completed regarding the participant personally).

Lastly, participants were asked to read a series of five "ambiguous scenarios", each depicting a common microaggression displayed toward sexual and romantic minorities. The scenario descriptions can be seen in Appendix E. For each scenario, the participants were asked to imagine themselves in the situation. They were then asked the same four questions about each scenario:

1. How do you feel after encountering this behaviour? (From 1, "Very negative", to 10, "Very positive")
2. How much did this behaviour affect you? (From 1, "Not at all", to 10, "A lot")
3. Did you feel that you were being discriminated against? (From 1, "No", to 10, "Yes")
4. Do you have any other comments about this scenario? (Free-form text answer)

These questions were developed for the current project. As there has been no previous work on evaluations of microaggressions, this set of questions is certainly exploratory. The questions were designed in order to measure both affect and impact, and to assess what behaviours participants thought were discriminatory. The first question, measuring affect, showed a poor but acceptable reliability of .51. The second question, measuring impact, showed a good reliability of .70. Similarly, the third question (measuring the degree to which participants thought the behaviour was discriminatory) showed a good reliability of .81.

## 2.2 Results

### 2.2.1 Data Cleaning

Four participants were removed from the data set prior to analysis, as they had not completed at least 50% of the study measures. Time records were then examined, with the intention of removing any participants who had completed the survey in less than five minutes; no participants fit this criterion, and as such, no data were removed at this step. A visual inspection of scatterplot graphs indicated no clear outliers for variables relevant to the hypotheses.

Missing values for the microaggression questions had to be assessed carefully due to a quirk of the survey program. For these questions, participants were provided with “sliders” ranging from 1 to 10. The slider value was set to 5.5, the middle of the scale, before the participant answered the question. If participants did not touch the slider, the program coded the value as missing. However, given that some participants may have intended to answer the question by leaving the slider in the “neutral” 5.5 position, further care was taken with these missing values. The researcher manually inspected each participant’s responses to these questions. If they had answered all surrounding questions, but had missing values for one or two of the three slider questions, the missing values were filled in with the value of 5.5. If all three slider questions had missing values, they were left blank.

### 2.2.2 Preliminary Analyses

A set of t-tests were performed to determine whether the participants who were initially recruited through the online student pool and the participants who were recruited

using posters and advertisements (henceforth called the “community sample”) had any meaningful differences on study measures. Since the community sample was made up almost entirely of sexual and romantic minorities, they were compared only to the sexual and romantic minorities from the student sample. Because multiple comparisons were being made (nine in total), a Bonferroni correction was applied to the alpha level in order to maintain a familywise error rate, with .05 being divided by nine for a “corrected” alpha level of .006. With this alpha level, no significant differences were found between the groups. As such, these two groups were combined for all further analyses, but future research should confirm and explore the differences between student and community samples on discrimination-related variables.

A set of t-tests were also conducted to explore gender differences on relevant measures. No significant gender effects were seen on any of the discrimination-related variables ( $ps > .156$ ). Women reported significantly more social anxiety ( $M=49.54$ ,  $SD=16.08$ ) than men ( $M=43.31$ ,  $SD=15.11$ ) in this sample, with a Bonferroni correction of the alpha level;  $t(230)=-.29$ ,  $p=.004$ ,  $d=-.04$ ). No other significant gender differences were noted.

Finally, a t-test was conducted to compare ratings of group discrimination and ratings of personal discrimination for the minority participants only. Although not a primary focus of this study, it should be noted that minorities often rate their group as receiving more discrimination than they do personally (i.e., the Personal/Group Discrimination Discrepancy; e.g. Taylor, Wright, Moghaddam & Lalonde, 1990). This was in fact the case in the current study, with minorities rating group discrimination

frequency ( $M=3.81$ ,  $SD=1.12$ ) as being higher than personal discrimination frequency ( $M=2.18$ ,  $SD=1.01$ );  $t(55)=-11.25$ ,  $p<.001$ ,  $d=1.51$ .

Correlations between all relevant study variables can be seen in Table 2.

### 2.2.3 Mean Differences

It was hypothesized that both the minority group and the majority group would rate discrimination against the minority group as being more prevalent than discrimination against the majority group (hypothesis 1A). It was further hypothesized that the minority group would rate discrimination against the minority group as being significantly more frequent than the majority group would (hypothesis 1B). In order to test these hypotheses, t-tests were performed for the relevant variables. Since these were a priori hypotheses, no Bonferroni correction was used in these analyses, and alpha levels were set at  $p=.05$ .

A paired-sample t-test revealed that, in general, participants rated discrimination as being more frequent against the minority group ( $M=3.72$ ,  $SD=1.12$ ) than against the majority group ( $M=1.66$ ,  $SD=.79$ );  $t(235)=25.97$ ,  $p<.001$ . Note that discrimination frequency ratings were reverse-coded from their original format, so that higher numbers indicate higher ratings of discrimination frequency. When effect size was computed, accounting for the correlation between variables (as is appropriate for paired-sample t-test), a relatively large effect size was found ( $d=1.54$ ) based on Cohen's standards (Cohen, 1977). This effect remained when conducting the analyses separately based on the participant's own orientation. Minority individuals indicated more frequent discrimination against the minority group ( $M=3.88$ ,  $SD=1.16$ ) than against the majority

group ( $M=1.62$ ,  $SD=.68$ );  $t(54)=13.54$ ,  $p<.001$ ,  $d=1.68$ . The majority group also rated discrimination against minorities as being more frequent ( $M=3.66$ ,  $SD=1.10$ ) than discrimination against the majority group ( $M=1.67$ ,  $SD=.82$ );  $t(180)=22.24$ ,  $p<.001$ ,  $d=1.91$ . As such, hypothesis 1A was supported by these findings.

Hypothesis 1B was tested using an independent sample t-test to compare the minority and majority groups in their rating of frequency of discrimination against the minority group. Although the results trended toward a higher rating from the minority group ( $M=3.86$ ,  $SD=1.14$ ) than the majority group ( $M=3.65$ ,  $SD=1.11$ ), this result was not statistically significant, and as such did not support hypothesis 1B;  $t(239)=-1.30$ ,  $p=.197$ ,  $d=.19$ ). It is worth noting that, with an effect size this small, the power of this analysis – that is, the estimated probability of finding a statistically significant effect, if one exists – is quite low (.36). It should not therefore be assumed that this comparison effectively proves the lack of relationship between these variables; rather, it is entirely possible that such a relationship exists (particularly as results trended in the hypothesized direction), but the test was simply not powerful enough to yield statistical significance.

Although not explicitly mentioned as an a priori hypothesis, it is worth noting that sexual and romantic minorities did rate discrimination against themselves as being significantly higher ( $M=2.17$ ,  $SD=1.01$ ) than the majority group did ( $M=1.73$ ,  $SD=.83$ ) with a Bonferroni correction for the total number of comparisons made;  $t(243)=-3.33$ ,  $p=.001$ ,  $d=-.48$ ).

The minority group also responded to the microaggressive scenarios differently than the majority group. Minorities rated their feelings as being significantly more negative in response to the scenarios ( $M=6.94$ ,  $SD=2.02$ ) than the majority group

( $M=6.02$ ,  $SD=1.15$ );  $t(144)=-4.71$ ,  $p<.001$ ,  $d=-.87$ ). Minorities also reported that they scenarios affected them more highly ( $M=5.42$ ,  $SD=1.71$ ) than the majority group did ( $M=3.88$ ,  $SD=1.61$ );  $t(202)=-5.84$ ,  $p<.001$ ,  $d=-.93$ ). Finally, the minority group rated the scenarios as being more discriminatory ( $M=5.10$ ,  $SD=2.17$ ) than did the majority group ( $M=2.96$ ,  $SD=1.74$ );  $t(225)=-7.54$ ,  $p<.001$ ,  $d=-1.10$ ). All of these differences remain statistically significant with a Bonferroni correction to the alpha level.

Finally, significant differences were also observed in the degree to which participants had disclosed their orientation. Minorities indicated significantly less disclosure to their families ( $M=1.57$ ,  $SD=.50$ ) than did the majority group ( $M=1.03$ ,  $SD=.16$ );  $t(249)=-.94$ ,  $p<.001$ ,  $d=-1.64$ ). They also indicated less disclosure to friends ( $M=1.28$ ,  $SD=.45$ ) than majority group members ( $M=1.02$ ,  $SD=.14$ );  $t(248)=-6.96$ ,  $p<.001$ ,  $d=-.88$ ), as well as less disclosure to social media contacts ( $M=1.67$ ,  $SD=.48$ ) than majority group members ( $M=1.10$ ,  $SD=.30$ );  $t(249)=-10.96$ ,  $p<.001$ ,  $d=-1.46$ ). Note that the measure of disclosure was reverse-coded, so higher values in these comparisons indicate lower amounts of disclosure. Again, all of the above differences remained statistically significant when a Bonferroni correction was applied to the alpha level.

No significant differences were noted between groups on social anxiety, socially desirable responding, or self-esteem.

## 2.2.4 Mediation Analyses

Hypotheses 2 and 3 both focused on potential mediators for the relationship between one's own orientation and the rated frequency of discrimination toward sexual and romantic minorities. As noted above, support for this relationship was not found in

the current data, and as such, hypotheses 2 and 3 – when approached as classic mediations – must also be unsupported.

However, there are multiple reasons why one might investigate an intervening (or “mediating”) variable even in the absence of a direct relationship from the predictor variable to the dependent variable; this will be further elaborated on in the discussion. As such, models of intervening variables were run based on hypotheses 2 and 3, in spite of the null direct relationship between orientation and discrimination frequency ratings.

Hypothesis 2 posited that ratings of frequency of discrimination toward the self could play a mediating role in this relationship; sexual and romantic minorities might experience more frequent discrimination themselves, and therefore, rate discrimination toward their group as being more frequent. Structural equation modelling was used in Mplus to construct a model of indirect influence, in which discrimination frequency ratings for the self were used as an intervening variable.

Regression coefficients for this model can be seen in Table 3. This model showed acceptable fit; model fit indices are recorded in Table 4. As hypothesized, orientation impacted ratings of discrimination frequency toward the self, and these ratings in turn influenced ratings of discrimination frequency toward the minority group. That is, those who identified as a sexual or romantic minority tended to rate discrimination toward themselves as more frequent; and those reporting high-frequency discrimination toward themselves also rated discrimination toward the minority group in general as more frequent ( $\beta=.07, p=.003$ ).



As such, although not a classic mediation, this model of indirect influence provides support to the theoretical underpinnings of Hypothesis 2. This will later be discussed in further detail.

Hypothesis 3 was similarly tested. In this hypothesis, the posited mediating variable was the degree to which participants rated the microaggressive scenarios as being discriminatory – in short, how sensitive they were to the theoretical microaggressions. Sensitivity to microaggressions was assessed using the item that asked participants the extent to which they felt they were being discriminated against following each microaggressive scenario. This item was identified as being the most conceptually relevant to the current study of the three scenario questions, and demonstrated the best reliability within the current sample.

Again, a model of indirect influence was tested using structural equation modelling in Mplus. Regression coefficients for this model are recorded in Table 5. Again, this model showed acceptable fit; the model fit indices can be seen in Table 4. Similar to the results found regarding Hypothesis 2, Hypothesis 3 was partially supported by the current data. Orientation did impact one's sensitivity to microaggressions, with sexual and romantic minorities rating the microaggressive scenarios as being more discriminatory; further, these ratings did impact discrimination frequency ratings toward the minority group. Those who rated the microaggressions as being more discriminatory also rated discrimination toward the minority group as being more frequent. Again, although this does not represent a classic mediation (in the absence of a direct relationship between orientation and discrimination frequency ratings for the minority group), it does represent a significant indirect effect ( $\beta=.12, p=.001$ ).

Given that both of these models represent paths of indirect influence from orientation to discrimination frequency ratings, a combined model was created to represent a more parsimonious path of influence. A traditional double mediation was first examined, once again using structural equation modelling in Mplus.

Regression coefficients for this model can be found in Table 6, and model fit indices in Table 4. This model did show a significant indirect effect of orientation on discrimination frequency ratings toward the minority group ( $\beta=.12, p=.001$ ).

However, given the lack of influence between microaggression sensitivity and discrimination frequency ratings toward the minority group, and the comparatively poor fit displayed by the model, an alternative combined model was tested.

Regression coefficients for this model can be found in Table 7, and model fit indices in Table 4. This model shows comparatively better fit than the previous combined model, and all regression values are statistically significant, as shown in Figure 4. This model appears to be the most parsimonious and cohesive explanation of the path of influence from orientation to discrimination frequency ratings toward the minority group.

## Chapter 3

### 3 General Discussion

This exploratory study brings several interesting findings to light, and raises many questions as well. The findings of this study will be discussed in some detail, along with their implications; this will be followed by a discussion of the study's limitations and potential future directions for research focused on orientation-based microaggressions.

First, in the current sample, both majority and minority group members indicated that they believed the minority group faced a higher frequency of orientation-based discrimination in their daily lives than the majority group. This is not an unexpected finding, but it is an important piece of information in understanding the dynamics of discrimination; it indicates that the population at large shows some agreement on the issue of whether minorities still face discrimination in our current society.

It was further predicted that sexual and romantic minorities would rate the discrimination against the minority group as being more frequent than the majority group would. This hypothesis is supported by the availability heuristic; that is, since minority group members would likely have been exposed to more instances of discrimination (or simply recalled these instances more easily), they should rate discriminatory behaviours as more frequent than a majority group member would. The results of this study did not support this hypothesis. This null finding indicates that, for whatever reason, the minority and majority group members rated discrimination faced by minorities at roughly the same frequency. Given that the availability heuristic and Error Management Theory should dictate a non-null result, the reason for this finding is unclear. It is possible that a relationship did exist, and was simply not detected due to the low power of the comparison. However, it is also possible that some other indirect effect, working in the opposite direction from the availability heuristic pathway, is causing the direct relationship to be insignificant.

Since Hypotheses 2 and 3 were focused on potential mediators of the relationship between minority vs. majority group status and discrimination frequency ratings toward the minority group, they must also both be deemed unsupported by the results of the

study. However, it is important for to examine this “mediating” pathway, even in the absence of a direct relationship between the independent and dependent variables. As described by Hayes (2009), it must be acknowledged that a total effect is the culmination of many different paths of influence, and it is possible – even likely – that any one experiment will not capture all potential paths of influence. There could be a second intervening or mediating variable at play in this model, and if this influence ran in the opposite direction, it could “cancel out” the effect of the predictor on the outcome variable. In other words, the direct relationship appears to be null because there are two (or more) mediators running in opposite directions.

As such, Hypotheses 2 and 3 were tested in modified forms. Hypothesis 2, positing that perceived discrimination frequency against the self would mediate the relationship between orientation and perceived discrimination frequency against the minority group, was tested not as a classic mediation but rather as a model of indirect or “intervening” influence. This model was supported by the data; minority group members tended to rate day-to-day discrimination against themselves as more frequent than majority group members, and in turn, those who rated personal discrimination frequency as higher tended to rate discrimination against the minority group in general as being higher. That is, orientation had an indirect positive impact on discrimination frequency ratings for the minority group in general. This finding provides support for the theoretical underpinnings of Hypothesis 2. The availability heuristic dictates that those who rated personal discrimination as being more frequent should also rate discrimination against the minority group as being more frequent, because it would be easier for them to recall instances of discrimination due to their personal relevance and salience. The only part of

Hypothesis 2 that was unsupported was, as previously mentioned, the direct relationship; it seems, then, that the hypothesized causal chain may be correct, but that there may simply be another causal chain working in another direction that is causing the direct relationship to be null.

Similarly, to test Hypothesis 3, a model of indirect influence was constructed in which sensitivity to microaggressions was designated as the “mediator” variable. Again, although not a mediation in the classical sense, sensitivity to microaggressions did act as an intervening variable in this relationship. Minority group members tended to rate the microaggressive scenarios as being more discriminatory; in turn, those who rated the scenarios as being more discriminatory rated discrimination toward the minority group as being more frequent. Again, these findings provide support for the hypothesized causal chain in this model, and indicate that another pathway of opposite influence may be causing the direct relationship to be null.

A more parsimonious model of influence was tested, in which sensitivity to microaggressions personal discrimination frequency ratings acted as double mediators of the direct relationship. The relatively poor fit of this model, in addition to its lack of conceptual logic (i.e., the lack of correlation between microaggression sensitivity and ratings of discrimination frequency toward the minority group), led to the testing of a fourth and final model. In this model, orientation predicted sensitivity to microaggressions; sensitivity to microaggressions predicted discrimination frequency ratings against the self; and discrimination frequency ratings against the self predicted discrimination frequency ratings toward the minority group. This model showed a

significant indirect effect, with the minority group rating discrimination toward the minority group as being more frequent.

It should be noted immediately that all the models being discussed here – and particularly the final model – were partially data-driven. That is, although these variables were hypothesized to be mediators, their role as *intervening* (i.e. indirect but non-mediating) variables was informed by the data collected. Because these models were directly informed by the data, they cannot be treated as a priori hypotheses, and therefore cannot be truly tested using the same data set. In order to confirm and extend these findings, this study should be replicated in the future.

### 3.1 Implications

This model provides a potential mechanism for a relationship between sexual and romantic orientation and discrimination frequency ratings toward the minority group. Several facets of this finding require further probing in order to determine their significance in our understanding of perceptions of discrimination.

First, the lack of a direct relationship between orientation and discrimination frequency ratings must be considered. Given the presence of the indirect model found in analysis, why does the direct relationship appear to be null? It is very likely that, as noted above, some unknown mediator is working in the opposite direction of the found indirect effect. That is, some unknown variable is causing sexual and romantic minorities to rate discrimination toward the group as being less frequent than they otherwise would.

This variable could be, for instance, a belief in a just world; sexual and romantic minorities might rate discrimination against their group as being less frequent because

they would prefer to believe that they would not be discriminated against for something outside of their control. Cognitive dissonance may also play a role in this relationship: if sexual and romantic minorities feel that they are at risk for harassment or discrimination due to their orientation, but also want to disclose their orientation (or have already disclosed their orientation) for other reasons, they may experience cognitive dissonance. This may compel these individuals to deemphasize the risk of harassment or discrimination, rating these events as less frequent than they would otherwise. However, the nature of this missing variable is completely unknown. Any suggestions made in this work are pure conjecture.

Another component of this work that raises discussion is the notion that sensitivity to microaggressive scenarios predicts ratings of discrimination frequency against the self. The temporal sequence of these two variables is difficult to discern. If individuals are more sensitive to microaggressions, rating these situations as being more discriminatory, it follows logically that these individuals would also rate discrimination against themselves as being more frequent. However, previous research on discrimination toward women has reported that perceptions of discrimination predicted the degree to which women rated a scenario as discriminatory (Swim & Cohen, 1997), implying that the reverse temporal order could be a possibility.

The identification of sensitivity to microaggressions as the predicting variable in this relationship could also be misconstrued in various ways. In the face of such findings, it may be tempting to claim that discrimination against minorities is “all in their heads”. This is, of course, a great oversimplification. First, as is evident in Figure 4, a great deal of the variance in ratings of discrimination frequency toward the self remains

unexplained by the model. Second, and perhaps most relevant to the current research, microaggressive behaviours *could* be motivated by discriminatory beliefs; that is, although they are not always intentional or conscious, microaggressions may in fact convey true feelings of hostility. As such, when a minority group member rates such a behaviour as being highly discriminatory, they may be entirely correct. In order to fully understand where the “error” lies in these judgments, it would be necessary to know exactly what thoughts or beliefs motivated each instance of microaggressive behaviour, and this is not information that was collected in the scope of the current study. The present findings should be interpreted with this in mind. Information about perpetrators’ thoughts and beliefs would be extremely helpful to researchers in this area, but might also be very difficult to obtain; it would be necessary to collect this information following naturally-occurring microaggressions, which are unlikely to occur in-lab. This is discussed further section 3.3 below.

## 3.2 Limitations

The current study is limited by a number of factors. First, this study was originally conducted using a university convenience sample; the first 214 participants were recruited in this manner, with the last 47 participants being recruited from the general community. However, even these last 47 participants were largely composed of students from Western University, with only a few members of the larger community participating in the study. University samples are often categorized as being largely “WEIRD” – Western, educated, industrialized, rich, and democratic (Jones, 2010). This is of particular note for the current study. University students are likely to be surrounded by fellow university students, both in their classes and among their social groups. As such,



participants in the study may have been rating their experiences of discrimination – and their perception of the frequency of discrimination against others – based on their experiences with other university students. In this context, the WEIRD characteristics may be particularly important, since democratic individuals have often been identified as being less homonegative (e.g. Hicks & Lee, 2006). That is, participants may have rated discrimination toward themselves or toward the minority or majority groups as being less frequent than it would be in the greater community, due to the highly liberal political leanings of their peers and classmates.

Another potential limitation is that all data for this study was collected in the form of self-report. This approach may be criticized by some, and of course, objective studies of discrimination and microaggressions are sorely needed (this will be discussed in more detail below). However, the goal of the current study was to examine not just discrimination, but *perceptions* of discrimination. As such, self-report measures were both necessary and sufficient to address the research questions being asked. It would perhaps be of interest to collect data about perception including opinions that are both “subjective” (i.e. personal) and “objective” (i.e. rated by trained coders), but as previously stated, this is outside the scope of the current project.

Finally, as mentioned above, this study suffers from a lack of power due to the small size of the minority group. This study should be replicated with a substantially larger sample size in order to confirm its findings.

### 3.3 Future Directions

There are several lines of research that could extend from the current work. First, it is imperative that this model should be re-tested using a new sample of data. The a

priori hypotheses for this work were not completely confirmed; rather, they had to be modified slightly in order to fit the data, and as such these findings should be viewed as post-hoc explanations of the data. Therefore, these partially data-driven models should be replicated in order to support their validity.

Secondly, it would be helpful to include a larger subset of microaggressive behaviours in the imaginary scenarios. Perhaps even a selection of non-aggressive behaviours could be included; that is, scenarios involving innocuous behaviours that have not been identified as microaggressions could be presented, in order to distinguish between sensitivity to truly discriminatory behaviours and mere reactivity. Items such as these would require careful preparation and consideration, but might include such situations as, “Your friend asks you how your partner’s new job is going.” Given that no other measures of microaggression sensitivity currently exist, the imaginary scenarios developed for this project could indeed represent a first step toward building a valid scale to be used more extensively in the discrimination literature.

Another facet of microaggressive behaviour is, of course, the motivating thoughts and beliefs behind the behaviour. As mentioned above, it would be extremely helpful to understand the cognitive processes underlying microaggressive behaviours. The logistics of this idea are difficult to imagine. A true examination of this process would require naturally-occurring microaggressions; this is unlikely to occur in-lab, as participants would likely avoid hostility in a supervised lab setting. Perhaps unintentional and unconscious microaggressions could be observed, if natural conversation was allowed, but these instances may still be few and far between. An alternative plan might be to observe microaggressive behaviours in natural environments (for instance, to have same-

sex confederates hold hands in a public space, and wait for someone to enact a microaggression toward them), and to then ask perpetrators if they would be willing to participate in the study. This type of study would necessarily be brief and easy to complete on-site. Even so, such a study would likely require extensive time and energy to complete, particularly because many perpetrators of microaggressions might be unwilling to answer questions about their behaviour.

Finally, as mentioned above, objective studies of microaggressions are currently non-existent. Microaggressions are very difficult to study; their subtle, sometimes-unconscious, and sometimes-unintentional nature make them troublesome to capture and record in real life. One such project is currently underway, however. The author of this work has initiated a study of microaggressions using hidden video cameras, which are worn by same-sex and different-sex couples as they walk hand-in-hand through a public space. The cameras record the reactions of people around them, including such microaggressive behaviours as staring at or avoiding the couples. Participants are then asked about whether they noticed any behaviours while walking, and asked to elaborate on their thoughts and feelings regarding the behaviours. This study should provide a more objective examination of the frequency of microaggressions, and of individuals' reactions to these behaviours.

### 3.4 Summary and Concluding Remarks

To summarize, it appears that all individuals agree that sexual and romantic minorities face more discrimination from the general population than do majority group members. Further, minority group members and majority group members show agreement on the frequency with which minorities experience discrimination. Frequency

ratings of discrimination against the minority group are impacted both by frequency ratings of discrimination against the self and by the degree to which one deems microaggressive behaviours to be discriminatory. An indirect effect of orientation (i.e. minority or majority group status) on frequency ratings of discrimination against the group was found.

The present work is unique due to its examination not only of discrimination and discriminatory behaviours, but rather, the *perception* of these behaviours. To date, no other studies have examined the ways in which microaggressions may be perceived and interpreted by sexual and romantic minorities. This study is a first step in broaching this topic, and its findings indicate that specific perceptual mechanisms may be at work in the identification of discrimination. This work should be replicated and extended to help fully understand the perception of microaggressions and its contribution to the literature on discrimination against sexual and romantic minorities.

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Table 1  
*Breakdown of participants' sexual and romantic orientations*

		Sexual Orientation	Romantic Orientation
Hetero-	Male	76	77
	Female	121	124
Homo-	Male	14	14
	Female	6	5
Bi-	Male	3	1
	Female	11	9
Pan-	Male	0	1
	Female	6	4
A-	Male	0	0
	Female	1	1
Questioning/Unsure	Male	0	1
	Female	1	2
Fluid	Male	1	2
	Female	2	2
Other	Male	3	1
	Female	5	6

Table 2  
*Correlations between study variables*

	D.F.R. minority	D.F.R. majority	D.F.R. self	Micro. Affect	Micro. Impact	Micro. Discrim.	Disclos. Family	Disclos. Friends	Disclos. SM	S.D.	S.E.	S.A.
D.F.R. minority	1											
D.F.R. majority	.22**	1										
D.F.R. self	.29**	.48**	1									
Micro. Affect	.09	-.14	.19*	1								
Micro. Impact	.13	.114	.40**	.51**	1							
Micro. Discrim.	.23**	.13*	.50**	.43**	.73**	1						
Disclos. Family	.15*	-.03	.26**	.24**	.33**	.39**	1					
Disclos. Friends	.06	-.02	.16*	.16	.15*	.23**	.63**	1				
Disclos. SM	.03	.02	.21**	.18*	.31**	.34**	.59**	.38**	1			
S.D.	.12	-.01	-.02	-.10	.00	.04	.18*	.16*	.12	1		
S.E.	.02	.20*	.25**	.01	.16*	.14*	.10	.12	.09	.17*	1	
S.A.	.13	.06	.21**	.06	.30**	.22**	.13*	.08	.09	.19*	.43**	1

\*  $p < .05$ ; \*\*  $p < .01$

*Note.* D.F.R. minority = discrimination frequency ratings for minority group; D.F.R. majority = discrimination frequency ratings for majority group; D.F.R. self = discrimination frequency ratings for the self; Micro. Affect = affective reaction to microaggressive scenarios; Micro. Impact = impact of microaggressive scenarios; Micro. Discrim. = degree to which microaggressive scenarios were rated as discriminatory; Disclos. Family = disclosure to family; Disclos. Friends = disclosure to friends; Disclos. SM = disclosure on social media; S.D. = social desirability; S.E. = self-esteem; S.A. = social anxiety.

Table 3  
*Regression Coefficients For Model 1*

Variable 1	Variable 2	$\beta$	$p$
Orientation	Self-discrimination ratings	.24	.00
Self-discrimination ratings	Minority group discrimination ratings	.29	.00
Orientation	Minority group discrimination ratings (indirect pathway)	.07	.003

Table 4  
*Model Fit Indices For All Four Models*

	$\chi^2$	df	CFI	TLI	RMSEA	RMSEA C.I.	SRMR
Model 1	.88	1	1.00	1.09	.00	.00-.09	.003
Model 2	.49	1	1.00	1.02	.00	.00-.16	.013
Model 3	1.36	1	1.00	.98	.04	.00-.19	.017
Model 4	3.66	3	1.00	.99	.03	.00-.12	.024

Table 5  
*Regression Coefficients For Model 2*

Variable 1	Variable 2	$\beta$	$p$
Orientation	Microaggression sensitivity	.50	.00
Microaggression sensitivity	Minority group discrimination ratings	.23	.00
Orientation	Minority group discrimination ratings (indirect pathway)	.12	.001

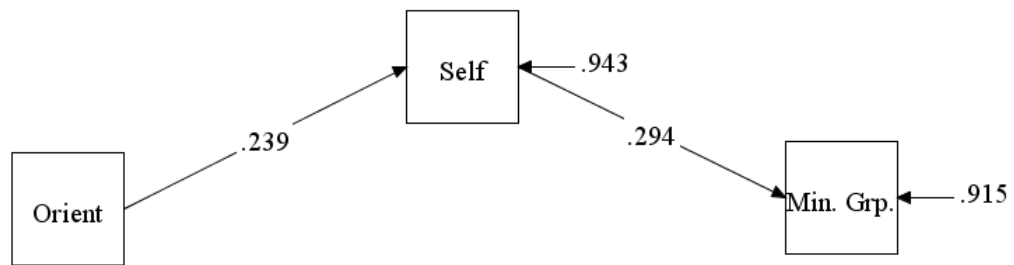


Table 6  
*Regression Coefficients For Model 3*

Variable 1	Variable 2	$\beta$	$p$
Orientation	Self-discrimination ratings	.25	.00
Orientation	Microaggression sensitivity	.50	.00
Self-discrimination ratings	Minority group discrimination ratings	.28	.00
Microaggression sensitivity	Minority group discrimination ratings	.11	.13
Orientation	Minority group discrimination ratings (indirect pathway through self-discrimination ratings)	.07	.007
Orientation	Minority group discrimination ratings (indirect pathway through microaggression sensitivity)	.06	.14
Orientation	Minority group discrimination ratings (overall indirect effect)	.12	.001

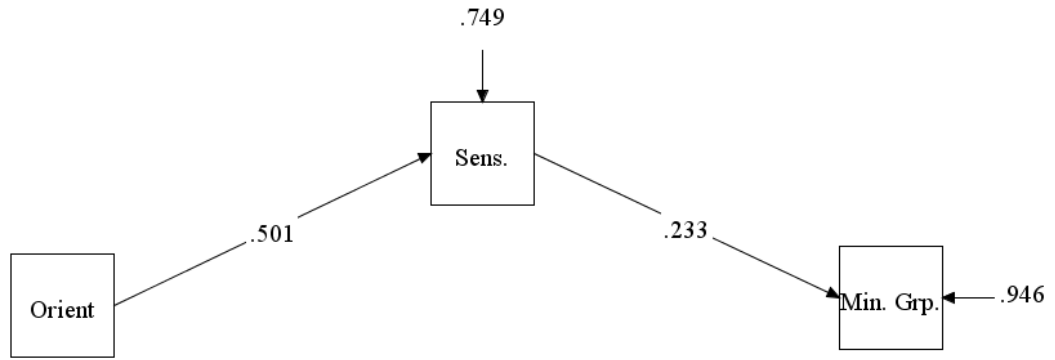
Table 7  
*Regression Coefficients For Model 4*

Variable 1	Variable 2	$\beta$	$p$
Orientation	Microaggression sensitivity	.50	.00
Microaggression sensitivity	Self-discrimination ratings	.46	.00
Self-discrimination ratings	Minority group discrimination ratings	.33	.00
Orientation	Minority group discrimination ratings (indirect pathway)	.08	.00



*Figure 1.* Indirect pathway through discrimination frequency ratings toward the self (Model 1).

Note: "Orient" = orientation; "Self" = discrimination frequency ratings toward the self; "Min. Grp." = discrimination frequency ratings toward the minority group.



*Figure 2.* Indirect pathway through microaggression sensitivity (Model 2).  
Note: “Orient” = orientation; “Sens.” = sensitivity to microaggressive scenarios; “Min. Grp.” = discrimination frequency ratings toward the minority group.

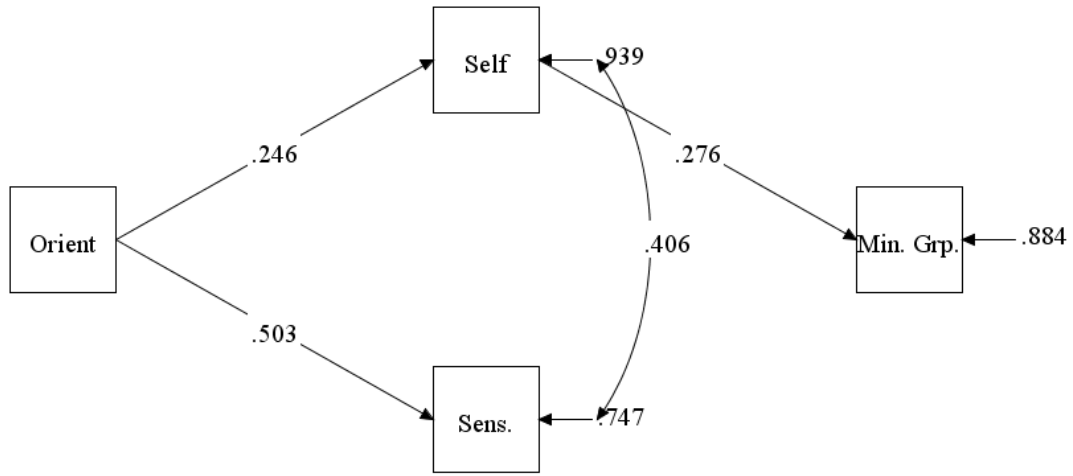
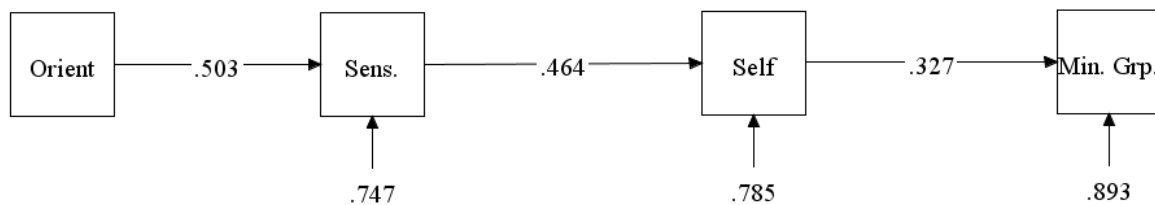


Figure 3. Indirect pathway through microaggression sensitivity and discrimination frequency ratings toward the self (Model 3).  
Note: “Orient” = orientation; “Self” = discrimination frequency ratings toward the self; “Sens.” = sensitivity to microaggressive scenarios; “Min. Grp.” = discrimination frequency ratings toward the minority group.



*Figure 4.* Indirect pathway through microaggression sensitivity and discrimination frequency ratings toward the self (Model 4).

Note: "Orient" = orientation; "Sens." = sensitivity to microaggressive scenarios; "Self" = discrimination frequency ratings toward the self; "Min. Grp." = discrimination frequency ratings toward the minority group.

# Appendix A

## Initial Ethics Approval Form



**Western  
Research**

Western University Health Science Research Ethics Board  
NMREB Delegated Initial Approval Notice

Research Ethics

**Principal Investigator:** Prof. Lorne Campbell  
**Department & Institution:** Social Science\Psychology, Western University

**NMREB File Number:** 105917  
**Study Title:** Perceptions of Discrimination Toward Sexual and Romantic Minorities  
**Sponsor:**

**NMREB Initial Approval Date:** November 13, 2014  
**NMREB Expiry Date:** April 30, 2015

### Documents Approved and/or Received for Information:

Document Name	Comments	Version Date
Western University Protocol	Revised Western protocol (clean)	2014/10/28
Recruitment Items	Newspaper ad	2014/10/28
Letter of Information	SONA	2014/10/28
Letter of Information	Non-SONA	2014/10/28
Instruments	Measures file	2014/10/28
Recruitment Items	SONA	2014/10/28
Other	Letter of debriefing - non-SONA	2014/10/28

The Western University Non-Medical Research Ethics Board (NMREB) has reviewed and approved the above named study, as of the NMREB Initial Approval Date noted above.

NMREB approval for this study remains valid until the NMREB Expiry Date noted above, conditional to timely submission and acceptance of NMREB Continuing Ethics Review.

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario.

Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB.

The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.



### Ethics Officer to Contact for Further Information

Erika Basile ebasile@uwo.ca	Grace Kelly grace.kelly@uwo.ca	Mina Mekhail mmekhail@uwo.ca	Vikki Tran vikki.tran@uwo.ca
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## Appendix B

### Approval of Revision to Ethics Application



**Western  
Research**

Research Ethics

**Western University Non-Medical Research Ethics Board  
NMREB Amendment Approval Notice**

**Principal Investigator:** Prof. Lorne Campbell  
**Department & Institution:** Social Science\Psychology, Western University

**NMREB File Number:** 105917  
**Study Title:** Perceptions of Discrimination Toward Sexual and Romantic Minorities  
**Sponsor:**

**NMREB Revision Approval Date:** February 06, 2015  
**NMREB Expiry Date:** November 13, 2015

**Documents Approved and/or Received for Information:**

Document Name	Comments	Version Date
Recruitment Items		2015/01/28
Revised Western University Protocol		2015/02/05

The Western University Non-Medical Science Research Ethics Board (NMREB) has reviewed and approved the amendment to the above named study, as of the NMREB Amendment Approval Date noted above.

NMREB approval for this study remains valid until the NMREB Expiry Date noted above, conditional to timely submission and acceptance of NMREB Continuing Ethics Review.

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario.

Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB.

The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.



er Information

<input type="checkbox"/> Erika Basile ebasile@uwo.ca	<input checked="" type="checkbox"/> Grace Kelly grace.kelly@uwo.ca	<input type="checkbox"/> Mina Mekhail mmekhail@uwo.ca	<input type="checkbox"/> Vikki Tran vikki.tran@uwo.ca
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## Appendix C

### Sexual and Romantic Orientation Questionnaire

Please identify the sexual orientation with which you most identify. Note that your sexual orientation describes which gender(s) you are attracted to sexually, but not necessarily those that you are attracted to romantically. You may select more than one answer. If none of the listed options are fully descriptive of your identity, please select "Not specified above" and use your own words in the text box.

1. Heterosexual / straight: I am only sexually attracted to people of a different gender than me.
2. Homosexual / gay: I am only sexually attracted to people of the same gender as me.
3. Bisexual: I may be sexually attracted to people of the same gender as me or of a different gender.
4. Pansexual: I may be sexually attracted to any person, regardless of gender.
5. Asexual: I am not sexually attracted to any gender.
6. Unsure / questioning: I am not yet sure of my sexual orientation.
7. Fluid: my sexual orientation has changed or may change over time.
8. Not specified above (please elaborate): \_\_\_\_\_

Please identify the romantic orientation with which you most identify. Note that your romantic orientation describes which gender(s) you are attracted to romantically (e.g., with whom you could fall in love), but not necessarily those that you are attracted to sexually. You may select more than one answer. If none of the listed options are fully descriptive of your identity, please select "Not specified above" and use your own words in the text box.

1. Heteroromantic / straight: I am only romantically attracted to people of a different gender than me.
2. Homoromantic / gay: I am only romantically attracted to people of the same gender as me.
3. Biromantic: I may be romantically attracted to people of the same gender as me or of a different gender.
4. Panromantic: I may be romantically attracted to any person, regardless of gender.
5. Aromantic: I am not romantically attracted to any gender.
6. Unsure / questioning: I am not yet sure of my romantic orientation.
7. Fluid: my romantic orientation has changed or will change over time.
8. Not specified above (please elaborate): \_\_\_\_\_

## Appendix D

### Orientation Disclosure Questionnaire

Are the majority of your family members aware of your sexual and romantic orientation?

1. Yes
2. No

Are the majority of your friends aware of your sexual and romantic orientation?

1. Yes
2. No

Is your significant other aware of your sexual and romantic orientation?

1. Yes
2. No
3. I do not have a significant other

Do the majority of your social media profiles (e.g. Facebook) accurately identify your sexual and romantic orientation?

1. Yes
2. No

## Appendix E

### Microaggressive Scenarios

*The next several screens will ask you to imagine various scenarios in which you are with your relationship partner. You will be asked to describe your feelings in response to these scenarios. If you do not currently have a partner, please imagine your ideal partner in these scenarios.*

- 1. Imagine that you and your partner are walking together in a mall, holding hands. You notice someone staring at you and your partner as you walk past them.**

**For each question, please move the slider to indicate your feelings.**

- a. How do you feel after encountering this behaviour?  
\_\_\_\_\_
- b. How much did this behaviour affect you?  
\_\_\_\_\_
- c. Do you feel that you were being discriminated against?  
\_\_\_\_\_
- d. Do you have any other comments about this scenario?  
\_\_\_\_\_

- 2. Imagine that you and your partner are sitting in a waiting room. Another person comes in, and you notice that they sit down as far from you and your partner as possible.**

**For each question, please move the slider to indicate your feelings.**

- a. How do you feel after encountering this behaviour?  
\_\_\_\_\_
- b. How much did this behaviour affect you?  
\_\_\_\_\_
- c. Do you feel that you were being discriminated against?  
\_\_\_\_\_
- d. Do you have any other comments about this scenario?  
\_\_\_\_\_

- 3. Imagine that you and your partner are at a party. You are being very affectionate with each other. A new acquaintance comments: "Wow, you**

sure are good friends."

**For each question, please move the slider to indicate your feelings.**

- a. How do you feel after encountering this behaviour?  
\_\_\_\_\_
- b. How much did this behaviour affect you?  
\_\_\_\_\_
- c. Do you feel that you were being discriminated against?  
\_\_\_\_\_
- d. Do you have any other comments about this scenario?  
\_\_\_\_\_

- 4. Imagine that you are talking to a friend about your partner. They ask you, "So, who wears the pants in your relationship?"**

**For each question, please move the slider to indicate your feelings.**

- a. How do you feel after encountering this behaviour?  
\_\_\_\_\_
- b. How much did this behaviour affect you?  
\_\_\_\_\_
- c. Do you feel that you were being discriminated against?  
\_\_\_\_\_
- d. Do you have any other comments about this scenario?  
\_\_\_\_\_

- 5. Imagine that you are talking to a friend, and the topic of your sexual and/or romantic orientation comes up. Your friend very quickly starts talking about something else.**

**For each question, please move the slider to indicate your feelings.**

- a. How do you feel after encountering this behaviour?  
\_\_\_\_\_
- b. How much did this behaviour affect you?  
\_\_\_\_\_

c. Do you feel that you were being discriminated against?

\_\_\_\_\_

d. Do you have any other comments about this scenario?

\_\_\_\_\_

## Curriculum Vitae

### SARAH MOROZ

#### Education

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2019	Ph.D., Social Psychology, University of Western Ontario (anticipated)
2015	M.Sc., Social Psychology, University of Western Ontario
2013	B.A., Psychology (Major), Cognitive Science (Minor), University of Waterloo

#### Scholarships and Awards

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2015-2016	Ontario Graduate Scholarship – Doctoral: \$15,000 [declined]
2014-2015	Ontario Graduate Scholarship – Masters: \$15,000
2013-2014	Joseph-Armand Bombardier Canada Graduate Scholarship – Masters, Social Sciences and Humanities Research Council: \$17,500
2009-2013	Dean’s Honours List, University of Waterloo
2012	Undergraduate Student Research Award, Natural Sciences and Engineering Research Council: \$4,500
2010	Undergraduate Student Research Award, Natural Sciences and Engineering Research Council: \$4,500
2008	University of Waterloo President’s Scholarship: \$2,000
2008	University of Waterloo Retirees’ Scholarship: \$1,000

#### Publications

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Connors, S., Khamitov, M., **Moroz, S.**, Campbell, L., & Henderson, C. (in press). Time, money, and happiness: Does putting a price on time affect our ability to smell the roses? *Journal of Experimental Social Psychology*.

Campbell, L., & **Moroz, S.** (in press). *The dyadic nature of ideal and partner perceptions in romantic relationships*. In C.R. Knee & H.T. Reis (Eds.), *Positive Approaches to Optimal Relationships*. Cambridge: Cambridge University Press.

Campbell, L., & **Moroz, S.** (2014). Humour use between spouses and positive and negative interpersonal behaviours during conflict. *Europe's Journal of Psychology*, 10(3), 532-542. doi: 10.5964/ejop.v10i3.763

Besner, D., **Moroz, S.**, & O’Malley, S. (2011). On the strength of connections between localist mental modules as a source of frequency-of-occurrence effects. *Psychological Science*, 22(3), 393-398. doi:10.1177/0956797610397957

#### Manuscripts Under Review or Revising for Resubmission

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**Moroz, S., Daljeet, K., & Chen, S.** (under review). The dark triad and break-up distress: The indirect effects of investment, commitment, and quality of alternatives.

## **Presentations**

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**Moroz, S.** (2016). The Role of Homonegative Microaggressions in Perceptions of Discrimination. Poster accepted at the Society for Personality and Social Psychology Annual Convention in San Diego.

Chen, S., **Moroz, S., & Daljeet, K.** (2015). The Dark Triad and Break-up Distress: Indirect Effects Through Relationship Investment and Commitment. Poster accepted at the International Society for the Study of Individual Differences annual conference, London.

**Moroz, S.** (2015). Sensitivity to Microaggressions as a Predictor of Sexual and Romantic Orientation Disclosure. Poster presented at the Canadian Psychological Association Annual Convention, Ottawa.

**Moroz, S.,** Chen, S., & Daljeet, K. (2015). Narcissism and Break-Up Distress: The Indirect Effect of Commitment, Investment, and Quality of Alternatives. Poster presented at the Canadian Psychological Association Annual Convention, Ottawa.

Chen, S., **Moroz, S., & Daljeet, K.** (2015). Bad Romance: Examining the Effects of Relationship Investment and the Dark Triad in Break-Up Distress. Poster presented at the Canadian Psychological Association Annual Convention, Ottawa.

Daljeet, K., Chen, S., & **Moroz, S.** (2015). Machiavellianism and Break-up Distress: The Mediating Role of Relationship Investment. Poster presented at the Canadian Psychological Association Annual Convention, Ottawa.

**Moroz, S.,** Ethier, N., & Nilsen, E. (2014). Mother-Child Communication Styles: The Influence of ADHD and Executive Function. Poster presented at the Canadian Psychological Association Annual Convention, Vancouver.

**Moroz, S.** (2013). Perceptions of Interpersonal Style in Mother-Child Interactions. Talk presented at the Ontario Psychology Undergraduate Thesis Conference, Toronto.

## **Teaching Experience**

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### ***Undergraduate Tutorials Taught***

Winter 2014/2015     Attitudes and Attitude Change, University of Western Ontario

Fall 2013/2014      The Science of Romantic Relationships, University of Western Ontario

### ***Teaching Certifications***

2013              Teaching Assistant Training Program Certificate, University of Western Ontario

### **Professional Service**

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2014-              Graduate Editor, Western Undergraduate Psychology Journal, University of Western Ontario  
 2014-2015        Graduate Affairs Committee, Department of Psychology, University of Western Ontario  
 2014-2015        Society of Graduate Students Equity Committee, University of Western Ontario  
 2013-2015        Social Psychology Area Master's Student Representative, University of Western Ontario

### **Related Work Experience**

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2013              Research Assistant, School of Public Health and Health Systems, University of Waterloo  
 2009-2012        Research Assistant, Department of Psychology, University of Waterloo  
 2012              NSERC Undergraduate Researcher, Department of Psychology, University of Waterloo  
 2011              Genetic Counselling and Research Assistant, Princess Margaret Hospital  
 2011              Student Researcher, National Research Council Canada  
 2010              NSERC Undergraduate Researcher, Department of Psychology, University of Waterloo