THE ROLE OF COLLECTIVE GUILT IN THE RIGHTING OF INJUSTICES PERPETRATED BY POWERFUL GROUPS:

UNRAVELLING INTRAPSYCHIC PROCESSES OF COLLECTIVE GUILT THROUGH INDIRECT MEASURES

Julie Caouette
Department of Psychology
McGill University, Montréal
December 2010

A thesis submitted to McGill University in partial fulfillment of the requirements of the degree of Doctor of Philosophy.

TABLE OF CONTENTS

ACKNOWLEDGMENTS

First and foremost, thanks to my supervisor, Prof. Don Taylor. Upon starting grad school, he had promised me that we would "rock n' roll", and we sure did! For the opportunity to discuss "big" ideas, thanks to the many members of the social psych Tupperware group (well, brown bags are "out" according to Don Taylor): Prof. John Lydon, Prof. Mark Baldwin, Prof. Richard Koestner, and their students. Exceptional mentions go to my fellow grad student musketeers Danielle Menzies-Toman and Michelle Downie, with honorary member Rupert Klein. And very special thanks to my fellow Taylor lab members, the camaraderie made the work all the more enjoyable: Winnifred Louis, Évelyne Bougie, Abigail Poore, Melissa Mair, Esther Usborne, Roxane de la Sablonnière, Michael King, Benjamin Giguère, and Régine Debrosse. I also want to especially underline the overall cooperative spirit of the McGill Psych grad students, with special thoughts to Stéphane Dandeneau, Sara Etchison, Jung-Kyong Kim, Lisa Linardatos, Joy McLure, and many others. Also, kudos to the honours students I have supervised through the years, their fresh look on things and energy was always beneficial to my work: Laurence Dupont-Hébert, Devon Proudfoot, Jody-Lynn Berg, Natalie Baker and Frank Kachanoff. For technical support, thanks to Michelle Caron, Roxanne Aubin, Annick Beaupré and the wonderful secretaries in our department, especially Giovanna LoCascio, Judi Young and Chantale Bousquet. For statistical advice, thanks to Prof. Jim Ramsay, Prof. Rhonda Amsel, Prof. Hsiu-Ting Yu and Prof. Kristopher J. Preacher (his website quantpsy.org was a godsend). For writing support, I would like to particularly thank the members of the 2010 Agraphia Group (Mike King, Ben Giguère, Régine Debrosse, Geneviève Taylor, Lisa Linardatos, David Tannenbaum, and Sara Etchison) and the members of the writing class led by Prof. Dan Levitin (Erin White, Mansoor Siddiqui, Régine Debrosse, Anna Tirovolas, and Elizabeth Parvin). And I keep a special place in my heart for the many people I have encountered during my concurrent work on bilingual education in the Canadian Arctic, you may not know, but you have touched me and my thinking on many levels, your insights were immensely

valuable. I am also grateful for this work has also allowed me to spend precious time with Prof. Steve Wright.

My deep gratitude goes to my family, although for entirely different reasons. Without them, life and work would have less meaning. So thanks for the great emotional support and all the love: maman, papa, sweety David and my daughter Angeline. I am also immensely grateful to my daycare, The Brat Pak. Literally, this thesis could not have been finished without the loving care and many hours of dedication that Lisa, Kai and Billy gave my daughter Angeline.

This thesis is especially dedicated to my maman, who passed away during my graduate journey. Writing this line, my eyes and heart are swelling up. I miss her immensely, and regret that she is not here to share in my big achievement. I just know how proud she would be. And now being a mother myself, I know her pride in me would be bigger than my own, and mean even more to her than to me.

... And of course, I already feel guilty for probably having forgotten to thank a whole bunch of people.

CONTRIBUTION OF AUTHORS

As the first author on both manuscripts, I took the lead role in the development, design, implementation, and interpretations of all the studies. I conducted the data analyses and lead the writing. My supervisor, Prof. Donald M. Taylor, second author on both manuscripts, gave substantial inputs into the development, design, implementation, and interpretations of all the studies, and also assisted with the writing of the manuscripts. Throughout the entire research process, he provided generous guidance, advice and contributions at all stages.

ABSTRACT

Traditionally, psychologists have understood guilt as an intrapsychic process, where people experience self-focused distress when confronted with their transgressions. This distress often motivates people to use psychological defenses to assuage their guilt. Hence, it is difficult to disentangle, when people claim not to feel guilty, whether people genuinely do not feel blameworthy or whether they are protecting themselves from guilt-ridden distress. Similar to traditional guilt research, where people tend to avoid *personal* guilt, a recent line of research reveals that people tend to avoid *collective* guilt, which stems from transgressions committed by their group (Branscombe & Doosje, 2004). However, because people tend to defend themselves against guilt, the field's reliance on self-report scales to measure collective guilt is problematic. That is, when participants are directly asked "do you feel guilty?" they may be unwilling or unable to openly report their guilt feelings. Thus, I contend that it is crucial that collective guilt be studied though indirect measures. They can capture automatic responses that are not under conscious or voluntary control by participants, and therefore are less prone to distortion. In Manuscript 1, I present a series of studies where the unique predictive and explanatory power of two novel indirect measures of collective guilt was investigated (a word fragment completion task and an implicit association test). In Manuscript 2, I focus on one mechanism often claimed to underlie the avoidance of collective guilt: because ingroup transgression poses a specific psychological *threat* to the group's self-image, this prompts the use of defenses that allow collective guilt to be deflected. Threat is difficult to measure empirically, as participants are often not consciously aware of the threat, or they may attempt to deny it. This again points to a need for more indirect measures. I present a study where threat was assessed in the context of collective guilt by employing a psychophysiological index of cardiac control, a measure not under conscious control: respiratory sinus arrhythmia (RSA). In both manuscripts, the differential pattern of results obtained from indirect measures and self-report measures confirms the value of including both measures when studying collective guilt.

RÉSUMÉ

En général, les psychologues conçoivent le sentiment de la culpabilité comme un processus intrapsychique où les gens ressentent de la détresse lorsqu'ils sont confrontés à leurs transgressions. Cette détresse motive souvent les gens à utiliser des défenses psychologiques pour apaiser leur sentiment de culpabilité. Par conséquent, lorsque les gens affirment ne pas se sentir coupable, il est difficile de distinguer les gens qui ne se sentent véritablement pas condamnables de ceux qui se protègent contre la détresse rattachée à un sentiment de culpabilité. De façon comparable aux travaux classiques qui ont démontré que les gens ont tendance à éviter la culpabilité *personnelle*, des études récentes révèlent que les gens ont aussi tendance à éviter la culpabilité *collective* qui découle de transgressions commises par leur propre groupe (Branscombe & Doosje, 2004). Cependant, l'utilisation unique d'échelles auto-rapportées pour mesurer la culpabilité collective est problématique puisque les gens ont tendance à se défendre contre cette culpabilité. Autrement dit, lorsqu'on demande directement aux participants "ressentez-vous de la culpabilité?" ils peuvent être réticents ou incapables de rendre compte ouvertement de leurs sentiments de culpabilité. Ainsi, je soutiens qu'il est crucial que la culpabilité collective soit étudiée à l'aide de mesures indirectes. Ces mesures peuvent capturer des réponses automatiques qui ne sont pas sous le contrôle conscient ou volontaire des participants et donc ces réponses sont moins assujetties à des distorsions. Dans le Manuscrit 1, je présente une série d'études où le pouvoir unique de prévision et d'explication de deux nouvelles mesures indirectes de la culpabilité collective a été étudié (un test de mots fragmentés et un test d'association implicite). Dans le Manuscrit 2, je me concentre sur un mécanisme souvent proposé afin d'expliquer la tendance à vouloir éviter la culpabilité collective: puisque la transgression du groupe constitue une *menace psychologique* spécifique à l'image du groupe, ce désir de vouloir éviter la culpabilité conduit à l'utilisation de moyens de défense qui permettent à la culpabilité collective d'être évitée. Cette menace psychologique est difficile à mesurer empiriquement, car les participants sont rarement conscients de cette menace ou encore, ils peuvent tenter de la nier. Cela met encore en évidence

le besoin de mesures plus indirectes. Je présente une étude dans laquelle la menace a été évaluée dans le contexte de la culpabilité collective en utilisant un indice psychophysiologique de contrôle cardiaque, c'est-à-dire une mesure qui n'est pas sous contrôle conscient: l'arythmie sinusale respiratoire (ASR). Dans ces deux manuscrits, les différences entre les résultats obtenus à partir des mesures indirectes et ceux obtenus avec les mesures auto-rapportées confirment la nécessité d'inclure ces deux types de mesures lorsque l'on étudie la culpabilité collective.

PREFACE

Kurt Lewin, the father of social psychology, is reputed to have extolled "If you want to truly understand something, try to change it". In my earlier research, I sought to understand collective guilt by trying to experimentally change levels of collective guilt. But because people are motivated to avoid feeling guilty, it was no surprise that my participants seemed reluctant to be "manipulated into" vicariously experiencing such an unpleasant emotion as a result of serious transgressions perpetrated by their own group. Be it in the laboratory, or in their daily lives, people will often react defensively when confronted with even minor transgressions. Because of the potential for such reactance, it is difficult to disentangle, when people claim not to feel guilty, whether people genuinely do not feel blameworthy or whether they are protecting themselves from the distress they feel as a result of knowing they have harmed another person. In other words, it is difficult to know whether people truly experience no change in guilt feelings, or whether guilt feelings are diminished with the help of psychological defenses. One well-known example of such a defense involves "blaming the victim", where such blame helps perpetrators, and other involved parties, to be less burdened by distress when faced with harm doing. For example, blame is common when people believe that rape victims could have stopped the harassment if they had really tried, or that the victims must have done something to cause it, by the way they dressed or acted.

In this doctoral program of research, I focused on how mainstream Canadians react when confronted with the harm done to Aboriginal peoples as a result of internal colonization at the hands of Euro-Canadians. In my own personal life, I have myself witnessed the plight of Aboriginal Canadians. First, I have been involved, along with my doctoral supervisor and other lab members, in a research program on bilingual education that seeks to protect and enhance Inuktitut, the heritage language of the Inuit (for a review of this program of work, see Taylor & Wright, 2002; Wright & Taylor, 1995; see also, Taylor, Caouette, Usborne & Wright, 2008; Usborne, Caouette, Qumaaluk & Taylor, 2009). This research required intensive field work in two Inuit communities in Nunavik (Northern

Québec) and I consider myself fortunate to have been allowed to share in the reality of these remote Aboriginal communities. Second, beyond such research-related visits, I lived for a year in Nunavut (the latest and newly created territory in Arctic Canada). This has allowed me to further deepen my relationship with Inuit community members. Both of these experiences serve as a constant reminder of the historically privileged position I, as a mainstream white Canadian, find myself in. Whatever statistics you may have heard about the harsh socio-economic situation of Aboriginal Canadians, or whatever I will present here, cannot fully convey the suffering, on so many levels, that I have encountered in Aboriginal communities. Most mainstream Canadians do not benefit from such first-hand experience and thus may be oblivious to the plight of Aboriginal peoples. Many are destined to a life in the poorer, more invisible sections of our cities, or on reserves and isolated communities. Thus, most mainstream Canadians are unaware of their own hugely advantaged position compared to Aboriginal peoples, and unaware that the impact of centuries of colonization continues to this day. And when confronted with such evidence, it may be difficult to accept that historical events have produced, on the one hand, systematic socio-economic barriers for Aboriginal peoples, and that white mainstream Canadians, on the other hand, have benefited as a result. This can be especially difficult to fathom given that Canadians cherish the egalitarian and multicultural essence of our society (cf. Feagin, Vera & Batur, 2001; Rothenberg, 2002; Tatum, 1997, 2000; see also, Allahar & Côté, 1998; Henry & Tator, 2009; Li, 1999; Menzies, 1999; Satzewich, 1998).

In my Master's thesis research (Caouette, 2003; Caouette & Taylor, 2007), I found that young mainstream Canadians often distance themselves from collective guilt and responsibility with regard to the plight of Aboriginal Canadians by emphasizing that wrongful actions were committed in the past by some distant ancestors. Many fail to consider that we are all accomplices in a society that perpetuates past wrongs even to the present day. One, very atypical, reaction from a research participant summarizes this well:

> The effects of brutally unfair and racist treatment by European settlers are still being felt today; however, Canadians today feel disconnected from the

> past so they have trouble feeling responsible. They also have trouble accepting the fact that they are benefiting from previous transgressions. No wonder there is little support to make changes to redress social inequality.

A more typical, and more widely shared, reaction is exemplified by this response from another participant:

> I agree that in the past White Canadians have exploited Aboriginal peoples by taking their land, but I can't help feeling that they brought their problems upon themselves somewhat as well.

Does this participant truly believe that Aboriginal peoples brought colonization upon themselves, with all its ravaging effects, or is this response indicative of a defense mechanism that was used to avoid feeling guilty?

The present thesis seeks to unravel such intrapsychic responses. Possibly, this participant is experiencing inner conflict: I'm a nice person; yet, people seem to be suffering because of my group, how can I reconcile that? This is a classic case of cognitive dissonance, where it's much easier to resolve such inner conflict by maintaining a positive vision of one's group, and by association of oneself, at the expense of the victimized group, by rationalizing that the suffering is somehow justified:

> We are good people. Therefore, if we deliberately inflict pain on another, the other must have deserved it. Therefore, we are not doing evil, quite the contrary. We are doing good. The relatively small percentage of people who cannot or will not reduce dissonance this way pay a large psychological price in guilt, anguish, anxiety, nightmare, and sleepless nights. (Tavris & Aronson, 2007, p. 198)

Accordingly, it is not surprising to find cumulative evidence suggesting that collective guilt is in fact a relatively rare emotion (for a review, see Wohl, Branscombe & Klar, 2006). If people have difficulty coping even with the harm caused by their own personal deliberate actions, it seems even less likely that they would feel guilty for their seemingly vicarious involvement with some harm caused by their group.

The Present Research Context: Harm Caused to Aboriginal Canadians

In 1991, the life expectancy at birth of Inuit in Canada was approximately 68 years, 10 years lower than for Canada overall. From 1991 to 2001, the life expectancy of Inuit did not increase, although it rose by about two years for non-Aboriginal Canadians. As a result, the comparative gap has widened to more than 12 years (Statistics Canada, 2008). During the same period, **s**uicide and self-injury were the leading causes of death for youth and adult Inuit up to age 44 years (Health Canada, 2005). These statistics are just one example that portrays an undeniable reality shared by Inuit and other Aboriginal peoples in Canada, such as the First Nations and Métis, and also other Aboriginal groups around the world (Eversole, McNeish & Cimadamore, 2005; Hurtig, 2008).

This reality was considered so alarming that a Royal Commission on Aboriginal Peoples (RCAP) was established in 1991 in Canada. In an ensuing report (1996), the Commission made it clear that the reality of entrenched economic and social problems in Aboriginal communities is far from being a so-called "Aboriginal problem": "Identifying it as an Aboriginal problem inevitably places the onus on Aboriginal peoples to desist from 'troublesome behaviour'" (Vol.1, Chap.1, Para. 8). Instead, the report made it clear that the source of the problems, and thus the solutions, are to be found in the relationships between Aboriginal nations and non-Aboriginal Canadian peoples. This was made acutely clear by one of the Chairs, René Dussault, at the launch of the report:

> We believe the relationship between Aboriginal and non-Aboriginal peoples in Canada must change. [...] We cannot afford to allow the present situation to persist. The legacy of Canada's treatment of Aboriginal peoples is one of waste: wasted potential, wasted money, wasted lives. It is measured in statistic after statistic: in the rates of suicide; of substance abuse; of incarceration; of unemployment; of welfare dependence; of low educational attainment; of poor health and poor housing. (Dussault & Erasmus, 1996, Para. 1- 6)

Since the launch of this report, some progress has been made, such as the creation of the Nunavut territory and more recently the official apology for residential

schools by the Canadian federal government. However, the original RCAP report set out a 20-year agenda for implementing changes, with very specific recommendations. To date, the federal government has not implemented many of the RCAP recommendations (see Hurley & Wherrett, 2000). Indeed, the government has been the subject of criticism by national and international human rights bodies. In December 1998, the United Nations Committee on Economic, Social and Cultural Rights expressed concern that the recommendations of the RCAP have not yet been implemented, in spite of the urgency of the situation. In April 1999, the United Nations Human Rights Committee also expressed concern about Canada's failure to implement the RCAP recommendations. Even nationally, the Canadian Human Rights Commission has been raising concern about the government's inadequacy with regard to the RCAP goals.

Clearly, a malaise persists. Recently, on March 7, 2008, Canadians were actually split on whether their government should offer an apology to Aboriginal peoples for the harm caused by colonization. The Angus Reid poll asked:

> As you may know, the Government of Australia offered an official apology to the country's Aboriginal population for the laws and policies of successive parliaments and governments that have inflicted profound grief, suffering and loss on Australia's Aboriginal peoples. Do you think the Canadian government should offer a similar apology to Canada's Aboriginal population?

This poll showed that 42 per cent of respondents thought an official apology was warranted, while 39 per cent disagreed.

Although there seems to be some recognition that Aboriginal peoples have suffered from internal colonization at the hands of mainstream Canadians, many non-Aboriginal Canadians today still find themselves uncomfortable with the place of Aboriginal peoples within society. Interestingly, the Chairs of the RCAP foresaw this predicament when launching their report in 1996:

> Canadians are now embarrassed by the arrogance that runs through our history and by the acts of state suppression that it gave rise to: the Indian Act in all its permutations, the residential schools, the frequent relocation

> of whole communities, the negation of treaty commitments. Yet the underlying assumptions have not died. Although positive change has occurred, too many still see Aboriginal peoples as an unfortunate minority who only need better education and better tools to take their place alongside the majority, having adopted the majority's values. (Dussault & Erasmus, 1996, Para. 16)

The present doctoral program of research probes at the heart of this ambivalent attitude that non-Aboriginal Canadians hold towards Aboriginal Canadians, exemplified at time by guilt, shame and embarrassment, but also by blame, pity and condescension.

The impact of guilt cannot be underestimated: it is a powerful psychological force. On the one hand, guilt motivates individuals to repair and make amends for their mistakes and transgressions. Importantly, such corrective actions are not undertaken as a consequence of external pressure, but as a result of self-regulation (Mischel, Cantor, & Feldman, 1996, for a review, see Baumeister, Schmeichel & Vohs, 2007). Yet, an absence of guilt can sometimes be made possible by various psychological defense mechanisms, such as blaming the victim. In other words, the psychological avoidance of guilt can also indicate that other powerful forces are at work. And so, this research began with a quest to understand by experimentally manipulating collective guilt levels, yet it became clear that it was as important to understand what lay beneath the seemingly low reported levels of collective guilt.

GENERAL INTRODUCTION

Whether we are aware of it or not, as human beings, we have all signed on to a simple social contract (Baumeister, Stillwell & Heatherton, 1994). Different cultures may have slight variations in their rules, but every society socializes citizens that are able to self-regulate in order to live harmoniously in their society. That is, when faced with the prospect of violating a social rule, we don't always need the presence of an authority to make us conform; we have our own conscience to guide us. First through the disciplining of our parents, and then through contact with other family members, social peers and authority figures, we gradually internalize the fundamental values, norms and standards of our society, the basic rules of right and wrong that form our conscience. And when we transgress these rules, we feel guilt, a morally painful emotion that motivates us to make amends, to take socially desirable actions, which can ultimately repair or even enhance the quality of our social ties. In fact, feeling guilt is in itself so unpleasant that the mere anticipation of guilt is often enough to prevent the occurrence of a transgression. For example, coming home from a hard day at work, I found a phone message from my dear grandmother. She called me two days ago, and I forgot to call her back. I feel guilty. I'm too tired to call now, but I can foresee that this nagging feeling of guilt will be pestering me throughout the night if I don't call. So I call her. This may seem straightforward. Yet, ironically, this nagging feeling can prompt us to turn to different psychological defenses to assuage guilt, instead of taking actions to make amends. For example, I could blame my grandmother for calling me so often, and decide it is appropriate to ignore her phone calls for once.

People often react in such a defensive way when confronted with a transgression, and even more so if this transgression resulted in another person being harmed (for an overview, see Tavris & Aronson, 2008). One well-studied defense mechanism is to "blame the victim" (Lerner, 1980; for a review, see Ross & Miller, 2001). For instance, victim blaming often occurs in cases of sexual harassment, where people believe that the victim could have stopped the harassment if they had really tried, or that the victim must have done something to

provoke it, by the way they dressed or acted (De Judicibus & McCabe, 2001). Such victim blame helps perpetrators and other involved parties to be "less burdened by distress when faced with the harm doing" (Bandura, 1990, p. 39).

The extensive scientific literature on guilt makes it clear that this painful emotion is not welcomed and as such people are motivated to avoid it: "Insofar as guilt is an acutely unpleasant state, it seems likely that people may want to escape from it. People apparently use a variety of strategies to reduce their guilt feelings." (Baumeister et al., 1994, p. 258; see also e.g. Kugler & Jones, 1992; Lewis, 2000; Miceli & Castelfranchi, 1998; Tangney & Salovey, 1999; Tracy, Robins & Tangney, 2007). Guilt then is a fundamentally paradoxical emotion. Self-regulation requires guilt to be unpleasant in order to prevent people from engaging in reprehensible acts or, if such acts occur, to motivate them to make amends. Yet, it is this unpleasant nature of guilt that will also compel people to defend themselves against actually experiencing guilt per se, thus undermining the motivation to make amends.

Guilt: From an Intrapsychic Perspective to an Intergroup Perspective

Traditionally, psychologists have understood guilt as a fundamentally intrapsychic experience, where people experience emotional distress when their own reprehensible actions have failed in relation to a set of standards, norms, values, or goals (Baumeister et al. 1994, for a recent review of the guilt literature, see Tracy, Robins & Tangney, 2007). If a person feels personally responsible for a wrongful act, personal guilt will be experienced. But a growing line of research has recently made it clear that people can also experience collective guilt (for a review, see Branscombe & Doosje, 2004; Wohl, Branscombe & Klar, 2006). That is, if a person belongs to a group that has committed a wrongful act, then collective guilt may be experienced. Because people perceive themselves both as individuals and as group members, both perceptions influence how they think, feel, and behave (cf. social identity theory: Tajfel & Turner, 1979, 1986; cf. self-categorization theory: Turner et al., 1987; for a review, see Postmes & Branscombe, 2010). Accordingly, when placed in a situation where shared group membership becomes salient, for example when people are confronted with the

historical transgressions of their group, such as slavery, colonization or genocide, the resulting emotions will be experienced through the shared group membership, and the potential for collective guilt will arise. (cf., Giner-Sorolla, Mackie & Smith, 2007; Iyer & Leach, 2008; Mackie, Smith & Ray, 2008)

The recent academic interest in the collective aspect of guilt seems to parallel the observation by many social scientists and philosophers of the advent of a new modern form of morality where societies are being held accountable for their collective misdeeds (see e.g. Barkan, 2000, 2004; Sznaider, 2001; Rifkin, 2009). As such, many victimized groups have called upon nations to make amends for their historical transgressions. A classic example would involve indigenous groups that have been harmed by internal colonization (see Eversole, McNeish & Cimadamore, 2005). For instance, in 2007, the Declaration on the Rights of Indigenous Peoples was adopted by the United Nations General Assembly. Yet, the United States, Canada, New Zealand and Australia, four nations with significant indigenous populations, were the only countries to vote against the Declaration. However, Australia recently reversed its decision and signed the document.

Overall, whether nations are more or less willing to contemplate their historical transgressions, ultimately, a social pressure stimulates a moral need to re-examine one's national history (see also, Castano, 2008). Barkan (2000) labels this modern moral phenomenon the new "guilt of nations".

Collective Guilt: Historical Observations and Empirical Investigations

Collective harm has a long history in the human experience (see Kelly, 2005), and as such the potential for collective guilt has long been recognized. For example, following the Holocaust, there were discussions, mostly in the field of psychoanalysis, as to how Germans might experience collective guilt for atrocities done to Jewish people (Janowitz, 1946; Westendorp, 1950). More recently, in the United States, Shelby Steele has been very vocal in arguing that a majority of white people tend to favour equality programs in order to ease the collective white guilt that springs from the knowledge of their ill-gotten advantages from the enslavement of black people (1989, 1991, 1999, 2002, 2006). Closer to the field

of social psychology, Allport, in his seminal 1954 book *The Nature of Prejudice*, foreshadowed the contemporary prejudice research that focuses on specific emotions (see e.g. Mackie & Smith, 2002; Tiedens & Leach, 2004), instead of treating prejudice solely as an overall negative emotion towards an outgroup. Although he never empirically tested it, Allport speculated that mainstream white individuals are conflicted between their endorsement of egalitarian beliefs while their lingering prejudice feelings persist and therefore they "experience moral uneasiness and a feeling of individual and collective guilt" (Allport, 1954, p. 330).

Even though the experience of collective guilt has been widely discussed in both academic and non-academic realms, there was no empirical support for its existence until very recently (see Doosje, Branscombe, Spears & Manstead, 1998). In modern social psychological terms, collective guilt is understood to be a group-based emotion experienced when people categorize themselves as members of a group that has committed unjustified harm to another group. More broadly, collective guilt is felt when the behaviours of group members conflict with the standards, norms, values, or goals cherished by the group, such as equality and fairness (Branscombe, Doosje & McGarty, 2002). Empirical evidence for the manifestation of collective guilt has been sought in a variety of contexts involving collective harm (see Branscombe & Doosje, 2004). But despite clear findings supporting the existence of collective guilt, independently from personal guilt, the cumulative evidence reveals that levels of collective guilt are typically relatively low, as measured by standard self-report scales (for a review, see Wohl et al., 2006). For example, in the first empirical test of collective guilt (Doosje et al., 1998), Dutch students read a text about the history of their country's devastating colonization of Indonesia. A few individuals experienced high levels of collective guilt, but the vast majority of participants reported only moderately low levels of collective guilt.

Measuring Collective Guilt: The Limits of Self-Report Measures

Similar to traditional guilt research where people attempt to avoid feeling guilty, it is perhaps not surprising that people may also be unwilling to vicariously experience guilt associated with their own group's transgressions (for a review,

see Wohl et al., 2006). And compared to personal guilt, collective guilt appears to leave open even more room for psychological manoeuvring. Because, with collective guilt, the entire group is the perpetrator of transgressions, it would seem that individual group members can, with relative ease, distance themselves from any immediate responsibility, and more easily escape feelings of guilt. Also, there is evidence that harming others can be rendered more tolerable by derogating or dehumanizing victims: "To regard a sufferer as an *outgroup* member with whom one has no social ties removes any danger that one's transgressions will break social bonds and minimizes the basis for empathetic distress" (Baumeister et al., 1994, p. 258, emphasis added). If guilt can be minimized by cognitively rendering another person different from oneself, this task is made all the more easy with collective guilt, as the victim is by definition already an outgroup member (cf. Katz, Glass & Cohen, 1973).

Given that collective guilt has consistently been shown to be related to apologies for past harm, to offers of reparations to the victims, and to reductions in prejudicial attitudes among perpetrator group members (see Wohl et al., 2006), it is essential to empirically investigate why collective guilt is a rarely reported emotion. In their most recent and comprehensive review of collective guilt, Wohl and his colleagues (2006, p.29) recognize that:

> What is less clear is whether attempts to alleviate collective guilt result from an automatic rejection of group responsibility, or whether active attempts must be made to construct arguments that render the ingroup less accountable. […] Disentangling these different intrapsychic response possibilities within the existing research is difficult because it has relied on self-report measures that are insensitive to such potential order effects.

Put simply, our understanding of the basic mechanisms underlying collective guilt is limited by the use of self-report measures.

The use of self-report measures is a standard practice in the field of social psychology. It involves asking direct questions to participants, for example "to what extent do you feel guilty?" often using a basic Likert-type scale "on a rating of 0 (*not at all*) to 10 (*very much*)". Although seemingly straightforward, asking

direct questions can be fraught with misunderstandings and inconsistencies, and most research methods textbooks warn of the many possible biases and shortcomings inherent with the use of self-report measures (see e.g. Constantine & Ponterotto, 2006; Stone et al., 2000). For example, in one standard textbook, the authors explain that:

> the logic underlying self-report data is that individuals are in a good position to report about their psychological processes and characteristics – unlike an outside observer, they have access to their private thoughts and experiences [...]. However, the validity of self-reports depends on the ability and willingness of the individuals to provide valid self-reports, and self-reports may be influenced by various constructs other than the intended one. (John & Benet-Martínez, 2000, p. 356)

The most commonly cited construct influencing self-reports is that of social desirability (Paulhus, 1984, Holtgraves, 2004). That is, individuals can be prone to self-report inaccurately in order to provide more socially desirable responses. For example, respondents might make deliberate attempts to misrepresent themselves in a more desirable light, or they can self-deceptively misrepresent themselves to reveal honestly held, but unrealistic, self-views (see e.g. Pauhlus & John, 1998).

This limitation of self-report measures is especially prevalent in the study of sensitive topics in social psychology, such as prejudice and self-esteem, where participants may be especially motivated to embellish their self-views or to conform to mainstream social norms of non prejudice in order to present themselves in a more socially desirable manner. For instance, respondents may be unwilling to reveal the unflattering negative attitudes they hold about other social groups (high prejudice) or about their own self (low self-esteem). One way this limitation has been addressed is through the use of more indirect (implicit)[1] measures that circumvent the biases inherent when participants themselves self-

[1] In this thesis, I am using the terms *implicit* and *indirect* interchangeably when referring to measures in which participants are not directly asked to report on their inner thoughts or feelings. But, there exists some debate in the field concerning the precise use of each of these terms (see e.g. De Houwer et al., 2009). Thus far, no clear consensus on usage has emerged.

report on sensitive questions (see e.g. Devine, 1989; Greenwald & Banaji, 1995; Greenwald, McGhee & Schwartz, 1998; Fazio & Olson, 2003; for a recent review, see Gawronski & Payne, 2010). What makes these measures indirect is their ability to capture automatic processes, that is, they indirectly measure the construct of interest by capturing responses that individuals are either unable to control or unaware of. Within the last two decades, many types of indirect measures have been developed (for a review, see De Houwer & Moors, 2010; Wittenbrink & Schwarz, 2007), and the most common implicit measures rely on reaction times that reveal automatically activated evaluations. For example, the most well-known test which relies on reaction times is the Implicit Association Test (IAT: Greenwald, McGhee & Schwartz, 1998; for a demonstration, see http://implicit.harvard.edu). The IAT is often employed to circumvent the limits of introspection and self-report in measuring sensitive attitudes, such as implicit prejudice and implicit self-esteem: "The Implicit Association Test (IAT) has become the most commonly used among the implicit measurement techniques because it is reliable, easy to administer, and produces large and robust effect sizes, particularly in comparison to other measures of social cognition" (Karpinski & Steinman, 2006, p. 16). The IAT requires the rapid categorization of various object stimuli (words or images) paired with good and bad words. Easier pairings (faster responses) compared to more difficult pairings are interpreted as revealing stronger implicit associations between the object and its evaluation (good/bad). For example, faster pairings of black faces with bad words would be interpreted as revealing automatic (implicit) negative prejudice towards black people.

Within the field of group-based emotions, only very recently have researchers attempted to use more indirect measures, and none have been applied so far to study collective (group-based) guilt. Of note, Rydell and colleagues (2008) elected to turn away from self-report measures to study group-based anger. They expressly deplore that the field thus far has exclusively relied on self-reports, where

> participants' responses in these studies might reflect at worst experimental demand and at best a more cognitive and reflective type of emotion rather

than a true gut-feeling. For example, rather than actually experiencing group-based emotions, participants might report feeling the emotions that they believe they "ought" to for a particular group, relying on lay theories of appropriate emotional response, group loyalty, and so forth. (p. 1142)

The Present Thesis

I contend that collective guilt is especially suited for the use of indirect measures because psychological defense mechanisms have been argued to play a central role, which can distort self-reported collective guilt feelings. I aim to demonstrate how the standard method of assessing collective guilt, through self-report, limits our ability to capture the richness of the intrapsychic processes involved when individuals are faced with such an unpleasant emotion. Furthermore, the inadequacy of introspective access into one's psychological processes (Lieberman et al., 2007; Nisbett & Wilson, 1977; Wilson, 2002) and the influence of various self-motives (Paulhus & Vazire, 2007), are well-established limitations of self-report measures.

Given the limitations of self-report measures, it is impossible to identify whether the relatively low levels of collective guilt currently reported in the field are truly due to a genuine lack of gut-feelings of guilt, or caused by a lack of self-awareness of one's guilt feelings, or, alternatively an unconscious or conscious use of psychological defenses against such guilt feelings. Accordingly, the major objective of the present thesis is to employ more indirect measures in order to assess and to better understand collective guilt.

A second related objective is to investigate one specific mechanism that has been argued to underlie the avoidance of collective guilt. One popular explanation evoked in the field is that ingroup transgressions pose a psychological threat to the group's self-image, resulting in the use of group-protective defenses that allow collective guilt to be deflected (cf. Branscombe & Doosje, 2004, see also Miron, Branscombe & Biernat, 2010; Peetz, Gunn & Wilson, 2010). Within the perspective of social identity theory (Tajfel & Turner, 1979, 1986), it is understood that individuals can be particularly sensitive to psychological threat to their social group, because belonging to a group is believed to help fulfill basic

cognitive and motivational needs (for a review, see Branscombe, Ellemers, Spears & Doosje, 1999).

According to social identity theory, people naturally classify themselves, and others, into various groups based on age, race, gender, organizational affiliation, to name a few, and these categories help to define and to provide meaning to our social environment. Specifically, group membership provides individuals with a sense of who they are and a sense of value. As such, individuals derive part of their self-esteem through belonging to valued social groups, and hence, group members are especially motivated to protect and defend a positive image of their groups. This motivation is expressed through the use of various group-protective strategies, or what is also labelled ingroup defenses.

For example, if one's group has harmed another group, one way to preserve a sense that one's group is "good" is by morally excluding the other group from one's scope of justice (cf. Opotow, 1990, 1995). The most extreme way that moral exclusion can be achieved is through the dehumanization of outgroup members, for instance by likening them to animals or machines (see Fritsche & Schubert, 2009). Perceiving the outgroup victims as being less human can help justify or legitimize the harm caused, because standard moral considerations do not apply to "non-humans". For example, Castano and Giner-Sorolla (2006) found that when the positive image of their participants' ingroup was under threat, by making them reflect on mass killings of an outgroup perpetrated by their ingroup, the dehumanization of the outgroup was increased. They argue that this ingroup defense, that of perceiving the outgroup as less human than the ingroup, was fuelled by motives of ingroup identity protection and enhancement, as it was shown in their study to be particularly enhanced when the positive image of the group was under threat.

Although the concept of psychological identity threat is often evoked as a driving mechanism in intergroup relations, and a key mechanism underlying the rejection of collective guilt, threat is rarely assessed directly. Instead, threat is assumed to be present if participants display behaviours that are believed to be due to the effects of threat, such as a drop in collective self-esteem or the active

use of ingroup defenses such as dehumanization. Measuring psychological threat has been difficult, because, here again, researchers cannot rely on participants self-reports to indicate that they feel threatened, as there is evidence to show that participants are often not consciously aware of the threat experience, or they may attempt to deny it (see Scheepers, Ellemers & Sintemaartensdijk, 2009).

Overview

Manuscript 1 presents five studies involving two implicit measures of collective guilt that were devised in order to circumvent the limits of the traditional explicit self-report measures of collective guilt. The indirect measures we employed are based on measures that have been used extensively in the field of implicit social cognition (for a review, see Gawronski & Payne, 2010): a word fragment completion task (Gilbert & Hixon, 1991) and an implicit association test (IAT: Greenwald, McGhee & Schwartz, 1998). Manuscript 2 presents a study involving a psychophysiological index of cardiac control that we employed to more directly assess psychological threat in the context of collective guilt, without relying on self-report: respiratory sinus arrhythmia (RSA). It is believed that RSA is a valid indicator of autonomic threat regulation that is not under voluntary control (for a review, see Butler, Wilhelm & Gross, 2006; see also, Bernston et al., 1997).

MANUSCRIPT 1

Implicit and Explicit Collective Guilt: Their Role in Understanding Intergroup Attitudes and Behaviours

Julie Caouette and Donald M. Taylor
McGill University
Montréal, Québec, Canada

Abstract

Our research explores how European Canadians experience collective guilt when reminded of the harmful impact of European colonization on Aboriginal peoples. In the process of studying collective guilt, it became clear that because it is a morally painful emotion, people may not be willing, or able, to admit to it on standard self-report measures. The present research aims to investigate two novel implicit measures of collective guilt, comparing it to standard self-report measures. Following a text presenting evidence of harm towards Aboriginal peoples, mainstream Canadian participants completed an implicit measure of collective guilt, either a word fragment completion task (Study 1a,1b, 1c) or an implicit association test (Study 2a, 2b), followed by an explicit self-report measure of collective guilt. The results revealed significantly divergent outcomes for implicit and explicit collective guilt in predicting various intergroup attitudes and behaviours.

Implicit and Explicit Collective Guilt: Their Role in Understanding Intergroup Attitudes and Behaviours

In 2008, the Canadian government officially apologized for its infamous residential schools, where many Aboriginal students, living in substandard conditions, were victims of physical and emotional abuse (see Annett, 2005; Milloy, 1999). This apology is another step in a long reconciliatory process tracing back to the creation, in the 1990s, of the Royal Commission on Aboriginal Peoples (RCAP). The RCAP produced a pivotal report advising governmental policy with respect to Aboriginal peoples as "those nations are important to Canada, and how Canada relates to them defines in large measure its sense of justice and its image in its own eyes and before the world" (Indian and Northern Affairs Canada, 2009, para. 1). Clearly, the intergroup relations between Aboriginals and non-Aboriginals have important moral implications for Canadians (cf. Ellemers, Pagliaro, Baretto & Leach, 2008; Leach, Ellemers & Barreto, 2007). One of the Chairs of the RCAP, René Dussault, concluded when launching the report that:

> Canadians are now embarrassed by the arrogance that runs through our history and by the acts of state suppression that it gave rise to: the Indian Act in all its permutations, the residential schools, the frequent relocation of whole communities, the negation of treaty commitments. Yet the underlying assumptions have not died. Although positive change has occurred, too many still see Aboriginal peoples as an unfortunate minority who only need better education and better tools to take their place alongside the majority, having adopted the majority's values. (Dussault & Erasmus, 1996, para. 16)

The present research probes this ambivalent attitude held by non-Aboriginal Canadians towards Aboriginal Canadians, where prejudice is abhorred, but yet not totally abandoned (cf. Devine, 1989). Although many Canadians believe that multiculturalism and egalitarianism are defining aspects of their nation, racial inequality is still pervasive in present-day Canadian society (see e.g., Carr & Lund, 2007; Johnson & Enomoto, 2007). For example, the

Canadian public is bombarded with a diverse range of statistics pertaining to Aboriginal Canadians: higher rates of suicide, substance abuse, incarceration, unemployment, welfare dependence, low educational attainment, poor health and poor housing (e.g. Health Canada, 2005; Hurtig, 2008; Statistics Canada, 2008). This situation is certainly not unique to Canada, as Aboriginal peoples around the world share a similar negative legacy as a result of their internal colonization (Eversole, McNeish & Cimadamore, 2005).

Our program of research (Caouette & Taylor, 2005, 2007) was designed to empirically explore how mainstream Canadians react when confronted with evidence of the harmful impact of the internal colonization by mainstream Canadians on Aboriginal peoples. Our particular focus has been on the role of collective guilt, guided by a number of research programs that point to collective guilt as an emotion that can be an impetus for actions aimed at remedying collective harm, such as compensation, financial reparation and public apology (for a review, see Wohl, Branscombe & Klar, 2006). Although collective guilt has been empirically found to significantly predict intentions to engage in such remedial actions, the specific ways in which collective guilt has been measured in past research, including our own, suffers from limitations due to their reliance on self-report. For example, participants' self-reports can be influenced by task demands or social desirability (see Pauhlus & Vazire, 2007). These pervasive limitations raise serious questions about the validity and predictive power of self-reported collective guilt.

The cumulative evidence based on self-report measurements (see Wohl et al., 2006) suggests that collective guilt is a relatively rare social emotion. We argue that this robust finding points to a need to pose a simple, but fundamental question: is collective guilt rare because it is not viscerally experienced in the first place, or is it rare because individuals are able to minimize or reject their initial pangs of guilt? In other words, is collective guilt truly a rare emotion that is simply not experienced at all? Or, are there some initial pangs of guilt that are psychologically suppressed and thus not captured by standard self-report scales of collective guilt? What is needed to address this fundamental issue, we argue, are

more implicit measures of collective guilt. The present research aims to present a first attempt at devising measures that would allow us to capture collective guilt at a more implicit level, enabling us to circumvent the limitations of self-report.

Establishing the Need for Implicit Measures of Collective Guilt

It would seem that the low levels of collective guilt, as measured in past studies, may arise from two distinct sources, which probably asked for different outcomes: it is one thing to argue that group members are totally emotionally disengaged from guilt, than to argue that initial pangs of guilt are followed by defense mechanisms that lead to low self-reports of guilt. Currently, the standard self-report measure of collective guilt used in the field does not allow us to differentiate the conscious self-report (explicit) expression of guilt, from the more automatic visceral (implicit) experience of guilt.

In their recent review of collective guilt, Wohl and colleagues (2006) recognize that more research is needed to understand the underlying mechanisms involved when group members attempt to reject collective guilt. Given that collective guilt can lead to apology, compensation and other offers of reparation to a wronged group, it is important to understand why collective guilt is a rarely reported emotion. In their words:

> What is less clear is whether attempts to alleviate collective guilt result from an automatic rejection of group responsibility, or whether active attempts must be made to construct arguments that render the ingroup less accountable (…) Disentangling these different intrapsychic response possibilities within the existing research is difficult because it has relied on self-report measures that are insensitive to such potential order effects. (p. 29).

The present research represents a first attempt to explore the possibilities afforded by two implicit measures of collective guilt that do not rely on conscious self-report. They are based on measures that have been used extensively in the field of implicit social cognition (for an overview, see Gawronski & Payne, 2010): a word fragment completion task (Gilbert & Hixon, 1991) and an implicit association test (IAT: Greenwald, McGhee & Schwartz, 1998).

Distinguishing Implicit and Explicit Collective Guilt

In social psychological terms, collective guilt is a group-based emotion experienced when people categorize themselves as members of a group that has committed unjustified harm to another group (Branscombe & Doosje, 2004). In understanding collective guilt, social identity theory (Tajfel & Turner, 1979, 1986) points to the importance of distinguishing between two levels of self categorization: our personal self (our individual unique attributes) and our social self (our shared group attributes). If my personal self is responsible for a wrongful act I will feel personal guilt. But if my social self is implicated in a wrongful act through my membership with a group, I will feel collective guilt. The manner in which we can categorize ourselves at either the personal or social level will influence how we think, feel and behave. Accordingly, when we are placed in a situation where our social self becomes salient, for example when we are made aware of the historical transgressions committed by our group, our reactions or emotions will be experienced through our group membership and the potential for collective guilt will be heightened (Branscombe & Miron, 2004; see also Smith, Seger & Mackie, 2007).

In order to assess the levels of collective guilt that group members may experience, the majority of studies use measures that rely exclusively on the participants' conscious self-evaluation and self-reporting of their emotion. Specifically, participants are asked to evaluate to what extent they agree with items such as "I feel guilty about the negative things my group has done." Some authors (e.g. Branscombe & Doosje, 2004) use the term "collective guilt acceptance", to indicate that these items describe the extent to which individuals consciously assess whether or not they acknowledge or accept feelings of guilt on behalf of their group. What these items do not measure is the "gut-feeling" of collective guilt. By gut-feeling, we mean a visceral emotional reaction not modulated by conscious thought (see Prinz, 2004). Specifically, it is an emotional reaction that is automatically or implicitly experienced, without the influence of further cognitive assessments, when individuals first become aware of the wrongdoings of their group.

A distinction between implicit collective guilt and explicit collective guilt may be crucial, as people can utilize a number of defense mechanisms to deny, displace, or repress, the aversive gut-feeling experience of collective guilt. Because guilt is such a painful emotion (see e.g. Baumeister, Stillwell & Heatherton, 1994; see also, Kugler & Jones, 1992; Lewis, 2000; Tangney & Salovey, 1999), people may not be willing, or able, to admit to it on standard self-report explicit measures. In fact, people are fundamentally motivated to avoid or escape negative feelings associated with negative self-evaluations, even to the extent of denying the precipitating events themselves (Kugler & Jones, 1992; Tangney & Salovey, 1999). Especially in a context of intergroup inequality, Tyler (2001) notes that "from a self-interest perspective, the unfairly advantaged are most strongly motivated to eliminate their guilt psychologically. If they do so, they need not redistribute resources, make more efforts, or treat those around them more fairly, to re-establish justice" (p. 351).

Different theoretical positions each use their own unique labels to refer to the cognitive re-appraisals that group members can utilize to psychologically justify intergroup inequality: defense mechanisms, group-protective strategies, legitimizing beliefs, hierarchy-enhancing beliefs to name a few (cf. Otten, Sassenberg & Kessler, 2009). But they all suggest that it is easy for advantaged group members to psychologically alleviate collective guilt by denying that any real harm was done, by arguing that their own group's privileged status is rightly deserved, by displacing responsibility to others, by distancing oneself from the ingroup, by denying group responsibility, or by dissociating oneself from any personal benefits as a result of the group's unjust act (Branscombe & Miron, 2004). In their recent review, Wohl and colleagues (2006) argue that:

> Collective guilt is a rare emotional response because people mostly repeat societal responses they are provided with at a young age. When the group is silent about historical wrongs, most members of that group will remain silent as well (or may claim they did not know of the wrong when confronted). When group silence is broken, groups may attempt to undermine the newly conscious feelings of collective guilt. Indeed, social

> discourses may shift in such a way that it continues to protect the group's social identity even when a slice of the group's history is newly depicted as consisting of illegitimate harm to another group. (p. 28).

The Present Research: Overview and Hypotheses

Growing lines of research have considered the specific antecedents and consequences of collective guilt (e.g. see Branscombe & Doosje, 2004; Branscombe, Doosje & McGarty, 2002; Swim & Miller, 1999; for a review, see Wohl et al., 2006). The societal implications of collective guilt have been at the fore of this research, in terms of predicting attitudes and behaviours towards the outgroup that was wronged, for example, such as apology and compensation for past historical wrongs. The present research was designed to investigate the unique predictive power of both implicit and explicit collective guilt to explain attitudes towards the victimized outgroup and willingness to compensate the victimized outgroup.

In a laboratory setting, self-identified mainstream Canadian participants were presented with evidence of wrongful treatment by mainstream Canadians towards Aboriginal peoples. First, participants' feelings of collective guilt were measured with two novel implicit measures, in Study 1a, 1b and 1c with a word fragment completion task, and in Study 2a and 2b with an implicit association test. Thereafter, participants' explicit feelings of collective guilt were measured with a self-report scale of collective guilt consistent with those typically used in the field. Finally, various intergroup attitudes and behaviours were measured.

Generally, the collective guilt literature has demonstrated that higher levels of (explicit) collective guilt are related to more favourable attitudes towards a victimized outgroup and to higher willingness to compensate the victimized outgroup. We expected to find such a main effect for explicit collective guilt in predicting intergroup attitudes and compensation in the present research.

But, the same literature has also shown that group members are motivated to alleviate their guilt feelings (e.g. Branscombe & Miron, 2004; Miron, Branscombe & Biernat, 2010; Peetz, Gunn & Wilson, 2010). Accordingly, we expected to find a level of discrepancy between feelings of guilt as measured on

the implicit and on the explicit measures. If indeed some group members use various defense mechanisms to assuage their guilt, then an interaction between implicit and explicit measures of collective guilt should emerge. That is, some group members may show higher levels of guilt on the implicit measures than on the explicit measures, suggesting an attempt to ameliorate initial pangs of guilt. In terms of attitudes and compensation, then, we should expect that group members who experience high levels of implicit guilt, but low levels of explicit guilt, thus demonstrating a motivation to defensively assuage their pangs of collective guilt, should be the least motivated to compensate, and have the least positive attitudes towards, the victimized outgroup.

Furthermore, the use of implicit measures allows us the possibility of examining whether standard self-report measures of collective guilt are sensitive to socially desirable responding and task demand effects. This is a common concern for any socially sensitive topic, and implicit measures have been widely used to address these biases associated with explicit measures (see Fazio & Olson, 2003). Thus far, research has shown one standard self-report scale of collective guilt not to be related with the Marlowe-Crowne Social Desirability Scale (Branscombe, Slugoski & Kappen, 2004). However, there is an ongoing debate about the soundness of using this scale (and other similar scales) to control for response bias, based on empirical and conceptual grounds (for a review, see Barger, 2002; Uziel, 2010). Several methods of controlling for social desirability have been proposed, but the use of a social desirability scale as a measure of biasing response style seems to now be mostly discouraged, despite its enduring practice in the field. One compelling alternative is to compare responses on implicit and explicit measures, assuming that an explicit measure is more likely to be bias-prone whereas the implicit measure is more likely to be bias-free (see e.g. Egloff & Schmukle, 2003, Riketta, 2005). In the present research context, this would suggest that some group members may report higher levels of collective guilt on the explicit measure despite having lower levels of collective guilt on the implicit measure. This would be somewhat surprising, given that current

theorizing points to how people are prone to avoid collective guilt, and certainly not motivated to endorse it.

Finally, group members who have concordant levels of implicit and explicit collective guilt might be displaying an unbiased pattern of responding, where group members self-reported levels of collective guilt (explicit) are consistent with their subjective feelings of collective guilt (implicit). Table 1 recapitulates our theoretical model.

Table 1.

Theoretical Model of the Interplay between Explicit and Implicit Collective Guilt

	Low explicit collective guilt	**High explicit collective guilt**
Low implicit collective guilt	Unbiased: Low collective guilt	Social desirability: Acceptance of collective guilt
High implicit collective guilt	Defensiveness: Avoidance of collective guilt	Unbiased: High collective guilt

Study 1a

In this first study we begin to address our primary research question: Are there some initial pangs of guilt that are suppressed and thus not captured by standard self-report scales of collective guilt? If this is the case, then we should find a general dissociation between levels of collective guilt as revealed with an indirect measure, tapping into *spontaneous* guilt feelings, compared to a self-report measure, tapping into a more *deliberative* process of collective guilt acceptance (cf. Vargas, Sekaquaptewa & von Hippel, 2007). In this sense, we

make a distinction between the measurement of a spontaneous gut-feeling, in contrast to a more cognitive and reflective type of emotion (for a similar argument, in the context of the measurement of intergroup anger, see Rydell et al., 2008).

In order to test this underlying premise, we needed to devise a novel measure that could capture spontaneous guilt feelings, without the possibility for the participants to either consciously control their responses, or for the participants to be aware that their guilt feelings were being measured. Insofar as we were interested in measuring a spontaneous affective reaction in the context of intergroup relations, we turned to research on stereotyping and prejudice where racial attitudes have successfully been measured implicitly with a word fragment completion task (Gilbert & Hixon, 1991; Sinclair & Kunda, 1999; Son Hing, Chung-Yan, Hamilton & Zanna, 2008; Son Hing, Li & Zanna, 2002; Spencer et al., 1998; Steele & Aronson, 1995; for an overview, see Sekaquaptewa, Vargas & von Hippel, 2010; Vargas, Sekaquaptewa & von Hippel, 2007). This implicit measurement technique is based on research in the field of implicit memory that has examined priming effects (e.g., Bassili & Smith, 1986; Tulving, Schacter & Stark, 1982; Warrington & Weiskrantz, 1968). In an intergroup context, a word fragment task can measure the activation and accessibility of a mental representation, such as stereotype beliefs or racial attitudes. In terms of measuring guilt feelings, mood and emotion can also be conceived as mental representations (see Carlston, 2010; Ortony, Clore & Collins, 1988). Accordingly, we reason that such affective forms of mental representation could be assessed at an implicit level, in terms of their accessibility and activation, using a word fragment completion task.

A word fragment is simply a word puzzle: participants are presented with letter strings with missing letters indicated by blanks and they are required to fill in the blanks to form a complete word. For example, to assess the activation of a stereotype, word fragments are created so that they can either be completed with a target word associated with that stereotype or with another neutral word (as frequently used in the English language as the target word). Greater completion

with target words indicates a greater accessibility of the stereotype. Thus, a word fragment completion task provides implicit evidence that a construct has been automatically activated, unintentionally and outside of awareness.

In the present research context, where participants are first asked to read a text depicting their ingroup transgression, our word fragment completion task was designed to measure the spontaneous activation of guilt feelings. For example, if upon reading the text the participant readily experienced pangs of guilt, he or she would be more likely to complete this word fragment G U _ _ T with the word GUILT, as opposed to GUEST (a word as frequently employed in the English language). This word puzzle does not involve directly asking participants "do you feel guilty". Instead, guilt feelings are measured via heightened mental accessibility that is revealed by a propensity to complete word puzzles with guilt-related words. This indirect measure can reveal responses that participants would have otherwise been unable or unwilling to directly report on explicit self-report measures of collective guilt.

In this first attempt at using a word fragment completion task to study collective guilt, we compared participants' score on this implicit measure of collective guilt, to their score on standard self-report explicit measures of collective guilt. Furthermore, because defense mechanisms are argued to play a key role in the avoidance of collective guilt, we included a measure of repressive tendencies, to further assess the extent to which our implicit and explicit measures of collective guilt differently tap into repressed vs. accepted feelings of collective guilt. Finally, we included an outcome measure indicative of ingroup defenses, the use of legitimizing beliefs, to initially test our main hypothesis (see Table 1), that implicit and explicit collective guilt would interact in predicting key intergroup attitudes.

Method

Participants

Participants were 114 McGill students. They were recruited through the social psychology paid subject pool on the basis of their self-identification as

being Canadian. They all provided informed consent and were compensated for their time.

Procedure and Materials

Participants first completed a short survey online, and then came to our laboratory two weeks later to complete a more extensive questionnaire. They were asked to respond to all items by indicating the extent of their agreement or disagreement with each item using a standard 11-point Likert scale ranging from *definitely no* (0) to *definitely yes* (10) with *neutral* (5) as the midpoint (with the exception of the ISE, see below).

The online survey comprised measures of social categorization and identification, along with the Index of Self-Regulation of Emotion (ISE: a measure of repressive tendencies), and a measure of modern prejudice.

Social categorization. As a check, participants were asked "with which group do you identify yourself the most?" All participants identified themselves as being Canadian.

Social identification. To measure the degree to which participants identified themselves with Euro-Canadians as a group, they were asked to indicate their degree of agreement with six identification statements. For example, "I feel strong ties with Euro-Canadians as a group" and "In general, I'm glad to be a Euro-Canadian". The term "Euro-Canadians" was specifically chosen to better reflect the actual intergroup context of the present study, where it was Canadians of European descent who internally colonized Aboriginal peoples. A single measure of social identification was created by averaging responses to all six statements (mean = 5.10, *SD* = 1.97; α = .89).

Index of self-regulation of emotion (ISE). The ISE (Mendolia, 2002) measures a disposition to exhibit repressive tendencies (i.e. attempts at distancing oneself from psychologically threatening emotions or experiences). ISE scores are computed based on scores obtained from a 20-item version of the Taylor (1953) Manifest Anxiety Scale (MAS: Bendig, 1956) and from the Social Desirability Scale (SDS: Crowne & Marlowe, 1960). Following Mendolia (2002), an ISE score was computed for each participant by subtracting the SDS from the MAS

and then subtracting the difference from the highest conceivable positive score for the purpose of inverting the scores, ISE = 20 - (MAS - SDS). Accordingly, individuals who tend not to distance themselves from threatening emotional events or experiences will have lower ISE scores and individuals who tend to engage in distancing behaviours will have higher ISE scores.

Modern prejudice towards Aboriginal peoples. The Modern Racism Scale (McConahay, 1986) was selected as it is the most widely used non-reactive measure of racial prejudice and numerous studies have provided evidence for the validity and reliability of this scale (see e.g. Biernat & Crandall, 1999). We adapted the Modern Racism Scale to apply to Aboriginal peoples. For example, "It's really a matter of some people not trying hard enough; if Aboriginal peoples would only try harder they could be just as well off as other Canadians" and "Over the past few years, Aboriginal peoples have gotten more economically than they deserve". A single measure of modern prejudice was created by averaging responses to all eight statements (mean = 2.88, *SD* = 1.63; $\alpha = .85$). This scale was included to assure that the specific group-based emotion of collective guilt offers predictive and explanatory power beyond that of the more general construct of prejudice (cf. Leach, Iyer & Pedersen, 2006; Smith, 1993).

Two weeks later, in the laboratory, participants were provided with a self-explanatory questionnaire that comprised three sections: 1) a text presenting wrongful ingroup actions; 2) a measure of implicit collective guilt, followed by a general measure of affect and a measure of explicit collective guilt; and 3) a measure of agreement with legitimizing beliefs.

Text presenting wrongful ingroup actions. In an attempt to explore the propensity to experience collective guilt, participants had to be made aware of instances of wrongful actions by their group. To do so, we adopted a procedure used in one of the first experiments that explored collective guilt (Doosje, Branscombe, Spears & Manstead, 1998). To increase the credibility of the source, as suggested by Doosje and colleagues, participants were instructed to "read one excerpt of a chapter from a respected Canadian history textbook". As such, participants read a one-page excerpt describing the history of the internal

colonization by mainstream Canadians and the concrete evidence of its devastating impact on Aboriginal peoples (based on Magocsi, 1999; Watkins, 1993; see Appendix A).

Implicit collective guilt. First, participants completed our measure of implicit collective guilt. We created a word fragment completion task (Gilbert & Hixon, 1991, for an overview, see Vargas, Sekaquaptewa & von Hippel, 2007; Sekaquaptewa,Vargas & von Hippel, 2010; see Appendix B). This task involved sixteen word puzzles, of which six were the target words for guilt feelings (blame, fault, shame, regret, guilt, sorry) and the remaining ten words were neutral filler words. All target words were equally likely to be solved either with the guilt-related word solution or with a word as frequently used in the English language. Consistent with standard scoring of a word fragment task, scores for implicit collective guilt were computed by dividing the number of target puzzles successfully completed by the total number of puzzles successfully completed (mean = .16, *SD* = .08).

General affect. Next, participants were asked "how do you generally feel about the passage that you just read about the history of Aboriginal peoples in Canada". We included this more general measure of affect prior to the explicit measure of collective guilt to have a more complete picture of the emotional experience of participants. Specifically, they were asked to indicate to what extent a series of emotion items described how they were "feeling right now" (e.g. distressed, ashamed, sympathetic, etc). This measure of immediate emotional response is modeled after the Positive and Negative Affect Scales (PANAS: Watson, Clark & Tellegen, 1988; Watson & Clark, 1994).

Emotion items were specifically chosen to reflect five emotional experiences relevant to the present context, and a principal component analysis confirmed our five-component structure. A measure of *general positive affect* was computed by averaging responses to the following 6 items: content, energetic, happy, friendly, good and optimistic (mean = 3.64, *SD* = 1.63; α = .80). A measure of *general negative affect* was computed by averaging responses to the following 6 items: frustrated, concerned, sad, depressed, negative, and bothered

(mean = 5.91, *SD* = 1.89; α = .87). A measure of *negative affect towards self* was computed by averaging responses to the following 4 items: disgusted with myself, angry with myself, disappointed with myself, and annoyed with myself (mean = 2.65, *SD* = 2.08; α = .88). A measure of *negative affect towards Canadians* was computed by averaging responses to the following 4 items: disgusted with Canadians, angry with Canadians, disappointed with Canadians, and annoyed with Canadians (mean = 5.46, *SD* = 2.20; α = .91). A measure of *negative affect towards Aboriginal peoples* was computed by averaging responses to the following 4 items: disgusted with Aboriginals, angry with Aboriginals, disappointed with Aboriginals, and annoyed with Aboriginals (mean = 1.05, *SD* = 1.53; α = .89). We made the decision not to aggregate 4 specific emotion items that related to general feelings of being threatened, defensive or distressed: anxious (mean = 4.16, *SD* = 2.71), tense (mean = 4.40, *SD* = 2.43), threatened (mean = 1.73, *SD* = 2.11) , and distressed (mean = 4.47, *SD* = 2.42).

Explicit collective guilt. Thereafter, participants completed a 12-item self-report scale of (explicit) collective guilt (see Appendix C). This scale was an adaptation of two existing self-report measures of collective guilt. The scale items were adapted to the present intergroup context (i.e. Euro-Canadians vs. Aboriginal peoples). The measure used by Doosje and his colleagues (1998) comprises five items that focus on feeling guilty on behalf of one's group's negative actions, for example "I feel guilty about the negative things White Americans have done to Black Americans". Swim and Miller's (1999) eight-item scale also includes items such as "I feel guilty about the benefits and privileges that I received as a White American" that tap into feelings of guilt resulting from an awareness of unearned privileges. We combined all items from these two scales (mean = 4.61, *SD* = 2.77; α = .95).

Legitimizing beliefs. It is argued that feelings of collective guilt can be dampened by holding beliefs that legitimize the actions committed by the ingroup, essentially blaming the victim (Branscombe & Miron, 2004; Powell, Branscombe & Schmitt, 2005; Miron, Branscombe & Biernat, 2010; Miron, Branscombe & Schmitt, 2006). Specifically, the extent to which group members perceive the

actions of their ingroup to be just and fair, and whether they are deservingly benefiting from such actions, can affect the extent to which individuals will accept inequalities between groups. Put simply, individuals can guiltlessly accept that their group is advantaged (socially and economically) compared to another group as long they perceive this advantage to be fair and just, that is, legitimate (see also, Levin, Federico, Sidanius & Rabinowitz, 2002; Jost & Kay, 2010).

In this last section, participants indicated their agreement with a series of 6 items asking whether Canadians treated Aboriginal peoples fairly, and whether they received any unearned benefits from such actions. For example "Canadians as a group treated Aboriginal peoples unfairly in the past" and "Canadians as a group have been benefiting from past unfair treatment at the expense of Aboriginal peoples". A measure of agreement with legitimizing beliefs was computed by averaging responses to the 6 items, with higher scores indicating more agreement that the situation is generally unfair, that is, lesser agreement with legitimizing beliefs (mean = 6.52, *SD* = 2.06; α = .89).

Results & Discussion

Mean levels of explicit collective guilt are low, which is consistent with previous findings in the field, suggesting that collective guilt is a rare emotion. Mean explicit collective guilt fell just below the neutral point of the scale (4.61). Furthermore, explicit collective guilt was not significantly correlated with implicit collective guilt, although the relation tended to be in the opposite direction, $r(114) = -.13$, $p = .19$.

Implicit and Explicit Collective guilt are Related to Different Emotional Experiences

To gain a better understanding of our novel implicit measure of collective guilt, and to explore how it might differ from the explicit measure of collective guilt, we performed a series of correlations with the measure of self-regulation of emotion (ISE) and our composite affect measures (see Table 2).

First, correlations with the ISE, which measures the likeliness to exhibit repressive tendencies with regard to threatening emotions or experiences, significantly diverge between implicit and explicit collective guilt.

Table 2.

Correlations among Main Variables and Implicit and Explicit Collective Guilt

	Implicit Collective Guilt	Explicit Collective Guilt
ISE	.20*	-.27**
MAS	-.18†	.31***
SDS	.15	-.11
Positive affect	.04	-.23**
Negative affect	-.05	.52***
Negative affect towards self	-.17†	.67***
Negative affect towards Canadians	.06	.54***
Negative affect towards Aboriginals	-.18†	.18†
Distressed	-.03	.35***
Threatened	-.18†	.31***
Tense	-.24**	.31***
Anxious	-.17†	.31***

Note. †$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$. ISE = Index of self-regulation of emotion. MAS = Manifest anxiety scale. SDS = Social desirability scale.

The ISE was positively correlated with implicit guilt, and negatively correlated with explicit guilt. That is, individuals who have a disposition not to distance themselves from threatening emotional experiences (lower ISE) tend to score lower on implicit guilt and higher on explicit guilt. Individuals who have a disposition to distance themselves from threatening emotional experiences (higher ISE) tend to score higher on implicit guilt and lower on explicit guilt. This suggests that the low levels of self-reported guilt that are usually found in the field may in part be a function of a defensive mechanism specific to the down-regulation of threatening emotions, and that our implicit measure may be able to tap into such repressed guilt feelings.

Further yielding support for the role of repressive tendencies in guilt feelings, those individuals with higher implicit scores of guilt were less likely to openly report having negative affect toward the self, towards Aboriginal peoples, feeling threatened, tense or anxious. In contrast, those individuals with higher explicit guilt were more like to openly report having a range of negative affect.

In sum, in terms of explaining the overall low levels of self-reported collective guilt in the field, the present findings point to the use of defense mechanisms possibly triggered by a psychological threat response (as suggested by the ISE), allowing initial pangs of collective guilt to be rejected and thus less likely to be explicitly acknowledged.

Implicit and Explicit Collective Guilt are Related to Different Levels of Agreement with Legitimizing Beliefs

In order to assess the extent to which participants tend to openly endorse beliefs that legitimize intergroup inequalities, we entered implicit and explicit collective guilt (centered), along with their interaction term into a linear regression. Based on past collective guilt studies, we expected that higher levels of explicit collective guilt would be associated with a lesser tendency to legitimize intergroup inequalities (or reversely, a higher tendency to perceive the intergroup situation as being unfair). However, we also hypothesised that implicit collective guilt should moderate this relationship, that is, we expected implicit and explicit collective guilt to interact in predicting the tendency to legitimize the intergroup situation. We were especially interested in those participants who show a dissociation between their implicit and explicit scores.

As expected, a main effect for explicit collective guilt emerged, but this main effect was qualified by a significant interaction (see Table 3). In order to probe the interaction further, we performed simple slope tests, at low (1 *SD* below) and high values (1 *SD* above) of implicit and explicit collective guilt (see also Figure 1). Only two simple slope tests were significant: at high explicit collective guilt $t(114) = 2.08$, $p = .04$ and at high implicit collective guilt $t(114) = 2.95$, $p = .01$.

Table 3.

Predicting Endorsement of Legitimizing Beliefs

	B	**SE**	***t***	***p***
Explicit Collective Guilt	0.19	0.08	2.38	.02
Implicit Collective Guilt	2.97	2.60	1.14	.26
Interaction	1.86	0.92	2.02	.04

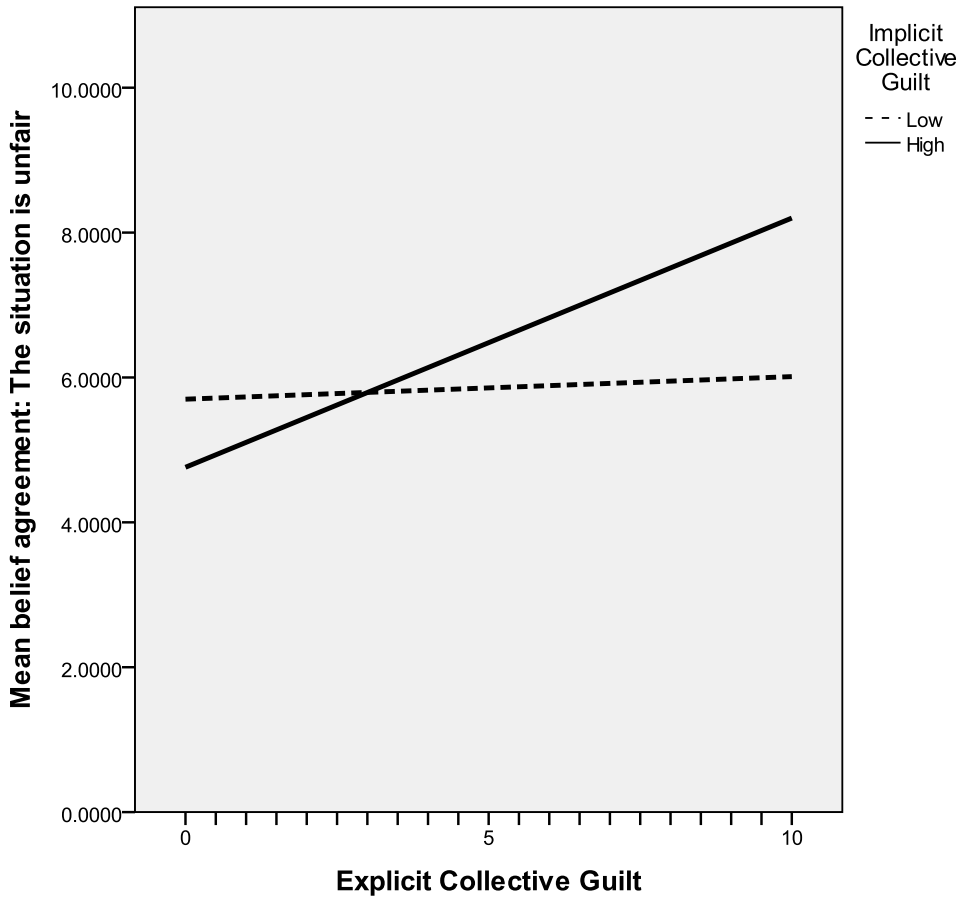

Figure 1.

Predicting legitimizing belief (where higher scores equal lesser agreement with legitimizing beliefs, or conversely higher agreement with beliefs that the intergroup situation is unfair)

These effects remained all statistically significant, even after controlling for levels of social identification and modern racism. Furthermore, neither social identification nor modern prejudice was statistically correlated with implicit collective guilt, explicit collective guilt, nor with legitimizing beliefs.

Our findings support our general hypothesis, that implicit collective guilt should moderate the relationship between explicit collective guilt and key intergroup attitudes. That is, replicating past research findings, we found a main effect for (explicit) collective guilt in predicting endorsement of legitimizing beliefs, where individuals who accept feeling of collective guilt show more positive intergroup attitudes; in the present study, they are more likely to perceive the intergroup situation as unfair (not legitimate).

However, the significant interaction effect is troubling: it suggests that this increased likeliness to perceive the relationship as unjust mainly holds for participants who reveal higher levels of collective guilt on both implicit and explicit levels. In contrast, those participants who explicitly self-reported experiencing high levels of collective guilt, but without displaying guilt feelings on the implicit measure, were less likely to perceive the intergroup situation as unfair, at levels comparable to those participant reporting lower levels of explicit collective guilt. As suggested in our theoretical model in Table 1, we might speculate that this response could be indicative of social desirability concerns. But, both our implicit and explicit measures of collective guilt were uncorrelated with the Marlowe-Crowne measure of social desirability; however there have been debates about the use of this scale to test biased response style (cf. Barger, 2002; Uziel, 2010).

In an attempt to further understand this perplexing response, we performed follow-up analyses, where we conducted a series of regression analyses predicting each of the 6 legitimizing beliefs independently. We found that the interaction arose mainly because of 2 items that related to the personal and group benefits that are involved in the present continuation of unfair ingroup actions: “Canadians as a group have been benefiting from the present maintenance of unfair treatment at the expense of Aboriginal peoples” and “I personally as a Canadian am

benefiting from the present maintenance of unfair treatment". Of all 6 items, these are, clearly, the most threatening items to acknowledge, as they refer to present unfair actions and to the undeserved benefit that one can gain as a result. Specifically, participants who show higher feelings of collective guilt on both implicit and explicit measures tended to endorse, to a higher degree, that the intergroup situation has been unjust, including both personal and group undeserved benefits as a result. In contrast, those participants who revealed higher feelings on the explicit measure of collective guilt, but not on the implicit measure, were also more likely to strongly believe that the intergroup situation was unjust, but only to a certain point: they were more hesitant to acknowledge *present* unfair actions and any personal or group *benefits* as a result.

However, it is important to note that all participants, on average, perceived the intergroup inequality to be unfair (average scores were above the neutral midpoint of the scale, see Figure 1), but participants who score higher on implicit and explicit collective guilt were more unequivocal in their assessment of the extremely unfair nature of the intergroup relationship, and were willing to accept the illegitimacy of the situation, even on the most threatening and difficult to accept items.

Finally, it is interesting to note that we did not find the expected effect for those individuals scoring high on implicit collective guilt, but low on explicit collective guilt. We had reasoned that such dissociation could be indicative of defensiveness, and perhaps would lead to more negative attitudes, compared to other participants. However scores for these individuals on legitimizing beliefs did not statistically differ from those participants who scored low on implicit and low on explicit guilt collective guilt.

Yet, the significant slope for participants higher on implicit collective guilt may suggest a defensive tendency. That is, participants who revealed higher implicit guilt but lower explicit guilt tended to endorse legitimizing beliefs to a greater degree (i.e. they were less likely to perceive the situation as unfair) than those participants who revealed both higher feelings of implicit and explicit collective guilt.

Study 1b

In this second study, we were interested in exploring further the predictive power of implicit and explicit collective guilt. We wanted to replicate the general finding of Study 1a, where we focused on collective guilt and the endorsement of intergroup attitudes. In Study 1b, we wanted to extend our focus to include intergroup behaviour, that of compensatory actions for the victimized outgroup. It follows logically that, if some advantaged group members feel collective guilt and perceive the intergroup relationship as illegitimate, they should be motivated to redress this unfair situation (Wohl et al., 2006). Specifically, we were interested in a distinction that Leach, Iyer and their colleagues have made between advantaged group members 1) endorsing the abstract goal of compensation, versus 2) being willing to take specific action to bring about compensation (see e.g. Harth, Kessler & Leach, 2008; Iyer, Schmader & Lickel, 2007; Leach, Iyer & Pedersen, 2006; Leach, Snider & Iyer, 2002). They argue that "wanting an abstract goal, such as systemic compensation, without the willingness to engage in specific political action to bring this goal about (e.g., writing letters, organizing demonstrations, voting for political candidates) may accomplish little." (Leach, Iyer & Pedersen, 2006, p. 1233)

The present study builds on this distinction, where we specifically explored the outcomes of our novel measure of implicit collective guilt, along with a standard measure of explicit collective guilt, in predicting group compensation, both as an abstract goal and in terms of specific action. Furthermore, we sought to add to this growing line of research by using a more proximate measure of action. That is, we asked participants for a commitment to volunteer a certain number of hours in a diversity program that would benefit the victimized outgroup. This is in contrast to past research that has often relied on self-report measures of intentions to engage in specific action (e.g. Leach, Iyer & Pedersen, 2006). Research typically finds that advantaged group members who experience higher levels of (explicit) collective guilt are willing to support the abstract goal of compensation for a victimized outgroup, but without having the intention to engage in specific action.

Method

Participants

Participants were 198 McGill students. They were recruited through the social psychology paid subject pool on the basis of their self-identification as being Canadian. They all provided informed consent and were compensated for their time.

Procedure and Materials

The procedure and materials were similar to Study 1a, where collective guilt feelings were induced with a text depicting ingroup transgression (the internal colonization of Aboriginal peoples). Afterwards, participants completed our novel measure of implicit collective guilt (a word fragment completion task), followed by a standard self-report scale of collective guilt. The only modifications, relative to Study 1a are that: 1) we omitted the general affect measure and the ISE; 2) we removed the outcome measure of legitimizing beliefs, and instead added a global abstract measure of intention to compensate Aboriginal peoples; and 3) we added an ostensibly independent study to measure specific concrete compensatory action. The specific focus of the items was as follows:

Global/abstract compensatory intention. A single item measured participants' intention to support the global abstract goal of compensation for Aboriginal peoples. They were asked to indicate their degree of agreement with the following item, on a scale from 0 (*definitely no*) to 10 (*definitely yes*): "I believe that Aboriginal peoples should be compensated by mainstream Canadians because of the injustices committed by mainstream Canadians against Aboriginal peoples". (Mean = 4.45, *SD* = 2.86)

Specific/concrete compensatory action. One last task was presented to participants as an ostensibly independent study about diversity on campus, where they were asked to offer their opinion on different diversity programs (our modified version of "Diversity Program Packet" from Woodzicka, Good & Lane, 2006). Importantly, they were asked whether they would donate time to work on diversity programs (the question simply was: Would you be willing to donate any time to work on diversity programs: YES/NO). This is akin to the measure of

intention to engage in specific action in studies by Leach, Iyer and colleagues (e.g. Leach, Iyer & Pedersen, 2006). However, in the present study, we also added a more proximate measure of specific compensatory actions, where, later on in the questionnaire, we asked participants if they would be willing to volunteer hours in any of the three specific diversity programs they had just read about. This measure was aimed at assessing participants' personal engagement in actual compensatory actions.

As part of the cover story, participants were first led to believe that this was a separate study commissioned by the university to determine students' attitudes about diversity on campus. In a separate questionnaire, they read about three proposed university-related diversity programs. It was made clear that these programs would benefit minority students, many of whom were Aboriginal Canadians. At the very end, the programs included a request for students to commit time to the proposed projects. Participants indicated the number of hours they would be willing to donate to these projects.

Questions during debriefing showed that all participants believed the cover story that the survey would be forwarded to the university and that they would be expected to participate in the programs for the number of hours they had officially committed to in writing.

Results & Discussion

Mean levels of implicit and explicit collective guilt were similar to those found in Study 1a and are generally low. However, this time, implicit and explicit collective guilt were significantly, negatively, correlated, $r(198) = -.15$, $p = .04$. The magnitude of the correlation is similar to Study 1a, but the significant correlation here can perhaps be explained by the relatively larger sample size. This correlation provides further evidence that there is a propensity for participants who experience higher implicit guilt feelings to be less likely to openly report them, suggesting some defensive tendencies. Furthermore, based on the results from Study 1a, it is important to examine this correlation also in terms of a propensity for participants who experience lower implicit collective guilt to be more likely to openly report higher levels of collective guilt. If our implicit

measures indeed tap into gut-feelings of guilt, then this may suggest that these participants respond to the standard explicit self-report scale of collective guilt, not based on their gut-feelings of collective guilt (as their score suggests them to be absent), but perhaps based on a more deliberate reflexive type of emotional responding. As suggested in Study 1a, this could be the result of socially desirable responding, but this was not empirically confirmed. More research is needed to identify what motivated cognition is at play that would prompt some group members to report feeling collective guilt on a self-report explicit scale, but without having experienced any gut-feeling of collective guilt.

Implicit and Explicit Collective Guilt are Related to Different Compensatory Patterns

In order to assess the extent to which participants would be willing to compensate Aboriginal peoples, we entered implicit and explicit collective guilt (centered), along with their interaction term into a regression analysis. We conducted three independent regressions.

First, we predicted global/abstract compensatory intention with the single item of willingness to compensate Aboriginal peoples. Second, we predicted specific/concrete compensatory action with 1) the willingness to donate any time to work on diversity programs and 2) the number of hours willing to donate to the diversity program[2].

Global/abstract compensatory intention. Past research has found (explicit) collective guilt to generally predict willingness to compensate the victimized outgroup. Similarly, our regression analysis revealed a main effect for explicit collective guilt in predicting participants' self-reported global willingness to compensate Aboriginal peoples (see Table 4). But contrary to the interaction revealed in Study 1a, neither implicit collective guilt, nor the interaction term, were significant predictors here. These effects remained unchanged, even after we performed the same regression analyses while controlling for social identification, and modern prejudice.

[2] Although those two measures are extremely similar, they were not perfectly correlated: some participants indicated their general intention to donate hours, while later on, being unwilling to indicate, in writing, their commitment to a specific number of donated hours, $r(198) = .78$.

Table 4.

Predicting Global/Abstract Compensatory Intention

	Prediction of Compensation			
	B	**SE**	***t***	***p***
Explicit collective guilt	0.34	0.07	4.79	.00
Implicit collective guilt	-2.19	2.10	-1.04	.30
Interaction	-0.05	0.77	-0.06	.95

However, the fact that we did not replicate the interaction found in Study 1a may not be unsurprising in light of the follow-up analyses conducted in Study 1a. These analyses revealed the interaction effect not to be significant for those items relating to past unfair actions and that were less personally relevant. The present compensation item was indeed worded in such a generally relevant way referring to "injustices committed". In Study 1a, implicit and explicit guilt diverged in their prediction of outcomes that appear to be more personally taxing. For instance, accepting that one is benefiting from the present unfair treatment perpetrated by their group, compared to the less threatening recognition of very abstract injustices committed in the past.

This reasoning seems to be confirmed in the next analyses examining specific/concrete compensatory intention. Specifically, we found the expected interaction effect when predicting specific compensatory action that required more personal involvement and more personal commitment: being willing to personally donate hours to volunteer in a diversity program that would benefit the victimized outgroup.

***Specific/concrete compensatory action*.** First, it is important to emphasize that in most studies predicting willingness to compensate the victimized outgroup, outcome variables are usually self-report measures of global willingness to compensate the outgroup, much like our global willingness item in the previous analysis (global/abstract compensatory intention).

Here, instead, we have asked participants whether they would be willing to donate hours to support diversity programs that would benefit the victimized outgroup (Aboriginal students on their campus) and to commit to a specific number of hours to support these programs. These more specific and concrete compensatory action measures were added based on research by Leach, Iyer and their colleagues who found that advantaged group members who experience higher levels of collective guilt are willing to support the abstract goal of compensation for a victimized outgroup (as we found in our previous analysis of global/abstract compensatory intention), but without having the intention to engage in specific action that would concretely bring about compensation. Here, we test whether implicit collective guilt would moderate the relationship between explicit collective guilt and support for such specific/concrete compensatory action. We performed two regression analyses, predicting 1) the willingness to donate any time to work on diversity programs and 2) the number of actual hours willing to donate to the diversity program (see Table 5).

Table 5.

Predicting Specific/Concrete Compensatory Action

	Prediction of Compensation			
	B	**SE**	***Z***	***p***
Predicting willingness to donate hour:				
Explicit collective guilt	0.02	0.06	0.26	.79
Implicit collective guilt	1.34	1.92	0.69	.49
Interaction	1.36	0.75	1.81	.06
	B	**SE**	***Z***	***p***
Predicting actual hours donated:				
Explicit collective guilt	-0.01	0.07	-0.03	.98
Implicit collective guilt	1.67	2.13	0.78	.43
Interaction	2.04	0.85	2.39	.02

First, we predicted the willingness to donate hours, using a binary logistic regression, as the outcome variable was 0 (*no*) or 1 (*yes*). Unlike the findings from research by Leach, Iyer and their colleagues, we did find that feelings of explicit collective guilt contributed in predicting specific/concrete compensatory action through a marginally significant interaction with implicit collective guilt (see Table 5). This interaction, although marginal ($p = .06$), is in fact consistent with our findings from Study 1a.

Within this unusual statistical situation (a binary logistic regression with two continuous predictors), we relied on a macro from Hayes & Matthes (2009), in order to probe this interaction further. By default, the macro probes the interaction at low values (1 *SD* below) and high values (1 *SD* above) for the predictor variables (see Figure 2).

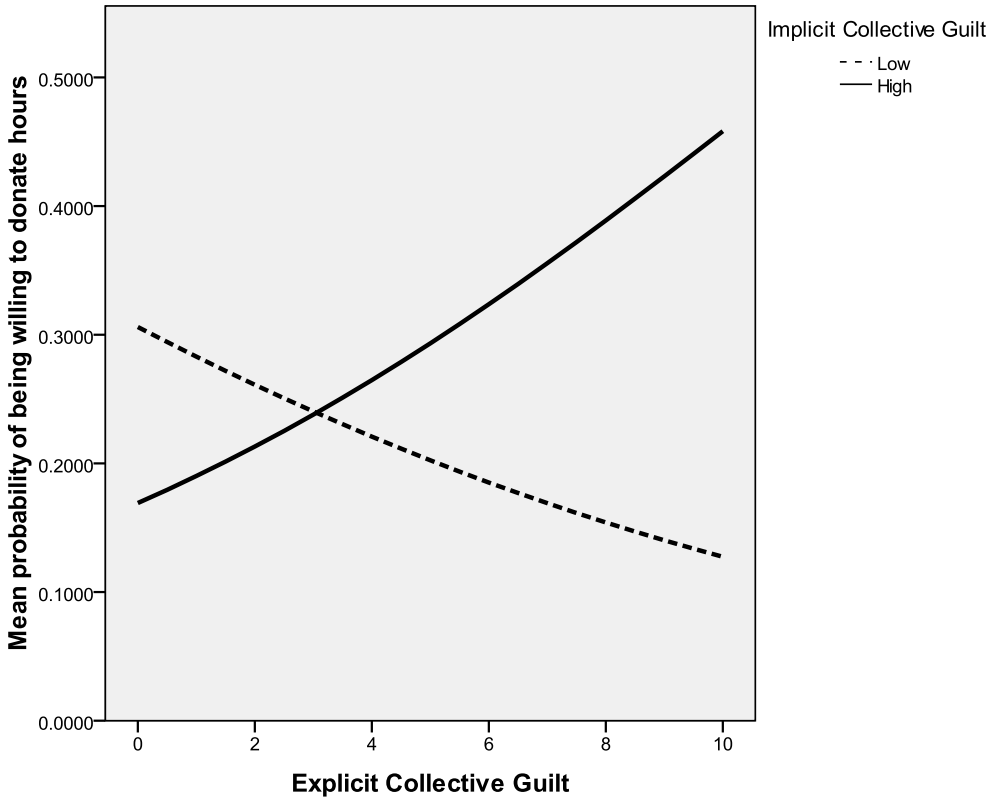

Figure 2.

Predicting specific/concrete compensatory action: willingness to donate hours

Similar to the interaction found in Study 1a, we again found a significant effect at high levels of explicit collective guilt, where implicit collective guilt significantly predicted hours, $Z = 1.70$, $p = .05$. No other simple slope effects were significant. And similar to Study 1a, this means that it is mostly participants who experienced higher collective guilt feelings on both the explicit and implicit measures of collective guilt who were willing to engage in a positive intergroup outcome, here, the willingness to donate hours to support a diversity program to benefit the victimized outgroup. All these effects remained unchanged, even after we performed the same analyses while controlling for social identification and modern racism.

Next, we sought to replicate this finding, this time with the number of hours participants were actually willing to donate. Unfortunately, the number of donated hours was non-normally distributed and overwhelmingly skewed. Specifically, 144 out of 198 participants did not want to donate any hours, while 27 participants wanted to donate between 1-2 hours, and the remainder between 3 to 20 hours. Because of the distribution of this variable, it was judged that a binary logistic regression would be more suitable, thus this variable was re-coded as 0 for those participants who did not desire to donate any hours (n = 144), and 1 for those participants who chose to donate any number of hours (n = 44). Again the interaction term was significant (see Table 5). Replicating our past findings where the relationship between explicit collective guilt and the outcome variable was contingent on implicit collective guilt; here, the relationship between explicit collective guilt and hours donated is contingent on implicit collective guilt.

We relied on the same macro from Hayes & Matthes (2009), in order to probe this interaction further (see Figure 3). Here again, a significant effect was only observed at high levels of explicit collective guilt, where implicit collective guilt significantly predicted hours, $Z = 2.11$, $p = .04$. However, some marginal effects were also revealed at low and high implicit collective guilt: At low implicit collective, $Z = -1.90$, $p = .06$; at high implicit collective guilt $Z = 1.79$, $p = .07$. All these effects remained unchanged, even after we performed the same analyses while controlling for social identification and modern racism.

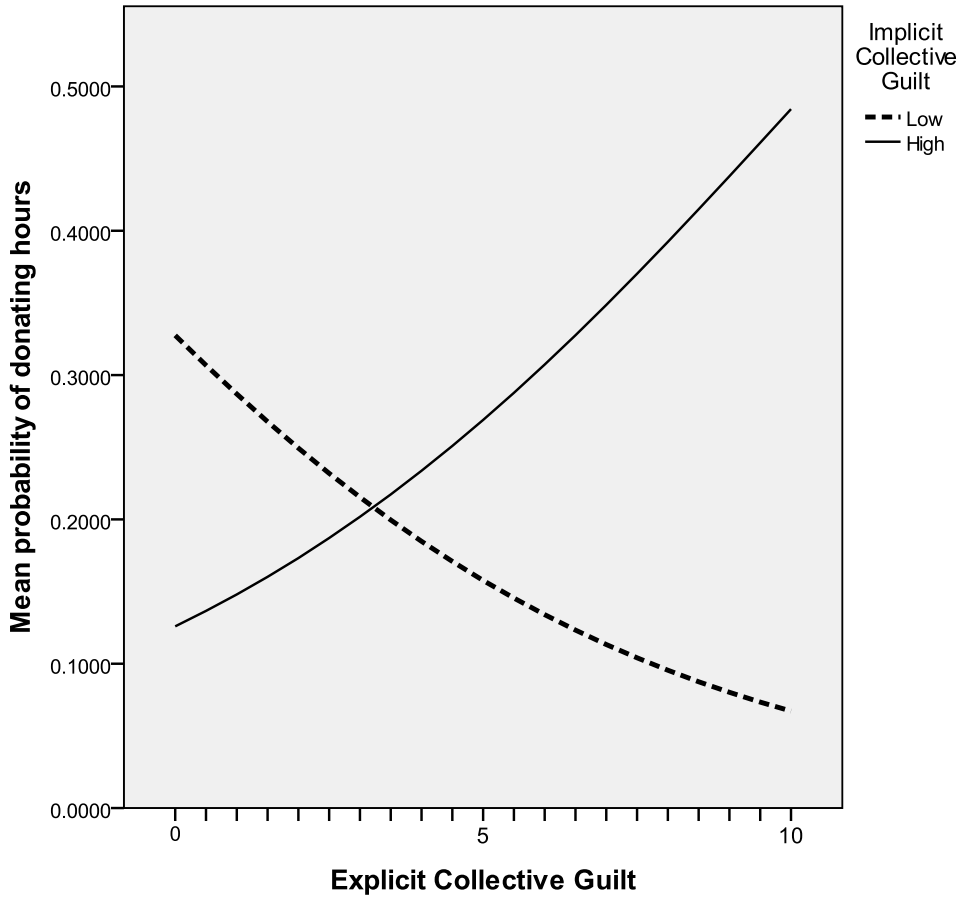

Figure 3.

Predicting specific/concrete compensatory action: donating actual hours

These interactions replicate our previous findings from Study 1a, but this time, with very consequential behavioural outcomes. This provides further evidence for the added value of including the implicit measure of collective guilt in our analyses. Whereas past research has found very robust effects for high (explicit) collective guilt in predicting a wide range of positive intergroup attitudes and compensatory intentions, we show here that not all individuals who explicitly self-report higher feelings of collective guilt may be willing to translate their intentions into concrete actions of personal relevance, such as donating hours. Through our novel measure of implicit collective guilt, we were able to show that only a subgroup of participants with higher levels of explicit collective

guilt, but who also experienced higher levels of gut-feelings of collective guilt, were more willing to engage in such specific concrete compensatory action.

However, here again, we did not find statistically significant results to indicate that individuals high on implicit but low on explicit collective guilt would show the worst behaviours possibly as a result of defensiveness (at least in terms of them not being different from participants who reveal less guilt feelings on both implicit and explicit measures). More suggestive of a defensive response was the marginally significant positive slope for participants higher on implicit collective guilt. That is, participants who revealed higher implicit guilt but lower explicit guilt tended to be less likely to donate hours than those participants who revealed both higher feelings of implicit and explicit collective guilt. Conversely, there was a marginally significant negative slope for participants lower on implicit collective guilt. That is, participants who experienced lower implicit guilt but expressed higher explicit guilt tended to be less likely to donate hours than those participants who revealed both lower feelings of implicit and explicit collective guilt. This last effect is somewhat surprising. It suggests that, relatively speaking, participants with absolutely no feelings of collective guilt (either implicit or explicit) were more likely to donate hours than participants who openly reported feeling collective guilt, albeit, without experiencing the gut-feeling of guilt. For these latter individuals, again there is the possibility of socially desirable responding. But for those with no guilt feelings, they must have been inclined to rectify the intergroup inequality based on other motives not measured by the present study, and perhaps by motives unrelated to guilt feelings. However, to put things into perspective, participants with both higher feelings of implicit and explicit collective guilt were, overall, the individuals with the highest probability of donating hours.

Study 1c

Study 1a and 1b relied on correlational data. In this final study to test our novel implicit measure of collective guilt, employing a word fragment completion task, we sought to experimentally manipulate the levels of collective guilt. In study 1a and 1b, we found that the predictive effect of implicit collective guilt

emerged for those participants with higher levels of explicit self-reported collective guilt. For the present study, we created 2 versions of the standard text methodology in order to induce relatively lower and higher levels of explicit collective guilt. We expected to replicate the same interaction effect found in Study 1a and 1b, where implicit collective guilt moderated the relationship between explicit collective guilt and the outcome measures (Study 1a: legitimacy beliefs and Study 1b: specific/concrete compensatory action).

In order to experimentally manipulate the levels of collective guilt, we relied on research that shows how group members' acceptance of collective guilt (i.e. explicit collective guilt) varies as a function of the difficulty related to making reparations: "the intensity of guilt is a function of the importance of making reparations to the disadvantaged group and the level of perceived deterrence to that goal" (Schmitt, Branscombe & Brehm, 2004, p. 88). The difficulty and the cost of establishing a more just intergroup relationship are two main types of deterrence. Based on Brehm's (1999) theory of emotional intensity, these authors show that self-reported collective guilt levels were the lowest when reparation was seen as requiring little effort or cost, and were higher when greater effort and cost was required, but not so costly or so difficult that it would outweigh the subjective importance of making reparation (see also Schmitt, Miller, Branscombe & Brehm, 2008).

Following these findings, we created 2 versions of a text, both describing the harm inflicted on Aboriginal peoples by mainstream Canadians, but varying in the amount of effort and cost required to achieve reparation (see Appendix D). In the low-guilt condition, we included details about how reparations were already underway, and that the process has been unfolding with relative ease, for example "although colonization has had a devastating impact on Aboriginal peoples, Canada today is making great progress in making amends and repairing the damages wrought by centuries of colonization". In the high-guilt condition, we included few details about ongoing reparations, and instead focused on the subjective importance of making reparation, without making the process appear too costly "past colonization does not define what Canadians are as a Nation

today. What Canadians need to acknowledge is that, although Canadian identity today is based on values of equality, colonization was a morally disappointing act by our Nation."

Method

Participants

Participants were 75 McGill students. They were recruited through the social psychology paid subject pool on the basis of their self-identification as being Canadian. They all provided informed consent and were compensated for their time.

Procedure and Materials

The procedure and materials were similar to Study 1b, where collective guilt feelings were induced with a text depicting ingroup transgression (the internal colonization of Aboriginal peoples). Afterwards, participants completed our novel measure of implicit collective guilt (a word fragment completion task). Finally, they completed our measures of compensation. However, one major modification was our experimental manipulation, where we introduced two versions of the text depicting ingroup transgression to induce lower or higher levels of explicit collective guilt (see Appendix D). Hence, participants were randomly assigned to a low-guilt condition (n = 37) or to a high-guilt condition (n = 38).

To confirm that our manipulation was successful, levels of explicit collective guilt were measured in a separate pilot test, with 50 participants from the same subject pool population. Our experimental manipulation was successful: participants in the low-guilt condition scored lower on the self-report scale of collective guilt (n = 25, mean = 4.5, *SD* = 2.8) than those in the high-guilt condition (n = 25, mean = 6.2, *SD* = 2.7), $F(1,48) = 4.50$, $p = .04$. Note that these scores are respectively lower and higher than the neutral midpoint of the scale (5).

Results & Discussion

Mean levels of implicit collective guilt did not significantly vary as a function of experimental conditions: low-guilt condition (mean = .14, SD = .09) vs. high-guilt condition (mean = .17, SD = .10), $F(1, 73) = 1.57$, $p = .21$.

Implicit and Explicit Collective Guilt are Related to Different Compensatory Patterns

In order to assess the extent to which participants would be willing to compensate Aboriginal peoples, we entered implicit collective guilt (centered) and explicit collective guilt conditions (dummy coded, low-guilt = 0, high-guilt = 1), along with their interaction term into a regression analysis. Similar to Study 1b, we conducted three independent regressions. First, we performed a regression to predict global/abstract compensatory intention with the single item of global willingness to compensate Aboriginal peoples. Second, we performed two separate binary logistic regressions to predict specific/concrete compensatory action with the outcomes of 1) willingness to donate any time to work on diversity programs and 2) number of hours willing to donate to the diversity programs.

Global/abstract compensatory intention. Consistent with study 1b, our regression analysis revealed a marginally significant main effect for manipulated explicit collective guilt (condition) in predicting participants' reported willingness to compensate Aboriginal peoples. Participants in the high-guilt condition were more likely to support compensation than in the low-guilt condition. But, again consistent with Study 1b, neither implicit collective guilt, nor the interaction term, were significant predictors (see Table 6).

Table 6.

Predicting Global/Abstract Compensatory Intention

	Prediction of Compensation			
	B	**SE**	***t***	***p***
Explicit collective guilt (condition)	0.89	0.53	1.67	.10
Implicit collective guilt	-0.78	4.11	-0.19	.85
Interaction	-0.88	5.66	-0.15	.88

***Specific/concrete compensatory action*.** Here, we test whether implicit collective guilt would moderate the relationship between manipulated explicit collective guilt (condition) and support for specific/concrete compensatory action. We performed two binary logistic regression analyses, predicting 1) the willingness to donate any time to work on diversity programs and 2) the number of actual hours willing to donate to the diversity program, re-coded to 0 (no hours donated) and 1(hours donated) similar to Study 1b (see Table 7).

Table 7.

Predicting Specific/Concrete Compensatory Action

	Prediction of Compensation			
	B	**SE**	***Z***	***p***
Predicting willingness to donate hours:				
Explicit collective guilt (condition)	-0.72	0.58	-1.24	.22
Implicit collective guilt	1.67	2.97	0.56	.57
Interaction	5.41	5.93	0.91	.36
	B	**SE**	***Z***	***p***
Predicting actual hours donated:				
Explicit collective guilt (condition)	-1.62	0.79	-2.04	.04
Implicit collective guilt	-3.32	3.96	-0.84	.40
Interaction	15.09	7.29	2.07	.04

First, we assessed the willingness to donate hours, using a binary logistic regression, as the outcome variable was 0 (*no*) or 1 (*yes*). Contrary to the finding in Study 1b, we did not find any significant effect in predicting this outcome variable (see Table 7: predicting willingness to donate hours). The potentially smaller sample size in the present study may suggest that we did not have enough power to detect an effect, especially since in Study 1b, the interaction effect was only marginally significant (with $p = .06$). Nonetheless, the prediction of actual

donated hours revealed a significant interaction (see Table 7: predicting actual hours donated), where the impact of the high-guilt condition is more clearly revealed next.

As in Study 1b, our second outcome variable, number of donated hours, was non-normally distributed and skewed. Overall, 52 participants did not choose to donate any hours, while 17 participants chose to donate between 1 to 30 hours. Specifically, in the low-guilt condition, it was 24 vs. 12, compared to, in the high-guilt condition, 28 vs. 5. Even before performing a statistical test, the effect of condition on hours is clear. Similar to Study 1b, we found a significant interaction, where the relationship between manipulated explicit collective guilt (condition) and hours donated is contingent on implicit collective guilt (see Table 7). We conducted simple slope tests to further probe this interaction (Figure 4).

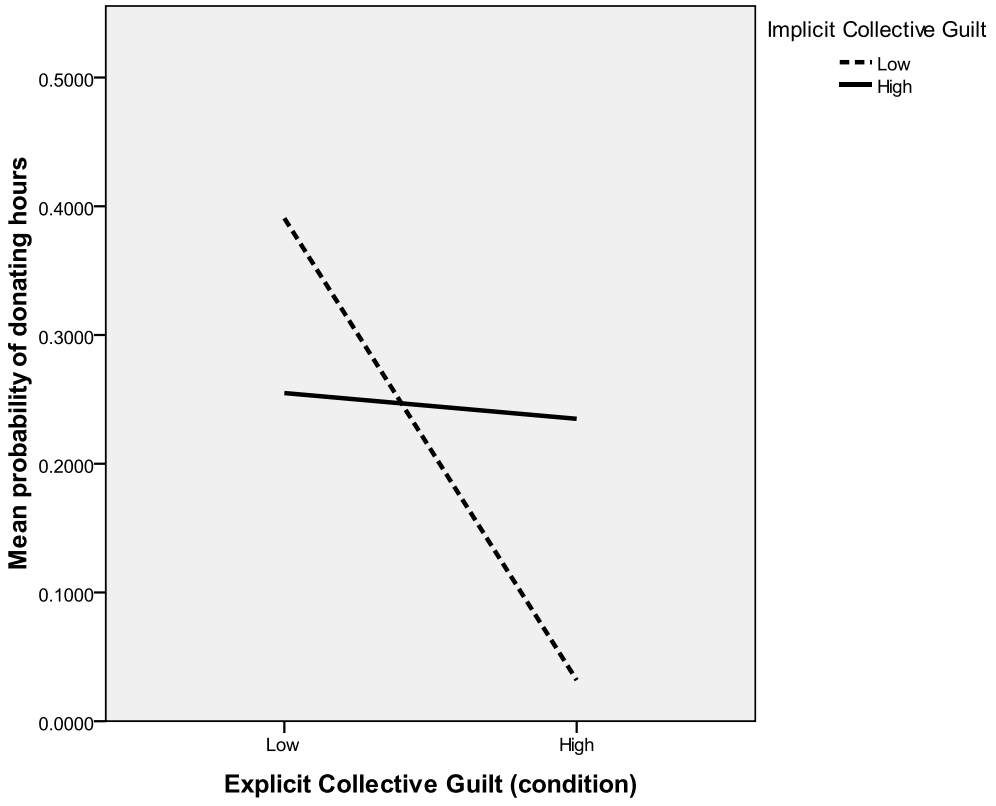

Figure 4.

Predicting specific/concrete compensatory actions: donating hours

A significant effect was observed for those participant in the high-guilt condition (higher explicit collective guilt), where implicit collective guilt significantly predicted hours, $Z = 1.93$, $p = .04$. That is, those participants with lower implicit collective guilt were less likely to donate hours than those participants with higher implicit collective guilt. For those participants in the low-guilt condition (lower explicit collective guilt), there was no significant relation between implicit collective guilt and likeliness to donate hours, $Z = -0.84$, $p = 0.40$. At low implicit collective guilt, there was a significant difference between the low-guilt and the high-guilt conditions, $Z = -2.42$, $p = .02$. That is, participants lower in implicit collective guilt were more likely to donate hours in the low-guilt condition than in the high-guilt condition. Finally, at high implicit collective guilt, there was no significant difference in the likeliness to donate hours between the low-guilt and high-guilt conditions, $Z = -0.13$, $p = .89$. All these effects remained unchanged, even after we performed the same analyses while controlling for social identification and modern racism.

These results support the findings from Study 1a and 1b, where the relationship between explicit collective guilt and an intergroup behaviour and attitude was contingent on levels of implicit collective guilt. However, in Study 1a and Study 1b, explicit levels of collective guilt were measured from participants' own self-reported appraisals of collective guilt acceptance in reaction to their ingroup transgression. In Study 1c, we replicated our main findings, but this time, experimentally manipulating levels of collective guilt acceptance. Again, we found that, when they experienced higher feelings of collective guilt acceptance, those participants with lower gut-feelings of collective guilt were less willing to engage in specific concrete action that would ameliorate the intergroup inequality.

Discussion for Studies 1

In three separate studies, we present, for the first time ever, the successful application of the methods of implicit social cognition to the measurement of collective guilt. This represents our initial attempt at measuring collective guilt at a more implicit level, by means of a word fragment completion task, in order to circumvent the limitations of standard self-report scales of collective guilt. In

these three separate studies, we present consistent findings, based on both correlational and experimental data, and predicting consequential intergroup attitudes and behaviours. Furthermore, these findings were obtained within a real intergroup relationship, where feelings of collective guilt were measured after mainstream Canadians participants were reminded of the harmful impact of internal colonization on Aboriginal peoples.

We demonstrated how spontaneous gut-feelings of collective guilt (implicit), assessed in terms of higher accessibility of guilt-related words on a word fragment completion task, systematically yielded a differential pattern of results when combined with self-reported feelings of collective guilt acceptance (explicit). Whereas past research has consistently found higher levels of self-reported collective guilt acceptance to be related to a host of desirable intergroup attitudes and behaviours, the present three studies show that this relationship is moderated by the levels of spontaneous gut-feelings of collective guilt.

Our most robust finding reveals that those participants who display lower levels of gut-feelings of collective guilt react less constructively when they had to cope with increasing levels of collective guilt acceptance. In Study 1a, this meant that they were more likely to legitimize intergroup inequality and in Study 1b, this meant that they were less likely to engage in specific concrete action to alleviate the intergroup inequality. In Study 1a and 1b, explicit levels of collective guilt were measured from participants' own self-reported appraisals of collective guilt acceptance. In Study 1c, we experimentally manipulated levels of collective guilt acceptance. Again, participants with lower levels of gut-feelings of collective guilt were less likely to engage in specific concrete action to alleviate intergroup inequality when faced with higher levels of collective guilt acceptance.

Overall, this robust finding across three studies illustrates a particular response tendency displayed by participants who appear to openly endorse collective guilt on self-report measures (high explicit collective guilt) while showing no evidence of spontaneous gut-feelings of collective guilt (low implicit collective guilt). Most importantly, these individuals seem to also wander in terms of their attitudes and behaviours towards the victimized group. On the one hand,

they claimed to be favourable to the abstract ideal of compensating the victimized outgroup (on a general item of self-reported willingness to compensate Aboriginal peoples). While on the other hand, they were more likely to hold beliefs that in fact legitimize the intergroup inequality between mainstream Canadians and Aboriginal peoples, and were less likely to personally commit to specific concrete compensatory actions that would ameliorate such inequality. We have suggested that this style of response may be suggestive of socially desirable responding, where guilt feelings are outwardly endorsed on a self-report scale, but without the inner presence of subjective gut-feelings of guilt. This is especially troubling given that, without the inclusion of the implicit measure of collective guilt, these participants would simply be encompassed within a group of individuals generally believed to experience higher levels of collective guilt.

Because research on collective guilt is based on the premise that collective guilt might motivate social justice, the present research suggests that it would be important to distinguish gut-feelings of collective guilt from the acceptance of collective guilt feelings. Based on our findings, the most desirable and most constructive intergroup attitudes and behaviours were most apparent for those individuals with both higher gut-feelings and acceptance of collective guilt, and comparatively equivocal for those individuals who only accepted collective guilt without any related gut-feelings. Encouraged by the present findings, other collective guilt researchers may find it useful to incorporate our implicit measure in their methodological design. We specifically had this goal in mind when choosing the word fragment completion task, a "low-tech" implicit measure (cf. Vargas, Sekaquaptewa & von Hippel, 2007) that can easily be integrated into a standard collective guilt methodology. A word fragment completion task is a simple pen-and pencil-measure that is easy to administer, requires no special equipment or computer, and is easy to score.

Overview Studies 2

A robust finding has emerged: implicit collective guilt moderates the usual relationship between explicit collective guilt and key intergroup attitudes and behaviours. In particular, implicit collective guilt seems to be especially affecting

this relationship for those individuals experiencing higher levels of explicit collective guilt. In these first three studies, our novel implicit measure of collective guilt was a word fragment completion task. In Study 2a and 2b, our major aim was to replicate our main findings, but with the use of a different novel implicit measure, this time employing the methodology of the implicit association test (IAT: Greenwald, McGhee & Schwartz, 1998).

The IAT is perhaps the gold standard for indirect measurements in the field of implicit social cognition, and is probably the most common implicit measure that relies on reaction times in order to reveal automatically activated evaluations that are not under conscious control (for a recent review, see Teige-Mocigemba, Klauer & Sherman, 2010). This does not imply that it is not without limitations, but the amount of research and debates, and the vast literature that surrounds the IAT makes it the measurement of choice. Most often, the IAT is employed to circumvent the limits of introspection and self-report in measuring sensitive attitudes, particularly implicit prejudice and implicit self-esteem: "The Implicit Association Test (IAT) has become the most commonly used among the implicit measurement techniques because it is reliable and produces large and robust effect sizes, particularly in comparison to other measures of social cognition" (Karpinski & Steinman, 2006, p. 16).

A standard IAT requires the rapid categorization of various stimuli related to an attitude object (words or images) paired with certain evaluative attributes (good and bad words). Easier pairings (faster responses) compared to more difficult pairings (slower responses) are interpreted as revealing stronger implicit associations between the attitude object and its evaluation. For example, with a standard self-esteem IAT (Greenwald & Farnham, 2000), relatively faster pairings between self-related words (e.g. me, myself, I) with "good" words (e.g. beautiful, splendid, wonderful) would be interpreted as revealing higher positive implicit self-esteem. In a similar manner, we adapted the IAT to the measurement of collective guilt by measuring the implicit associations between self-related words (the attitude object) and guilt-related words (the evaluation).

Beyond the introduction of this second novel implicit measure of collective guilt, a second aim of Study 2a and 2b was to address an anomaly found in Studies 1. Consistently, we found that our measure of social identification did not correlate with feelings of collective guilt (either implicit or explicit). The majority of collective guilt studies have found a negative correlation between levels of social identification and levels of collective guilt; however, some studies have found a positive relationship or, indeed, no relationship at all (see e.g. Branscombe, Slugoski & Kappen, 2004; Doosje, Branscombe, Spears & Manstead, 2004). In Studies 1 a-b-c, we used the term "Euro-Canadians" for our measure of social identification, but perhaps this term was less than ideal. We originally had reasoned that using the term "Euro-Canadians" would better reflect the nature of the intergroup context under investigation. That is, the internal colonization of Aboriginal people was historically perpetrated by Canadians of European ancestry. However, it appears that this term is not commonly used and may have appeared strange to respondents. Thus, for the present studies, instead of Euro-Canadians, we used the more popular term "mainstream Canadians".

Study 2a

Our main challenge in adapting the implicit association test (IAT) to the present research context was in the choice of categories to represent the attitude object and its evaluative dimension that would be appropriate to the measurement of collective guilt. A standard IAT measures a *relative* attitude that participants hold towards a complementary pair of objects. For example, a standard self-esteem IAT measures the automatic associations of good vs. bad words with words related to the self vs. an unspecified other. Specifically, the IAT is built in such a way that participants are required to classify a series of stimuli into four categories: two representing the complementary attitude object (e.g. Self vs. Other) and two representing the evaluative attribute (e.g. Good vs. Bad). Overall, this means that a standard IAT cannot reveal the automatic evaluative associations with a single attitude object:

> Because it uses complementary pairs of concepts and attributes, the IAT is limited to measuring the relative strengths of pairs of associations rather

> than absolute strengths of single associations. In practice, however, the IAT can nevertheless be effectively used because many socially significant categories form complementary pairs, such as positive-negative (valence), self-other, male-female, Jewish-Christian, young-old, weak-strong, warm-cold, liberal-conservative, aggressive-peaceful, and so forth. (Greenwald & Farnham, 2000, p. 1023)

However, various researchers have highlighted that many categories cannot naturally be mapped onto such complementary pairs, or that the choice of a complement is not obvious or is fraught with methodological confounds. More recently, different modifications to the standard IAT have been proposed to address these challenges (Bluemke & Friese, 2008; Karpinski, 2004; Karpinski & Steinman, 2006; see also, Blanton, Jaccard, Gonzales & Christie, 2006).

One recent promising line of research suggests that a Single Category Implicit Association Test (SC-IAT) is a reliable and valid measure for examining implicit social cognition, such as self-esteem and racial attitudes (Karpinski & Steinman, 2006). As the name suggests, this modified SC-IAT measures the strength of evaluative associations with a single attitude object. For example, implicit self-esteem would simply be measured by the strength of associations between one attitude object (Self) and its evaluative attributes (Good vs. Bad), thus requiring only three categories instead of the standard four. In the present research, choosing four categories was indeed difficult, and we found that choosing three categories, as made possible by the SC-IAT, was more parsimonious and effectively dealt with a series of possible confounds.

To begin, in the present context, because guilt is a self-conscious emotion, the pairing of "self" as the attitude object and "guilty" as an evaluative attribute was an obvious choice. Then, choosing a complementary pair of categories to reflect two evaluative poles was straightforward (Guilty vs. Proud). Indeed, guilt and pride are known to be contrasting affective pairs in the emotion literature (for a review, see Tracy, Robins & Tangney, 2007). Generally, *succeeding* or *failing* to meet the standards, rules, and goals of one's group or society will determine whether an individual feels, respectively, pride or guilt. Both are considered self-

conscious emotions because they both require a sense of self-awareness and self-representation. That is, guilt and pride can be experienced because the "self" can be an object of evaluation by the individual. The "I" self has the capacity to evaluate the "Me" self (cf. James, 1890). Because the self-aware self ("I") has the capacity to reflect on the mental representations that comprise the identity self ("Me"), then self-evaluations are possible, which can lead to self-conscious emotions of guilt and pride (cf. Tracy & Robins, 2007). Just as the IAT can measure implicit self-esteem through the strength of automatic self-evaluations with positive vs. negative attributes, we reasoned that the IAT can measure implicit self-conscious emotions through the strength of automatic self-evaluations with guilty vs. proud attributes.

A standard self-esteem IAT would normally assess the attitude object with a pair of categories, generally contrasting the self with an unspecified other. This pair can be represented by various categories, such as Me vs. Not-Me, Self vs. Not-Self, Self vs. Other; and pronouns are usually used as stimuli (see Hofman, Gawronski, Gschwender, Le & Schmitt, 2005). For example, for the category "Self" the pronouns I, Me, My and Self would be used, and for the category "Other" the pronouns You, Yours, and Other would be used. Karpinski and colleagues (Karpinski, 2004; Karpinski & Steinman, 2006) have demonstrated that the other-associations can be problematic both in their use and in their interpretation. Specifically, they demonstrated that the content of the other, for example whether the other is unspecified or referred to as a close friend, has a considerable influence on the overall self-esteem IAT scores.

For the present context, where collective guilt is a group-based emotion experienced within the context of an intergroup relationship, the use of a category "other" is even more problematic. Because the *social* self will be made salient for participants in our study, by being reminded of the historical relationships between their own social group and Aboriginal peoples, our IAT should be tapping into automatic associations between the social self and guilty evaluations. Hence, a "Self" category would include elements of the "Other", in terms of other ingroup members, making the use of an "Other" category somehow repetitive and

potentially confusing. Even worse, in the context of the study of collective guilt, where harm has been perpetrated to the "other", in this case another group, the "Other" category could even refer to the victimized outgroup, Aboriginal peoples. Put simply, in the present context, it would be difficult for participants to clearly classify stimuli between a "Self" category and an "Other" category because of the ambiguity and confusion related to the salient intergroup context. By itself, this would be a significant methodological confound. But beyond this, because we have argued that "blaming the victim" is a key defense mechanism in the avoidance of collective guilt, the use of stimuli pronouns such as You, Yours and Other within an "Other" category, paired with guilt-related words stimuli, could easily render our IAT measure a measure of automatic other blaming. Because of these potential confounds, we elected to use the Single Category Implicit Association Test (SC-IAT) of Karpisky and colleagues (Karpinki & Steinman, 2006, cf. Karpinski 2004). Specifically, we chose to use a single attitude object "Self", and we used the following pronouns as stimuli to reflect the social self relevant to the measure of the group-based emotion of collective guilt: I, Me, My Group, Myself (see Appendix E for a full list of all stimuli words used).

For this first attempt to apply the methodology of the implicit association test to create a second novel measure of implicit collective guilt, we adapted the modified SC-IAT to provide an implicit measure of automatic guilty self-evaluations. To achieve this, the rapid categorization of stimuli into a "Self" category was combined with the categorization of stimuli into "Guilty" and "Proud" categories. An IAT effect indicating implicit collective guilt would be represented by the relative ease of categorizing self stimuli with guilty stimuli as compared to self stimuli with proud stimuli.

The overall methodological procedure is generally similar to the one used in Studies 1, where participants first read a text describing the ingroup transgression, followed by the measure of implicit collective guilt first, then by the measure of explicit collective guilt. We are generally interested in replicating the main findings of Studies 1, where implicit collective guilt moderated the usual relationship between explicit collective guilt and key intergroup attitudes and

behaviours. Specifically, in the present study, we focus on compensatory action, by following up on the distinction that Leach, Iyer and their colleagues have made between advantaged group members 1) endorsing the abstract goal of compensation versus 2) being willing to take specific action to bring about compensation (see e.g. Harth, Kessler & Leach, 2008; Iyer, Schmader & Lickel, 2007; Leach, Iyer & Pedersen, 2006; Leach, Snider & Iyer, 2002). In Study 1b and Study 1c, we have found that this distinction was crucial.

Method

Participants

Participants were 106 McGill students. They were recruited through the social psychology paid subject pool on the basis of their self-identification as being Canadian. They all provided informed consent and were compensated for their time.

Materials and Procedure

Participants were invited to come to the laboratory to complete a computer task and a written questionnaire. Ten participants were scheduled at a time and desk arrangement allowed the participants to have a sufficient degree of privacy.

First, in a computer task, participants were asked to: 1) read a text presenting wrongful ingroup actions (same text as in Studies 1a-b, see Appendix A); and then, 2) complete our version of a Single Category Implicit Association Test (SC-IAT). Second, in a written questionnaire, participants were asked to complete various self-report measures which we describe next, along with the SC-IAT.

Implicit collective guilt: Guilt SC-IAT. After reading the text, participants were asked to complete our version of a Single Category Implicit Association Test (SC-IAT: Karpinski & Steinman, 2006). Our Guilt SC-IAT was designed to test the relative strength of automatic guilty self-associations versus proud self-associations. We followed the specific recommendations for creating and using a single category IAT as outlined by Karpinski and Steinman (2006, pp. 30-31).

On the computer screen, the evaluative dimension was labelled *guilty* vs. *proud*, and the object dimension was labelled *self*. Fourteen target words were

used for each of the evaluative dimension labels, and four target words were used for the object dimension (see Appendix E). During the computer task, participants were required to complete two stages, in the same order. Each stage comprised 24 practice trials immediately followed by 72 test trials. In the first stage (*self + guilty*), self words and guilty words were categorized on the *z* key, and proud words were categorized on the *2* key on the numeric pad. In the second stage (s*elf + proud*), guilty words were categorized on the *z* key, and self and proud words were categorized on the *2* key. The target words remained on the screen until the participant responded or for 1,500 ms. If participants failed to respond within 1,500 ms, a reminder to "Please respond more quickly!" appeared for 500 ms. This response window is meant to decrease the likelihood that participants engage in controlled processing when responding (see Karpinski & Steinman).

An IAT effect indicating implicit guilt was computed as the difference in average reaction time between the stages *self + guilt* and *self + proud* (using the newest D-score algorithm used for IAT data: Greenwald, Nosek & Banaji, 2003). By measuring the relative ease of categorizing self items with guilt items as compared to self items with proud items, the Guilt SC-IAT effect is an indicator of the implicit guilty self-associations. In other words, Guilt SC-IAT D-scores were such that higher scores indicate greater guilty than proud associations with the self.

After having completed the IAT, the computer program prompted participants to begin the written questionnaire. All scale items required responses on a Likert scale ranging from 0 (*totally disagree*) to 10 (*totally agree*).

Explicit collective guilt: Feelings of group-based guilt and group-based pride. Because the IAT measures relative associations between two evaluative dimensions, in our case guilty vs. proud, we felt the need to include a self-report measure of both pride and guilt. We selected two items from the State Shame and Guilt Scale (SSGS; Marschall, Sanftner & Tangney,1994). The SSGS is a validated self-report scale of "in-the-moment feelings of shame, guilt and pride experiences" (Tangney & Dearing, 2002, p. 240). For our purpose, we selected two items that could easily be adapted for the present context of group-based

emotions: “I feel pleased about something we have done” and “I feel bad about something we have done”. To ensure that the items would be tapping into group-based emotions, participants were specifically instructed to rate each item in terms of “how you feel as a Canadian right now”. There is evidence showing that measuring group-based feelings with a single affect item is valid and reliable, as long as “a particular group membership is salient to all participants in a given study” (Branscombe, Slugoski & Kappen, 2004, pp. 22-23). Finally, again because of the relative measurement of the IAT, we created a measure of differential guilt-proud feeling by subtracting participants’ score on the proud item from the guilt item.

Compensatory efforts. Following the findings from Studies 1b-c, we designed an item that would tap into more concrete specific compensatory action. As such, we asked participants to what extent they agree with the following item “Canadians should make more efforts to improve the socio-economic position of Aboriginals”. This item is more concrete and specific because it goes beyond asking, in a global and abstract way, whether participants are willing to compensate Aboriginal peoples. It is concrete by referring to “efforts” and specific by referring to “socio-economic improvement”.

Retrospective thoughts and feelings. We created a scale to gain insight into the inner thoughts and feelings that participants experienced as they were reading the text about their ingroup transgression (see Appendix F). Participants were asked to retrospectively recall what they were thinking about and feeling as they were reading the text. Then, they were presented with 8 possible thoughts or feelings and they were asked to rate their agreement with them. For example, this scale includes items such as “I was feeling pangs of guilt (feeling-sensation of guilt)” or “I was thinking I should not be held responsible or blamed for what other Canadians have done!”

Social categorization and social identification. As a check, participants were asked “with which group do you identify yourself the most?” All participants identified themselves as being Canadian. Then, to measure the degree to which participants identified themselves with Canadians as a group, they were

asked to indicate their degree of agreement with the same six identification statements as in Studies 1 a-b-c, except that the term "Euro-Canadians" was replaced with "mainstream Canadians"

Results & Discussion

Guilt SC-IAT: Data Reduction

The average error rate for the present study is consistent with error rates found in other SC-IAT that include a response window: 11.81% (SD = 7.64). Generally, IAT error rates hover around 5%, but the inclusion of a response window, meant to facilitate quick responding, is likely to be accompanied by increased error rates. The incentive to add a response window is to decrease the likeliness of motivated responding. The standard practice with IAT and SC-IAT data is to exclude participants with high error rates from the analyses (error rates larger than 20%). Once the 15 participants with high error rates were discarded, the average error rate decreased to 9.35% (SD = 4.14). Following Karpinski and Steinman (2006), Guilt SC-IAT scores were computed using a scoring algorithm modeled on the newest D-score algorithm used for IAT data (Greenwald, Nosek & Banaji, 2003). Data from the practice blocks were discarded. Also, responses less than 350 ms were eliminated and non-responses were eliminated, and error responses were replaced with the block mean plus an error penalty of 400 ms. The average response times to the test trials of Stage 2 (*self + proud*) were subtracted from the average response times to the test trials of Stage 1 (*self+ guilty*). This number was divided by the standard deviation of all correct response times to all test trials. Thus, Guilt SC-IAT D scores were such that higher scores indicate greater guilty than proud associations with the self.

Average Levels of Guilt

Both implicit and explicit measures of guilt suggest that levels of guilt feelings are low, confirming again that collective guilt is a rare emotion (see Table 8). The Guilt SC-IAT revealed that participants on average had more proud self-association than guilty self-association. There is a similar bias on the explicit measure of differential proud-guilt feelings, where participants tend to endorse feeling pride slightly more. Objectively though, participants tend not to endorse

feeling guilt (3.85 is significantly different from the scale neutral midpoint), without necessarily endorsing feeling proud (4.86 is not significantly from the scale neutral midpoint).

Table 8.

Descriptive Statistics

			Difference from midpoint	
Measures	**M**	**SD**	***t***	***p***
Implicit:				
Guilt SC-IAT	-0.48	0.42	$t(90) = -10.97$	$< .001$
Explicit:				
Guilty	3.85	2.81	$t(90) = -3.92$	$< .001$
Proud	4.86	2.67	$t(90) = -0.51$	$= .61$
Guilty-Proud Differential	-1.01	4.19	$t(90) = -2.32$	$< .05$

Note. Midpoint is the middle point of the scale or the point of the scale at which a person has neutral self-associations.

Relationship between Implicit and Explicit Measures of Guilt

A significant positive correlation was observed between Guilt SC-IAT and, self-reported guilt, $r(90) = .24$, $p = .03$, and the differential measure between self-reported guilt and pride, $r(90) = .23$, $p = .03$. However, it failed to correlate with self-reported pride, but it was in the expected direction, $r(90) = -.11$, $p = .31$. These findings contrast with results found in Studies 1, where implicit guilt feelings, as revealed on the word fragment completion task, tended to be negatively correlated with explicit guilt feelings, although the magnitude was small.

Implicit and Explicit Collective guilt are Related to Different Emotional Experiences

We sought to explore the role of emotion regulation when people are attempting to cope with their guilt feelings while reading the provocative text depicting ingroup transgression. We performed a series of correlations with a list of thoughts and feelings that participants retrospectively recalled having while reading the text (see Table 9).

Table 9.

Correlations among Main Variables and Retrospective Thoughts and Feelings

	Pride	**Guilt**	**Diff**	**IAT**
I was thinking "Aboriginal peoples are somewhat to be blamed for their situation."	.05 (.67)	-.02 (.83)	-.04 (.67)	.11 (.30)
I was feeling "pangs of guilt" (feeling-sensation of guilt).	**-.23** (.03)	**.27** (.01)	**.32** (.00)	.01 (.92)
I was thinking "Why should Canadians be blamed for that?"	-.03 (.79)	**-.30** (.00)	**-.19** (.08)	-.01 (.90)
I was thinking "it is so horrible what Aboriginal peoples must have suffered."	-.11 (.28)	**.35** (.00)	**.31** (.00)	.09 (.42)
I was feeling "very small, like hiding" (feeling-sensation of shame).	**-.22** (.04)	**.37** (.00)	**.39** (.00)	.05 (.65)
I was thinking "I should not be held responsible or blamed for what other Canadians have done!"	-.05 (.67)	-.10 (.35)	-.04 (.73)	**.20** (.05)
I was thinking "this text is unfairly blaming Canadians."	.05 (.63)	-.08 (.45)	-.09 (.41)	.04 (.70)
I was thinking "in many ways, Canadians should be held responsible for this situations"	-.06 (.60)	**.31** (.00)	**.25** (.02)	-.03 (.76)

Note. p values are in parentheses

First, in terms of self-reported feelings of group-based emotions, we find that the correlations with the single self-report measure of guilt are very similar to the differential self-report measure of guilt-pride. In both cases, as participants experience more guilt, or more guilt relative to pride, they are more likely to report having felt pangs of guilt and sensations of shame. Also, they are more likely to report having thought that Canadians should be blamed and more likely to report having thought that Canadians should be held responsible and that Aboriginal peoples must have suffered. In contrast, the only significant correlation for the Guilt SC-IAT involves a more personally relevant item, where participants who score higher on the Guilt SC-IAT were more likely to report having thought that they should not be held personally responsible for what their group has done. In sum, it seems that the Guilt SC-IAT is specifically tapping into appraisal of shared responsibility with regards to ingroup transgression, or more specifically, rejection of shared responsibility. That is, stronger implicit guilty self-associations are related to a higher propensity of having thought that one should not be held responsible or blamed for what other Canadians have done. This would also mean that participants who score lower were less likely to react against such shared responsibility. This may suggest that our Guilt SC-IAT is assessing automatic rejection of self-responsibility associations, instead of gut-feelings per se. And in fact, the Guilt SC-IAT was not correlated with any of the "feeling" items.

An alternative explanation is that our SC-IAT is in fact tapping into *unwanted* gut-feelings of collective guilt, as personally distancing oneself from any association with wrongdoings committed by other ingroup members is one defense mechanism that can be used to avoid collective guilt feelings (Branscombe, Slugoski & Kappen, 2004). Specifically, this means that the SC-IAT may be measuring those unwanted guilt feelings associated with the ingroup transgression, which participants are actively attempting to avoid by believing that individual group members, such as themselves, should not be blamed for what other group members have done.

In fact, Branscombe and her colleagues, when devising one of the original self-report scales of collective guilt, also developed a related subscale, the "whole group accountability" to assess the extent to which participants believe that a group should be held accountable for the actions of its members. For example, one item on the scale is "I think that members of a group are accountable for what others in their group do". They reasoned that "to the extent that people deny any form of collective responsibility and claim that only the personal self can be assigned responsibility, then the experience of collective guilt is likely to be minimal" (Branscome, Slugoski & Kappen, 2004, p. 20). That is, rejecting the idea of shared collective responsibility (that, as a group member, an individual can share responsibility for the collective actions of the group) is an important defense mechanism that can be used to avoid unwanted guilt feelings associated with one's ingroup transgressions.

Explicit Collective Guilt is Related to Different Compensatory Efforts

In a next crucial step, we sought to replicate the interaction effect that we found in our previous studies (1b and 1c), this time with a single item of specific concrete compensatory efforts. In the previous studies, it was found that implicit collective guilt significantly moderated the relationship between explicit collective and specific/concrete compensatory action. In the present study, we formulated a single item that specifically focused on the increased efforts that Canadians should make to improve the socio-economic conditions of Aboriginal peoples.

In order to assess the extent to which participants would endorse such efforts, we entered implicit and explicit collective guilt (both centered), along with their interaction term into a linear regression. A significant main effect of explicit collective guilt was revealed, but, the interaction did not reach the standard acceptable level of statistical significance (see Table 10 & Figure 5).

The present findings suggest that, similar to past findings, individuals who self-report higher explicit feelings of collective guilt tend to be more likely to support compensation for the victimized group.

Table 10.

Predicting Compensatory Efforts

	B	**SE B**	***t***	***p***
Explicit Collective Guilt	0.29	0.09	3.27	.02
Implicit Collective Guilt	-0.47	0.59	-0.78	.44
Interaction	0.31	0.21	1.49	.11

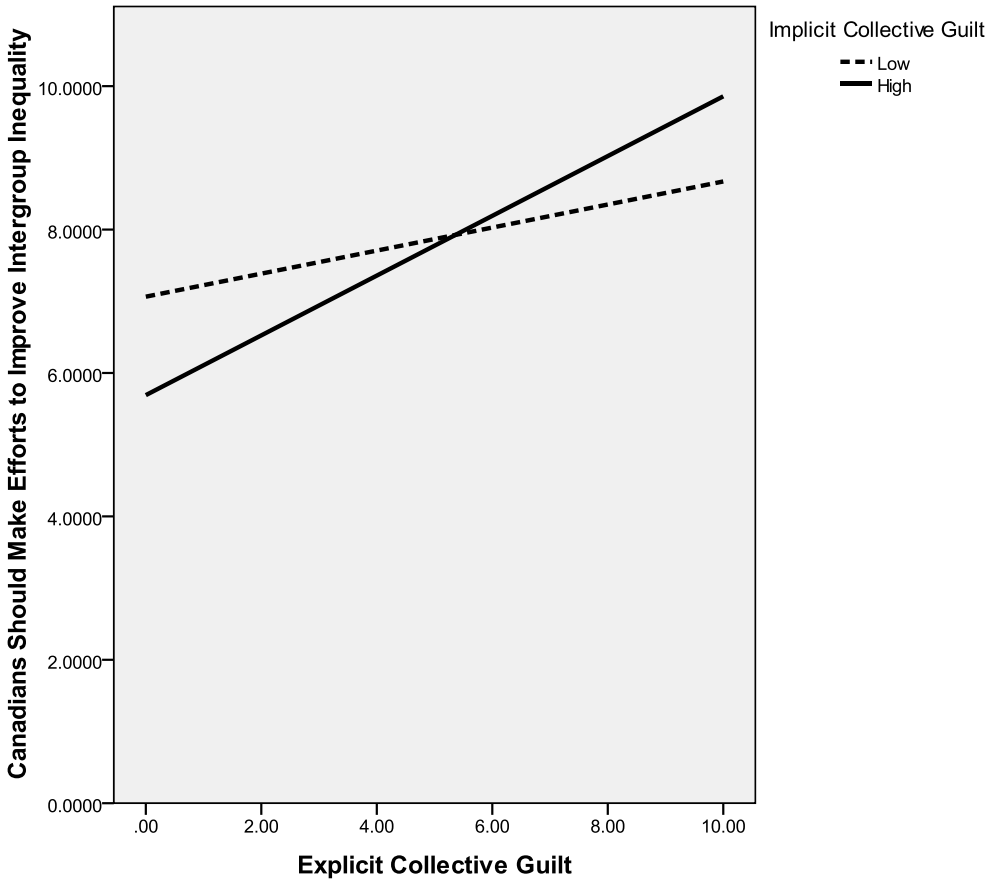

Figure 5.

Predicting compensatory efforts

However, we failed to replicate the interaction effect that was found in our previous studies (1b and 1c), where implicit collective guilt moderated the relationship between explicit collective guilt and more concrete specific compensatory actions. Perhaps, the compensatory measure employed in the present study, a single self-report item of compensatory efforts, was in fact too abstract, and less sensitive than the measure of actual compensatory behaviours that was employed in our previous studies, in the form of donated hours to benefit the victimized group.

Implicit and Explicit Levels Collective Guilt are Related to Different Levels of Social Identification

In Studies 1 a-b-c, social identification did not correlate with any of our measures of collective guilt or any of our other intergroup measures. We reasoned that the wording might have been problematic. The present study used a slightly modified measure of social identification, where the social group is referred to as "mainstream Canadian", instead of the former wording of Euro-Canadians.

Because levels of social identification were obtained after participants read the text presenting ingroup transgression and after they completed both implicit and explicit measures of guilt, it makes sense, both theoretically and statistically, to explore social identification as an outcome variable. In fact, it has been suggested that shifts in identification can be part of an emotion regulation response (Smith & Mackie, 2006; 2008).

That is, because people are members of multiple groups, they can strategically shift between their identities, allowing them to distance themselves from unwanted or less desirable social ties. For instance, some group members may be motivated to disidentify from a group that is associated with negative group emotions (Kessler & Hollbach, 2005; cf. Powell, Branscombe & Schmitt, 2005). Hence, shifts in social identification can be strategically employed to regulate group-based emotions (Smith & Mackie, 2006; 2008). The present study is suitable for such an analysis, because our measure of social identification was obtained after participants were confronted with negative group-based emotions, thus potentially allowing us to capture such strategic shifts in identification.

To assess the degree to which participants identify with mainstream Canadians as a function of their guilt levels, we entered implicit and explicit collective guilt (both centered), along with their interaction term into a linear regression. We found a significant interaction (see Table 11). To probe this interaction, we performed simple slope tests, at low (1 *SD* below) and high values (1 *SD* above) of the predictors (see Figure 6). We found two simple slope tests to be significant.

First, we found a significant positive relationship between explicit collective guilt and social identification at higher levels of implicit collective guilt, $t = 2.75$, $p = .01$. Those participants who experienced higher levels of gut-feelings of guilt while self-reporting lesser collective guilt tended to identify less with mainstream Canadians. In contrast, those with both higher gut-feelings of guilt and who also self-reported more collective guilt tended to identify more with mainstream Canadians. Second, we found a significant positive relationship between implicit collective guilt and levels of social identification at higher levels of explicit collective guilt, $t = 2.72$, $p = .01$. For those participants who tended to self-report higher feelings of guilt, those who experience lower levels of gut-feelings of guilt tended to identify less with mainstream Canadians, whereas those who experience higher levels of gut-feelings of guilt tended to identify more

Table 11.

Predicting Levels of Social Identification

	B	**SE B**	***t***	***p***
Explicit Collective Guilt	0.82	0.57	1.43	.16
Implicit Collective Guilt	0.12	0.09	1.46	.15
Interaction	0.49	0.20	2.47	.02

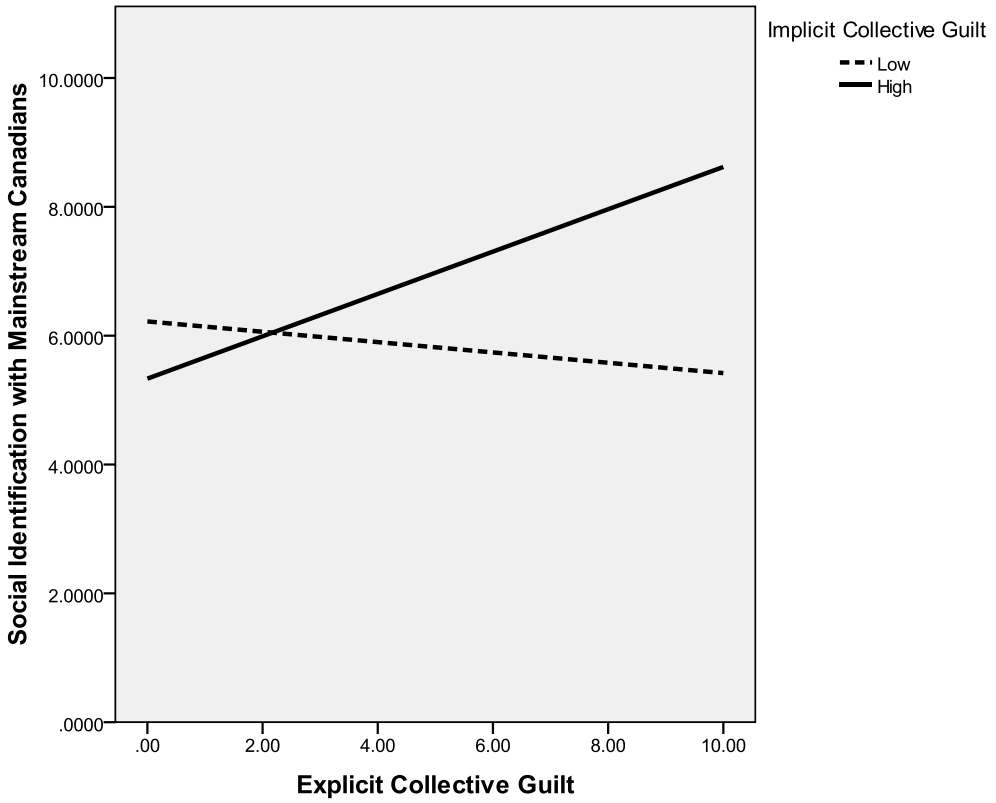

Figure 6.

Predicting social identification

These results are suggestive of defensive responding for those individuals who display high implicit gut-feelings of collective guilt, but without explicitly self-reporting feeling collective guilt, as they are less likely to identify with Canadians. However, because we do not have a pre-measure of social identification, it is not possible to know whether these individuals identified less with Canadians from the start, or whether they were motivated to disidentify from Canadians as a defensive reaction. Also, for those individuals who show higher levels of self-reported collective guilt feelings, but with no related gut-feelings, they seem to be less motivated to identify with Canadians as a well. Again, it is unclear whether this is a self-protective motive.

Overall, if, indeed, these group members are less willing to identify with Canadians as a group, as a direct result of attempts to distance themselves from collective guilt and shared responsibility for the ingroup's wrongdoing; such response style is detrimental on a long-term basis. Support for compensation will decline if no sense of shared responsibility is experienced.

Study 2b

In this last study, we sought to provide further support for the role of implicit collective guilt by experimentally manipulating levels of collective guilt, using the same methodology employed in Study 1c. Two versions of the text depicting ingroup transgression were created, in order to induce lower and higher levels of explicit collective guilt. Furthermore, we also included a measure of implicit self-esteem, to rule out the possibility that our Guilt SC-IAT might have been tapping into more general valence of positive vs. negative self-affect. Indeed, our Guilt SC-IAT closely resembles the Self-esteem SC-IAT. Finally, this time, measures of social categorization and social identification were obtained *before* participants completed the main experiment, through completion of an online survey about one week prior to the laboratory experiment.

Method

Participants

Participants were 99 McGill students. They were recruited through the social psychology paid subject pool on the basis of their self-identification as being Canadian. They all provided informed consent and were compensated for their time.

Procedure and Materials

The procedure and materials were similar to Study 2a, where participants first read a text depicting ingroup transgression, followed by the Guilt SC-IAT. However, we omitted the measure of retrospective thoughts and feelings. We also included an experimental manipulation of explicit collective guilt levels, using two versions of the text used in Study 1c.

Participants completed a computer-based questionnaire in a laboratory. The experiment was divided in three sections. First, participants were asked to

read a one-page excerpt about the internal colonization of Aboriginal peoples by mainstream Canadians. In order to experimentally manipulate the emotion elicited, participants were randomly assigned to read one of two versions of the excerpt (low-guilt vs. high-guilt: see Study 1c and Appendix D). Second, participants completed two different implicit measures (counterbalanced): 1) the name letter task to assess implicit self-esteem, and 2) our Guilt SC-IAT to assess implicit guilt. Third, participants completed the compensation item, assessing specific concrete compensatory action.

They were asked to respond to all items, by indicating the extent of their agreement or disagreement with each item using a standard 11-point Likert scale ranging from *definitely no* (0) to *definitely yes* (10) with *neutral* (5) as the midpoint. All measures are identical to those presented in Study 2a, except for the addition of the name letter task, which we outline next.

Implicit self-esteem: name letter task. For the name letter task, participants were asked to rate their liking for each letter of the alphabet. Past research indicates that individuals who display high levels of implicit self-esteem prefer their initials to other letters of the alphabet (Jones, Pelham & Mirenberg, 2002; Kitayama & Karasawa, 1997). To control for response styles involving the tendency to use high or low numbers on the scale, ratings were ipsatized by subtracting from each participant's ratings of his or her initials, the mean liking score that participant gave to the remaining letters of the alphabet. To also control for a potential confound that certain frequently used letters might generally be rated higher than other less frequent letters (Jones et al., 2002), we subtracted from the rating of each of these letters the mean ipsatized score for all other participants who did not share that initial. Each participant's score was the mean of the adjusted ratings for his or her two initials (see Sakellaropoulo & Baldwin, 2007).

Results & Discussion

Guilt SC-IAT: Data Reduction

The average error rate was 13.51% (SD = 8.01), similar to Study 2a. Furthermore, the error rate did not significantly differ as a function of

experimental conditions, between the low-guilt condition (mean = 13.56; *SD* = 7.65) and the high-guilt condition (mean = 13.47, *SD* = 8.52). As in Study 2a, we excluded data from participants with high error rates from the analyses (error rates larger than 20%). Once the 18 participants with high error rates were discarded, the average error rate decreased to 10.48% (SD = 4.55). Finally, similar to Study 2a, and following Karpinski and Steinman (2006), Guilt SC-IAT scores were computed using a scoring algorithm modeled on the newest D-score algorithm used for IAT data (Greenwald, Nosek & Banaji, 2003).

Preliminary Analyses: Comparing Implicit Collective Guilt Feelings, Implicit Self-Esteem and Compensatory Efforts as a Function of Experimental Conditions

We first performed a 2-way ANOVA to compare Guilt SC-IAT scores as a function of experimental conditions (manipulated explicit collective guilt: low-guilt vs. high-guilt; order of implicit measure: Guilt SC-IAT first vs. name letter first). We found only a marginally significant effect for the manipulated explicit collective guilt conditions, where individuals in the low-guilt condition tended to experience slightly less implicit guilt (mean = -.60, *SD* = .07) than individuals in the high-guilt condition (mean = -.44, SD = .06), $F(1, 77) = 2.85$, $p = .10$. In comparison, the similar experiment, presented in Study 1c, revealed no significant main effect of the manipulated explicit collective guilt conditions on implicit collective guilt, where implicit collective guilt was measured with a word fragment completion task.

We can also compare the levels of Guilt SC-IAT scores found in the present experimental conditions to those found in Study 2a, where the average score was of -.48. This would suggest that our low-guilt condition comparatively reduced feelings of implicit guilt, whereas implicit guilt feelings were similar in the high-guilt condition. Finally, this experimental marginal effect remained significant after controlling for social identification. Also, social identification was not a significant moderator in the marginal relationship between experimental conditions and implicit collective guilt.

We performed the same analysis with the outcome measure of compensatory effeorts, and this time the effect for experimental guilt conditions did not reach standard acceptable level of statistical significance, with average scores for the low-guilt (mean = 7.09, *SD* = .38) and high-guilt condition (mean = 7.94, SD = .37), $F(1, 77) = 2.62$, $p = .11$. This analysis remained similar after controlling for social identification and social identification was not significantly related to compensatory efforts.

We could have expected that participants who strongly identify with their ingroup might have reacted differently to the experimental manipulation of collective guilt levels, because of their motivation to maintain a positive social identity (cf. Wohl et al., 2006). However, collective guilt studies have shown mixed results in explaining the relationship between levels of social identification and levels of collective guilt (see e.g. Branscombe, Slugoski & Kappen, 2004; Doosje, Branscombe, Spears & Manstead, 2004). And indeed, similar mixed results are revealed in the present program of research, where levels of social identification were only significantly related to levels of collective guilt in Study 2a. In this specific case, levels of social identification were obtained *after* levels of collective guilt were measured, and we explained this finding by suggesting that shifts in levels of social identification might have been strategically used as part of an emotion regulation response (see, Smith & Mackie, 2006; 2008).

Finally, because in both analyses, the experimental condition for the order of the implicit measures of guilt vs. self-esteem was not significant, we eliminated this counterbalance variable from further analyses

Next, we performed correlation analyses between our main variables (implicit collective guilt, implicit self-esteem, social identification, compensatory efforts) separately for low-guilt vs. high-guilt experimental conditions (see Table 12).

The only significant correlation was between scores of implicit collective guilt and implicit self-esteem within the low-guilt condition: implicit self-esteem was significantly positively correlated with implicit guilt. This significant correlation is somewhat surprising. We included a measure of implicit self-esteem

to control for the possibility that our Guilt SC-IAT was tapping into general positive vs. negative affect related to the self (i.e. self-esteem) instead of more specific feelings of guilt. If this was the case, then we should have found a negative correlation between implicit self-esteem (a positive self-affect) and implicit guilt (a negative self-affect). Instead, we found a significant positive correlation between the two. Even more puzzling, this correlation is only significant within the low-guilt condition. Further investigation is needed to confirm whether this is a spurious effect, or an interesting phenomenon to be pursued

Table 12.
Correlations between main variables as a function of manipulated explicit collective guilt conditions (low-guilt vs. high-guilt)

	IAT		**Name Letter**		**SID**	
	Low Guilt	**High Guilt**	**Low Guilt**	**High Guilt**	**Low Guilt**	**High Guilt**
IAT	-	-	-	-	-	-
Name Letter	**.43** (.01)	-.10 (.52)	-	-	-	-
SID	.10 (.95)	.04 (.82)	.25 (.13)	-.12 (.46)	-	-
Comp	.07 (.66)	-.10 (.53)	-.09 (.61)	.06 (.71)	.05 (.77)	.17 (.29)

Note. *p* values in parenthesis. IAT = Guilt SC-IAT. Name Letter = name letter task. SID = social identification. Comp = Compensatory efforts

.

Predicting Compensatory Efforts as a Function of Implicit and Explicit Collective Guilt Levels

Finally, we sought to replicate our previous findings, where implicit collective guilt moderates the relationship between explicit collective guilt and concrete specific compensatory action. In the present study, explicit collective guilt was experimentally manipulated in two different conditions (low-guilt vs. high-guilt). In order to assess the extent to which participants endorse specific concrete compensatory efforts, we entered implicit (centered) and manipulated explicit collective guilt (dummy coded: 0 for low-guilt condition and 1 for high-guilt condition), along with their interaction term into a linear regression. Although this regression did not reach standard levels of statistical significance, the relationship was in the expected direction, pointing towards the moderating effect of implicit collective guilt.

Consequently, as a follow-up, we decided to perform the same regression analysis, but to increase our statistical power, we decided to use data from all participants, and to add error rates as a covariate. Previously, we had discarded from analysis data with too high error rates, which effectively prevented us from using data from 18 participants out of 99, which is considerable.

This time, we reached a marginally significant interaction effect (see Table 13). To probe this interaction, we performed simple slope tests, at low (1 *SD* below) and high values (1 *SD* above) of the predictors (see Figure 7).

Table 13.

Predicting Specific/Concrete Compensatory Efforts

	Prediction of Compensation			
	B	**SE**	***t***	***p***
Error rates	0.26	3.17	0.08	.93
Explicit collective guilt (condition)	-0.04	0.80	-0.05	.96
Implicit collective guilt	0.75	0.81	0.92	.36
Interaction	-1.73	1.05	-1.64	.10

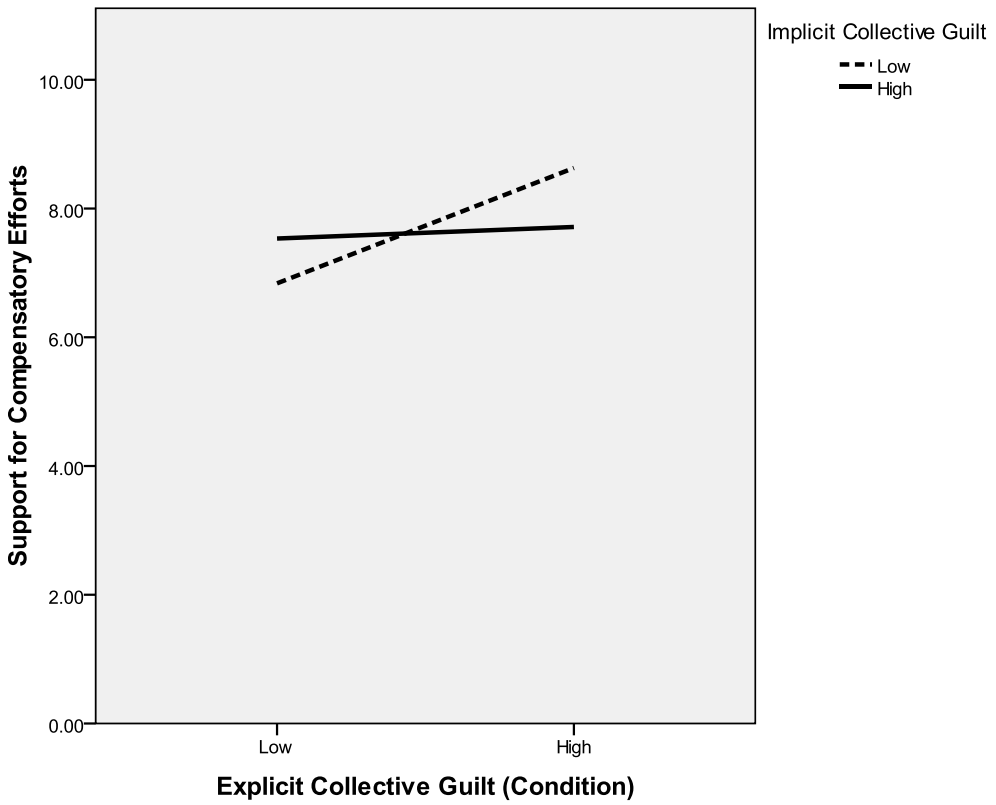

Figure 7.

Predicting compensatory efforts

First, we found a significant positive slope for those participants low in implicit collective guilt. That is, participants lower in implicit collective guilt were less likely to support compensatory efforts in the low-guilt condition, than in the high-guilt condition, $t = 2.65$, $p = .01$. Conversely, for those participants who revealed higher levels of implicit collective guilt, their level of support for compensatory efforts remained relatively high, but unchanged as a result of the experimental manipulation aimed at inducing higher vs. lower explicit collective guilt acceptance. To reiterate, this is in contrast to those individuals lower in implicit collective guilt who appeared to be indeed more sensitive to the experimental manipulation.

Specifically, those individuals who responded with less spontaneous gut-feelings of collective guilt (low implicit) in reaction to the low-guilt text were less willing to support compensation; whereas those individuals who responded with less spontaneous gut-feelings of collective guilt (low implicit) in reaction to the high-guilt text were more willing to support compensation. Those individuals who did not seem to experience much automatic guilty self-associations appeared to be more easily swayed by outside manipulation meant to motivate compensation (through a text meant to induce higher collective guilt acceptance) or to hinder compensation (through a text meant to induce lower collective guilt acceptance). Hence, those participants lower in implicit collective guilt, as revealed on the Guilt SC-IAT, perhaps show a lack of defensiveness and more socially desirable responding, as they seem to be easily persuaded in either direction.

In contrast, a marginally significant negative slope for the high-guilt condition may suggest a defensive style of responding for some individuals with higher levels of implicit collective guilt. When confronted with a text meant to induce higher levels of collective guilt acceptance, those individuals higher in implicit collective guilt were less likely to support compensation than individuals lower on implicit collective guilt, $t = -1.85$, $p = 10$. This provides further support for our argument that our SC-IAT may, for some individuals, be tapping into unwanted gut-feelings of collective guilt which they may actively try to avoid, especially in a more threatening context.

Discussion for Studies 2

In Study 1a, Study 1b and Study 1c, we presented a promising first attempt at devising a measure of implicit collective guilt, specifically, a word fragment completion task. In Study 2a and Study 2b, we sought to replicate our promising initial attempts, but with the use of a different methodology, that of the Implicit Association Test (IAT: Greenwald, McGhee & Schwartz, 1998).

In Study 2a, our findings suggest that those participants who reveal higher implicit collective guilt on the IAT, but who then self-report lower explicit feelings of collective guilt, tend to be more likely to want to distance themselves from other Canadians as a group, potentially in order to avoid shared

responsibility for the ingroup's wrongdoing. These findings are consistent with a pattern of defensive responding (see original theoretical model, Table 1). This is in contrast with the most positive intergroup attitudes that were revealed in those participants who expressed higher levels of collective guilt both at the implicit and explicit levels.

In Study 2b, what most strongly predicted specific compensatory efforts was the effect of an experimental manipulation, meant to induce lower or higher levels of collective guilt acceptance, on individuals who spontaneously reacted with lower levels of implicit collective guilt. That is, this manipulation was most potent on individuals with lower levels of gut-feelings of collective guilt who seemed to have been swayed by the manipulation. They were more willing to support compensatory efforts in the condition meant to induce higher levels of collective guilt acceptance.

General Discussion

This program of research offers support for the applicability of the methods of implicit social cognition to the measurement of collective guilt. Past collective guilt research has uniquely relied on the use of self-report measures. The present series of five studies are the first to confirm that implicit measures can successfully be applied in the context of collective guilt to circumvent the well-known limitations of self-report. Generally, two main problems with more direct self-report measures result from introspective limits (Nisbett & Wilson, 1977) and susceptibility to self-presentation, more precisely in the form of socially desirable responding (Paulhus, 1984). In terms of collective guilt, this means that explicit self-report measures may be unable to capture guilt feelings that group members may be incapable or unwilling to self-report.

To circumvent the limitations of self-report, we have devised two different novel implicit measures of collective guilt, one employing a word fragment completion task (Studies 1a-b-c) and one employing an implicit association test (Studies 2a-b). In both cases, the differential pattern of results obtained from the implicit measures and self-report measures confirms the value of including both types of measures when studying collective guilt. Precisely, we have repeatedly

found that implicit collective guilt moderated the usual relationship between explicit collective guilt and key intergroup attitudes and behaviours. Though, the specific nature of the interaction resulting from the two implicit measures somewhat diverged.

A certain lack of convergence between our two measures of implicit collective guilt might have been anticipated. It is now well-established in the field of implicit social cognition that different implicit measures of the same construct often do not correlate with each other (Bosson, Swann & Pennebaker, 2000; Koole & Pelham, 2003; see also, De Houwers & Moors, 2010; Teige-Mocigemba, Klauer & Sherman, 2010). Various possible explanations have been proposed. The most common are that either 1) the different implicit measures may be tapping into different facets of the construct, or that instead 2) the different implicit measures simply reflect the use of different cognitive processes. Consequently, our lack of complete convergence between two implicit measures of collective guilt may actually shed some light on the nature of collective guilt.

We suggest here that because of the different features of the word fragment completion task and the implicit association test, we might have potentially tapped into different facets of the nature of the implicit processes at work in the experience of collective guilt. Similar arguments have been made with the study of implicit self-esteem (see e.g. Zeigler-Hill, 2006), where it was suggested that some implicit measures may actually be reflecting nonconscious associations with the self whereas other measures may be tapping unto conscious self-evaluations which individuals are reluctant to report on explicit measures.

In the present context, our two measures of implicit collective guilt, a word fragment completion task and an implicit association test (IAT), differ in two important ways. First, with a word fragment completion task, the participants are unaware of what construct the researchers are measuring. Participants are simply told to fill in the blanks when solving the word puzzles, and there are no obvious right or wrong answers. Consequently there are no motives to consciously control the nature of their responses. However, with the IAT, participants are able to "feel" what construct the researchers are measuring. While

completing an IAT, participants experience the ease or difficulty of making certain pairings, and thereby sense the nature of their automatic evaluations, and thus may become aware of what construct the researchers are trying to address. Yet, they technically remain unable to consciously control the nature of their response, because of the rapid and automatic nature of the categorization task. To summarize our claims, two different conditions are believed to be unique to implicit measures, that of unawareness and uncontrollability, where either 1) the participants are unaware of the construct under examination, or 2) the participants have no control over their responses (cf. De Houwer, 2009). Our IAT mostly focuses on the element of uncontrollability revealing automatic guilty self-associations that people are unable to actively control (i.e. suppress), whereas our word fragment completion task mostly focuses on the element of unawareness, revealing higher accessibility (or lack thereof) of guilt-related words, outside of conscious awareness. And in relation, a second difference between the word fragment completion task and the IAT involves the cognitive process underling the implicit mechanism assessed by the two measures. A word fragment completion task relies on the higher accessibility of an automatically activated construct to reveal the implicit process at work. In contrast, an IAT relies on response latency between different evaluative pairing activated under time pressure to reveal the implicit process at work (see also, De Houwer & Moors, 2010).

Based on the findings outlined in the present five studies, we would speculate that the word fragment completion task appears to be revealing unconscious guilt feelings, or at the very least, individuals are not consciously aware that they are reporting guilt feelings (i.e. lack of awareness). In contrast, the implicit association test (IAT) appears to be revealing unwanted guilt feelings, which individuals may not want to necessarily outwardly express (i.e. lack of control). Specifically, the word fragment completion task appears successful at revealing the genuine lack of gut-feelings of guilt, whereas the IAT appears more successful at revealing unwanted guilt feelings that people cannot suppress. We base this reasoning on findings that seem to show that the word fragment

completion task was better able to discriminate individuals who show signs of socially desirable responding (who explicitly reported feelings of collective guilt, while having revealed no spontaneous gut-feelings of collective guilt: i.e. individuals high in explicit collective guilt but low on implicit collective guilt). The IAT on the other hand was better able at discriminating individuals who show signs of defensive responding (who explicitly reported not feeling collective guilt, while having revealed spontaneous gut-feelings of collective guilt: i.e. individuals low in explicit collective guilt and high in implicit collective guilt).

The fact that individuals may not want to openly report unwanted feelings of guilt may seem like a straightforward idea, based on a long and rich literature that shows that guilt is an emotion that people are motivated to avoid (for a review, see, Tracy, Robins & Tangney, 2007). And as a result, it logically follows that more implicit measures of guilt, which do not rely on self-report, are essential. However, unconscious feelings of guilt may be a more provocative idea. Usually, emotions, especially higher-order ones such as guilt, are understood to originate from specific appraisals that require a certain level of more complex conscious cognitive processes (for a review, see Keltner & Lerner, 2010). For example, the appraisal tendency related to guilt feelings is that the self has violated moral standards regarding harm (cf. Baumeister, Stillwell & Heatherton, 1994). Furthermore, many may believe that an emotion is fundamentally not an emotion unless the individual is consciously aware of the inner subjective feeling related to the emotion, thus rendering the concept of unconscious emotion impossible. However, recently, there has been a growing body of research on unconscious emotions, and this conceptualization may not be so unreasonable, at least in terms of a general positive vs. negative valence (Izard, 2009; Ruys & Stapel, 2008, 2009; Wiens & Öhman, 2007; Winkielman & Berridge, 2004). However, further empirical research is needed, especially targeting the necessary conditions for clearly identifying how an emotion can be unconscious. As with the study of any implicit processes, this is not easy to pinpoint or to clearly verify empirically (cf. Moors, Spruyt & De Houwer, 2010). This may appear especially problematic for more complex emotions, such as guilt, that have been believed to

involve high-order cognitive processes. However, we contend, given that guilt is a self-conscious emotion where self-processes are key mechanisms, and given the growing literature on implicit self-processes (see e.g. Devos & Banaji, 2003; Schnabel & Asendorpf, 2010; Zeigler-Hill & Jordan, 2010); that therefore; guilt may be an ideal candidate for further investigations into the possible unconscious elements of emotion. Specifically, this can be achieved by using the methodology and measurement tools of implicit social cognition, and the first two novel implicit measures of collective guilt presented here are a promising initial indication.

Conclusion

The collective guilt literature is replete with discussions of the wide array of defense mechanisms group members may use to assuage their collective guilt, but no one yet has attempted to test whether these strategies allow guilt to be completely avoided, or whether repressed guilt feelings are simply not captured by standard self-report measures. What was needed were more implicit measures of collective guilt that would allow researchers to explore such possibilities. The present research now provides novel measures that can allow other researchers to directly delve into and test implicit processes apparent in collective guilt.

TRANSITION FROM MANUSCRIPT 1 TO MANUSCRIPT 2

I have argued that direct measures of self-report are especially problematic for the study of collective guilt. To address the limitations of self-report measures, in Manuscript 1, two implicit measures were devised to more indirectly assess feelings of collective guilt: a word fragment completion task (WFCT) and an implicit association test (IAT). In Manuscript 2, one of our novel implicit measures of collective guilt (the WFCT) was again employed, but a categorially new implicit measure was the focus. This new implicit measure took the form of a psychophysiological index of autonomic *threat* regulation: respiratory sinus arrhythmia (RSA). Psychological threat is an explanation that is often proposed to explain the low levels of collective guilt commonly found in research on collective guilt. Specifically, it is believed that ingroup transgressions pose a psychological threat to the group's self-image, resulting in defenses that allow collective guilt to be deflected. In Manuscript 2, I argue that RSA may be the most effective measure for better understanding the mechanisms underlying the avoidance of collective guilt as a function of threat regulation.

In Manuscript 1, the implicit measures were specifically targeted to indirectly measure feelings of collective guilt. In this next study, presented in Manuscript 2, the focus is on a procedure designed to indirectly measure a mechanism that is argued to underlie the avoidance of collective guilt feelings: threat. A psychophysiological index, RSA, which is not under voluntary or conscious control, was employed to address the role of threat in the context of collective guilt.

MANUSCRIPT 2

"Taking it to Heart": Heart Rate Variability (HRV) and Emotional Threat Regulation in the Face of Ingroup Transgressions

Julie Caouette and Donald M. Taylor
McGill University
Montréal, Québec, Canada

Abstract

When individuals are reminded of serious transgressions perpetrated by their own group, collective guilt may ensue. Yet, research reveals that when confronted with this reality, collective guilt is not widely endorsed (Wohl, Branscombe & Klar, 2006). One popular explanation is that ingroup transgressions pose a psychological threat to the group's self-image, resulting in defenses that allow collective guilt to be deflected. Although often evoked, threat is rarely assessed directly; instead, threat is assumed from its consequences, such as the use of defenses. The goal of the present study was to directly measure threat in the context of collective guilt, by using a psychophysiological index: respiratory sinus arrhythmia (RSA). RSA reflects the variability in heart rate that occurs in concert with breathing, and is a putative measure of parasympathetic cardiac control. Higher RSA implies more parasympathetic activation, allowing the down-regulation of a threat response. Lower RSA involves a withdrawal of the parasympathetic system, allowing the activation of a sympathetic threat response. We obtained RSA for 110 self-identified mainstream Canadians when they were: 1) reading a text describing the devastating impact of their group's colonization of Aboriginal peoples, and 2) completing a self-report scale of collective guilt. Only explicit collective guilt marginally predicted RSA when they were reading the text (higher RSA = higher explicit guilt). But when completing the self-report scale of collective guilt, an interaction between explicit an implicit collective guilt significantly predicted RSA (higher RSA = lower implicit guilt and higher explicit guilt). Thus, unexpectedly, we found no overwhelming evidence that a threat response can explain low levels of self-reported collective guilt (only marginally lower RSA = lower implicit guilt and lower explicit guilt). Instead, we found a threat-buffering response for some participants who are self-reporting high collective guilt, without having experienced any gut-feelings of collective guilt, as measured by our novel implicit measure of collective guilt (where we found highly significant higher RSA).

"Taking it to Heart": Heart Rate Variability (HRV) and Emotional Threat Regulation in the Face of Ingroup Transgressions

In its early days, the field of social psychology mainly focused on understanding conflicts between groups of equal power (for a review, see Taylor & Moghaddam, 1994). This was a reflection of concerns at the time surrounding the Cold War, when an uneasy peace was maintained because of the relatively equal power of two superpowers, the United States and the former Soviet Union. Since the collapse of the Soviet Union, the focus has shifted to understanding conflicts between groups of unequal power, paralleling the reality of more recent geopolitical developments. For example, processes of colonization and de-colonization involve unequal relationships between advantaged and disadvantaged groups. This provokes new questions about intergroup relations, such as how members of an advantaged group feel about and act towards members of a disadvantaged group.

Nowadays, advantaged groups are increasingly uncomfortable with blatant social inequalities. Following World War II, and arguably with the influence of the Marshall Plan and general post-colonial sensibilities, collective harm and suffering are now commonly denounced in the international community, and claims for reparation have come to be expected. Such humanitarian sentiments are heralded by the nascent commitment to protect collective human rights, in line with modern individual human rights (Barkan, 2000, 2004; Rifkin, 2009; Sznaider, 2001).

This new reality provides a certain amount of moral currency for victimized disadvantaged groups who are increasingly calling upon their advantaged perpetrators to atone for their historical transgressions. Barkan (2000) refers to this modern moral phenomenon as the "new guilt of nations" (see also, Brooks, 1999). In light of these modern transformations, it seems unlikely that nations can easily justify, either politically or morally, collective violence or harm. Surely, then, when a group has committed collective atrocities, widespread feelings of collective guilt should ensue. Surprisingly, research in social psychology suggests otherwise (Branscombe & Doosje, 2004).

A Threat-Based Explanation for Low Levels of Self-Reported Collective Guilt

Empirical studies reveal that the expression of collective guilt among perpetrators is infrequent, and even when present, levels of collective guilt are not very high (for a review, see Wohl, Branscombe & Klar, 2006). One widespread explanation for these low levels of collective guilt is that group members have a variety of psychological defense mechanisms at their disposal that may allow them to avoid experiencing collective guilt (see e.g. Branscombe & Miron, 2004; Doosje, Branscombe, Spears & Manstead, 1998; Miron, Branscombe & Biernat, 2010; Peetz, Gunn & Wilson, 2010). Specifically, various researchers have argued that being confronted with transgressions that portray the ingroup as immoral is psychologically threatening and group members may be motivated to resort to a variety of means to defend against this threat to their group's self-image (see e.g. Baumeister & Hastings, 1997; Branscombe, Doosje & McCarty, 2002; Branscombe, Ellemers, Spears & Doosje, 1999; Iyer, Leach & Pedersen, 2004). Such a line of reasoning stems from decades of research on social identity theory (Tajfel & Turner, 1979, 1986) that has underscored how group members are highly motivated to perceive their own group positively (for a recent review, see Postmes & Branscombe, 2010). Accordingly, group members are motivated to defend against information that undermines or threatens the positive image of their group. For example, group members can defend their ingroup and avoid collective guilt by minimizing the harm they have committed, by derogating the victim, or by legitimizing their own group's transgressions (Branscombe & Miron, 2004).

In addition to being motivated to defend against this psychological threat to their group's positive image, advantaged group members may also be motivated to defend against the actual feeling of collective guilt because of the aversive nature of this emotion. Feeling collective guilt by itself can be psychologically threatening: specifically, collective guilt has been shown to be a self-focused distress-based emotion (Iyer, Leach & Crosby, 2003; Leach, Iyer & Pedersen, 2006; Miron, Branscombe & Schmitt, 2006). The long history of scientific literature on guilt makes it clear that this morally painful emotion is not

welcomed; accordingly, people are motivated to avoid it and they will resort to different strategies to reduce their actual feelings of guilt (Baumeister, Stillwell & Heatherton, 1994; see also, Kugler & Jones, 1992; Lewis, 2000; Tangney & Salovey, 1999). More generally, research in the growing field of emotion regulation has shown that people use very specific strategies to decrease the intensity of their inner emotional feelings, which then mitigate emotional expression (for a review, see Gross, 2007). Two well-studied emotion regulation strategies that people use to alter their emotional experience are cognitive reappraisal and expressive suppression (see Gross & John, 2003). These strategies can be used to down-regulate the negative feelings of guilt (see also, Miceli & Castelfranchi, 1998). In the present context of ingroup transgressions, individuals belonging to a perpetrator group can simply overtly deny feeling any collective guilt (expressive suppression) or can diminish feelings of collective guilt by changing the way they interpret the situation, such as believing they are not personally responsible for the actions of their group (cognitive reappraisal).

Goal of the Present Study

Although the experience of psychological threat is often evoked as an explanation for the low levels of reported collective guilt, threat has not been assessed directly in this context. Instead, threat is inferred from its assumed consequences, such as a display of defensive reactions. It is argued that because reminders of past ingroup transgressions operate as a threat to the ingroup's self-image, group members can react defensively by shifting their standards of justice, for instance, by asserting that the group was not *that* racist or did not behave *that* unjustly (Miron, Branscombe & Biernat, 2010). Or, they can react defensively by shifting their subjective perception of time, for instance, by relegating past ingroup transgressions to ancient history (Peetz, Gunn & Wilson, 2010). These defensive reactions, it is argued, function to deflect the assumed threat to the group's positive self-image, thus undermining collective guilt.

The goal of the present study was to directly measure the occurrence of threat when individuals are confronted with their own group's transgressions and then when they are self-reporting on their collective guilt. To do so, we employed

a psychophysiological index: respiratory sinus arrhythmia (RSA). RSA reflects the variability in heart rate that occurs in time with breathing, and is a putative measure of parasympathetic cardiac control (see e.g. Bernston et al., 1997; Bernston, Cacioppo & Quigley, 1993, 1995; Chambers & Allen, 2007; Grossman & Taylor, 2007). Higher RSA implies more parasympathetic activation, allowing the down-regulation of a threat response. Lower RSA involves a withdrawal of the parasympathetic system, allowing the activation of a sympathetic threat response. In contrast with other psychophysiological measures indicative of a threat response, such as cortisol levels, RSA is advantageous because its immediate effects can be tracked online on a moment-to-moment basis, and RSA can reflect rapid shifts between sympathetic activation, parasympathetic activation, and homeostasis baseline, within seconds (Bernston et al., 1997; see also, Berger, Saul & Cohen, 1989; Penáz, 1962).

RSA then may be the most effective measure for better understanding the mechanisms underlying the avoidance of collective guilt as a function of threat regulation. Beyond its theoretical importance, understanding this mechanism is vital because the acceptance of collective guilt has been found to be related to a willingness to apologize, and to offer compensation and reparation to a victimized group, as well as a reduction in prejudicial attitudes (Branscombe & Doosje, 2004; Wohl et al., 2006). Furthermore, by employing a psychophysiological index, we are not relying on a self-report measure of threat, as RSA is a measure which is not under voluntary control, That is, RSA is an implicit or indirect measure of threat. We argue that self-report measures are generally problematic in the study of collective guilt, both in terms of measuring threat within the context of collective guilt, but also in terms of measuring the feeling of collective guilt per se.

On the Necessity of Investigating Implicit Processes in the Context of Collective Guilt: Moving Beyond Self-Report Measures

Given that ingroup transgressions and collective guilt should both be psychologically threatening to ingroup members, it is surprising that most collective guilt research relies so heavily on self-report measures. Because

psychological threat may motivate group members to use a variety of defense mechanisms that can allow them to ultimately avoid or reduce collective guilt, it is not surprising to find that many group members are unwilling to openly embrace and report collective guilt. Thus, using self-report measures may be particularly problematic in the context of collective guilt. A distinction between implicit (unconscious, uncontrollable, automatic) and explicit (conscious, controllable, deliberate) processes appears especially crucial here. On the one hand, one assumption underlying the popular threat-based explanation used in the field is that, at an implicit level, some pangs of guilt must have been initially experienced, thus prompting a threat response and because of the consequent use of defense mechanisms, these initial guilt feelings have been suppressed, and thus go unreported later. On the other hand, it is possible that defense mechanisms may be activated so automatically that guilt may be avoided altogether, both at implicit and explicit levels. And of course, there is the possibility for some group members to simply feel unconcerned, and to reject collective guilt in a non-reactive and non-defensive way. To date, it has not been possible to disentangle these different alternatives because of the field's reliance on explicit, conscious, self-report measures of collective guilt. Thus, we believe that collective guilt needs to be studied at a more implicit, unconscious, uncontrolled, automatic level.

Research has shown that, because self-report measures depend on the participants' conscious self-evaluation and self-reporting of their thoughts and feelings, different self-motives can influence their self-assessments (for a review, see Paulhus & Vazire, 2007). Specifically, participants' self-report responses can be biased by a host of self-motives that function to defend their self-image against information that would lead them to judge themselves negatively (see Hoyle, Kernis, Leary & Baldwin, 1999). For example, self-presentation motives involve favourable impression management that may lead to exaggeration, faking and lying and also involve favourable self-deception that may lead to self-favouring bias, self-enhancement, defensiveness and denial (see Paulhus & Vazire).

In the context of self-reported collective guilt, participants are asked to rate the extent to which they agree with items such as "I feel guilty about the

negative things my group has done". Some authors (e.g. Branscombe & Doosje, 2004) use the term "collective guilt acceptance" to indicate that these items reflect the extent to which individuals consciously acknowledge and accept feelings of guilt on behalf of their group's negative actions. These items are unable to discern a group member's gut-feeling reaction when confronted with the negative actions of their own group (for a similar argument within the context of group-based anger, see Rydell et al., 2008). By gut-feeling, we mean a visceral emotional reaction not modulated by conscious thought (see Prinz, 2004). It is an emotional reaction that is implicitly experienced, without the influence or control of further cognitive assessments, such as the influence of self-motives (see also Izard, 2009; Ruys & Stapel, 2008, 2009; Wiens & Öhman, 2007; Winkielman & Berridge, 2004). For example, a participant could have experienced initial gut-feelings of collective guilt, but defense mechanisms may have prevented him from openly reporting any collective guilt feelings (a denial response influenced by a self-presentation motive of self-deception). It is also possible that a participant may have reported feeling collective guilt without having actually experienced any gut-feelings of guilt, because she thinks that the experimenter is expecting such a response, or because she believes that this is the morally expected response (a socially desirable response influenced by a self-presentation motive of impression management).

These self-motivated regulation processes that appear to be involved in self-reported collective guilt are a theoretically delicate issue because collective guilt research centers on the importance of self-regulation in making collective guilt a key motivator in social justice (for an overall review of the regulatory function of intergroup emotions, see Smith & Mackie, 2008). Generally, guilt has been argued to hold a key self-regulatory role in motivating a variety of behaviours aimed at remedying the harm caused in social relationships (Baumeister, Stillwell & Heatherton, 1994). In an intergroup context, this means that collective guilt can motivate reparation, compensation, apology, and more fundamentally a more just society (Wohl et al., 2006). But if group members can somehow easily and always psychologically wiggle out of collective guilt through

the use of defense mechanisms, this may suggest that guilt is a poor self-regulatory mechanism. This may be a realistic conclusion given the low levels of consciously self-reported collective guilt frequently found in the field. At the same time, there always seem to be some group members who actually report feeling collective guilt and who appear motivated to remedy the harm caused by their group.

In the context of this debate surrounding the role of collective guilt, some researchers have questioned the role of collective guilt to act as a suitable motivator for social change in this context (see e.g. Harth, Kessler & Leach, 2008; Iyer, Schmader & Lickel, 2007; Leach, Iyer & Pedersen, 2006; Leach, Snider & Iyer, 2002). In their research, self-reported collective guilt was associated with intentions to support the abstract goal of compensation. However, it often failed to predict actual, specific forms of arguably more constructive social change efforts (e.g. concrete political actions, affirmative action programs that increase opportunities, etc.). Aside from the plausible explanations they provide for such findings, perhaps this inconsistency may be due to some participants reporting a socially desirable response of collective guilt acceptance without having really experienced the motivational gut-feelings of collective guilt. But because research has relied on self-reports, it is not possible to distinguish such a nuance. Potentially, there might be a subset of participants who do experience motivational gut-feelings of collective guilt along with openly endorsing and accepting collective guilt. This combination of gut-feelings of collective guilt coupled with acceptance of collective guilt may be a better motivator of concrete action to make amends. But to study these psychological distinctions, researchers need more indirect measures, instead of the current reliance on explicit self-report measures.

Our recurring question is: what if collective guilt could be measured at a more implicit level, tapping into the gut-feelings that cannot be captured by explicit conscious self-report measures of collective guilt? At such an implicit level, self-motives, such as social desirability, would have lesser influence. In a first attempt, we used a word fragment approach to measure implicit collective

guilt in the context of the internal colonization of Aboriginal peoples at the hands of mainstream Canadians (Caouette & Taylor: Manuscript 1). We were able to show that implicit collective guilt moderated the predicted relationship between self-reported explicit collective guilt and willingness to take the more constructive forms of concrete actions that directly benefit the victimized group. Specifically, although mainstream Canadian participants with higher explicit guilt were more likely to support the abstract goal of compensation for Aboriginal peoples, only those with both higher explicit and higher implicit collective guilt were more willing to engage in specific actions to accomplish this goal (e.g. hours volunteering for diversity programs benefiting Aboriginal peoples on campus). Conversely, this also means that participants who reported only higher explicit collective guilt without the presence of implicit collective guilt were probably providing a socially desirable response, and they were only willing to support the abstract goal of compensation, but without the personal commitment that would be required for specific actions. We concluded that in order to investigate the real impact of collective guilt as a self-regulatory motive that can bring about tangible compensatory actions, both implicit and explicit feelings of collective guilt need to be considered.

In terms of explaining the low levels of self-reported collective guilt found in the literature, the most noteworthy finding provided by our initial implicit collective guilt research is that we found a certain level of dissociation between collective guilt measured at explicit and implicit levels. Specifically, the higher an individual scored in terms of implicit collective guilt, as revealed in a word fragment completion task, the more likely they were to reject collective guilt at an explicit level, as revealed on a standard self-report scale. Furthermore, an index of self-regulation of emotion (ISE: Mendolia, 2002), which measures the likeliness to exhibit repressive tendencies (i.e. attempts at distancing oneself from psychologically threatening emotions or experiences), was positively correlated with our implicit measure of collective guilt, and negatively correlated with our explicit measure of collective guilt. These two findings point to the use of defense mechanisms possibly triggered by a psychological threat response, allowing initial

automatic feelings of collective guilt to be rejected and thus less likely to be explicitly acknowledged.

Importantly, however, within this methodological design, we could only assume or infer the presence of psychological threat to explain why some group members would display higher implicit collective guilt, while reporting lower explicit collective guilt. Although this threat-based explanation is widely used in the field, and in our research, it has been difficult to directly test this mechanism. Few attempts have been made in the field of intergroup relations to directly assess such a psychological threat response (but, see e.g. Scheepers, 2009; Scheepers & Ellemers, 2005; Scheepers, Ellemers & Sintemaartensdijk, 2009), and none to our knowledge have involved collective guilt. Measuring psychological threat is difficult, because, here again, we cannot rely on participants' self-reports to indicate that they feel threatened, as there is evidence to show that participants are often not consciously aware of the threat, or they may attempt to deny it (Bettencourt, Miller & Hume, 1999; Branscombe et al. 1999; Blascovich & Mendes, 2000; cf. Scheepers, Ellemers & Sintemaartensdijk, 2009). For the present study, we sought to implicitly measure threat, in the context of collective guilt, without relying on self-report. Instead, we employed a psychophysiological index, a measure which is not under voluntary control. To measure threat, we rely on an emerging line of research in the field of psychophysiology where the relationship between heart rate variability and cardiac vagal control has generated great interest among social scientists who wish to explore the autonomic aspect of emotional responding.

A Psychophysiological Alternative

In a recent comprehensive review of collective guilt research (Wohl et al., 2006) the authors arrived at a stark conclusion: collective guilt is a rare emotion. However, a question remains: is collective guilt automatically rejected, or is collective guilt experienced initially and then subsequently rejected by the deployment of defense mechanisms resulting from threat appraisals?:

> Disentangling these different intrapsychic response possibilities within the existing research is difficult because it has relied on self-report measures

> that are insensitive to such potential order effects. One alternative to self-report measures would be to assess group members' physiological responses upon hearing about the ingroup's harmful actions. Presumably, if group members automatically reject collective guilt, then there should be little threat-based physiological arousal. Conversely, if group members must actively search for means of alleviating collective guilt, physiological arousal may be elevated upon hearing information that jeopardises the ingroup's positive social identity. (p. 29)

In terms of our implicit-explicit distinction of collective guilt, we can test the hypothesis that those individuals who reveal lower levels of collective guilt both on the implicit and explicit measures reject collective guilt automatically, and thus, they should show no physiological threat arousal. However, those individuals who reveal higher levels of collective guilt on the implicit measure but low levels of collective guilt on the explicit measure reject guilt more deliberatively, and thus, they should show higher threat arousal. In sum, we hypothesize that implicit and explicit collective guilt will interact in predicting threat arousal.

We turned to the field of psychophysiology to identify a measure that would allow the assessment of such a threat-related physiological arousal when group members need to cope with their ingroup transgressions. There is a long history and literature on the role of the autonomic nervous system (ANS) in emotional responding, reaching as far back as William James (see James, 1884; Lange & James, 1922; for a review, see Kreibig, 2010). More recently, one specific peculiarity of the ANS, heart rate variability, has been implicated in emotion regulation (see e.g. Appelhans & Luecken, 2006; Butler, Wilhem & Gross, 2006; Koole, 2009; Porges, 1995, 2007, 2009; Thayer & Siegle, 2002).

As a brief review, the autonomic nervous system (ANS) controls the heart, the intestines, and other organs, and is not under voluntary control. It has two components, the sympathetic nervous system (SNS) and the parasympathetic nervous system (PNS). SNS activation aims to mobilize the body in the face of threat, whereas the PNS promotes restoration and relaxation. Because the heart is

both innervated by the SNS and PNS, heart rate in itself is not uniquely informative. However, heart rate *variability* is more informative. The time that elapses between each heart beat is not constant, and it varies in time with our respiration. This phenomenon is referred to as respiratory sinus arrhythmia (RSA). This was once believed to be an error in measurement, but more systematic experiments (for an overview, see Bernston, Cacioppo & Quigley, 1993, 1995; Bernston, Quigley & Lozano, 2007) have illustrated that the variability in the timing of the heart that is tied to the respiratory cycle is mainly regulated by parasympathetic influences on the heart through the vagus nerve.

This association of respiratory-linked heart rate variability (RSA) to vagal influences has led to the use of different RSA indices as an approximation of parasympathetic cardiac control (for different methods of quantification, see Bernston et al., 1997). In sum, higher RSA means more parasympathetic activation, thus a slower heart rate and a more relaxed state. Lower RSA means a withdrawal of parasympathetic influences, thus a higher heart rate allowing the activation of the sympathetic fight-or-flight threat response.

For the present study, we rely on such an index of parasympathetic cardiac control (RSA) to explore group members' autonomic physiological reactions in the context of ingroup transgressions. Such autonomic physiological reactions are not under voluntary or conscious control, and thus offer a window into the implicit responses potentially at work. Specifically, RSA reactivity (i.e. increase or decrease in RSA relative to normal metabolic baseline level) has been related to self-regulatory efforts, specifically emotion regulation (see Beauchaine, 2001; Butler, Wilhelm & Gross, 2006; Koole, 2009; Porges, 2007). An increase in RSA, relative to baseline, indicates the ability to regulate and inhibit negative emotional states. A decrease in RSA, relative to baseline, indicates a threat-related arousal that impairs the ability to regulate and inhibit negative emotional states. More concretely, a decrease in RSA indicates a failure to down-regulate a negative emotion, instead indicating a fight-or-flight threat response, whereas an increase in RSA indicates a down-regulation of negative emotion thus facilitating a more relaxed state.

Hypotheses

We sought to explain the mechanism underlying the rejection of collective guilt by using RSA as an index of emotional threat regulation. Based on our past research, which introduced a novel implicit measure of collective guilt (Caouette & Taylor: Manuscript 1), we predicted that implicit and explicit collective guilt would interact in predicting RSA levels (increase or decrease in RSA compared to baseline). That is, participants with initially higher levels of gut-feelings of collective guilt (high implicit) but who then report lower levels of self-reported collective guilt (low explicit) should display a decrease in RSA. We reasoned that the combination of high implicit/low explicit collective guilt is suggestive of an attempt to use defense mechanisms to repress initial gut-feelings of collective guilt, which should be evident in an increase threat-based arousal (i.e. lower RSA). The presence of guilt feelings at the implicit level is also indicative of a failure to avoid the subjective feeling of a negative emotion (i.e. lower RSA), even though the expression of guilt was successfully avoided (by self-reporting lesser feelings of guilt). Participants with initially low levels of gut-feelings of collective guilt (low implicit) and who also report low levels of self-reported collective guilt (low explicit) should show no change in their RSA levels. We reasoned that the combination of low implicit/low explicit collective guilt is suggestive that defenses were not used, or if there were, the process was so automatic that threat arousal might not be involved. Indeed, we might even see an increase in RSA, indicative of a successful attempt at down-regulating the subjective feeling of this negative emotion.

Finally, we explored the change in RSA both when participants had to cope with information describing their ingroup transgressions, and when participants had to complete a self-report scale of collective guilt. We have argued that both should be psychologically threatening, albeit for different reasons. We formulated no specific a priori hypothesis, but we expected some possible differences between the two. Arguably, coping with ingroup transgressions involves defending against the psychological threat to the positive self-image of one's group. In contrast, coping with the self-report scale of collective guilt

involves defending against the psychological threat of accepting a morally painful emotion on behalf of one's group. In the first case, the individual needs to generally cope with threatening negative information, whereas in the second case, the individual is more directly forced to cope with threatening negative feelings.

Method

Participants

Participants were 120 McGill students (86 females, 28 males, 6 unidentified; mean age = 20.00 years, *SD* = 1.73). They were recruited through the social psychology paid subject pool on the basis of their self-identification as being Canadian. They all provided informed consent and were compensated for their time. None of the participants reported cardiovascular problems or use of substance or medication affecting psychophysiological measures. All participants were asked to refrain from using products with caffeine or nicotine, and to refrain from physical exercise, for at least 4 hours prior to participation.

Design

Participants were first asked to complete a short online survey, one week prior to coming to the laboratory (pre-test survey). Then, while they were completing a questionnaire in the laboratory, electrocardiogram (ECG) recordings were obtained throughout (laboratory test). Because of technical difficulties, we only obtained reliable ECG data for 110 participants.

Pre-Test Survey

Social categorization. As a check, participants were asked "with which group do you identify yourself the most?" All participants identified themselves as being Canadian.

Social identification. To measure the degree to which participants identified themselves with Euro-Canadians as a group, they were asked to indicate their degree of agreement with six statements, on a scale from 0 (*definitely no*) to 10 (*definitely yes*). The term "Euro-Canadian" was specifically chosen to better reflect the actual intergroup context of the present study, where Canadians of European descent colonized Aboriginal peoples. For example, "I feel strong ties with Euro-Canadians as a group" and "In general, I'm glad to be a Euro-

Canadian". A single measure of social identification was created by averaging responses to all six statements (mean = 5.05, *SD* = 1.97; α = .89)

Modern prejudice towards Aboriginal peoples. The Modern Racism Scale (McConahay, 1986) was selected as it is the most widely used non-reactive measure of racial prejudice and numerous studies have provided evidence for the validity and reliability of this scale (see e.g. Biernat & Crandall, 1999). We adapted the Modern Racism Scale to apply to Aboriginal peoples. Participants were asked to indicate their degree of agreement with eight statements, on a scale from 0 (*definitely no*) to 10 (*definitely yes*). For example, "It's really a matter of some people not trying hard enough; if Aboriginal peoples would only try harder they could be just as well off as other Canadians" and "Over the past few years, Aboriginal peoples have gotten more economically than they deserve". A single measure of modern prejudice was created by averaging responses to all eight statements (mean = 2.87, *SD* = 1.62; α = .84).

Laboratory Test

Participants were tested three at a time, each in their own private cubicle in a soundproof room with dimmed light. Participants were seated in a comfortable chair in front of a desk, and they were instructed to place an electrode belt just below their chest muscles using a water-soluble gel to insure optimal conductance. Participants were then administered a questionnaire including introductory instructions (such as refraining from excessive movements).

RSA. Electrocardiogram (ECG) recordings were obtained from a Polar S810i monitor (see Goodie, Larkin & Schauss, 2000; Nunan et al., 2009; Vanderlei et al., 2008). Based on recommendations by Allen (2002, see also Allen, Chambers & Towers, 2007), interbeat interval (IBI: time between 2 heartbeats) were corrected for artifacts using the program QRSTool. IBI series are the standard input data that allow researchers to calculate metrics of heart rate variability. RSA was then calculated in the .12- to .40-Hz band of the R-wave-to-R-wave interbeat interval series using the CMetX software (Allen et al., 2007). CMetX takes the natural log of the variance of the filtered waveform as the

estimate of RSA. As a result, the outcome variable we used in our statistical analyses was log RSA.

For the present study, three estimates of RSA were derived for each participant. First, a "vanilla" baseline[3] RSA was derived from the data acquired after participants read the instructions, during a first task where they were asked to look at a map of Aboriginal languages and cultural divisions and reading a short atlas article about Aboriginal languages. Two other separate estimates of RSA were also derived from the data acquired while participants: 1) read a text presenting evidence of ingroup transgression, and 2) completed a standard self-report scale of collective guilt.

Text presenting evidence of ingroup transgression. In an attempt to explore the propensity to experience collective guilt, participants had to be made aware of instances of harm perpetrated by their group against Aboriginal peoples. To do so, we adopted a procedure used in one of the first experiments that explored collective guilt (Doosje et al., 1998). We presented participants with a one-page excerpt that we composed describing the devastating impact brought on by the internal colonization of Aboriginal peoples by mainstream Canadians (based on Magocsi, 1999; Watkins, 1993; see Appendix A).

Implicit collective guilt. To assess this type of collective guilt, we created a word fragment completion task (Gilbert & Hixon, 1991, for a review see Vargas, Sekaquaptewa & von Hippel, 2007; see Appendix B). This task involved sixteen word puzzles, of which six were the target words for guilt feelings (blame, fault, shame, regret, guilt, sorry) and the remaining ten words were neutral filler words. All target words were equally likely to be solved with a guilt-related word solution or with a word as frequently used in the English language. Consistent with standard scoring for a word fragment task, scores of implicit collective guilt

[3] The usual methodological practice is to have participants simply sit quietly during baseline assessments. However, it is now common, in psychophysiological research, to have a "vanilla" baseline, where participants are engaged in a non-demanding task that minimally engages their attention. There is evidence to suggest that "vanilla" baseline shows greater stability in physiological responding (Jennings, Kamarck, Stewart & Eddy, 1992, for a review, see Diamond & Otten-Henderson, 2007).

were computed by dividing the number of target puzzles successfully completed by the total number of puzzles successfully completed (mean = .18, *SD* = .07).

General affect. Following the text, participants were asked to complete a self-report scale of affect loosely based on the PANAS (Watson, Clark & Tellegen, 1988; Watson & Clark, 1994). Specifically, participants were asked to indicate to what degree each of 50 affect items 'described your feelings right now' on a scale from 0 (*definitely no*) to 10 (*definitely yes*).

Explicit collective guilt. A 12-item scale was created to measure collective guilt with regards to the harm done to Aboriginal peoples (see Appendix C). This scale was our adaptation of two standard self-report measures of collective guilt (Doosje et al., 1998; Swim & Miller, 1999). We combined the items from both scales. Participants were asked to indicate their degree of agreement with each item, on a scale from 0 (*definitely no*) to 10 (*definitely yes*). For example, "I feel guilty about the harmful acts that Canadians as a group have perpetrated towards Aboriginal peoples in the past" and "I feel guilty about the present social inequality between Aboriginal peoples and Canadians as a group". A single measure of explicit collective guilt was created by averaging responses to all 12 items (mean = 5.63, *SD* = 2.18; α = .94).

Results

Our main focus involves assessing change in RSA over three repeated measurements: under vanilla baseline, when reading a text presenting ingroup transgressions, and when completing a self-report scale of collective guilt. We adopted the approach outlined by Heck, Thomas & Tabata (2010) using SPSS Mixed to examine this change over repeated measures (cf. Singer & Willett, 2003). There are several advantages to a multilevel approach to repeated measures data, in contrast to employing multiple regressions or MANOVA. First, many measurements within the same individual violate the statistical assumptions of independence, which is circumvented by a multilevel approach. Second, multilevel models can explicitly examine the variability in the predicted rate of change (i.e. not only can the assumption of homogeneity of regression slopes be violated, in fact multilevel models are meant to examine such variability in

regressions slopes). Finally, missing data are unproblematic for multilevel models (e.g. when some data points are missing in the repeated measures).

We used the Mixed procedure in SPSS 18.0 with restricted maximum likelihood estimation to analyze the data. In multilevel terminology, the repeated measures nested within individuals are defined as Level 1 and measures of differences between individuals are defined as Level 2. Multilevel models with repeated measures data specify two linked linear regressions. At Level 1, each individual's successive measurements over time are defined by an individual rate of change (slope) and random error. At Level 2, differences in rate of change between groups of individuals can be examined with the addition of between-individual predictors. In the present context, Level 1 corresponds to the rate of change in RSA for each individual over 3 measurements (baseline, text, scale). Level 2 corresponds to differences in the rate of change in RSA between individuals predicted as a function of their levels of explicit and implicit collective guilt (our main hypothesis). At Level 2, we can also control for differences as a function of gender, levels of social identification and levels of modern prejudice. This multilevel approach allows us to test whether RSA changes significantly within individuals (i.e. increases or decreases in RSA relative to baseline within individuals); and, to test whether different predictors can significantly explain differences among individuals in their RSA change.

The main goal is to test a full model based on our main hypothesis, where an interaction between implicit and explicit collective guilt (predictors) should account for different patterns of threat regulation (i.e. different RSA changes). This interaction was formulated based on our past research (Caouette & Taylor: Manuscript 1) that has revealed a robust finding where implicit and explicit collective guilt interact to reveal divergent patterns in terms of key intergroup attitudes and behaviours. Important parallels can be made as we employed identical measures of collective guilt, a standard self-report scale of explicit collective guilt and most notably our novel measure of implicit collective guilt, a word fragment completion task. Before presenting this full model, we will first show a series of preliminary analyses, to provide the context for this interaction.

Preliminary Analyses

Before testing our main hypothesis, it was important to determine whether RSA levels vary significantly within individuals. Accordingly, we first tested a baseline model without any Level-2 predictors. This model is also useful to test whether there is a substantial amount of variation in RSA levels between individuals that would warrant the inclusion of Level-2 predictors. We will use two subscripts to describe individuals (*i*) and occasions of measurements (time, *t*: dummy coded to represent baseline as 0, text as 1 and scale as 2). Accordingly, the intercept can be interpreted as individuals' initial baseline RSA, and the slope as the unit change in RSA with each subsequent measurement. In sum, we assume that RSA at time *t* for individual *i* is a function of a systematic change plus random error. This model can be represented by this equation:

$$\log RSA_{ti} = \beta_{00} + \beta_{10}(time)_{ti} + r_{0i} + r_{1i} + \varepsilon_{ti} \quad (1)$$

In this equation, both the intercept and the slope are random (hence the estimation of $r_{0i} + r_{1i}$). In other words, we assume baseline RSA can vary between individuals (intercept), and that the rates of change in RSA can also vary between individuals (slope).

The fixed effect size for time was significant, $\beta_{01} = .08$, $t(107.306) = 2.17$, $p < .05$. This demonstrates that, across individuals, reading a text presenting ingroup transgressions and completing a self-report scale of collective guilt elicited a significant increase in RSA, compared to baseline. Furthermore, RSA showed significant variability among individuals. Specifically, there was a significant variance in slopes among individuals (Wald $Z = 2.14$, $p < .05$). There was also a significant variance in intercepts between individuals (Wald $Z = 6.28$, $p < .001$)[4]. In summary, baseline RSA significantly differ among individuals, and the rates of change in RSA, compared to baseline, significantly differ between individuals. This implies that our research design (a guilt-eliciting text) provoked

[4] Some authors caution against interpreting the Wald statistic for random parameters (Hox, 2002; Raudenbush & Bryk, 2002; Singer & Willett, 2003). Instead, they suggest comparing the fit of two models, with or without the random parameter. Here, such a strategy corroborates the Wald interpretation: comparing the fit of the model including time as a fixed parameter (AIC = 798.44) yield to a poorer fit that allowing time to be a random parameter (AIC = 796.74).

physiological reactions that varied within and between individuals, and that our method of measurement could reliably capture this variability. Next, predictors can be added to the model in order to explain this significant variability in RSA.

RSA Significantly Vary as a Function of Collective Guilt

In the second phase of analysis, we were able to expand our baseline model by adding our main predictors of interest, explicit collective guilt and implicit collective guilt, in order to explain the significant differences in RSA. As such, we created cross-level interactions that involve the effect of Level 2 predictors, such as explicit collective guilt, on the Level 1 slope coefficient, the individuals' rate of change in RSA (e.g. see equations 2 and 3, where *exp* = explicit collective guilt). If such a cross-level interaction is found to be significant, it means that explicit collective guilt moderates the relationship between time of measurement and RSA. That is, different rates of change in RSA between individuals can be explained as a function of their levels of explicit collective guilt. Each of the Level-2 predictors was tested in this manner, where a level-2 predictor was included to explain the differences in the rates of change in RSA. As a representative example, we can predict that rates of change in RSA will vary as a function of individuals' explicit collective guilt, which is illustrated with the following equations:

$$\pi_{0i} = \beta_{00} + \beta_{01}(exp)_i + r_{0i} \quad (2)$$

$$\pi_{1i} = \beta_{00} + \beta_{11}(time*exp)_i + r_{1i} \quad (3)$$

Where r_{0i} *and* r_{1i} represent variation associated with measuring the intercept (π_{0i}) and slope (π_{1i}) parameters between individuals. In other words, instead of assuming that all individuals have the same baseline RSA (intercept) and the same rate of change in RSA (slope), we assume that these parameters are random. That is, we assume that the intercept and slope will vary between individuals and furthermore, that explicit collective guilt can significantly explain this variation.

For the sake of parsimony, we present in Table 1 the most theoretically relevant and statistically significant models amongst all tested (e.g. various covariance structures were tested, but an unstructured covariance structure was retained for all models presented in Table 1).

Table 1.

Comparing Models, AIC Index, and Number of Parameters

Model and predictors	**AIC**	**Number of Parameters estimated**
Baseline (time)	796.74	6
Model 1 (time, explicit, time*explicit)	801.27	8
Model 2 (time, implicit, time*implicit)	792.52	8
Model 3 (time, explicit, implicit, explicit*implicit, time*explicit, time*implicit, time*explicit*implicit)	784.62	12
Model 4 (gender, social identification, modern prejudice, time, explicit, implicit, explicit*implicit, time*explicit, time*implicit, time*explicit*implicit)	768.35	15

Note. explicit = explicit collective guilt; implicit = implicit collective guilt

In Model 1, we tested whether changes in RSA varied as a function of explicit collective guilt. In Model 2, we tested whether changes in RSA varied as a function of implicit collective guilt. In Model 3, our hypothesised model, we were especially interested in exploring whether an interaction between implicit and explicit collective guilt would explain changes in RSA. Finally, in Model 4, we wanted to test whether this interaction would remain significant, after controlling for gender, levels of social identification and levels of modern prejudice. All Level-2 predictors were grand-mean centered, except for gender (coded 0 = female, 1 = male). We used the Akaike information criterion (AIC) index to compare the models. The smallest AIC is preferred, regardless of the number of parameters (Marcoulides & Hershberger, 1997). A deviance test could not be used to directly compare models because of our use of restricted maximum

likelihood estimation. As can be seen in Table 1, the models with the smallest AIC indices were the ones that included the interactive effect of implicit and explicit collective guilt to explain the rate of change in RSA (i.e. time).

Confirming our main hypothesis, we found that, in Model 3, the interaction between implicit collective guilt and explicit collective guilt moderated the rate of change in RSA, $F(1, 103.975) = 4.34$, $p < .05$. In Model 4, this interaction remained unchanged, even after controlling for gender, levels of social identification and levels of modern prejudice, $F(1, 97.969) = 4.54$, $p < .05$. We present the final estimation of the fixed effects for this model in Table 2.

Table 2.

Final Estimation of Fixed Effect from Multilevel Modeling Predicting log RSA Scores with Time at Level 1, Explicit and Implicit Collective Guilt at Level 2 with the Addition of their Cross-Level Interactions with Time, and Controlling for Gender, Social Identification and Prejudice at Level 2

Fixed Effect	*Coefficient*	*SE*	*t*	*df*	*p*
Intercept	6.27	.14	45.71	106.232	.000
Gender	.11	.26	.41	97.804	.681
Social Identification	.06	.06	.97	97.136	.335
Modern Prejudice	.10	.07	1.32	96.945	.189
Explicit Collective Guilt	-.06	.06	-.97	103.439	.336
Implicit Collective Guilt	1.64	1.78	.92	99.262	.361
Time	.08	.04	1.96	98.388	.054
Explicit Collective Guilt x Time	.05	.02	2.48	98.215	.015
Implicit Collective Guilt x Time	-.13	.57	-0.23	97.980	.823
Explicit Collective Guilt x Implicit Collective Guilt	.85	.91	.93	98.696	.356
Explicit Collective Guilt x Implicit Collective Guilt x Time	-.63	.29	-2.13	97.969	.036

This interaction was deconstructed by comparing the change in RSA 1) from baseline to the text, and 2) from baseline to the scale. This makes both theoretical and methodological sense. First, our main focus is in examining the specific RSA reactivity when reading the text and when completing the scale. We are less interested in RSA change over time per se, but rather, we are interested in RSA change from baseline (i.e. reactivity) in response to two different task demands (i.e. reading a text and completing a scale). Second, absolute RSA numbers are somewhat meaningless to compare between individuals, except perhaps for resting (tonic) RSA[5]. What are meaningful are increases and decreases in RSA (modulation of RSA) within individuals compared to their own individual baseline levels.

In order to probe this interaction, we created two new dummy variables for time (see e.g. Singer & Willett, 2003, pp. 187-188). This differs from the analyses previously presented, where time was treated using effect coding (baseline = 0, text = 1, scale = 2). Instead, we now have a first dummy variable that specifically focuses on the RSA change from baseline to text (timetext, where baseline = 0, text = 1, scale = 0), and a second dummy variable that specifically focuses on the RSA change from baseline to scale (timescale, where baseline = 0, text = 0, scale = 1). To aid our testing of simple slopes within this multilevel model, we used a web utility described in Preacher, Curran & Bauer (2006).

Figure 1 depicts mean individual change in RSA compared to individual baseline level when reading the text and when completing the scale. It depicts the interaction for individuals at one standard deviation above and below the mean on explicit collective guilt and on implicit collective guilt.

[5] Under resting (baseline) conditions, the vagus nerve acts like a "brake" on the heart, firing a rapid and continuous signal (or "tonus") to the heart. Without this vagal break, the heart would race over 100 beats per minute. This tonic vagal influence ("vagal tone") has been correlated to a variety of stable temperamental traits or personality dispositions, and may differ from phasic vagal influences (i.e. RSA modulation or RSA reactivity; see e.g. Grossman & Kollai, 1993). As such, interpreting tonic vagal influences may be more problematic than interpreting phasic vagal influences as obtaining valid and reliable baseline assessments is difficult: "as with most psychophysiological measures, RSA is a more accurate index of change than of absolute level. Consequently, within-subject differences are likely to be more accurate than estimates of the mean or absolute level of vagal control" (Bernston et al., 1997, p. 640).

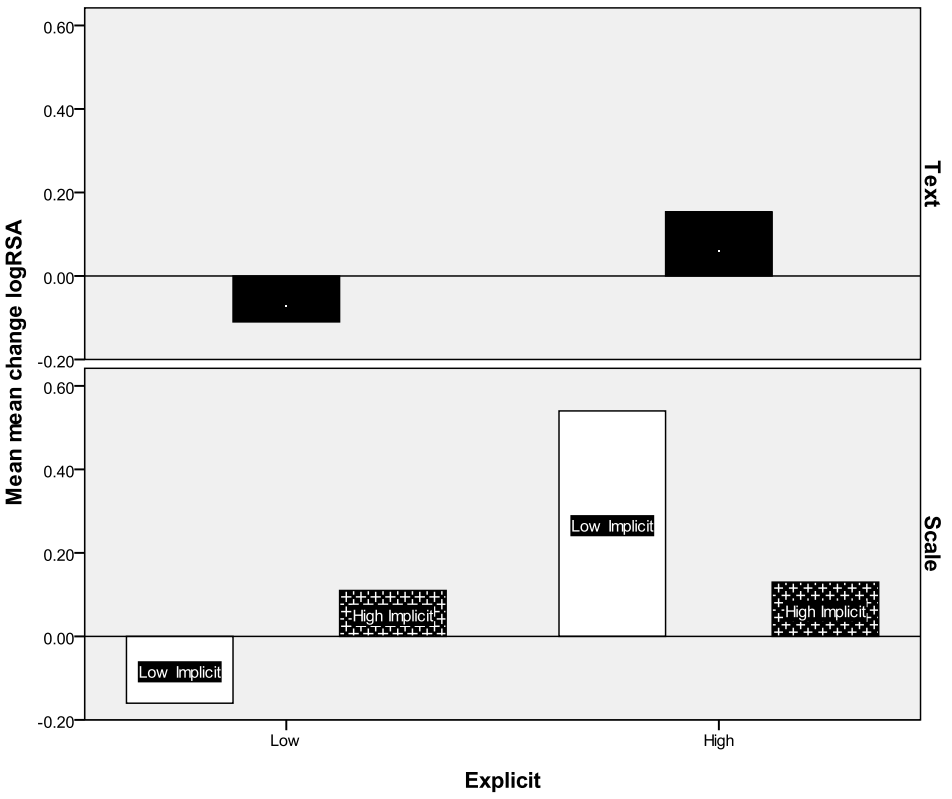

Figure 1.

Change in RSA as a function of implicit and explicit collective guilt

First, we focus on RSA reactivity in response to the text. Our new multilevel model with dummy coding only revealed a marginally significant effect, where explicit collective guilt moderated the rate of change in RSA from baseline to text, $b = .06$, $t(1.82)$, $p = .068$. Simple slopes tests (using conditional values of one standard deviation above and below the mean) were somewhat inconclusive. Those individuals high in explicit collective guilt tended to show only a marginally significant increase in RSA, $b = .15$, $z(1.53)$, $p = .103$. And the seeming decrease in RSA for those individuals low in explicit collective guilt did not reach standard levels of statistical significance $b = -.11$, $z(-1.07)$, $p = .208$. Although this may suggest a certain tendency for individuals high and low in explicit collective guilt to react differently to the text, the marginally significant results suggest that these changes in RSA are of small magnitude and not dramatically different from zero.

Second, we focus on RSA reactivity in response to the scale. Our multilevel model revealed a significant effect where explicit collective guilt moderated the rate of change in RSA from baseline to scale, $b = .08$, $t(2.53)$, $p < .05$. However, this effect was qualified by a significant interaction between explicit collective guilt and implicit collective guilt, $b = -1.08$, $t(-2.53)$, $p < .05$. Simple slopes tests (using conditional values of one standard deviation above/below the mean) revealed that those individuals high in implicit collective guilt show no change in RSA compared to baseline, no matter whether they are high in explicit collective guilt, $b = 0.13$, $z(0.89)$, $p = 0.37$; or low in explicit collective guilt, $b = 0.11$, $z(0.73)$, $p = 0.46$. Consistent with these results, a test of region of significance for individuals low in implicit collective guilt was not conclusive, suggesting that no slopes were significantly different from zero within the entire range of scores for explicit collective guilt.

For those individuals low in implicit collective guilt, similar simple slope tests revealed that those individuals high in explicit collective guilt show an increase in RSA compared to baseline, $b = 0.56$, $z(3.90)$, $p < .0001$; whereas those high in implicit collective guilt show no significant change in RSA, $b = -.17$, $z(1.06)$, $p = 0.29$. A test of region of significance was informative here. It revealed that simple slopes were significant for those individuals low in implicit collective guilt scoring between 0.0 and 1.5 on a 0-10 scale of explicit collective guilt (with significant negative slopes), and for those individuals scoring between 5.6 and 10 on a 0-10 scale of explicit collective guilt (with significant positive slopes). This implies that only individuals with extremely low scores for explicit collective guilt show a decrease in RSA, whereas virtually all individuals above the neutral midpoint of the explicit collective guilt scale show an increase in RSA.

Follow-up analyses

We performed three sets of follow-up analyses: 1) we tested alternative models including other predictors to explain RSA change, 2) we tested models to explain heart rate change, and 3) we tested models of RSA change when completing a general measure of self-report of affect, compared to the specific measure of self-report of collective guilt.

First, the previous analyses clearly show that RSA change can be explained by implicit and explicit collective guilt. However, we also tested alternative models where we specifically predicted RSA change as a function of gender, levels of social identification, and levels of modern prejudice. Thus, we created cross-level interactions between these Level-2 predictors and time. None of these analyses were able to significantly predict change in RSA levels.

Second, in order to provide further evidence that RSA change truly reflects autonomic threat regulation, we explored whether analyses involving heart rate change would show the same pattern of change. That is, if an increase in RSA truly reflects an attempt at down-regulating an autonomic threat response, this should translate into a decrease in heart rate. Similarly, if a decrease in RSA truly reflects the activation of an autonomic threat response, this should be reflected to an increase in heart rate. This is precisely what we found.

Finally, we wanted to verify whether the significant changes in RSA that occurred when some participants completed the self-report scale of collective guilt were specific to regulating the emotion of collective guilt, or whether such changes in RSA could be explained in term of general emotional regulation. In other words, are these RSA changes indicative of a general emotional response, or are these RSA changes indicative of a specific response to collective guilt? In order to explore this possibility, we were able to specifically compare RSA levels when participants completed the self-report scale of affect, which they completed immediately before completing the self-report scale of collective guilt. Interestingly, RSA levels in response to the self-report scale of affect were not significantly different from baseline, and did not vary significantly as a function of explicit or implicit collective guilt, even though many items on these scale included items that related to shame, regret, and other guilt-related affect, but not specifically collective guilt.

Discussion

The aim of the present study was to investigate one specific mechanism that has been postulated to explain the avoidance of collective guilt: threat. That is, one explanation often evoked in the field is that ingroup transgressions pose a

psychological threat to the group's self-image, prompting psychological defenses that allow collective guilt to be deflected (cf. Branscombe & Doosje, 2004; see also, Miron, Branscombe & Biernat, 2010; Peetz, Gunn & Wilson, 2010). Although the concept of identity threat is often evoked as a key mechanism underlying the rejection of collective guilt, and more generally a driving mechanism in intergroup relations (for a review, see Riek, Mania & Gaertner, 2006), the impact of threat is rarely assessed directly. In this study, we relied on a psychophysiological index of autonomic threat regulation, a measure not under voluntary or conscious control: respiratory sinus arrhythmia (RSA).

We examined the physiological threat response of group members when confronted with the harm their ingroup has caused to an outgroup (when reading a text about the devastating impact of the internal colonization of Aboriginal peoples), and also when confronted with the possibility of accepting feelings of collective guilt as a result (when responding to a standard self-report scale of collective guilt). With the application of a multilevel model of individual change, it was demonstrated that an interaction between implicit and explicit collective guilt revealed different patterns of autonomic threat regulation (RSA). Three findings were especially striking.

First and contrary to what we had expected based on theorizing in the field, we found no overwhelming evidence that a threat response could explain the low levels of self-reported collective guilt when group members are confronted with information that reflects badly on their group's self-image. Instead, the apparent drop in RSA (b = -.11) in response to being confronted with ingroup transgressions was not statistically significant for those group members who self-reported lower collective guilt. That is, participants who rejected collective guilt did not show a statistically signification activation of their sympathetic fight-or-flight system (indicative of a physiological threat response). Instead, we only found a marginally significant increase in RSA for those participants who self-reported higher collective guilt (b = .15). Thus, participants who accepted collective guilt showed an activation of their parasympathetic soothing system. This finding seems to provide further support for the argument that collective

guilt is a self-focused distress-based emotion (see e.g. Iyer, Leach & Crosby, 2003; Leach, Iyer & Pedersen, 2006; Miron, Branscombe & Schmitt, 2006; Powell, Branscombe & Schmitt, 2005). Generally, increased vagal reactivity (higher RSA compared to baseline) during a task has been associated with attempts at emotional down-regulation. Such an increased activation of the parasympathetic soothing system has been interpreted as reflecting people's attempts to buffer themselves against distress (higher RSA is associated with calmness, equanimity, emotional composure, and a lack of distress). This is further evidenced by a slower heart rate (for an overview of research, see Mendes, 2009, see also van Kleef, Oveis, van der Löwe, LuoKogan, Goetz & Keltner, 2008). It would seem that, when accepting collective guilt, group members are actively seeking to down-regulate a threat response, possibly by focusing on dampening the distress they may feel with regard to the harm done to the outgroup. This physiological evidence provides unique support for theorists who have suggested that "collective guilt reflects a concern for reducing one's own distress due to perceived injustice, rather than an empathic concern for others" (Miron, Branscombe & Schmitt, 2005, p. 175; cf. Batson, Early & Salvarani, 1997).

Second, not only did we not find substantial evidence of a physiological threat response, but the only statistically significant indication of a threat response was revealed for a small subset of four participants (with a test of region of significance) who displayed no gut-feelings of collective guilt (low levels of implicit collective guilt) and who unequivocally rejected collective guilt (extremely low levels of explicit collective guilt). And this effect was only present when they were completing the self-report scale of collective guilt. Again, this is noteworthy, as a threat response should have been most apparent when participants were first confronted with a text presenting their ingroup transgression, as such information appears to tarnish the positive image of their group and thus represents a definite source of identity threat (see Branscombe, Ellemers, Spears & Doosje, 1999). However, the fact that a threat response occurred for some participants especially when they completed a standard self-

report scale of collective guilt offers some support for our contention that using such a direct measure to gauge levels of collective guilt feelings can be problematic. Specifically, it seems that our subset of participants were mostly stoic when confronted with their ingroup transgressions, as they showed no physiological reactivity and no evidence of having experienced any gut-feelings of collective guilt (as suggested by their low score on the implicit measure), and only physiologically reacted slightly more when confronted with a scale that very directly asked them about their feelings of collective guilt (i.e. decreased RSA) and to which they responded with unequivocal rejection. Perhaps, the possibility of collective guilt had not even come to mind while they were reading the text presenting their ingroup transgressions, and the scale was probably the first alert to the potential emotional and moral ramifications of their ingroup transgression (as suggested by their slight threat response at this point). In sum, a threat-related response was only evident for an extremely small number of group members who strongly reacted to a standard self-report scale of collective guilt by reporting extremely low scores of collective guilt, perhaps indicative of defensive responding.

Finally, related to this distinction between gut-feelings and self-reported guilt, the third and most important finding of the present study is that we successfully predicted participants' physiological threat response as a function of both their implicit and explicit collective guilt levels. Explicit collective guilt corresponds to the conscious acceptance of collective guilt feelings, as measured by a standard self-report scale. Implicit collective guilt corresponds to automatic gut-feelings of collective guilt, as measured by our novel indirect measure, a word fragment completion task, which we devised in previous studies (Caouette & Taylor: Manuscript 1). We have argued that such an indirect measure can access *spontaneous* guilt feelings, compared to a more direct self-report measure, that taps into a more *deliberative* process of collective guilt acceptance (cf. Vargas, Sekaquaptewa & von Hippel, 2007). We believe there is a crucial distinction between the measurement of a gut-feeling, in contrast to a more cognitive and reflective type of emotion (see Rydell et al., 2008). Arguably, such an indirect

measure is more likely to assess pangs of guilt, feelings that people may not want to reveal, or may be unaware of, whereas the self-report measure may be more sensitive to self-biases, such as social desirability.

Table 3 summarizes the levels of RSA change (RSA reactivity), illustrated by participants' higher or lower levels of implicit or explicit collective guilt.

Table 3.

RSA Reactivity as a Function of Explicit and Implicit Collective Guilt

	Low explicit collective guilt	**High explicit collective guilt**
Low implicit collective guilt	Text threat: No change Scale threat: Marginal ↓	Text threat: Marginal ↑ Scale threat: Big ↑
High implicit collective guilt	Text threat: No change Scale threat: No Change	Text threat: Marginal ↑ Scale threat: No Change

These results shed light on our main research question: Is collective guilt automatically rejected, or is collective guilt experienced initially and then subsequently rejected by the deployment of defense mechanisms resulting from threat appraisals? Two possible answers were suggested by collective guilt researchers (Wohl et al., 2006, p. 29). 1) If group members automatically reject collective guilt, then there should be little threat-based physiological arousal. 2) If group members must actively search for a means to alleviate collective guilt, physiological arousal may be elevated upon hearing information that challenges the ingroup's positive social identity. The present research tends to provide evidence for the first possibility, that collective guilt is rejected automatically, with little threat-based arousal.

Furthermore, our use of both implicit and explicit measures of collective guilt can help further unravel the intrapsychic process underlying the avoidance of collective guilt (and also the acceptance of collective guilt) as a function of autonomic threat regulation. For example, we have argued that a defensive response (indicated by higher threat-based arousal) should have been most apparent for those participants high in implicit collective guilt and low in explicit collective guilt: that is, hypothetically, pangs of guilt are initially experienced, thus prompting a threat response and the use of defense mechanisms, with the consequence that those guilt feelings are suppressed and thus go unreported. However, no threat responses were revealed for this subset of participants, which arguably should have been the most likely to display a defensive threat response. The fact that those participants experience gut-feelings of collective guilt and are able to suppress them with very little physiological reactions provides further evidence that this process is most likely automatic, or at least not mediated by threat appraisals.

Although the initial and the present goal of this study was to explain the avoidance of collective guilt, our most dramatic physiological reactions occurred in relation to the acceptance of collective guilt. We found a threat-buffering physiological response (highly significant increase in RSA) for those participants who were self-reporting high levels of collective guilt, without having experienced any gut-feelings of collective guilt, as measured by our implicit measure. To reiterate, at the most basic level, an increase in RSA indicates the activation of the parasympathetic soothing system, which facilitates a more relaxed state through a decrease in heart rate. Thus, this particular finding is puzzling: we have argued that collective guilt is an unpleasant feeling and that most people are motivated to avoid it. Thus, it may be surprising that some group members would be willing to openly endorse collective guilt without seemingly having experienced any gut-feeling of guilt and with no evidence of being threatened by such an open acceptance of collective guilt.

To provide some insight into this particular finding, it again may be useful to turn to research which has specifically focused on the correlates of RSA

reactivity (increased in RSA compare to baseline). Increased RSA is generally related to a parasympathetic down-regulation of negative emotions (Butler, Wilhelm & Gross, 2006). And more generally, self-regulatory efforts are related to increased RSA (Segerstrom & Solberg Nes, 2007). Recent theorizing by Martens, Greenberg and Allen (2008) has argued that higher RSA functions to buffer people from experiences of threat. This is consistent with more general theorizing by Porges (2007) which has received a great deal of attention, albeit has also generated much controversy with regard to his differentiation between different branches of the vagus (see Grossman & Taylor, 2007). Generally, Porges argues that increased RSA index adaptive emotional regulation and responsiveness to the social environment, and that such "social engagement" is associated with calmness, equanimity and a lack of distress. Specifically, he argues that increased RSA functions to allow people to feel safe and trusting, an optimal state to form social bonds and to engage socially with their environment. However, one can wonder whether such emotional composure is adaptive when an environment involves the suffering of others, as in the present research. How do people cope with such suffering, as reflected in their autonomic threat regulation? Recent research is particularly pertinent here, where increased RSA was related to decreased distress when faced with the suffering of another person (van Kleef, Oveis, van der Löwe, LuoKogan, Goetz, Keltner, 2008). That is, increased RSA was associated with attempts to attenuate emotional reactions vis-a-vis those who suffer. The authors likened this to "turning a blind eye to the suffering of others". In the present context of group-based harm and suffering, we can argue that increased RSA seems to especially indicate that the parasympathetic soothing system is engaged (higher RSA) to allow people to buffer themselves against the distress they might experience by being confronted with the suffering caused to an outgroup from actions perpetrated by their ingroup.

To fully understand the implications of this finding, three observations need to be highlighted. First, if we examine the physiological reactions of participants who self-reported higher levels of collective guilt (high explicit), this

threat-buffering response was only apparent for those participants who did not experience gut-feelings of guilt (low implicit). In contrast, those participants who both experienced gut-feelings of guilt (high implicit) and self-reported higher levels of collective guilt (high implicit), displayed no such threat-buffering activation of their parasympathetic soothing system, in fact they displayed no RSA reactivity. This qualifies our earlier conclusion that collective guilt is a self-focused distress-based emotion, as the attempt to dampen the distress associated with accepting collective guilt seems to be only apparent for a subset of people who report accepting collective guilt without having experienced any gut-feelings of guilt (those high in explicit but low in implicit). One possibility then is that the distress is caused by accepting an emotion that one may not fully endorse, and may instead reflect socially desirable responding. This interpretation seems to be supported by our concurrent research (Caouette & Taylor: Manuscript 1), where we used identical measures of explicit and implicit collective guilt, with a similar sample population, but this time predicting compensatory actions to benefit the victimized outgroup. We found that those participants who self-reported high levels of collective guilt (high explicit), but without having experienced gut-feelings of guilt (low implicit) generally supported the abstract idea of compensating the outgroup, but without being personally willing to engage in concrete action to compensate the outgroup (in volunteering hours for diversity program that would in part benefit the outgroup). However, those individuals who experienced both gut-feelings of guilt and acceptance of guilt were willing to engage in such concrete action to enact positive social change.

Another approach to this puzzling level of increased RSA, is to compare those participants who displayed no gut-feelings of collective guilt, between those who self-reported lower collective guilt and those who self-reported higher collective guilt. Both groups initially did not experience spontaneous guilt feelings upon being presented with ingroup transgressions; however, their physiological reactivity when completing the self-report scale of collective guilt then become indicative of their levels of self-reported collective guilt. Those who reacted with a threat response ended up openly rejecting collective guilt, while

those who reacted with a threat-buffering response ended up accepting collective guilt. In both cases, distress or threat was arguably present, but only those people self-reporting high collective guilt engage in the down-regulation of the threat response.

Finally, we need to mention that, besides efforts at emotional self-regulation, higher RSA has also been linked to basic attentional processes, such as greater attentional control or effort (e.g. Tattersall & Hockey, 1995). However, in the present context of collective guilt, an interpretation of emotional self-regulation seems more parsimonious.

Strengths, Limitations and Future Research

The use of implicit measures has grown exponentially in the past two decades and, at times, it seems that every question in social psychology is amenable, or wants to be amenable, to implicit measurements (cf. Payne & Gawronski, 2010). We believe that the use of implicit measures for the study of collective guilt is a considerable strength and is especially relevant in the context of understanding collective guilt. Not only is collective guilt in and of itself an unpleasant emotion that people may want to avoid, but the ingroup transgression that may evoke guilt can represent a psychological threat to the group's self-image. In both cases, it is problematic to directly ask participants "do you feel guilty?" or "do you feel threatened" as they may be trying to actively avoid these experiences, or they may even be unaware of them. By including more indirect measures, it is possible to capture some of the feelings that may not be revealed on standard self-report measures. And indeed, the differential pattern of results we obtained from two types of indirect measures (physiological: RSA and cognitive: word fragment) and a self-report measure in the present study confirms the value of including both types of measures when studying collective guilt.

However, several limitations have to be acknowledged. First, although we were specifically interested in measuring a physiological threat response, that is, a fight-or-flight sympathetic response, we opted to rely on a measure of vagally-mediated cardiac control, RSA, which indexes the parasympathetic influences on the heart. Generally, the sympathetic system and parasympathetic system have

been perceived as functioning reciprocally, so when the sympathetic goes up, the parasympathetic goes down. This is why a drop in RSA (a withdrawal of the parasympathetic system) is usually indicative of the activation of the sympathetic system. However, there is some indication (see Bernston, Cacioppo & Quigley, 1991) that both systems can at times act independently of each other, either being uncoupled or co-activated. However, this area of research needs more elaboration (see Blascovich & Mendes, 2010). Yet, it would be prudent to replicate the present findings with more physiological indices that are known to be putative measures of threat arousal mediated by the sympathetic nervous system. For example, the Biopsychological Model of Challenge and Threat by Blascovich and colleagues specifically focuses on identifying motivational states of threat in terms of the sympathetic nervous system (Blascovich & Mendes, 2000; Blascovich & Tomaka, 1996; Tomaka et al., 1993; cf. Wright & Kirby, 2003). This model has now been extensively tested, and even recently applied in the context of social identity threat (e.g. Scheepers et al., 2009). However, in our opinion, a certain advantage remains with the use of RSA to indirectly index activity in the sympathetic nervous system. The effect of the vagus nerve upon heart rate is almost instantaneous (i.e. within milliseconds), whereas sympathetic effects upon the heart (i.e. not through the vagus nerve) are delayed for a few seconds and then require several more seconds to achieve a maximum response (Berger et al., 1989). Also, once a sympathetic response is engaged, it takes longer for its effects to withdraw, the effect lingers even though, technically, the threat response is gone. In contrast, the vagus nerve can activate and deactivate more rapidly. Research reveals that the cardiac response to vagal activity is rapid, whereas that of the sympathetic activity is characterized by a pure time delay and slower response (Bernston et al., 1997). This is especially important, as in the present study, where an experimenter may expect an activation or withdrawal of a threat response within a short-timed questionnaire, comparing various independent and unique tasks.

Second, in terms of a limitation more specific to our measurement of RSA, we did not measure respiration, thus we cannot be sure that respiration fell within

the high-frequency band used to compute RSA estimates. This is important because some researchers have argued that respiration rate and depth can affect RSA estimates independent of vagal influence (Grossman & Taylor, 2007). However recent research by Houtveen, Rietveld and de Geus (2002) suggests that measuring respiration may not be necessary under some conditions. For instance, they argue that uncorrected RSA (i.e. that does not correct for respiration rate and depth) is acceptable to index within-subject changes in parasympathetic modulation of heart rates in most mental stress (threat) studies. This is the case within the present research, as we were not interested in comparing resting levels (baseline) of RSA (i.e. vagal tone, see footnote 5). Yet, further work is necessary to rule out this possibility.

Third, although we have argued that threat appraisals in the context of collective guilt are related to a threat to the positive image of the group (identity threat or group esteem threat), we did not find our measure of social identification to be related to any other measures in the present study. Specifically, based on social identity theory, Doosje and colleagues (1998) were the first to argue how group members who strongly identify with their group should be the most threatened about information that would reflect badly on their group, and that they could rely on a number of strategies to deal with and avoid the distressing feeling of collective guilt. For example, we should have expected lower levels of RSA (i.e. a threat response) for high identifiers. One possibility for our lack of expected findings is the wording of our social identification scale that may have been problematic, despite our best intentions. Because the present study focuses on the colonization of Aboriginal peoples by Euro-Canadians, we specifically used the term "Euro-Canadians" in our scale. However, it appears that this term is not commonly used and may have appeared strange to respondents. Further confirming our suspicion, the level of identification with the present scale was low, despite pre-selecting only self-identified Canadians. We have since conducted further collective guilt studies with the same intergroup context and a similar sample population, but using the term "mainstream Canadians". We have obtained higher levels of self-identification with this scale, and more predictive

and explanatory power. The present study should be replicated with a more appropriate social identification scale.

Conclusion

Is collective guilt a beneficial emotion? On the one hand, research suggests that collective guilt leads to many prosocial consequences (for a review, see Wohl et al., 2006). For example, as a result of collective guilt, group members are motivated to apologize and make amends to a victimized group. On the other hand, research also suggests that collective guilt may have limitations. As a result of collective guilt, group members may become defensive and more focused on alleviating the self-focused distress brought on by their guilt feelings.

How can collective guilt lead to those two diametrically opposed reactions? For researchers to begin answering such a question, we suggest that more indirect measures need to be used. These defensive reactions make it difficult to untangle these underlying mechanisms, as self-reported measures can be distorted.

Here, to test the idea that previous research has yielded low levels of self-reported collective guilt because of defensive responding, our study measured autonomic threat regulation (RSA reactivity) while group members were confronted with ingroup transgressions and while they were completing a standard self-report scale of collective guilt. Overwhelmingly, a majority of participants did not exhibit a threat-related response. This may suggest that collective guilt is rejected automatically, without the need to actively search for conscious defensive means to alleviate collective guilt. Further research is needed to specifically uncover how collective guilt can be alleviated at such an unconscious automatic level.

GENERAL DISCUSSION

The seed for the present doctoral research can be traced back to my long-lasting interest in an apparent paradox: although egalitarianism is highly valued in Canada, as in many other societies, some groups have, and still continue, to experience profound inequalities. For example, at the onset of this thesis, we reviewed how Aboriginal Canadians as a group are profoundly disadvantaged compared to the general Canadian population, despite the cherished belief that Canada is an egalitarian society. As such, it may appear striking to find that, when mainstream Canadians are presented with actual evidence of social inequality in their society, as in the present studies, they are unlikely to feel much guilt about it.

However, such findings may not be so surprising given that a long legacy of social psychological theorizing, tracing back to social identity theory (Tajfel & Turner, 1979, 1986), has underscored how advantaged group members are motivated to maintain and legitimize a system of inequality from which they benefit (cf. Leach, Snider & Iyer, 2002). Not only are advantaged group members motivated to maintain their very real material benefits, but they also retain psychological benefits from their advantaged position, such as the social power to set values, norms and ideologies that are esteemed in society (cf. Taylor, 2002). Accordingly, conflicts between social groups are not always instrumentally-based, and social identity theory would suggest that they are fundamentally rooted in identity concerns. This is not to deny that groups can, in a very real material way, be threatened by other groups, for example through competition over scarce resources. But psychological threat is a powerful source of conflicts between groups as well, as power struggles often erupt over incompatible group identity concerns. Indeed, groups, at a symbolic level, provide their members with a fundamental sense of meaning and value through culture, religion, language, norms and ideologies, all aspects that encompass a sense of identity, and all possible sources of psychological threat and intergroup conflict.

Within the perspective of social identity theory (Tajfel & Turner, 1979, 1986), it is understood that individuals can be particularly sensitive to psychological threats to their social group, because belonging to a group is

believed to help fulfill basic cognitive and motivational needs (for a review, see Branscombe, Ellemers, Spears & Doosje, 1999). Paradoxically, if egalitarianism is a cherished and valued part of a group identity, evidence of ingroup transgression can pose a psychological threat to the group's self-image, and this threat may prompt the use of defense mechanisms that ultimately sustain inequality. For example, group members can defend their ingroup and avoid collective guilt by minimizing the harm they have committed, by derogating the victim, or by legitimizing their ingroup transgressions (Branscombe & Miron, 2004). Simply put, when individuals' social identity is threatened by their own group transgressions, they can use psychological defenses to protect their sense of self, and thereby alleviate collective guilt. This is troubling because much of the theory and research on collective guilt has centered on the role of this emotion in the regulation of intergroup behaviours. Specifically, a number of researchers have now demonstrated the powerful role played by collective guilt in motivating actions related to apologizing and making amends for one's group's misdeeds (see Branscombe & Doosje, 2004; Wohl, Branscombe & Klar, 2006). But if group members are able to easily resort to defense mechanisms to psychologically alleviate their guilt, then one is left wondering what practical role collective guilt may have in ameliorating social inequality.

At a very basic empirical level, research thus far seems to suggest that group members do indeed tend to avoid collective guilt, as cumulative evidence shows low levels of collective guilt (for a review, see Wohl, Branscombe & Klar, 2006). However, this wealth of research is solely based on participants themselves self-reporting on their acceptance of collective guilt. Given the theorizing on the use of defense mechanisms, there is every reason to be suspicious of people's own assessment of their guilt feelings. In fact, psychologists for a long time now have been suspicious of responses participants may give when asked direct questions on self-report scales (see Paulhus & Vazire, 2007). At a very basic level, participants are often not able, or not willing, to self-report on their inner thoughts or feelings, especially when the topics are sensitive or threatening. In terms of collective guilt research, given these well-known limitations of self-report

measures, it is impossible to identify whether the relatively low levels of collective guilt currently reported in the field are due to a genuine lack of gut-feelings of guilt, or caused by a lack of self-awareness of one's guilt feelings, or, alternatively, made possible by an unconscious or conscious use of psychological defenses against such guilt feelings. Accordingly, the major objective of the present thesis was to employ more indirect measures in order to assess and to better understand the intrapsychic mechanisms underlying collective guilt.

Present Program of Research

In this thesis, I have argued that collective guilt is especially suited for the use of indirect measures because psychological defense mechanisms have been argued to play a central role, which can distort self-reported collective guilt feelings. I demonstrated how the standard method of assessing collective guilt in the field, through self-report, limits our ability to capture the richness of the intrapsychic processes involved when individuals are faced with such an unpleasant emotion.

My primary mission in the present thesis was to demonstrate that a genuine understanding of collective guilt requires the study of implicit processes. In two manuscripts, I presented robust findings, predicting both attitudinal and behavioural outcomes following the presentation of ingroup transgression, with the use of three different types of implicit measures. A word fragment completion task and an implicit association test were employed to measure implicit collective guilt (Manuscript 1), and a psychophysiological index was employed to assess implicit threat (Manuscript 2). Overall, I demonstrated how these implicit and explicit measures produced divergent effects. This differential pattern of findings, obtained with a varied set of methodological and statistical tools, attests to the added value of including both types of measures within the same study.

In past research, it was found that group members who openly endorsed collective guilt (i.e. they self-report feelings of collective guilt acceptance on explicit measures) were generally more willing to make amends for their ingroup transgression. In the present research, this main effect was qualified by the gut-feelings of collective guilt that group members may reveal on more implicit

measures. Beyond the theoretical merits of such findings, there remains a need to develop a better understanding of the antecedents of implicit collective guilt, and of the potential role of psychological threat in defending against such gut-feelings of collective guilt. Clearly, adding measures of implicit collective guilt increased our ability to predict key intergroup attitudes and behaviours. However, it remains to be explained why some group members experience higher or lower levels of gut-feelings of collective guilt, and why and how such feelings may diverge from self-reported feelings of collective guilt acceptance. Manuscript 2, with its use of a psychophysiological index of autonomic threat regulation shows promise in addressing such questions, and offers one possible line of research that is worth pursuing further.

In the following section, I review the evolution of my research throughout my graduate journey, and the research that I envision for the future. Unravelling the implicit processes that underlie collective guilt has been my quest. I will argue that a basic appraisal of "responsibility" is the logical next step to further investigate the antecedents of implicit collective guilt.

Evolution of my Research

Throughout my graduate studies, my interest in social inequality has not only focused on empirical laboratory research, but also led me to first-hand and grassroots experiences in Nunavik (Northern Québec) and Nunavut (see e.g. Taylor, Caouette, Usborne & Wright, 2008). In both my personal and academic experience, I have addressed issues concerning society's most disadvantaged and their well-being, especially regarding Aboriginal Canadians. Relentlessly, I found myself facing a puzzling paradox: why, given our society's commitment to equality, is there continuing, often dramatic, socio-economic disparity between social groups? My graduate research on collective guilt led me to address this paradox in the context of the plight of Aboriginal Canadians.

Egalitarianism is highly valued in Canadian society; yet, some groups, such as Aboriginal peoples, experience profound inequalities. For example, the levels of diabetes, disability, suicide, poverty and unemployment among Aboriginal Canadians have consistently been dramatically higher than the levels

among non-Aboriginal Canadians. Put simply, although Canada has ranked within the top 5 of the United Nations Human Development Index for many years, and despite many government promises, today Aboriginal Canadians rank a lowly 63rd on the same scale (see Hurtig, 2008). How can Canadians' confidence in the egalitarian essence of their society co-exist with such social inequality? I believe the study of collective guilt can help us address this paradox.

In my Master's and doctoral program of research, I have explored how mainstream Canadians experience collective guilt when confronted with concrete evidence documenting the devastating impact of internal colonization perpetuated by mainstream Canadians on Aboriginal peoples. My particular focus has been on the role of collective guilt because a number of research programs point to collective guilt as an emotion that can be an impetus for constructive social change including financial reparations and public apologies (see Wohl, Branscombe & Klar, 2006). However, in the process of studying collective guilt with well-validated self-report measures, it became clear to me that because it is such a threatening emotion, people are not willing, or not able, to admit guilt on these measures. As such, the basic underlying psychological processes are not being captured by overtly asking people "Do you feel guilty?". The majority of collective guilt studies use measures of collective guilt that rely exclusively on the participants' conscious self-evaluation and self-reporting of their emotion. Specifically, participants are asked to evaluate to what extent they agree with items such as "I feel guilty about the negative things my group has done." These items describe the extent to which individuals consciously assess whether or not they acknowledge or accept feelings of guilt on behalf of their group. A distinction between gut-feelings of collective guilt versus collective guilt acceptance may be crucial, as people can utilize a number of defense mechanisms (e.g. rejection of responsibility or blaming the victim) to deny, displace or repress the aversive gut-feeling experience of collective guilt. In my Master's research, the use of defense mechanisms *appeared* to be abundant, where participants would justify not feeling guilty by saying that "People should not dwell on the past", "The past cannot be changed", or "Aboriginal peoples were given fair

opportunities, but did not take them". However, it was impossible to determine, within this methodology, whether these cognitions were indeed defense mechanisms in reaction to a threat response to pangs of guilt, or whether these were cognitions held independently and non-reactively from any collective guilt experience.

This basic contradiction led me to pose a simple, but fundamental question within the context of my doctoral research: is collective guilt rare because it is not viscerally experienced in the first place, or is it rare because group members are able to reject their initial pangs of guilt? The collective guilt literature is replete with discussions of the wide array of defense mechanisms individuals may use to assuage their collective guilt, but no one yet has attempted to test whether these strategies allow guilt to be completely avoided, or whether repressed guilt feelings are simply not captured by standard self-report measures. What was missing were more implicit measures of collective guilt that would allow researchers to explore such possibilities. The present doctoral research offers novel measures that hopefully can allow other researchers to directly delve into and test implicit processes involved in collective guilt.

As a direct logical extension to my doctoral program of research, my next research will be aimed at exploring the implicit processes underling rejection or acceptance of responsibility within the context of collective guilt. Responsibility appraisal is a necessary condition for the experience of collective guilt (cf. Branscombe, Slugoski & Kappen, 2004), and focusing on responsibility can help us better understand guilt rejection. In their most recent review of collective guilt, Wohl and colleagues (2006) recognize that more research is needed to understand whether low levels of collective guilt are related to more automatic (i.e. implicit) or more deliberate (i.e. explicit) rejection of responsibility. In their words:

> An important direction for future research is to determine whether or not responsibility is immediately rejected or is only accomplished with time and cognitive effort. Although collective guilt can lead to apologies for past harm, offers of reparations to the victims, and reductions in prejudicial attitudes among perpetrator group members, additional

> research that focuses on the strategies used by those who reject the notion of collective guilt would be worthwhile. What is less clear is whether attempts to alleviate collective guilt result from an automatic rejection of group responsibility, or whether active attempts must be made to construct arguments that render the ingroup less accountable (…) Disentangling these different intrapsychic response possibilities within the existing research is difficult because it has relied on self-report measures that are insensitive to such potential order effects. (p. 29)

Using the implicit measures devised in the present doctoral program of research, it is now possible to pursue the next logical step where I will focus on exploring the intrapsychic mechanisms of responsibility appraisals when group members experience collective guilt.

Future Research

There is a wide amalgam of research that illustrates how it is natural for human beings to minimize their responsibility for the suffering of other human beings (for a review, see Tavris & Aronson, 2007). The reality is that people are constantly surrounded by injustices in their lives, and decades of research in psychology has documented how the mind is equipped to allow people to live comfortably with injustices. It would be impossible to function daily if people constantly felt guilt-ridden, and as a result people effortlessly manufacture self-justification, such as the minimization of responsibility or the blaming of others. Self-justification is a major psychological mechanism postulated in a wide range of theories from cognitive dissonance, prejudice, memory, to clinical psychology. Despite its wide application, there remains an important paradox. If people need to self-justify, at some level, they must somehow have felt the possibility of having done something wrong, otherwise, why would they be motivated to engage in self-justification in the first place? In terms of collective guilt, would group members just automatically reject group responsibility, or would they first feel some pangs of guilt and then engage in active attempts to minimize their responsibility? Such intrapsychic processes have been left unexplained in the literature, I would argue, mainly because of the limitations related to the reliance

on self-report measures. Consequently, the main 2 questions I would like to tackle in the future are: 1) will group members alleviate collective guilt by automatically minimizing their personal or group responsibility, or do they require more time and effort to actively construe arguments that would render them less accountable?; 2) what is the intrapsychic process underlying this phenomenon: is a) responsibility rejected immediately and automatically without the use of guilt, or is b) responsibility first recognized because of pangs of guilt which then motivates more active actions to alleviate collective guilt?

In order to answer the question "is responsibility rejected automatically?", we could rely on the legendary Stroop Task (see MacLeod, 1991). Researchers have successfully used this task to investigate the avoidance of socially threatening information (see e.g. Williams, Mathews & MacLeod, 1996; Dandeneau & Baldwin, 2004). If group members automatically reject responsibility, they should show little need to avoid responsibility on the Stroop task. But if they need to actively search for ways to reject responsibility, they should show more avoidance on the Stroop task. As a result, group members who successfully avoid responsibility on the Stroop task should demonstrate lower levels of self-reported collective guilt. To further answer the question "is responsibility rejected immediately on its own or is responsibility rejected as a result of active attempts to avoid the aversive initial pangs of collective guilt (i.e. implicit)", we could add the implicit measures validated in my doctoral research. Test of mediations could be conducted to explore the relation between scores of implicit collective guilt and scores of responsibility avoidance on the Stroop task to predict self-reported collective guilt. Finally, to clarify a possible confound from such studies, specific appraisals of responsibility need to be examined. Are group members attempting to protect themselves from the aversive experience of collective guilt by minimizing their personal sense of responsibility (e.g. it's not my fault, my group did this) or by minimizing their collective sense of responsibility (e.g. my group did not intentionally mean any harm)? This question is essential in terms of reparations: should wronged groups appeal to the personal or collective sense of responsibility when seeking reparations?

Concluding Remarks

A recent national survey of Canadians' opinions on various social issues shows that fifty-two per cent of Canadians believe that improving the living conditions for Aboriginal Canadians is important or very important, but that only three per cent say they want the government to spend more money to make it happen. "It makes us question how deeply we really are concerned about issues beyond ourselves in our society" said Michael Sullivan, a pollster for Strategic Counsel, the research company that conducted the survey (see Mofina, 2003).

It can be difficult to accept that systemic barriers limit opportunities for certain groups in our modern egalitarian society. Advantaged individuals, such as mainstream Canadians, often deny collective guilt by claiming that they are not personally responsible for what their ancestors did in the past, and that therefore they should not be blamed for their ancestors' actions and its present consequences (see Caouette & Taylor, 2007). As a result, the motivation to feel deeply concerned and responsible and to support real concrete action often flounders. However, "to say that it is not our fault does not relieve us of responsibility" (Tatum, 2000, p. 80). One does not necessarily need to have directly caused harm to another person in order to feel responsible for helping this person, or this group, and rectifying the harm that was caused. "Once we think about responsibility as having a duty to respond to one who has been harmed, the scope of responsibility widens considerably" (Radzik, 2001, p. 461). Blame need not to be attributed to take responsibility for the well-being of other individuals. This duty to respond relates to a feeling of guilt, but not a guilt for having caused harm, but instead the guilt that spurs from a feeling of obligation to take action to rectify harm. That is, a genuine care and concern for the other remains at the center of the motive to purse social equality. I would like to speculate that "genuine guilt", exemplified by both the raw gut-feelings and the open endorsement of this feeling, comes from a sense of duty to respond. By denying responsibility and a duty to respond, we are accomplices in a society that perpetuates past wrongs in the present day by not admitting the impact of historical and current societal barriers on certain groups.

Final Words: Enacting Change & Applied Intervention

This thesis began with the words of the great Kurt Lewin, and so it appears natural to end with one of his great insights. In their review of the History of Social Psychology, Ross, Lepper & Ward (2010, p. 39) mention that:

> another old Lewinian insight involves the strategy of achieving change by removing rather than adding forces to an existing tension system – that is, instead of relying on positive and negative incentives (which can add "tension" to a system), it may be more useful to determine what impediments or barriers stand in the way of achieving change, and then eliminate or at least reduce them.

In the present thesis, I alluded to collective guilt as a possible motivator for social change. Indeed, knowing that collective guilt is related to a host of desirable intergroup outcomes, such as apology, compensation and reparation, it would be obvious to consequently find ways to promote guilt. It is inevitable, almost every time I mention my research to a new acquaintance, I am always asked why "I want to make people feel guilty", to which I always respond "I am not, I only want to understand and research collective guilt", but we both know this is half the truth. Both laypeople and psychologists recognize the self-regulatory power of guilt, and we all use guilt, sparingly, in our daily lives to "persuade" people to act a certain way. But clearly, the present research, and indeed other programs of research (cf. Iyer, Leach & Crosby, 2003; Iyer, Leach & Pedersen, 2004) have touched upon the limits of collective guilt. Mainly, because collective guilt is indeed such an unpleasant, even threatening, emotion, group members may be more motivated to assuage their guilt feelings, instead of focusing on bettering their relationship with the victimized outgroup whom they have harmed. Clearly, collective guilt may be adding too much negative "tension" to the fragile intergroup "system".

If a more just society is our goal, then we need to ask, as Kurt Lewin suggests, what are the sources of individual and collective barriers that we need to remove to enact positive social change (cf. Jost & Kay, 2010). Based on the present findings, feelings of guilt appear to lead to emotional resistance and

reactance in some group members, but not all of them, as suggested by our differential patterns of results based on implicit vs. explicit measures of guilt feelings. Why does collective guilt appears to be loaded with emotional resistance in some group members, prompting the use of defense mechanisms, but not in others? I want to argue that finding the source of this emotional resistance is one possible barrier that needs to be removed.

REFERENCES

Allahar, A. L., & Côté, J. E. (1998). *Richer and poorer: The structure of inequality in Canada.* Toronto, Ontario, Canada: James Lorimer & Company Ltd.

Allen, J. J. B. (2002). Calculating metrics of cardiac chronotropy: A pragmatic overview. *Psychophysiology*, *39*, S18.

Allen, J. J. B., Chambers, A. S., & Towers, D. N. (2007). The many metrics of cardiac chronotropy: A pragmatic primer and a brief comparison of metrics. *Biological Psychology*, *74*, 243-262.

Allport, G. W. (1954). *The nature of prejudice*. Cambridge, Mass: Addison-Wesley Pub. Co.

Annett, K. (2005). *Hidden from history: The Canadian Holocaust*. Port Alberni, British Columbia, Canada: The Truth Commission into Genocide in Canada.

Appelhans, B. M., & Luecken, L. J. (2006). Heart rate variability as an index of regulated emotional responding. *Review of General Psychology*, *10*, 229-240.

Bandura, A. (1990). Selective activation and disengagement of moral control. *Journal of Social Issues*, *46*, 27–46.

Barkan, E. (2000). *The guilt of nations: Restitution and negotiating historical injustices.* New York: Norton.

Barkan, E. (2004). Individual versus group rights in western philosophy and the law. In N. Branscombe & B. Doosje (Eds.), *Collective guilt: International perspectives* (pp. 309-319). Cambridge, UK: Cambridge University Press.

Barger, S. D. (2002). The Marlowe-Crowne affair: Short forms, psychometric structure and social desirability. *Journal of Personality Assessment*, *79*, 286-305.

Bassili, J. N., & Smith, M. C. (1986). On the spontaneity of trait attribution: Converging evidence for the role of cognitive strategy. *Journal of Personality and Social Psychology*, *50*, 239-245.

Batson, C. D., Early, S., & Salvarani, G. (1997). Perspective taking: Imagining how another feels versus imagining how you would feel. *Personality and Social Psychology Bulletin. 23*, 751–758.

Baumeister, R. F., & Hastings, S. (1997). Distortions of collective memory: How groups flatter and deceive themselves. In J. W. Pennebaker, D. Paez, & B. Rimé (Eds.), *Collective memory and political events: Social psychological perspectives* (pp. 277-293). Mahwah, NJ: Erlbaum.

Baumeister, R. F., Schmeichel, B. J., & Vohs, K. D. (2007). Self-regulation and the executive function: The self as controlling agent. In A. W. Kruglanski & E. T. Higgins (Eds.), *Social psychology: Handbook of basic principles* (pp. 516-539). New York: Guilford Press.

Baumeister, R. F., Stillwell, A. M., & Heatherton, T. F. (1994). Guilt: An interpersonal approach. *Psychological Bulletin*, *115*, 243-267.

Beauchaine, T. (2001). Vagal tone, development, and Gray's motivational theory: Toward an integrated model of autonomic nervous system functioning in psychopathology. *Development and Psychopathology, 13*, 183-214.

Bendig, A. W. (1956). The development of a short form of the Manifest Anxiety Scale. *Journal of Consulting Psychology, 20,* 384.

Berger, R. D., Saul, J. P., & Cohen, R. J. (1989). Transfer function analysis of autonomic regulation. I. Canine atrial rate response. *American Journal of Physiology - Heart and Circulatory Physiology*, *256*, H142-H152.

Berntson, G. G., Bigger, J. T., Eckberg, D. L., Grossman, P., Kaufmann, P. G., Malik, M., Nagaraja, N., Porges, S. W., Saul, J. P., Stone, P. H., & Van der Molen, M. W. (1997). Heart rate variability: Origins, methods, and interpretive caveats. *Psychophysiology*, *34*, 623-648.

Berntson, G. G., Cacioppo, J. T., & Quigley, K. S. (1991). Autonomic determinism: The modes of autonomic control, the doctrine of autonomic space, and the laws of autonomic constraint. *Psychological Review, 98,* 459-487.

Bernston, G. G., Cacioppo, J. T., & Quigley, K. S. (1993). Respiratory sinus arrhythmia: Autonomic origins, physiological mechanisms, and psychophysiological implications. *Psychophysiology*, *30*, 183-196.

Bernston, G. G., Cacioppo, J. T., & Quigley, K. S. (1995). The metrics of cardiac chronotropism: Biometric perspectives. *Psychophysiology*, *32*, 162-171.

Bernston, G. G., Quigley, K. S., & Lozano, D. (2007). Cardiovascular psychophysiology. In J. T. Cacioppo, L. G. Tassinary, & G. G. Berntson (Eds.). *Handbook of psychophysiology* (pp. 182-210). Cambridge, UK: Cambridge University Press.

Bettencourt, B. A., Miller, N., & Hume, D. L. (1999). Effects of numerical representation within cooperative settings: Examining the role of salience in in-group favoritism. *British Journal of Social Psychology*, *38*, 265-287.

Biernat, M., & Crandall, C. S. (1999). Racial attitudes. In J. P. Robinson & P. R. Shaver (Eds.), *Measures of political attitudes: Measures of social psychological attitudes* (Vol.2, pp. 297-411). San Diego, CA: Academic.

Blanton, H., Jaccard, J., Gonzales, P. M., & Christie, C. (2006). Decoding the Implicit Association Test: Perspectives on criterion prediction. *Journal of Experimental Social Psychology, 42,* 192–212.

Blascovich, J., & Mendes, W. B. (2000). Challenge and threat appraisals: The role of affective cues. In J. Forgas (Ed.), *Feeling and thinking: The role of affect in social cognition* (pp. 59-82). Cambridge, England: Cambridge University Press.

Blascovich, J., & Mendes, W. B. (2010.). Social psychophysiology and embodiment. In S. T. Fiske, D. T. Gilbert, & G. Lindzey (Eds.), *Handbook of social psychology* (5th Ed., pp. 194-227). New York: Wiley.

Blascovich, J., & Tomaka, J. (1996). The biopsychosocial model of arousal regulation. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 28, pp. 1-51). New York: Academic Press.

Bluemke, M., & Friese, M. (2008). Reliability and validity of the Single-Target IAT (ST-IAT): Assessing automatic affect toward multiple attitude objects. *European Journal of Social Psychology*, *38*, 977-997.

Bosson, J. K., Swann, W. B., & Pennebaker, J. W. (2000). Stalking the perfect measure of self esteem: The blind men and the elephant revisited. *Journal of Personality & Social Psychology*, *79*, 631-643.

Branscombe, N. R. (2004). A social psychological process perspective on collective guilt. In N. R. Branscombe & B. Doosje (Eds.), *Collective guilt: International perspectives* (pp. 320-334). New York: Cambridge University Press.

Branscombe, N. R., & Doosje, B. (Eds.). (2004). *Collective guilt: International perspectives.* New York: Cambridge University Press.

Branscombe, N. R., Doosje, B., & McGarty, C. (2002). Antecedents and consequences of collective guilt. In D. M. Mackie & E. R. Smith (Eds.), *From prejudice to intergroup emotions: Differentiated reactions to social groups* (pp. 49-66). Philadelphia, PA: Psychology Press.

Branscombe, N. R., Ellemers, N., Spears, R., & Doosje, B. (1999). The context and content of social identity threats. In N. Ellemers, R. Spears, & B. Doosje (Eds.), *Social identity: Context, commitment, content* (pp. 35-58). Oxford: Blackwell.

Branscombe, N. R., & Miron, A. M. (2004). Interpreting the ingroup's negative actions toward another group: Emotional reactions to appraised harm. In C. W. Leach & L. Z. Tiedens (Eds.), *The social life of emotions* (pp. 314-335). New York: Cambridge University Press.

Branscombe, N. R., Slugoski, B. R., & Kappen, D. (2004). Collective guilt: What it is and what it is not. In N. R. Branscombe & B. Doosje (Eds.), *Collective guilt: International perspectives* (pp. 16-34). New York: Cambridge University Press.

Brehm, J. W. (1999). The intensity of emotion. *Personality and Social Psychology Review*, *3*, 2-22.

Brooks, R. L. (Ed.). (1999). *When sorry isn't enough: The controversy over apologies and reparations for human injustice*. New York: New York University Press.

Butler, E. A., Wilhelm, F. H., & Gross, J. J. (2006). Respiratory sinus arrhythmia, emotion, and emotion regulation during social interaction. *Psychophysiology*, *43*, 612-622.

Caouette, J. (2003). *"Don't Blame Me for What My Ancestors Did!" Factors Associated With the Experience of Collective Guilt Regarding Aboriginal people*. Unpublished manuscript, McGill University, Montréal, Québec, Canada.

Caouette, J., & Taylor, D. M. (2005). Les nouveaux immigrants ressentent-ils une culpabilité collective pour les injustices historiques de leur société d'adoption? *Les Cahiers Internationaux de Psychologie Sociale, 66- 67,* 137-151.

Caouette, J., & Taylor, D. M. (2007). "Don't blame me for what my ancestors did!": Understanding the impact of collective White guilt. In P. R. Carr & D. E. Lund (Eds.), *The great white north? Exploring whiteness, privilege and identity in education in Canada* (pp. 77-92). Rotterdam, The Netherlands: Sense Publishers.

Carlston, D. (2010). Models of implicit and explicit mental representation. In B. Gawronski & B. K. Payne (Eds.), *Handbook of implicit social cognition: Measurement, theory, and applications* (pp. 38-61). New York: Guilford Press.

Carr, P. R., & Lund, D. E. (Eds.). (2007). *The great white north? Exploring Whiteness, privilege, and identity in education*. Rotterdam, Netherlands: Sense.

Castano, E. (2008). On the perils of glorifying the in-group: Intergroup violence, in-group glorification, and moral disengagement. *Social and Personality Psychology Compass*, *2*, 154-170.

Castano, E., & Giner-Sorolla, R. (2006). Not quite human: Infra-humanization as a response to collective responsibility for intergroup killing. *Journal of Personality and Social Psychology*, *90*, 804-818.

Chambers, A. S., & Allen, J. J. B. (2007). Introduction to special issue on cardiac vagal control, emotion, psychopathology, and health. *Biological Psychology*, *74*, 113-115.

Constantine, M. G., & Ponterotto, J. G. (2006). Evaluating and selecting psychological measures for research purposes. In F. T. J. Leong & J. T. Austin (Eds.), *The psychology research handbook* (pp. 104-113). Thousand Oaks, CA: Sage Publications.

Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology, 24*, 349-354.

Dandeneau, S. D., & Baldwin, M. W. (2004). The inhibition of socially rejecting information among people with high versus low self-esteem: The role of attentional bias and the effects of bias reduction training. *Journal of Social and Clinical Psychology*, *23*, 584-602.

De Houwer, J. (2009). Comparing measures of attitudes at the procedural and functional level. In R. Petty, R. H. Fazio & P. Brinol (Eds.), *Attitudes: Insights from the new implicit measures* (pp. 361-390). Mahwah, NJ: Lawrence Erlbaum Associates.

De Houwer, J., & Moors, A. (2010). Implicit measures: Similarities and differences. In B. Gawronski & B. K. Payne (Eds.), *Handbook of implicit social cognition: Measurement, theory, and applications* (pp. 176-196). New York: Guilford Press.

De Houwer, J., Teige-Mocigemba, S., Spruyt, A., & Moors, A. (2009). Implicit measures: A normative analysis and review. *Psychological Bulletin*, *135*, 347-368.

De Judicibus, M. A., & McCabe, M. (2001). Blaming the target of sexual harassment: Impact of gender role, sexist attitudes and work role. *Sex roles*, *44*, 401-417.

Devine, P. G. (1989). Stereotypes and prejudice: Their automatic and controlled components. *Journal of Personality and Social Psychology, 56*, 5-18.

Devos, T., & Banaji, M. R. (2003). Implicit self and identity. *Annals of the New York Academy of Sciences, 1001,* 1749-6632.

Diamond, L. M., & Otter-Henderson, K. D. (2007). Physiological measures. In R. W. Robins, R. C. Fraley & R. F. Krueger (Eds.), *Handbook of research methods in personality psychology* (pp. 370-388). New York: Guilford Press.

Doosje, B. J., Branscombe, N. R., Spears, R., & Manstead, A. S. R. (1998). Guilty by association: When one's group has a negative history. *Journal of Personality and Social Psychology, 75*, 872-886.

Doosje, B. J., Branscombe, N. R., Spears, R., & Manstead, A. S. R. (2004). Consequences of national ingroup identification for responses to immoral historical events. In N. R. Branscombe & B. J. Doosje (Eds.), *Collective guilt: International perspectives* (pp. 95-111). New York: Cambridge University Press.

Dussault, R., & Erasmus, G. (1996). *Address for the launch of the report on the Royal Commission on Aboriginal Peoples*. Retrieved February 3, 2010, from http://www.ainc-inac.gc.ca/ap/pubs/spch/spch-eng.asp.

Egloff, B., & Schmukle, S. C. (2003). Does social desirability moderate the relationship between implicit and explicit anxiety measures? *Personality and Individual Differences*, *35*, 1697-1706.

Ellemers, N., Pagliaro, S., Barreto, M., & Leach, C. W. (2008). Is it better to be moral than smart? The effects of morality and competence norms on the decision to work at group status improvement. *Journal of Personality and Social Psychology*, *95*, 1397-1410.

Eversole, R., McNeish, J.-A., & Cimadamore, A. D. (Eds.). (2005). *Indigenous peoples and poverty: an international perspective*. New York: Palgrave Macmillan.

Fazio, R. H., & Olson, M. A. (2003). Implicit measures in social cognition research: Their meaning and use. *Annual Review of Psychology*, *54*, 297-327.

Feagin, J. R., Vera, H., & Batur, P. (2001). *White racism: The basics.* New York: Routledge.

Fritsche, I., & Schubert, T. W. (2009). Go to hell! Determinants of motivated social exclusion. In S. Otten, T. Kessler, & K. Sassenberg (Eds.), *Intergroup relations: The role of motivation and emotion* (pp. 221-239). New York: Psychology Press.

Gawronski, B., & Payne, B. K. (Eds.). (2010). *Handbook of implicit social cognition: Measurement, theory, and applications*. New York: Guilford Press.

Gilbert, D. T., & Hixon, J. G. (1991). The trouble of thinking: Activation and application of stereotypic beliefs. *Journal of Personality and Social Psychology*, *60*, 509-517.

Giner-Sorolla, R. S., Mackie, D. M., & Smith, E. R. (2007). Special issue on intergroup emotions: Introduction. *Group Processes & Intergroup Relations*, *10*, 5-8.

Goodie, J. L., Larkin, K. T., & Schauss, S. (2000). Validation of the polar heart rate monitor for assessing heart rate during physical and mental stress. *Psychophysiolology*, *14*, 159–164.

Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and prejudice. *Psychological Review, 102*, 4-27.

Greenwald, A. G., & Farnham, S. D. (2000). Using the implicit association test to measure self-esteem and self-concept. *Journal of Personality and Social Psychology*, *79*, 1022-1038.

Greenwald, A. G., McGhee, D. E., & Schwarz, J. L. K. (1998). Measuring individual differences in implicit cognition: The Implicit Association Test. *Journal of Personality and Social Psychology*, *74*, 1464-1480.

Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the Implicit Association Test: I. An improved scoring algorithm. *Journal of Personality and Social Psychology*, *85*, 197-216.

Gross, J. J. (2007). *Handbook of emotion regulation*. New York: Guilford Press.

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, *85*, 348-362.

Grossman, P., & Kollai, M. (1993). Respiratory sinus arrhythmia, cardiac vagal tone, and respiration: Within- and between-individual relations. *Psychophysiology*, *30*, 486-95.

Grossman, P., & Taylor, E. W. (2007). Toward understanding respiratory sinus arrhythmia: Relations to cardiac vagal tone, evolution and biobehavioral functions. *Biological Psychology*, *74*, 263-285.

Harth, N. S., Kessler, T., & Leach, C. W. (2008). Advantaged group's emotional reactions to intergroup inequality: The dynamics of pride, guilt, and sympathy. *Personality and Social Psychology Bulletin*, *34*, 115-129.

Hayes, A. F., & Matthes, J. (2009). Computational procedures for probing interactions in OLS and logistic regression: SPSS and SAS implementations. *Behavior Research Methods*, *41*, 924-936.

Health Canada (2005). A statistical profile on the health of First Nations in Canada. Retrieved September 19, 2010, from http://www.hc-sc.gc.ca/fniah-spnia/diseases-maladies/2005-01_health-sante_indicat-eng.php.

Heck, R. H., Thomas, S. L., & Tabata, L. N. (2010). Multilevel and longitudinal modelling with IBM SPSS. London, UK: Routledge Academic.

Henry, F., & Tator, C. (2009). *The colour of democracy: Racism in Canadian society.* Toronto: Nelson Thomson.

Hofmann, W., Gawronski, B., Gschwender, T., Le, H., & Schmitt, M. (2005). A meta-analysis on the correlation between the Implicit Association Test and explicit self-report measures. *Personality and Social Psychology Bulletin*. *31*, 1369-1385.

Holtgraves, T. M. (2004). Social desirability and self-reports: Testing models of socially desirable responding. *Personality and Social Psychology Bulletin*, *30*, 161-172.

Houtveen, J. H., Rietveld, S., & De Geus, E. J. C. (2002). Contribution of tonic vagal modulation of heart rate, central respiratory drive, respiration depth, and respiratory frequency to respiratory sinus arrhythmia during mental stress and physical exercise. *Psychophysiology, 39,* 427-436.

Hox, J. J. (2002). *Multilevel analysis: Techniques and applications*. Mahwah, NJ: Erlbaum.

Hoyle, R. H., Kernis, M. H., Leary, M. R., & Baldwin, M. W. (1999). *Selfhood: Identity, esteem, regulation*. Boulder, CO: Westview Press.

Hurley, M. C., & Wherrett, J. (2000). *The Report of the Royal Commission on Aboriginal Peoples*. Retrieved February 3, 2010, from http:// www2.parl. gc.ca/ Content/LOP/ResearchPublications/prb9924-e.htm.

Hurtig, M. (2008). *The truth about Canada: Some important, some astonishing, and some truly appalling things all Canadians should know about our country.* Toronto, Ontario, Canada: McClelland & Stewart Ltd.

Indian and Northern Affairs Canada (2009). *Royal Commission Report on Aboriginal Peoples.* Retrieved February 3, 2010, from http://www.ainc-inac.gc.ca/ap/rrc-eng.asp.

Iyer, A., & Leach, C. W. (2008). Emotions in inter-group relations. *European Review of Social Psychology*, *19*, 86-125.

Iyer, A., Leach, C. W., & Crosby, F. J. (2003). White guilt and racial compensation: The benefits and limits of self-focus. *Personality and Social Psychology Bulletin, 29*, 117-129.

Iyer, A., Leach, C. W., & Pedersen, A. (2004). Racial wrongs and restitutions: The role of guilt and other group-based emotions. In M. Fine, L. Weis, L. Powell Pruitt, & A. Burns (Eds.), *Off White: Readings on power, privilege and resistance* (pp. 345-361). New York: Routledge.

Iyer, A., Schmader, T., & Lickel, B. (2007). Why individuals protest the perceived transgressions of their country: The role of anger, shame, and guilt. *Personality and Social Psychology Bulletin*, *33*, 572-587.

Izard, C. E. (2009). Emotion theory and research: Highlights, unanswered questions, and emerging issues. *Annual Review of Psychology*, *60*, 1-25.

James, W. (1884). What is an emotion? *Mind*, *9*, 188-205.

James, W. (1890). *The principles of psychology.* New York: Holt.

Janowitz, M. (1946). German reactions to Nazi atrocities. *American Journal of Sociology, 52*, 141-146.

Jennings, J. R., Kamarck, T., Stewart, C., Eddy, M., & Johnson, P. (1992). Alternate cardiovascular baseline assessment techniques: Vanilla or resting baseline. *Psychophysiology*, *29*, 742–750.

John, O. P., & Benet-Martínez, V. (2000). Measurement, scale construction, and reliability. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology (*pp. 339-369). New York: Cambridge University Press.

Johnson, G. F., & Enomoto, R. (Eds). (2007). *Race, racialization, and antiracism in Canada and beyond*. Toronto, Ontario, Canada: University of Toronto Press.

Jones, J. T., Pelham, B. W., & Mirenberg, M. C. (2002). Name letter preferences are not merely mere exposure: Implicit egotism as self-regulation. *Journal of Experimental Social Psychology*, *38*, 170–177.

Jost, J. T., & Kay, A. C. (2010). Social justice: History, theory, and research. In S. T. Fiske, D. Gilbert, & G. Lindzey (Eds.), *Handbook of social psychology* (5th edition, Vol. 2, pp. 1122-1165). Hoboken, NJ: Wiley.

Karpinski, A. (2004). Measuring self-esteem using the Implicit Association Test: The role of the other. *Personality and Social Psychology Bulletin, 30,* 22-34.

Karpinski, A., & Steinman, R. B. (2006). The single category implicit association test (SC-IAT) as a measure of implicit social cognition. *Journal of Personality and Social Psychology, 91,* 16-32.

Katz, I., Glass, D. C., & Cohen, S. (1973). Ambivalence, guilt, and the scapegoating of minority group victims. *Journal of Experimental Social Psychology*, *9*, 423-36.

Kelly, R. C. (2005). The evolution of lethal intergroup violence. *Proceedings of the National Academy of Sciences of the United States of America*, *102*,

15294-15298.

Keltner, D., & Lerner, J. S. (2010). Emotion. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (5th edition, Vol. 1, pp. 317-352). Hoboken, NJ: Wiley.

Kessler, T., & Hollbach, S. (2005). Group-based emotions as determinants of ingroup identification. *Journal of Experimental Social Psychology*, *41*, 677-685.

Kitayama, S., & Karasawa, M. (1997). Implicit self-esteem in Japan: Name letters and birthday numbers. *Personality and Social Psychology Bulletin*, *23*, 736–742.

Koole, S. L. (2009). The psychology of emotion regulation: An integrative review. *Cognition and Emotion*, *23*, 4-41.

Koole, S. L., & Pelham, B. W. (2003). On the nature of implicit self-esteem: The case of the name letter effect. In S. J. Spenser, S. Fein, M. P. Zanna & J. M. Olson (Eds.), *Motivated social perception: The Ontario symposium* (Vol. 9, pp. 93-116). Mahwah, NJ: Lawrence Erlbaum Associates.

Kreibig, S. D. (2010). Autonomic nervous system activity in emotion: A review. *Biological Psychology*, *84*, 394–421.

Kugler, K., & Jones, W. H. (1992). On conceptualizing and assessing guilt. *Journal of Personality and Social Psychology, 62*, 318-327.

Lange, C. G., & James, W. (1922). *The Emotions (Volume I)*. Baltimore, MD: Williams & Wilkins Co.

Leach, C. W., Ellemers, N., & Barreto, M. (2007). Group virtue: The importance of morality (vs. competence and sociability) in the positive evaluation of in-groups. *Journal of Personality and Social Psychology*, *93*, 234-249.

Leach, C. W., Iyer, A., & Pedersen, A. (2006). Anger and guilt about ingroup advantage explain the willingness for political action. *Personality and Social Psychology Bulletin*, *32*, 1232-1245.

Leach, C. W., Snider, N, & Iyer, A. (2002). Poisoning the consciences of the fortunate. In I. Walker & H. J. Smith (Eds.), *Relative deprivation:*

Specification, development, and integration (pp. 136-163). Cambridge, UK: Cambridge University Press.

Lerner, M. J. (1980). *The belief in a just world: A fundamental delusion*. New York: Plenum.

Levin, S., Federico, C. M., Sidanius, J., & Rabinowitz, J. L. (2002). Social dominance orientation and intergroup bias: The legitimation of favoritism for high-status groups. *Personality and Social Psychology Bulletin*, *28*, 144-157.

Lewis, M. (2000). Self-conscious emotions: Embarrassment, pride, shame, and guilt. In M. Lewis & J. M. Haviland-Jones (Eds.), *Handbook of emotions* (pp. 623-635). New York: Guilford Press.

Li, P. S. (Ed.). (1999). *Race and ethnic relations in Canada.* Don Mills, Ontario, Canada: Oxford University Press.

Lieberman, M. D., Eisenberger, N. I., Crockett, M. J., Tom, S. M., Pfeifer, J. H., & Way, B. M. (2007). Putting feelings into words: Affect labeling disrupts amygdala activity in response to affective stimuli. *Psychological Science, 18,* 421-428.

Mackie, D. M., & Smith, E. R. (Eds.). (2002). *From prejudice to intergroup emotions: Differentiated reactions to social groups*. Philadelphia, PA: Psychology Press.

Mackie, D. M., Smith, E. R. & Ray, D. G. (2008). Intergroup emotions and intergroup relations. *Personality and Social Psychology Compass*, *2*, 1866-1880.

MacLeod, C. M. (1991). Half a century of research on the Stroop effect: An integrative review. *Psychological Bulletin, 109,* 163-203.

Magocsi, P. R. (Ed.). (1999). *Encyclopedia of Canada's peoples*. Toronto, Ontario, Canada: University of Toronto Press.

Marcoulides, G. A., & Hershberger, S. L. (1997). *Multivariate Statistical Methods*. Mahwah, NJ: Lawrence Erlbaum Associates.

Marschall, D. E., Sanftner, J., & Tangney, J. (1994). *The state shame and guilt scale.* Fairfax, VA: George Mason University.

Martens, A., Greenberg, J., & Allen, J. J. B. (2008). Self-esteem and autonomic physiology: Parallels between self-esteem and cardiac vagal tone as buffers of threat. *Personality and Social Psychology Review, 12*, 370-389.

McConahay, J. B. (1986). Modern racism, ambivalence, and the modern racism scale. In S. L. Gaertner & J. F. Dovidio (Eds.), *Prejudice, discrimination, and racism* (pp. 91-125). New York: Academic.

Mendes, W. B. (2009). Assessing the autonomic nervous system. In E. Harmon-Jones & J. Beer (Eds.), *Methods in social neuroscience* (pp. 118–147). New York: Guilford Press.

Mendolia, M. (2002). An index of self-regulation of emotion and the study of repression in social contexts that threaten or do not threaten self-concept. *Emotion*, *2*, 215-232.

Menzies, C. R. (1999). First Nations, inequality, and the legacy of colonialism. In J. Curtis, E. Grabb & N. Guppy (Eds.), *Social inequality in Canada: Patterns, problems, and policies* (pp. 236-244). Scarborough, Ontario, Canada: Prentice Hall Allyn and Bacon.

Miceli, M., & Castelfranchi, C. (1998). How to silence one's conscience: Cognitive defenses against the feeling of guilt. *Journal for the Theory of Social Behaviour*, *28*, 287-318.

Milloy, J. S. (1999). *A national crime: The Canadian government and the residential school system.* Winnipeg, Manitoba, Canada: University of Manitoba Press.

Miron, A. M., Branscombe, N. R., & Biernat, M. (2010). Motivated shifting of justice standards. *Personality and Social Psychology Bulletin*, *36*, 768-779.

Miron, A. M., Branscombe, N. R., & Schmitt, M. T. (2006). Collective guilt as distress over illegitimate intergroup inequality. *Group Processes & Intergroup Relations*, *9*, 163-180.

Mischel, W., Cantor, N., & Feldman, S. (1996). Principles of self-regulation: The nature of willpower and self-control. In E. T. Higgins & A.W. Kruglanski

(Eds.), *Social psychology: Handbook of basic principles* (pp. 329-360). New York: Guilford Press.

Mofina, R. (2003, January 5). 3% back native funding as top priority: poll. *The Ottawa Citizen*, p. A4.

Moors, A., Spruyt, A., & De Houwer, J. (2010). In search of a measure that qualifies as implicit: Recommendations based on a decompositional view of automaticity. In B. Gawronski & B. K. Payne (Eds.), *Handbook of implicit social cognition: Measurement, theory, and applications* (pp. 19-37). New York: Guilford Press

Nisbett, R., & Wilson, T. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review, 84,* 231-259.

Nunan, D., Donovan, G., Jakovljevic, D. G., Hodges, L. D., Sandercock, G. R. H., & Brodie, D. A. (2009). Validity and reliability of short-term heart-rate variability from the Polar S810. *Medicine & Science in Sports & Exercise*, *41*, 243-250.

Opotow, S. (1990). Moral exclusion and injustice: An overview. *Journal of Social Issues, 46*, 1–20.

Opotow, S. (1995). Drawing the line: Social categorization, moral exclusion, and the scope of justice. In B. B. Bunker & J. Z. Rubin (Eds.), *Conflict, cooperation, and justice* (pp. 347–369). San Francisco: Jossey-Bass.

Ortony, A., Clore, G. L., & Collins, A. (1988). *The cognitive structure of emotions*. New York: Cambridge University Press.

Otten, S., Sassenberg, K., & Kessler, T. (Eds.). (2009). *Intergroup relations: The role of motivation and emotion*. East Sussex: Psychology Press.

Paulhus, D. L. (1984). Two-component models of socially desirable responding. *Journal of Personality and Social Psychology*, *46*, 598-609.

Paulhus, D. L., & John, O. P. (1998). Egoistic and moralistic bias in self-perceptions: The interplay of self-deceptive styles with basic traits and motives. *Journal of Personality*, *66*, 1025-1060.

Paulhus, D. L., & Vazire, S. (2007). The self-report method. In R. W. Robins, R. C. Fraley, & R. Krueger (Eds.), *Handbook of research methods in personality psychology* (pp. 224-239). New York: Guilford Press.

Payne, B. K., & Gawronski, B. (2010). A history of implicit social cognition: Where is it coming from? Where is it now? Where is it going? In B. Gawronski & B. K. Payne (Eds.), *Handbook of implicit social cognition: Measurement, theory, and applications* (pp. 1-15). New York: Guilford Press.

Peetz, J., Gunn, G. R., & Wilson, A. E. (2010). Crimes of the past: Defensive temporal distancing in the face of past in-group wrongdoing. *Personality and Social Psychology Bulletin*, *36*, 598-611.

Penáz, J. (1962). Frequency response of the cardiac chronotropic action of the vagus in the rabbit. Archives of Physiology and Biochemistry, *70*, 636-650.

Porges, S. W. (1995). Orienting in a defensive world: Mammalian modifications of our evolutionary heritage: A Polyvagal Theory. *Psychophysiology*, *32*, 301-318.

Porges, S. W. (2007). The polyvagal perspective. *Biological Psychology*, *74*, 116-143.

Porges, S. W. (2009). Reciprocal influences between body and brain in the perception and expression of affect: A polyvagal perspective. In D. Fosha, D. Siegel, & M. Solomon (Eds.), *The healing power of emotion: Affective neuroscience, development, and clinical Practice* (pp. 27-54). New York: Norton.

Postmes, T., & Branscombe, N. R. (Eds.). (2010). *Rediscovering social identity: Core sources*. New York: Psychology Press.

Powell, A. A., Branscombe, N. R., & Schmitt, M. T. (2005). Inequality as ingroup privilege or outgroup disadvantage: The impact of group focus on collective guilt and interracial attitudes. *Personality and Social Psychology Bulletin*, *31*, 508-521.

Preacher, K. J., Curran, P. J., & Bauer, D. J. (2006). Computational tools for probing interactions in multiple linear regression, multilevel modeling, and latent curve analysis. *Journal of Educational and Behavioral Statistics*, *31*, 437-448.

Prinz, J. J. (2004). *Gut reactions: A perceptual theory of emotion*. New York: Oxford University Press.

Radzik, L. (2001). Collective responsibility and duties to respond. *Social Theory and Practice, 27*, 455-471.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods*. Newbury Park, CA: Sage Publications.

Riek, B. M., Mania, E. W., & Gaertner, S. L. (2006). Intergroup threat and outgroup attitudes: A meta-analytic review. *Personality and Social Psychology Review*, *5*, 336-353.

Rifkin, J. (2009). *The empathic civilization: The race to global consciousness in a world in crisis*. New York: Jeremy P. Tarcher/Penguin.

Riketta, M. (2005). Gender and socially desirable responding as moderators of the correlation between implicit and explicit self-esteem. *Current Research in Social Psychology*, *11*, 14-28.

Ross, L., Lepper, M., & Ward, A. (2010). History of social psychology: Insights, challenges, and contributions to theory and applications. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (5th edition, Vol. 1, pp. 3-50). Hoboken, NJ: Wiley.

Ross, M., & Miller, D. T. (Eds.). (2001). *The justice motive in everyday life*. New York: Cambridge University Press.

Rothenberg, P. S. (2002). *White privilege: Essential readings on the other side of racism.* New York: Worth Publishers.

Royal Commission on Aboriginals Peoples. (1996). Report of the Royal Commission on Aboriginal Peoples. Retrieved September 19, 2010, from http://www.collectionscanada.gc.ca/webarchives/20071115053257/http://www.ainc-inac.gc.ca/ch/rcap/sg/sgmm_e.html.

Ruys, K. I., & Stapel, D. A. (2008). The secret life of emotions. *Psychological Science*, *19*, 385-391.

Ruys, K. I., & Stapel, D. A. (2009). The unconscious unfolding of emotions. *European Review of Social Psychology*, *20*, 232-271.

Rydell, R. J., Mackie, D. M., Maitner, A. T., Claypool, H. M., Ryan, M. J., & Smith, E. R. (2008). Arousal, processing, and risk-taking: Consequences of intergroup anger. *Personality and Social Psychology Bulletin*, *34*, 1141-1152.

Sakellaropoulo, M., & Baldwin, M. B. (2007). The hidden sides of self-esteem: Two dimensions of implicit self-esteem and their relation to narcissistic reactions. *Journal of Experimental Social Psychology, 43,* 995-1001.

Satzewich, V. (Ed.). (1998). *Racism and social inequality in Canada.* Toronto, Ontario, Canada: Thompson Educational Publishing, Inc.

Scheepers, D. (2008). Turning social identity threat into challenge: Status stability and cardiovascular reactivity during inter-group competition. *Journal of Experimental Social Psychology*, *45*, 228-233.

Scheepers, D., & Ellemers, N. (2005). When the pressure is up: The assessment of threats to social identity in low and high status groups. *Journal of Experimental Social Psychology*, *41*, 192-200.

Scheepers, D., Ellemers, N., & Sintemaartensdik, N. (2009). Suffering from the possibility of status loss: Physiological responses to social identity threat in high status groups. *European Journal of Social Psychology*, *39*, 1075-1092.

Schmitt, M. T., & Branscombe, N. R., & Brehm, J. W. (2004). Gender inequality and the intensity of men's collective guilt. In N. R. Branscombe & B. Doosje (Eds.), *Collective guilt: International perspectives* (pp. 75-92). New York: Cambridge University Press.

Schmitt, M. T., Miller, D. A., Branscombe, N. R., & Brehm, J. W. (2008). The difficulty of making reparations affects the intensity of collective guilt. *Group Processes and Intergroup Relations*, *11*, 267-279.

Schnabel, K., & Asendorpf, J. B. (2010). The self-concept: New insights from implicit measurement procedures. In B. Gawronski & B. K. Payne (Eds.), *Handbook of implicit social cognition: Measurement, theory, and applications* (pp. 408-425). New York: Guilford Press.

Segerstrom, S. C., & Solberg Nes, L. (2007). Heart rate variability indexes self-regulatory strength, effort, and fatigue. *Psychological Science, 18*, 275-281.

Sekaquaptewa, D., Vargas, P., & von Hippel, W. (2010). A practical guide to paper-and-pencil implicit measures of attitudes. In B. Gawronski & B. K. Payne (Eds.), *Handbook of implicit social cognition: Measurement, theory, and applications* (pp. 140-155). New York: Guilford Press.

Sinclair, L., & Kunda, Z. (1999). Reactions to a Black professional: Motivated inhibition and activation of conflicting stereotypes. *Journal of Personality & Social Psychology*, *77*, 885-904.

Singer, J. D., & Willett, J. B. (2003). *Applied longitudinal data analysis: Modeling change and event occurrence*. New York: Oxford University Press.

Smith, E. R. (1993). Social identity and social emotions: Toward new conceptualizations of prejudice. In D. M. Mackie & D. L. Hamilton (Eds.), *Affect, cognition, and stereotyping: Interactive processes in group perception* (pp. 297-315). San Diego, CA: Academic Press.

Smith, E. R., & Mackie, D. M. (2006). It's about time: Intergroup emotions as time-dependent phenomena. In R. Brown & D. Capozza (Eds.), *Social identities: Motivational, emotional, cultural Influences* (pp. 173-187). New York: Psychology Press.

Smith, E. R., & Mackie, D. M. (2008). Intergroup emotions. In M. Lewis, J. M. Haviland-Jones, and L. F. Barrett (Eds.), *Handbook of emotions* (pp. 428-439). New York: Guilford Press.

Smith, E. R., Seger, C. R., & Mackie, D. M. (2007). Can emotions be truly group level? Evidence for four conceptual criteria. *Journal of Personality and Social Psychology*, *93*, 431-446.

Son Hing, L. S., Chung-Yan, G. A., Hamilton, L. K., & Zanna, M. P. (2008). A two-dimensional model that employs explicit and implicit attitudes to characterize prejudice. *Journal of Personality and Social Psychology*, *94*, 971–987.

Son Hing, L. S., Li, W., & Zanna, M. P. (2002). Inducing hypocrisy to reduce prejudicial responses among aversive racists. *Journal of Experimental Social Psychology, 381*, 71–78.

Spencer, S. J., Fein, S., Wolfe, C. T., Fong, C., & Dunn, M. A. (1998). Automatic activation of stereotypes: The role of self-image threat. *Personality and Social Psychology Bulletin, 24,* 1139–1152.

Statistics Canada (2008). *Life expectancy in the Inuit-inhabited areas of Canada, 1989 to 2003.* Retrieved September 19, 2010, from http://www.statcan.gc.ca/pub/82-003-x/2008001/article/10463-eng.htm.

Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology*, *69*, 797-811.

Steele, S. (1989). The recoloring of campus life: Student racism, academic pluralism, and the end of a dream. *Harper's Magazine, 278,* 47-55.

Steele, S. (1991). *The content of our character: A new vision of race in America.* New York: Harper Perennial.

Steele, S. (1999). *A dream deferred: The second betrayal of Black freedom in America.* New York: Harper Perennial.

Steele, S. (2002). The age of white guilt and the disappearance of the black individual. *Harper's Magazine, 305*, 33-42.

Steele, S. (2006). *White guilt: How Blacks and Whites together destroyed the promise of the Civil Rights Era.* New York: Harper Collins.

Stone, A. A., Turkan, J. S., Bachran, C. A., Jobe, J. B., Kurtzman, H. S., & Cain, V.S. (Eds.). (2000). *The science of self-report: Implications for research and practice.* Mahwah, NJ: Lawrence Erlbaum Associates.

Swim, J. K., & Miller, D. L. (1999). White guilt: Its antecedents and consequences for attitudes toward affirmative action. *Personality and Social Psychology Bulletin, 25*, 500-514.

Sznaider, N. (2001). *The compassionate temperament: Care and cruelty in modern society*. Lanham: Rowman & Littlefield.

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33-47). Monterey, CA: Brooks/Cole.

Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behavior. In S. Worchel & W. G. Austin (Eds.), *Psychology of intergroup relations* (pp. 7-24). Chicago, IL: Nelson-Hall.

Tangney, J. P., & Dearing, R. (2002). *Shame and guilt.* New York: Guilford Press.

Tangney, J. P., & Salovey, P. (1999). Problematic social emotions: Shame, guilt, jealousy and envy. In R M. Kowalski & M. R. Leary (Eds.), *The social psychology of emotional and behavioral problems* (pp. 167-195). Washington, DC: APA.

Tattersall, A. J., & Hockey, G. R. J. (1995). Level of operator control and changes in heart rate variability during simulated flight maintenance. *Human Factors*, *37*, 682–698.

Tatum, B. D. (1997). *Why are all the black kids sitting together in the cafeteria?* New York: Basic Books.

Tatum. B. D. (2000). Defining racism: "Can we talk?". In M. Adams, W. Blumenfell, R. Castaneda, H. Hackman, M. Peters & X. Zuniga (Eds.), *Readings for diversity and social justice: An anthology on racism, sexism, anti-semitism, heterosexism, classism and ableism* (pp. 79-82). New York: Routledge.

Tavris, C., & Aronson, E. (2007). Mistakes were made (but not by me): Why we justify foolish beliefs, bad decisions, and hurtful acts. Orlando, FL: Harcourt.

Taylor, J. (1953). A personality scale of manifest anxiety. *Journal of Abnormal*

and Social Psychology, 48, 285-290.

Taylor, D. M. (2002). *The quest for identity: From minority groups to generation Xers*. Westport, CT: Praeger.

Taylor, D. M., Caouette, J., Usborne, E., & Wright, S. C. (2008). Aboriginal languages in Québec: Fighting linguicide with bilingual education. *Diversité Urbaine*, *1(hs),* 69-89.

Taylor, D. M., & Moghaddam, F. M. (1994). *Theories of intergroup relations: International social psychological perspectives.* Westport, CT: Praeger.

Taylor, D. M., & Wright, S. C. (2002). Do Aboriginal students benefit from education in their heritage language? Results from a ten-year program of research in Nunavik. *The Canadian Journal of Native Studies, 22,* 141-164.

Teige-Mocigemba, S., Klauer, K. C., & Sherman, J. W. (2010). A practical guide to implicit association tests and related tasks. In Gawronski & B. K. Payne (Eds.), *Handbook of implicit social cognition: Measurement, theory, and applications* (pp. 117-139). New York: Guilford Press.

Thayer, J. F., & Siegle, G. J. (2002). Neurovisceral integration in cardiac and emotional regulation. *IEEE Engineering in Medicine and Biology*, *21*, 24-29.

Tiedens, L. Z., & Leach, C. W. (Eds.). (2004). *The social life of emotions*. Cambridge, UK: Cambridge University Press.

Tomaka, J., Blascovich, J., Kelsey, R. M., & Leitten, C. L. (1993). Subjective, physiological, and behavioral effects of threat and challenge appraisal. *Journal of Personality and Social Psychology, 65,* 248–260.

Tracy, J. L., & Robins, R. W. (2007). The self in self-conscious emotions: A cognitive appraisal approach. In J. L. Tracy, R. W. Robins, & J. P. Tangney (Eds.), *The self-conscious emotions: Theory and research* (pp. 263-282). New York: Guilford Press.

Tracy, J. L., Robins, R. W., & Tangney, J. P. (Eds.). (2007). *The self-conscious emotions: Theory and research.* New York: Guilford Press.

Tulving, E., Schacter, D. L., & Stark, H. A. (1982). Priming effects in word-fragment completion are independent of recognition memory. *Journal of Experimental Psychology*, *8*, 336-342.

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. (1987). *Rediscovering the social group: A self-categorization theory*. Oxford, England: Basil Blackwell.

Tyler, T. R. (2001). Social justice. In R. Brown & S. L. Gaertner (Eds.), *Blackwell handbook of social psychology: Intergroup processes* (pp. 344-364). Malden, MA: Blackwell Publishers Inc.

Usborne, E., Caouette. J, Qumaaluk, Q., & Taylor, D. M. (2009). Bilingual education in an Aboriginal context: Examining the transfer of language skills from Inuktitut to English or French. *International Journal of Bilingual Education and Bilingualism, 12,* 667-684.

Uziel, L. (2010). Rethinking social desirability scales from impression management to interpersonally oriented self-control. *Perspectives on Psychological Science*, *5*, 243-262.

Vanderlei, L. C. M, Silva, R. A., Pastre, C. M., Azevedo, F. M., & Godoy, M. F. (2008). Comparison of the Polar S810i monitor and the ECG for the analysis of heart rate variability in the time and frequency domains. *Brazilian Journal of Medical and Biological Research*, *41*, 854-859.

Van Kleef, G. A., Oveis, C., Van der Löwe, I., LuoKogan, A., Goetz, J., & Keltner, D. (2008). Power, distress, and compassion: Turning a blind eye to the suffering of others. *Psychological Science, 19*, 1315-1322.

Vargas, P. T., Sekaquaptewa, D., & von Hippel, W. (2007). Armed only with paper and pencil: "Low-tech" implicit measures of attitudes, prejudice and self-esteem. In B. Wittenbrink & N. Schwarz (Eds.), *Implicit measures of attitudes* (pp. 103-124). New York: Guildford Press.

Warrington, E. K., & Weiskrantz, L. (1968). New method of testing long-term retention with special reference to amnesic patients. *Nature*, *217*, 972-974.

Watkins, M. (1993). Aboriginal peoples. In M. Watkins (Ed.), *Handbooks to the modern world: Canada* (pp. 583-595). New York: Facts on File.

Watson, D., & Clark, L. A. (1994). Measurement and mismeasurement of mood: Recurrent and emergent Issues. *Journal of Personality Assessment, 68,* 267-296.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scale. *Journal of Personality and Social Psychology, 54,* 1063-1070.

Westendorp, B. N. (1950). Collective guilt: A survey. *Synthese, 8*, 213-221.

Wiens, S., & Öhman, A. (2007). Probing unconscious emotional processes: On becoming a successful masketeer. In J. A. Coan & J. J. B. Allen (Eds.), *The handbook of emotion elicitation and assessment* (pp. 65-90). New York: Oxford University Press.

Williams, M. G., Mathews, A., & MacLeod, C. (1996). The emotional Stroop task and psychopathology. *Psychological Bulletin, 120,* 3-24.

Wilson, T. D. (2002). *Strangers to ourselves: Discovering the adaptive unconscious.* Cambridge, MA: Harvard University Press.

Winkielman, P., & Berridge, K. C. (2004). Unconscious emotion. *Current Directions in Psychological Science*, *13*, 120-123.

Wittenbrink, B., & Schwarz, N. (Eds.). (2007). *Implicit measures of attitudes.* New York: Guildford Press.

Wohl, M. J. A., Branscombe, N. R., & Klar, Y. (2006). Collective guilt: Emotional reactions when one's group has done wrong or been wronged. *European Review of Social Psychology, 17,* 1-37.

Woodzicka, J., Good, J., &, Lane, C. (2006, February). *Increasing support of diversity: The role of White privilege awareness and self-efficacy.* Poster presented at the annual meeting of the Society for Personality and Social Psychology, Palm Springs, CA.

Wright, R. A., & Kirby, L. D. (2003). Cardiovascular correlates of challenge and threat appraisals: A critical examination of the biopsychosocial analysis. *Personality and Social Psychology Review*, *7*, 216-233.

Wright, S. C., & Taylor, D. M. (1995). Identity and the language of the classroom: Investigating the impact of heritage versus second language

instruction on personal and collective self-esteem. *Journal of Educational Psychology, 87*, 241-252.

Zeigler-Hill, V. (2006). Discrepancies between implicit and explicit self-esteem: Implications for narcissism and self-esteem instability. *Journal of Personality, 7*, 1467-6494.

Zeigler-Hill, V., & Jordan, C. H. (2010). Two faces of self-esteem: Implicit and explicit forms of self-esteem. In B. Gawronski & B. K. Payne (Eds.), *Handbook of implicit social cognition: Measurement, theory, and applications* (pp. 392-407). New York: Guilford Press.

imposed on Aboriginal peoples that disadvantaged them more than they already were in competing with settlers.

To summarise so far, there is overwhelming evidence of conditions that suggest- some would say prove- that there was systematic discrimination and racism at the beginning of colonisation. (Much of this has been powerfully portrayed in a book by Toronto *Globe and Mail* reporter Geoffrey York. The book is entitled, properly and pointedly, *The Dispossessed*, and is hauntingly subtitled, *Life and Death in Native Canada*.) Furthermore, such initial discrimination by Canadians soon led to a system of institutional and cultural practices that disadvantage Aboriginal people still even in the present time. Such continuous discrimination by mainstream Canadian society until the present time has had an even worse effect of reducing the cohesion of Aboriginal peoples. Ultimately, it is their sense of themselves as vibrant individuals and collectivities that has suffered the most damage as a result of this.

Aboriginal peoples' present social conditions must be discussed as a set of interconnected phenomena. But apart from these factors, a major fact remains, that Canadians are advantaged compared to Aboriginal peoples. Even though Canadians differ in how advantaged they appear, the reality is that each and every Canadian is privileged relative to Aboriginal peoples. Compared to other Canadians, Aboriginal people on average live poorly, often abjectly so. Of course, some do prosper. But in view of the hardship and barriers they face, those few who do well economically deserve much credit for their achievement. For the harsh reality is that Aboriginal peoples in Canada rank in material terms below any other ethnic group, including the most recent immigrants.

Today, the life expectancy of an Aboriginal person is 10 years less than that of the average Canadian; he or she is 50% more likely to die before age 65. The infant mortality rate is twice that of non-Native Canadians; the death rate for Aboriginal children up to age 14 is four times that of non-Natives. Generally, Native death, illness and accident rates were 3 times the national average in 1998, reflecting poor health conditions such as inadequate nutrition, housing, sewage disposal, water supplies and access to health services. The leading causes of death among Aboriginal peoples that year were injury and poisoning. The suicide rate was nearly 3 times that of the general population- 5 times among young adults. Inuit women in Canada's North have an incidence of lung cancer six times higher than the general population in Canada. The rate is the second highest in the world. Cigarette packages in Canada carry strong health warnings in English and French, but not in Native languages.

The average income of an Aboriginal person is about one-half that of a non-Native Canadian's. Native Canadians live disproportionately in poverty and unemployment, on reserves and in the skid row of cities. Employment rates for Natives are the lowest of any ethnic group. One-third of all houses on reserves have no running water, and outdoor latrines are common. Half of such houses have no central heating, and there are frequent fires and deaths from unsafe stoves. Utility services in Native communities, with the exception of electricity, are far below the national average. Indeed, adequate housing in Native communities

Appendix B: Word Fragment Completion Task

Below is a list of word fragments (words with missing letters). Try to construct a meaningful word by filling in the missing spaces with letters. Work quickly! Write the first answer that comes to mind. Spend NO MORE THAN 15 SECONDS ON EACH ITEM. IT'S OK IF YOU DON'T FILL THEM ALL OUT.

1. S __ __
2. B L A __ __
3. A P __ __ __
4. G R A __ __
5. F __ U __ T
6. S E __ __
7. S T __ __ Y
8. S H A __ __
9. C H O __ __ E
10. R E __ __ __ T
11. R __ __ __ B __ W
12. M __ __ E
13. G U __ __ T
14. P R O D __ __ __
15. H __ __ __ E
16. S __ __ R Y

Solution:

Neutral: 1 – 3 – 4 – 6 – 7 – 9 – 11 – 12 – 14 – 15

Target: 2 (blame) – 5 (fault) – 8 (shame) – 10 (regret) – 13 (guilt) – 16 (sorry)

Appendix C: Self-Report Scale of Collective Guilt

Please, read the following statements and indicate to what extent you agree or disagree with each of them by circling your answer using the scale below.
PLEASE READ THE STATEMENTS CAREFULLY

0 1 2 3 4 5 6 7 8 9 10 **Definitely no Neutral Definitely yes**	
I feel guilty about the negative way in which Canadians as a group have treated Aboriginal peoples.	0 1 2 3 4 5 6 7 8 9 10
I feel guilty about how Canadians as a group have treated Aboriginal peoples unfairly.	0 1 2 3 4 5 6 7 8 9 10
It is easy for me to feel guilty about the negative effects experienced by Aboriginal peoples, which are a result of unfair treatment by Canadians as a group.	0 1 2 3 4 5 6 7 8 9 10
I feel guilty about the harmful acts that Canadians as a group have perpetrated towards Aboriginal peoples in the past.	0 1 2 3 4 5 6 7 8 9 10
I feel guilty about the unfair way in which Canadians as a group treat Aboriginal peoples in the present time.	0 1 2 3 4 5 6 7 8 9 10
Although I feel my behavior is typically nondiscriminatory towards Aboriginal peoples, I still feel guilty because of my association with Canadians as a group.	0 1 2 3 4 5 6 7 8 9 10
When I learn about how Canadians as a group have treated Aboriginal peoples unfairly, I feel guilty because of my association with Canadians as a group.	0 1 2 3 4 5 6 7 8 9 10
I feel guilty about the benefits and privileges that I receive as a Canadian, compared to Aboriginal peoples.	0 1 2 3 4 5 6 7 8 9 10
I feel guilty about past social inequality between Aboriginal peoples and Canadians as a group.	0 1 2 3 4 5 6 7 8 9 10
I feel guilty about present social inequality between Aboriginal peoples and Canadians as a group.	0 1 2 3 4 5 6 7 8 9 10
I feel guilty about the benefits and privileges that I receive due to my association with Canadians as a group, compared to Aboriginal peoples.	0 1 2 3 4 5 6 7 8 9 10

Appendix D: Guilt-Inducing Texts

Text Condition: High-Guilt

The research presented in this book addresses the past and current implications of colonization for the Canadian nation. Different authors, whose expertise in Canadian issues is well-established, will present their perspectives on the significance of the internal colonization of Aboriginal peoples by Euro-Canadians. The authors all share one basic view: past colonization does not define what Canadians are as a Nation today. What Canadians need to acknowledge is that, although Canadian identity today is based on values of equality, colonization was a morally disappointing act by our Nation. This book clearly portrays the devastating impact of the dispossession, economic marginalization, and attempted assimilation of Aboriginal peoples.

As the burgeoning Euro-Canadian population dispersed throughout Canada, Aboriginal peoples were deprived of their land base and the wildlife upon which many of them depended for their livelihood. The difficulty that Aboriginal peoples faced, even if they offered no resistance to Canadian colonization, was that, with a few exceptions, they were offered only small parcels of land that almost guaranteed they would be poor cousins to those whose way of life they were supposed to be imitating. Reserves for the Natives were lands that were supposed to allow them to become self-supporting farmers. However, this plan never materialized as the government, responsible both for helping Canadians to get settled and for protecting Native rights, generally favored the Euro-Canadians when the interests of the groups clashed.

Clearly, actions by Canadians during colonization still have a systemic impact today. Today, Aboriginal peoples are, economically and socially, the most deprived of Canada's peoples. The Government of Canada acknowledges the role it played in unsuccessful projects such as the development and administration of the Residential School system. This system separated many children from their families and communities and prevented them from speaking their own languages and from learning about their heritage and cultures. In the worst cases, it left legacies of personal pain and distress that continue to reverberate in Aboriginal communities to this day. Tragically, some children were the victims of physical and sexual abuse. Canada's own Human Rights Commission cites Canada's treatment of its Aboriginal peoples as a national tragedy.

Text Condition: Low-Guilt

The research presented in this book addresses the past and current implications of colonization for the Canadian nation. Different authors, whose expertise in Canadian issues is well-established, will present their perspectives on the significance of the internal colonization of Aboriginal peoples by Euro-Canadians. The authors all share one basic view: although colonization has had a devastating impact on Aboriginal peoples, Canada today is making great progress in making amends and repairing the damages wrought by centuries of colonization, exemplified by a growing cooperation between Aboriginal and non-Aboriginal Canadians.

For thousands of years before Canada was founded, Aboriginal peoples enjoyed their own forms of government. Diverse, vibrant Aboriginal nations had ways of life rooted in fundamental values concerning their relationships to the Creator, the environment, and each other. These were personified through their responsibilities as custodians of the lands, waters and resources of their homelands. As the burgeoning Euro-Canadian population dispersed throughout

Canada, the Aboriginal nations started to share their native peoples' knowledge of their environment that would prove crucial to the survival of Canadians. The Aboriginal peoples' willingness to trade with Canadians reflected the already established lines of trade among themselves. The Canadian government, responsible both for helping immigrants to get settled and for protecting Native rights, tried establishing reserves for the Natives, land that was to allow them to become self-supporting farmers.

The Government of Canada acknowledges the role it played in projects such as the development and administration of the Residential School system. The Government is continuously trying to protect Native's rights as well as their unique culture while trying to create an environment of equality. We can see the difficulty in achieving these goals with matters such as Land rights which has led many Aboriginal peoples to seek compensation in the courts. This can be a tricky process as Land rights have had to be proven on the basis of use and occupancy, and their ancestors must not have ceded them, knowingly or unknowingly. It is ongoing problems such as these which are currently being addressed in Canada's upcoming Aboriginal Action Plan.

Appendix E: Target Words Used in the Guilt SC-IAT

Guilty	Proud	Self
apologetic	accomplished	I
ashamed	capable	me
dejected	confident	my group
disappointed	content	myself
embarrassed	delighted	
faulty	glad	
low	gratified	
regretful	great	
remorseful	high	
shameful	joyful	
sheepish	pleased	
sorrowful	respectful	
sorry	satisfied	
unworthy	worthy	

Appendix F: Retrospective Thoughts and Feelings

We would like you to recall the thoughts and feelings that went through your mind as you were reading the excerpt about Aboriginal peoples earlier in this survey.

Below, you will find a list of thoughts and feelings that may have gone through your mind AS YOU WERE READING THIS TEXT.

ANSWER AS HONESTLY AS YOU CAN. REMEMBER TO ANSWER BASED ON THE THOUGHTS AND FEELINGS THAT YOU EXPERIENCED WHILE YOU WERE READING THE EXCERPT.

	Disagree Totally					**Neutral**					**Agree Totally**
I was thinking "Aboriginal peoples are somewhat to be blamed for their situation."	0	1	2	3	4	5	6	7	8	9	10
I was feeling "pangs of guilt" (feeling-sensation of guilt)	0	1	2	3	4	5	6	7	8	9	10
I was thinking "Why should Canadians be blamed for that?"	0	1	2	3	4	5	6	7	8	9	10
I was thinking "it is so horrible what Aboriginal peoples must have suffered."	0	1	2	3	4	5	6	7	8	9	10
I was feeling "very small, like hiding" (feeling-sensation of shame)	0	1	2	3	4	5	6	7	8	9	10
I was thinking "I should not be held responsible or blamed for what other Canadians have done!"	0	1	2	3	4	5	6	7	8	9	10
I was thinking "this text is unfairly blaming Canadians."	0	1	2	3	4	5	6	7	8	9	10
I was thinking "in many ways, Canadians should be held responsible for this situations"	0	1	2	3	4	5	6	7	8	9	10