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## Mediators of change in the stigmatization of depression among Caucasian and Asian populations

Francois B. Botha  
*The University of Western Ontario*

Supervisor  
Dr. David Dozois  
*The University of Western Ontario*

Graduate Program in Psychology  
A thesis submitted in partial fulfillment of the requirements for the degree in Doctor of  
Philosophy  
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MEDIATORS OF CHANGE IN THE STIGMATIZATION OF DEPRESSION AMONG  
CAUCASIAN AND ASIAN POPULATIONS

(Thesis format: Integrated Article)

by

Francois B. Botha

Graduate Program in Psychology

A thesis submitted in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy

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

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## Abstract

Public stigma negatively impacts public health by discouraging people with depression from seeking help. In North America, Asians reliably report higher levels of stigma and lower levels of help-seeking than do Caucasians. The reasons for this discrepancy and possible methods of reducing this have, however, rarely been explored. In Study 1, undergraduate students ( $n = 573$ ) completed several questionnaires related to public stigma, values and ideological beliefs, attitudes and beliefs regarding people with depression and perceived norms. At least one week afterward, participants completed the second part of Study 1, where they were presented with contrived articles highlighting a biological cause for depression, a contextual causal for depression, or hope for recovery from depression, or were assigned to a control condition. Asian participants reported higher levels of stigma and increased desired social distance from people with depression compared to Caucasian participants. This difference was mediated by perceived norms, social dominance orientation, conservatism, and the belief that people with depression brings shame to their families. The articles presented were largely ineffective in reducing stigma or desired social distance. In Study 2, undergraduate students ( $n = 287$ ), were presented with one of four anti-stigma videos with two actresses portraying a student with depression and a professor, respectively. The videos used the concept of social proof to effect change and presented either positive or negative descriptive norms.

All videos were effective in reducing preferred social distance towards people with depression relative to the control condition for Asians, but not Caucasians. The effectiveness of the positive descriptive norm video was mediated through perceived norms, empathy, and self-efficacy. The effectiveness of the negative norm video was mediated through perceived norms and empathy only. Differences in preferred social distance between Asian and Caucasian participants were no longer significant. The findings can help guide interventions encouraging social engagement with people with depression among Asian student populations. Manipulating social norms and increasing self-efficacy may be especially effective, while changing attitudes may be less important in an Asian student population.

*Keywords:* Asians, Attitudes, Attribution, Conservatism, Collectivism, Ethnic Differences, Major Depression, Recovery, Self-efficacy, Social Influence, Social Norms, Stigma

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## Dedication

This thesis is dedicated to Beth Coronado, who supported me in my new career despite the sacrifices involved for her. Her love has kept me focused on our goal of returning to Vancouver to continue our journey. I look forward to us being back together for a long time.

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Major depressive disorder has a significant impact on public health due to its prevalence. Approximately 5% of Canadians are expected to experience a depressive disorder in a given year (Esposito et al., 2007). Unfortunately, individuals with depression often do not seek help from mental health services. In particular, roughly 50% of young adults with depression fail to utilize mental health services in Canada (Cheung & Dewa, 2007). Although a number of factors are associated with reduced mental health care utilization (see Collins, Westra, Dozois, Burns, 2004, for review), public stigma and self-stigma have been identified as important variables (Barney, Griffiths, Jorm, & Christensen, 2006; Corrigan, 2005; Link & Phelan, 2001).

Public stigma has been defined as the negative beliefs and attitudes that others hold towards people with depression (Corrigan & Wassel, 2008). Public stigma can cause people with depression to avoid help-seeking in order for them to minimize prejudice and discrimination (Barney et al., 2006; Link & Phelan, 2001). Self-stigma, on the other hand, involves the internalization of publicly held negative beliefs and attitudes by an individual with depression. Self-stigma can cause people with depression to lose hope for recovery, avoid seeking help and terminate treatment early (Corrigan & Wassel, 2008; Fung et al., 2007).<sup>1</sup>

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<sup>1</sup> Given that non-clinical student samples were utilized, this thesis investigated the reduction of public stigma only. The number of people with depression in these samples would most likely not be enough to draw any firm conclusions regarding the ability of the proposed interventions to reduce self-stigma.

This thesis consists of two studies which explored the nature of differences in stigmatization of depression between Asians and Caucasians. Study 1 explored the mediation of these differences as well as how traditional anti-stigma interventions may operate (mechanisms of change) to effect change for Asians and Caucasians. Study 2 followed up the findings of Study 1 by creating an intervention that specifically targeted the significant mediators and mechanisms of change found in Study 1. External validity was also enhanced in Study 2 by using a contact-based intervention similar to what is currently used in anti-stigma programs to effect change. Study 2 also evaluated the mechanisms of change for the intervention based upon a well-known theory of change in social psychology, the reasoned action approach. The influence of ethnicity was considered throughout, given that different interventions may be effective among different populations. A general overview of the influence of ethnicity is provided first, followed by a discussion of attitudes and values that have been found to be relevant to stigma in the literature, and a brief review of anti-stigma intervention programs.

### **Stigma among Asian Populations**

Canada is a multicultural country with the majority of its population growth between 2001 and 2006 resulting from immigration (Statistics Canada, 2012). Immigrants comprised 19.8% of the Canadian population in 2006 and 43 countries of origin are each represented by at least 25,000 immigrants in Canada. Canada has received an average of 250,000 immigrants every year since 2006 and the majority of these immigrants are of Asian origin. People of Asian descent comprised 11.2% of the Canadian population in 2006 and approximately 72% of Asians in Canada were classified as immigrants in 2006 (i.e., they were not born in Canada). An increasing number of

foreign students at college-level or above have been entering the country as well (an increase from 40,000 in 2001 to 60,000 in 2010). The majority of these students have come from China, South Korea, and India. Typically, only about 3,000 students become permanent residents of Canada each year. Those students who return to their countries of origin represent a significant outflow of intellectual capital from Canada. In order to retain foreign students, particularly graduate students at the Ph.D. level, the Canadian government has, since 2011, made it easier for these students to apply for permanent residence (Citizenship and Immigration Canada, 2011).

Providing services to such a diverse population is a challenging proposition. Mental health services is one area in which governments, mental health agencies and mental health professionals have struggled to adapt to changing demographics. The importance of the Asian population in North America has also encouraged research on the mental well-being of this population. Asians in Canada and the United States have generally been found to have at least as many mental health concerns as do Caucasians in these countries (Uba, 1994). A wide range of adjustment problems have also been reported for international students, putting this population at increased risk for mental disorders. Studies that have investigated the mental health of international students (including studies specifically focused on Asian international students) have generally found that this population shows higher rates of depression than does the general student population (see Leong & Chou, 2002, for a review). Asians have, however, also been found to be less likely than Caucasians to utilize mental health services (Mau & Jepsen, 1990; Sue & Sue, 2008; Uba, 1994; U.S. Public Health Service, 2001). A number of

reasons for this discrepancy have been proposed, including stigma related to mental disorders.

### **Stigma-Related Attitudes and Beliefs**

Increased stigma towards people with mental disorders is associated with a number of attitudes and beliefs, including personal responsibility and weakness, dangerousness, social inappropriateness, and low expectations of recovery (Corrigan, Roe, & Tsang, 2011; Feldman & Crandall, 2007). Anti-stigma programs have sought to reduce the endorsement of these attitudes and beliefs in order to reduce discriminatory behaviors towards people with mental disorders. Studies 1 and 2 of this dissertation investigated the effectiveness of different anti-stigma programs in reducing stigma towards people with depression among two ethnic populations (Caucasians and Asians), and evaluated the mediation of this process through reduced endorsement of negative attitudes and beliefs (among other variables). The effects of various ideologies and values held by Caucasians and Asians on stigma were also evaluated. The assessment of stigma itself was conducted using a social distance measure. Social distance measures evaluate behavioral intent toward and acceptance of stigmatized populations in social situations (e.g., "How likely is it that you would do school work with a person with depression?").

Researchers have explored various attitudes and beliefs that are associated with the stigmatization of mental disorders. Feldman and Crandall (2007), for example, explored the ability of seventeen different factors (including attitudes and beliefs) to explain differences in stigmatization (measured by social distance) among forty different mental disorders. These researchers found that personal responsibility for causing the disorder, perceived dangerousness of the people with the disorder, and the rarity of



disorders explained 61% of the variance in social distance. In a similar study, that explored factors related to the stigmatization of 66 biological illnesses, Crandall and Moriarty (1995) found that personal responsibility for causing the illness and illness severity explained most of the variance in social distance.

Norman, Windell, and Manchanda (2010) explored which factors mediated differences between the stigmatization (measured by social distance) of depression and schizophrenia among university students and community members. The perceived dangerousness of the individual with a mental disorder and concerns regarding the individual acting in a socially inappropriate manner mediated the difference in stigmatization between depression and schizophrenia among university students. Beliefs regarding the ability of the individual to recover from his or her disorder and concerns regarding the individual acting in a socially inappropriate manner mediated the difference in stigmatization between depression and schizophrenia among community members. Perceived dangerousness also partially mediated the differences in preferred social distance toward people with schizophrenia compared to individuals with depression among a community sample in New Zealand (Marie & Miles, 2008). Perceived dangerousness was not correlated with social distance towards people with depression, suggesting that the influence of this factor may be less relevant (although not entirely irrelevant) for the stigma of depression (see Dietrich, Matschinger, & Angermeyer, 2006). Other studies investigating factors associated with social distance toward people with mental disorders have reported that similar factors are statistically significant (Lauber et al., 2004; Wolff et al., 1996).

**Perceived norms and social identity theory.** Beliefs regarding whether others will also desire social distance from a person with a mental disorder and beliefs regarding whether others will approve of one's behavior towards a person with a mental disorder can also influence social distance. Norman et al. (2008b) found that these perceived norms, together with concerns regarding social inappropriateness, predicted social distance towards people with depression. Dangerousness was not a significant predictor in the study. Hsu et al. (2008) also found that perceived norms differentiated the stigmatization of depression between Caucasians and Asians. These latter findings suggest that considering ethnic differences is important in investigations of the stigmatization of depression.

Social identity theory holds that people naturally classify themselves in social groups which are identified with particular attributes and norms that capture in-group similarities and out-group differences. Belonging to a group can hold significant survival advantages and acting in line with perceived group norms allows individual members of the group to signal to the rest of the group that they can be trusted and that they share the attributes and characteristics that define the group (Campbell, 1982; Hogg & Smith, 2007; Turner, 1991). New members of the group (whether by birth or integration) learn group norms through their interactions (including punishment and reward) with other group members, norms that may become internalized over time (Rieber & Robinson, 2004). Perceived norms has therefore been viewed as an important determinant of behaviour in many psychological theories, such as the reasoned action approach (Fishbein & Ajzen, 2010), and can be expected to be influential in determining behaviour towards people with depression as well.

**Stigma-related attitudes and beliefs specific to Asian populations.** Research has been conducted to identify attitudes and beliefs that may influence stigma among Asians. Some beliefs that are frequently identified include: believing that mental disorders bring shame to the family as a whole; believing that mental disorders reflect weakness and a lack of self-discipline; and, believing that mental disorders reflect divine punishment (Corrigan, Roe, & Tsang, 2011; Lam, Tsang, Chan, & Corrigan, 2006; Uba, 1994). Asians have also been found to stigmatize mental disorders more than do Caucasians (Hsu et al., 2008; Wolff et al., 1996).

Mental disorders are often associated subjectively with supernatural origins and sin, and these beliefs are especially prevalent among people living in rural areas in Asia (Corrigan, Roe, & Tsang, 2011; Lam, et al., 2006). Irrespective of cause, people with mental disorders may therefore be blamed more for their disorder than is the case for people with biological illnesses, although biological illnesses are also not exempt from stigma. Both physical and mental disability are seen as reflecting a lack of harmony (Taoist and Confucianism beliefs) or punishment for past transgressions (Buddhist beliefs) and are therefore viewed negatively by the Chinese (Lam et al., 2006). Beliefs regarding divine punishment may mediate differences in the stigma of depression between Asians and Caucasians.

In Asian cultures, individual members of the family who have mental disorders are perceived to reflect negatively on the whole family (Corrigan, Roe, & Tsang, 2011). Mental health problems are often interpreted in Chinese culture as reflecting a lack of harmony and the whole family (including past generations) is held responsible for such disharmony (Lam et al., 2006; Yang, 2007). Moreover, individuals who show strong

emotional expression are often seen to bring shame (Shea & Yeh, 2008), whereas those who accomplish highly bring honor to their family (Abdulla & Brown, 2011). People with depression may well show increased emotional expression and reduced accomplishment, which reflect poorly on their family. Maintaining harmony and obeying societal values are also of key importance and being labeled “different” can carry significant stigma that brings shame to the person with a mental disorder and his or her family (Kim & Park, 2008; Lam et al., 2006). A diagnosis of a mental disorder can therefore be interpreted as a moral defect in an entire family line and can threaten the prosperity and value of all family members (Yang & Pearson, 2002; Yang et al., 2007). This loss of social standing is sometimes described as losing "face" in Asian societies (Kleinman & Kleinman, 1993). Secrecy is a primary coping strategy and may be maintained on an individual level (protecting against stigma from the rest of the family) or on a familial level (protecting against stigma from the rest of the community). The belief that having depression may bring shame onto the whole family may therefore be another belief that mediates differences in the stigma of depression between Asians and Caucasians

**Summary.** Social distance towards people with mental disorders is associated with beliefs regarding personal responsibility and weakness, dangerousness, social inappropriateness, perceived norms, and low expectations of recovery. Dangerousness has often been implicated as a significant factor for social distance toward people with psychotic disorders, but may be less important for people with depression. Asian populations have demonstrated particular beliefs which may increase stigma towards mental disorders including the belief that mental disorders have a divine origin and the

belief that having a mental disorder brings shame upon the whole family. The degree to which individuals hold particular beliefs and attitudes may, however, be influenced by the values they believe in, the ideologies that they hold important, and their personal background.

### **Personality, Ideology, and Stigma**

Ideologies that pertain to moral judgments or social hierarchies have been linked to stigmatization for a variety of conditions (Crandall, 2000). The impact of such ideologies on stigma has also been explored occasionally in mental disorders. The results of these studies indicate that certain ideologies (e.g., values, social dominance, collectivism) and experiences (e.g., degree of acculturation) may negatively influence stigma for mental disorders (e.g., Phelan & Baslow, 2007).

**Values.** Values serve as guiding principles in people's lives and can influence their behavior in significant ways. Research has demonstrated that people who hold self-transcendent values tend to sit closer to individuals with schizophrenia (Norman et al., 2008a) whereas people with conservative values show increased stigmatization of groups such as the obese and the poor (Weiner, 1995). It can therefore be expected that value systems will also play a role in the stigmatization of people with depression. In particular, people with conservative values tend to hold people more responsible for their life circumstances and may also view a lack of effort toward change in a pernicious manner (Weiner, 1995). People with conservative values can therefore be expected to show increased public stigma toward people with depression. Conversely, self-transcendent values, including benevolence toward others (Schwartz, 1992), may be related to less stigmatization. People from Asian countries have been found to show higher conservative

values than do people from Western countries (D'Andrade, 2008; Schwartz, 2006; Schwartz, 2007), which may explain some of the increased stigma among Asians when compared to Caucasians.

**Social Dominance Orientation (SDO).** SDO is a construct that refers to an attitude towards group relations wherein some groups (usually one's in-groups) are viewed as superior, rather than equal to others (Pratto, Sidanius, Stallworth, & Malle, 1994). An individual with a high SDO will generally prefer greater distinction in rights and privileges between his or her in-group and an out-group. SDO correlates positively with prejudice and with valuing power and achievement (for a review, see Duckitt, 2009). A characteristic of people high in SDO is that they often believe in several stereotypes which provide support for their views that inequality is justified (e.g., lower compensation for immigrants reflects their lower skill levels and abilities; Pratto et al., 1994). Individuals high in SDO often resist efforts to create greater equality in society; therefore, it is expected that such people may resist anti-stigma programs which attempt to reflect people with depression in a more positive light. This reaction will allow individuals high in SDO to continue to justify why people with depression may be discriminated against. SDO has indeed been associated with a greater desire for social distance from people with depression (Phelan & Baslow, 2007) and more negative attitudes and intentions to discriminate towards people with mental disorders (Bizer, Hart, & Joekgian, 2012). People from Asian countries have also been found to adopt a social dominance orientation more than do people from Western countries (Fischer, Hanke, & Sibley, 2012; Pratto et al., 2000), which may again explain some of the increased stigma among Asians relative to Caucasians.

**Collectivism.** Many Western anti-stigma programs are strongly rooted in individualistic values (Green, 2009). People who are confronted with negative attitudes in an individualistic society and are then able to persevere and overcome these attitudes may be viewed as courageous or even heroic. There may also be an expectation in an individualistic society that people who are currently disabled, but are then supplied with sufficient resources, should work towards overcoming the disability. The perception that others are responsible for causing their disability or for failing to resolve their problems is emphasized and can perpetuate negative attitudes (Brickman et al., 1982; Weiner, 1995).

In collectivistic societies a strong emphasis is placed on the family, and individual achievements and failures are often evaluated in terms of their reflection on the family as a whole (Sue & Sue, 2008; Triandis, 1995). The goals of the individual are usually held subordinate to the goals of the family in a collectivist society and family members are expected to conform to stereotypic family roles (Triandis, 1995). Lam et al. (2006) indicate that research usually shows less tolerance among Asians for mental disorders than among Caucasians, and suggests that the collectivistic focus on maintaining group harmony does not allow for deviance from social norms. Harmony and social order form the foundation of Confucianism and unpredictable or disturbing behavior from people with depression may be unacceptable to Asians who believe in this philosophy (Yang, 2007). In a collectivistic society, reducing blame and saving face for the family may be more important than empowering an individual to change, especially if such empowerment would lead to revealing a mental disorder. People high in collectivism, however, may also be more open to the norms of the society in which they find themselves and, if people with mental disorders are treated well in society, may be more

likely to follow suit. The degree to which such individuals are open to information regarding the norms of their current society might, however, depend on their overall degree of acculturation.

**Acculturation.** As immigrants become exposed to the norms of the dominant society in Canada, they may come to adapt or reject some of these norms over time and decide whether or not to engage in closer relations with the dominant society. Similarly they may decide to retain or reject some of the norms of their original culture. The interaction of these options creates four acculturation strategies (Sam & Berry, 2010): Immigrants may (1) assimilate, accepting the norms of, and seeking closer relations with, the dominant society while rejecting their original norms; (2) separate, rejecting the norms of and avoiding other members of the dominant society while retaining their original norms; (3) integrate, retaining their original values, but adapting to Canadian culture by engaging with the dominant society and learning, if not following dominant values; or, (4) become marginalized, rejecting both their original and dominant values of society.

The choice of acculturation strategy may affect Asians' response to anti-stigma programs as well. Asians who assimilate may, for example, be expected to respond to anti-stigma programs in a manner comparable to Caucasians, because their beliefs and values would tend to be similar. Asians who separate may largely retain their collectivistic beliefs and perceptions of mental disorders that dominate in their home country. These individuals may be more likely to stigmatize mental disorders and be resistant to anti-stigma programs that they associate with dominant Canadian culture or which contradicts traditional Asian values. Asians who integrate may retain some



collectivistic beliefs and negative attitudes towards mental disorders, but would probably not outright reject programs which reflect Caucasian beliefs and values and can, therefore, be expected to fall between Asians who assimilate and separate in their response to anti-stigma programs. Finally, Asians who become marginalized may reject any attempts to alter their opinions.

Mallinckrodt, Shigeoka, and Suzuki (2005) found that higher acculturation (i.e., identification with Western values) predicted greater agreement between Asian students and Western counselors' views of the etiology of mental disorders and life problems. In the same study, identification with traditional values (enculturation) was not related to differences in views between Asian students and Western counselors. This study highlights the need for a two-dimensional view of the acculturation concept and for exploring association with both ethnic and dominant culture values.

**Summary.** A number of ideologies and values have been associated with increased stigma towards mental disorders. Among Caucasian populations, higher levels of conservatism and social dominance orientation, in particular, has been associated with increased stigma towards a variety of disorders. Collectivism is a value that has been associated with negative attitudes towards people who differ from the norm in Asian populations. The degree of acculturation and enculturation which Asian immigrants display in Canada may also influence their response to people with mental disorders and their response to attempts to reduce stigma. These ideologies and values may therefore moderate the responses towards anti-stigma programs in this study. On the other hand, differences in the endorsement of these values between Asians and Caucasians may mediate the difference in preferred social distance between Asians and Caucasians.

### **Anti-Stigma Interventions**

Although it is possible to change stigma behaviors directly (e.g., through legislation), most anti-stigma programs seek to address stigmatizing attitudes and beliefs (as mediators of change). Investigating the mediation process will allow those individuals who run anti-stigma programs to understand which attitude and belief changes actually cause change in stigma during an anti-stigma intervention. If the key mediators can be identified, the possibility exists that any extraneous components of an intervention can be eliminated to improve efficiencies. The identification of mediators can also guide researchers in the identification of moderators. If the mediators are known, research can be conducted to determine how attitudes and stigmatization can be expected to change for different people under different circumstances.

Recent developments in the field of mediation has allowed for complex mediation analyses to be conducted. Shrout and Bolger (2002) have shown that a mediation analysis is possible where two experimental conditions have similar effects on the dependent variable. That means that it is possible that a change in an attitude or belief could be a mediator for one stigma program but not another equally effective program, and that this can be tested through mediation analysis. Differences in how equally effective anti-stigma programs lead to change can therefore be analyzed.

Bootstrapping techniques were utilized, in this thesis, to estimate the standard error for the mediation path (the indirect effect). Mackinnon et al. (2002) have shown that the use of bootstrapping techniques allows for increased power compared to the Baron and Kenny (1986) methodology and the Sobel test, while adequately controlling Type I error. Finally, Preacher and Hayes (2008) explored the use of bootstrapping to estimate

indirect effects for multiple mediators. This method allows for the contribution of each mediator to be evaluated and for the contributions of mediators to be compared with each other. These developments were integrated in this thesis to identify attitudes and beliefs that mediate the change in social distance for different anti-stigma programs and for different ethnicities.

### **Summary and Contribution of this Thesis**

Asians represent a significant and important part of the Canadian population. They have at least as many mental health concerns as do Caucasians, but seek help less often. Stigma has been implicated as one of the causes of reduced help-seeking, but very little research has focused on the reduction of stigma among Asians. Asians hold particular beliefs (in addition to those commonly held by Caucasians) regarding mental disorders that may influence the effectiveness of attempts to reduce stigma. These beliefs include the theology that mental disorders reflect divine punishment and the perception that mental disorders bring shame upon families. Study 1 evaluated whether beliefs (that mental disorders cause shame and disharmony and that mental disorders are caused by divine punishment) act as mediators of the difference in the stigma of depression between Asians and Caucasians. “Perceived norms” represents another variable that was expected to serve as a mediator of stigma differences between Asians and Caucasians. Perceived norms may be a crucial variable in a collectivist culture where maintaining order and harmony and adhering to social values are of primary importance. The mediating effects of social dominance and conservatism were also evaluated. Study 1 also investigated whether the approaches typically used to reduce stigma of depression among Caucasian populations may also be effective for Asians.

After mediating factors for the stigma of depression in an Asian population were verified or identified, an intervention was created based upon these factors. It was hoped that addressing the potential mediators directly would result in an effective intervention for reducing stigma in an Asian population. The evaluation of this effectiveness, and the confirmation of the mediators and potential moderators involved, formed the basis of Study 2 of this thesis. The intervention was also presented to a Caucasian population to evaluate differences in the mediation/moderation process between ethnicities.

## Study 1

Study 1 investigated whether approaches typically used to reduce stigma of depression among Caucasian populations are also effective for Asians. The mediating factors for the difference in stigma between Caucasians and Asians were examined with a particular emphasis on perceived norms and beliefs and values particular to Asian culture. After providing a review of typical approaches to stigma reduction, the expected influence of Asian values and beliefs on responses to anti-stigma programs is discussed.

### **Biomedical and Contextual-based Anti-Stigma Initiatives**

**Early anti-stigma initiatives.** Early anti-stigma initiatives focused on causal explanations for depression and the application of attribution theory. Causal explanations for depression potentially contribute to the development of public stigma through the attribution of responsibility for depression made by others. Individuals make attributions about others to order the world, explain the behavior of others, and protect them from the threat that others and their behavior may represent. In explaining the behavior of individuals with depression, the perceived cause is critical in determining whether they are believed to be responsible for their condition which, in turn, influences subsequent emotional and behavioral reactions (Weiner, 1995). Based on attribution theory, one can predict that causes that can be directly related to an individual, and that are under the individual's control, would normally elicit an assignment of personal responsibility (in this case, for depression), which would lead to increased negative attitudes towards that individual and thus increased stigma. Conversely, causes that can be directly related to external factors and are not controllable would normally result in the individual with depression being held less or not responsible for the mental disorder, which would lead to

more positive attitudes toward the individual and thus reduced stigmatization (Weiner, 1995; Weiner, Perry, & Magnusson, 1988).

Past programs which have focused on reducing stigma have incorporated various aspects of attribution theory. In order to reduce blame, these programs have attempted to convince the public that mental disorders are caused by circumstances outside of one's control. Therefore, stigma reduction programs have traditionally emphasized a biomedical explanation for depression (Mental Health Commission of Canada, 2013). Recent research has, however, cast doubt as to whether this explanation is the most effective means of reducing public stigma. Rusch, Kanter, and Brondino (2009), for example, demonstrated that contextual explanations (i.e., explanations that emphasize the influence of environmental variables, such as stressful circumstances) of depression are more effective than are biomedical explanations in reducing public stigma. Reviews of large-scale anti-stigma initiatives and public attitudes have demonstrated that biomedical explanations are increasingly endorsed by the public, but that this has not translated into reduced stigma towards people with depression (Angermeyer et al., 2011; Jorm & Oh, 2009). Despite these findings, the largest anti-stigma initiative in the United States, which is being conducted under the auspices of the National Alliance on Mental Illness, still emphasizes the message that depression is a biological "illness".

**Biomedical explanations.** The biomedical explanation posits that depression is an illness caused by biological factors that operate outside of an individual's control. These factors include genetic vulnerability, the sensitivity of the stress-response system (especially the influence of the hypothalamic-pituitary-adrenal [HPA] axis), the influence of neurotransmitters, and activity in the prefrontal cortex (Levinson, 2009; Thase, 2009).

A biomedical explanation of depression may result in less public stigma, because it suggests that people with depression cannot control the cause of the disorder, thereby exonerating them from responsibility. An increased belief in the biomedical causes of depression has indeed been associated with decreased public stigma and reduced blame in some studies (e.g., Goldstein & Rosselli, 2003; Rusch et al., 2009). Conversely, a few studies have found that endorsing biomedical causes was correlated with increases in social distance (e.g., Dietrich et al., 2004; Lauber et al., 2004). Recent reviews have demonstrated that findings regarding the effectiveness of a biomedical explanation in reducing public stigma are inconsistent, especially with regard to depression (Angermeyer et al., 2011; Jorm & Oh, 2009; Schomerus et al., 2012).

A biological explanation appears to exhibit some negative unintended consequences, and recent research has raised questions about its efficacy relative to other causal explanations. Individuals with depression do seem to believe that others will stigmatize them less if the cause of their depression can be explained by biological factors (Blais & Renshaw, 2008; Schreiber & Hartrick, 2002). A reduction in public stigma after being presented with a biological explanation may, however, only occur if the explanation matches an individual's preexisting beliefs (Rusch et al., 2009). Even if the target audience believes the biomedical explanation for depression, it may still treat people with depression in a condescending manner (Mehta & Farina, 1997). This behavior seems to be motivated by the belief that people with depression cannot control the disorder themselves, and that people with depression should therefore follow the prescriptions and guidelines laid down for them by others. Weiner (1995) has similarly

noted that pitying stigmatized individuals enforces the belief that they are not capable of change and leads to divesting them of opportunities to take responsibility for change.

There are numerous shortcomings of a biomedical explanation for reducing public stigma. First, a biomedical explanation, especially with its focus on genetics, may suggest that people with depression suffer from a permanent disorder. Even if the symptoms of depression are eliminated by antidepressants, a biomedical explanation implies that people with depression remain fundamentally flawed in some way (e.g., due to genetic vulnerability). The risk of genetic vulnerability being transmitted to children can also reduce the opportunities for marriage for people with depression. Second, research suggests that formerly depressed people who used antidepressants are more likely to relapse than are those who receive cognitive therapy (Blackburn, Eunson, & Bishop, 1986; Evans et al., 1992; Gloaguen, Cottraux, Cucherat, & Blackburn, 1998). An experimental manipulation of the perceived cause of mental disorders has revealed that the biomedical model creates less hope for long-term recovery than does a psychological model (Farina, Fisher, Getter, & Fischer, 1978; Lam & Salkovskis, 2007; Lam, Salkovskis, & Warwick, 2005). Third, instilling the belief that a mental disorder has a biological basis can lead people to believe that a person with a mental disorder is less able to control his or her symptoms. This belief can, in turn, foster the perception that an individual with a mental disorder is dangerous and unpredictable (Dietrich, Matschinger, & Angermeyer, 2006; Read & Law, 1999; Walker & Read, 2002). Finally, an illness can still be the subject of stigma even if biological factors are posited as the primary cause. A person with lung cancer who has smoked for most of his or her life, for example, may



still be stigmatized because an earlier event in the causal chain leading to lung cancer may be viewed as being under the person's control (Weiner, 1995).

**Contextual explanations.** Research conducted on the influence of a contextual explanation of depression has shown positive results for the reduction of public stigma. A contextual explanation posits that depression is mainly caused by environmental influences. These influences are normally outside of the control of the person with depression but, because one's environment can usually be altered, hope for recovery from depression remains. Stigma reduction programs, using the contextual model, were found to be more effective in reducing public stigma of depression than a program utilizing a biological model (Rusch et al., 2009). After completing an anti-stigma program focusing on the contextual model, participants reported that they would be more willing to communicate their disorder to close others if they themselves were depressed, compared to a control and biomedical condition. A contextual explanation may be more consistent with how an individual with depression views the cause of his or her depression. Primary care patients, for instance, tend to endorse contextual factors more often than biological factors as contributors to their depression (Brown et al., 2001). It should be noted that causal beliefs are not mutually exclusive. A literature review of changes in public attitudes towards depression has shown that biomedical causes are being increasingly endorsed, whereas the endorsement of psychosocial causes has also remained consistently high (Schomerus et al., 2012).

**Summary of attribution approaches.** Early attempts at reducing stigma focused on addressing the belief that people with depression are responsible for their disorder. Prior research has established that biomedical and contextual explanations can both serve

to reduce public stigma by altering attributions. A contextual explanation may, however, also create greater hope for recovery from depression than a biological explanation, and may therefore be more effective overall in reducing public stigma. More recent approaches to stigma reduction, which have moved away from the use of attribution theory, are considered next followed by a review of the influence of cultural factors.

### **Recovery-based Approaches to Stigma Reduction**

**Recovery as a way of reducing stigma.** The recovery message seeks to categorize people with mental disorders as deprived of resources, but capable of recovery and therefore in need of empowerment. This change in categorization is expected to lead to reduced beliefs that people with depression are weak and increased expectations for their recovery. This approach could lead to decreased stigma behavior as people with depression can be seen as capable of living meaningful lives. Corrigan, Roe, and Tsang (2011) have described this message as focusing on people rather than illnesses, thereby creating respect, hope, and opportunity.

**Recovery-based anti-stigma initiatives.** In 2008, the Mental Health Commission of Canada (MHCC) began a ten-year initiative (Opening Minds) to reduce stigmatization of mental disorders in Canada (MHCC, 2013). The MHCC noted that its approach was based on the best empirical evidence available, but also admitted that there was a paucity of research in the area of stigma reduction for mental disorders, especially among minority populations. Positive contact with individuals with mental disorders and public education initiatives are some of the interventions included in the MHCC approach. The MHCC hopes that reducing stigma will increase help-seeking and decrease discrimination against people with mental disorders.

The MHCC initiated Opening Minds by asking grassroots level organizations to apply for funding for running anti-stigma programs. These programs were to emphasize the ability of people with mental disorders to recover from their disorders. Recovery was generally defined as achieving symptom reduction and/or the ability to live a meaningful life despite the presence of a mental disorder (Slade, Adams, & O'Hagan, 2012). This definition was preferred by people with mental disorders and does not necessarily reflect the use of this term by lay people or by researchers. Programs were also required to evaluate and publish the outcomes of their interventions. Several programs have shown promising outcomes, including findings of reduction of stigma and improved social distance towards people with mental disorders after program completion. These programs usually did not distinguish among different mental disorders and included education sessions and contact with people with mental disorders. There was, however, no evaluation of the mechanisms by which these programs worked to reduce stigma. The focus was instead on specific program activities which appeared to be effective. Opening Minds aims to eventually develop anti-stigma tool kits based on these activities and distribute these to programs across the country (MHCC, 2013).

One of the first large-scale anti-stigma campaigns to use a recovery-based approach was the Beyondblue campaign which is still active in Australia. Beyondblue started in 2000 aiming (among other goals) to reduce the stigma of depression over a four-year period. Upon evaluation, some evidence was found that the stigma of depression was decreasing (Pirkis, 2004), and the campaign was subsequently funded for another five years and expanded to include anxiety disorders and other mood disorders. A subsequent independent report highlighted that there was some evidence for reduced

stigma in the Australian population, but that it was hard to attribute this specifically to exposure to the Beyondblue campaign (Dunt, Robinson, Selvarajah, & Pirkis, 2009). Nevertheless the campaign received funding to continue its activities. A few of the campaign publications highlight biopsychosocial causes of depression (i.e., that a combination of biological, psychological, and social factors may play a role in the occurrence of major depressive disorder). The causes of depression, however, have received little emphasis in the vast majority of the campaign materials.

### **Cultural Considerations**

Although the cultural diversity of the Canadian population is acknowledged by the MHCC, most of the programs sponsored by the MHCC did not address this diversity and the potential challenges it introduces directly. This thesis research seeks to address this concern by evaluating whether current anti-stigma approaches (used in research or practice) can be expected to be successful with an Asian population. In particular, this research was expected to show that differences in beliefs and value systems may reduce the effectiveness of current anti-stigma approaches among Asians.

Very little research has been conducted to investigate the effectiveness of stigma reduction for depression among Asians. Rao, Feinglass, and Corrigan (2007) found that in vivo contact or watching a videotape of someone with a mental disorder reduced perceptions of dangerousness of people with mental disorders among Asians. This study was, however, not specific to depression and had a small sample size of Asians. In predicting whether current approaches used with Caucasians would also be effective among Asians, particular Asian beliefs and values need to be taken into account. These beliefs and values include those identified in the literature to be associated with the

stigma of mental disorders and may represent mediators by which change in stigma may occur (e.g., beliefs regarding familial shame). Values which may moderate the effectiveness of anti-stigma approaches were also considered.

**Beliefs regarding biological illnesses vs. mental disorders.** It is possible that a biomedical model of mental disorders may be more effective in reducing stigma among Asians, because it would allow the family to present the mental health concern (e.g., depression) as a biological illness. Lin (1989) highlighted that Neurasthenia was diagnosed much more frequently in China and Japan than in the West. The disorder includes symptoms such as fatigue, concentration problems, insomnia and heart palpitations. A study of 100 patients diagnosed with Neurasthenia revealed that 87 of these patients would qualify for a diagnosis of major depressive disorder and most improved after treatment with anti-depressants (Kleinman, 1982). Qualitative research has also revealed that both professionals and laypeople may prefer a diagnosis of Neurasthenia, because Neurasthenia is seen as a neurological disorder and carries less stigmatization than a mental disorder (Lin, 1989).

Hsu et al. (2008) explored differences in stigmatization of two biological illnesses (diabetes and fever of unknown origin) and three variations of depression (somatic symptoms only, general symptoms of depression, and depression with psychotic symptoms) among Chinese and Caucasian Americans using vignettes. Both groups stigmatized the mental disorders more than the biological illnesses and Chinese Americans stigmatized every condition more than did Caucasian Americans. Chinese Americans showed less stigmatization toward depression with somatic symptoms than towards depression with general (somatic and mental) symptoms, but the reverse was true

for Caucasian Americans. Hsu et al. (2008) speculated that mental symptoms may be stigmatized significantly more by Asians than biological symptoms, accounting for the differences between stigma towards somatic depression and general depression. Beliefs related to the dangerousness of the person in the vignette, the shame that the person brings to his or her family, personal responsibility for the disorder and weakness of the person, the belief that others would also avoid the person (perceived norms), and the belief that discrimination against the person was justified accounted for differences in stigmatization between Asians and Caucasians for both depression and biological illnesses.

Asians also tend to show more somatic symptoms compared to Caucasians with mental disorders of equal severity (Kleinman, 2004; Yeung et al., 2004) and a biomedical explanation may therefore be more acceptable. The previously mentioned patients in the study by Kleinman (1982) emphasized somatic symptoms over psychological distress (although most reported some element of psychological distress when prompted).

Further evidence for the possibility that a biomedical causal explanation may be effective among Asians comes from a study by WonPat-Borja et al. (2012). In this study, Asian and Caucasian participants were presented with a vignette of a person with depression or schizophrenia. Participants were then informed that the cause was either genetic in nature or not. Information about a genetic cause reduced desired social distance for Asian participants, but increased desired social distance for Caucasian participants. This result occurred despite that fact that Asians initially held more eugenic attitudes in general (e.g., believing that people with mental disorders should be forbidden from having children). In the analysis of the results, there was unfortunately no distinction

made between people who read the depression vignette and those who read the schizophrenia vignette, but the results suggest that biogenetic causes may be destigmatizing for Asian participants.

**Beliefs regarding personal weakness.** Beliefs regarding the personal weakness of people with mental disorders have been associated with greater preferred social distance from them by others (Jorm & Oh, 2009). Asian students agreed less with Western counselors than did Caucasian students that social conflict and life changes were potential causes of a variety of presenting psychological problems (Mallinckrodt, Shigeoka, & Suzuki, 2005). Further sources of disagreement pertained to Asian students' beliefs that divine causes and a weak mind were related to the presenting problems, especially for more severe problems such as depression. The authors noted that their findings corresponded with work on collectivist cultures which suggests that causes of success (both for self and others) in such a culture are usually ascribed to external reasons, whereas failures are attributed to internal factors. A contextual approach which places the cause of failure (depression) outside the person may therefore be in conflict with traditional Asian beliefs. Whereas beliefs regarding personal weakness are typically expected to be a mediator for the success of contextual approaches (compared to control conditions) among Caucasians, they may not be among Asians.

### **Summary**

Early attempts at reducing stigma focused on causal explanations for depression, but the focus of recent campaigns has shifted to emphasize the potential for recovery from depression. Potential for recovery has often been implicated as an attitude relevant for the stigma of mental disorders. If focusing on this attitude is indeed effective, it can

be expected that a recovery approach will increase beliefs regarding potential for recovery. However, because causation is not addressed, the recovery approach will not be expected to influence attitudes regarding personal responsibility. Approaches emphasizing biological or contextual causes and a recovery approach represent the major approaches which have been used in practice or tested in research to reduce the stigma of depression.

Asian populations have shown a preference for emphasizing physiological symptoms of mental disorders above psychological symptoms and for stigmatizing biological disorders less than mental disorders. An approach emphasizing biological causes may therefore be more acceptable to Asians.

### **Current Study and Main Hypotheses**

Prior studies in this area have used vignettes of people with mental disorders (Link, Yang, Phelan, & Collins, 2004; Phelan & Basow, 2007; Rusch, et al., 2009; Wolkenstein & Meyer, 2008) as well as fake media materials regarding causal explanations for mental disorders (e.g., Farina et al., 1978; Lam & Salkovskis, 2007; Walker & Read, 2002). These methods were used in the current study.

**Mediation of differences in stigma between Asians and Caucasians.** Prior to intervention, Asian participants were expected to report higher levels of stigma compared to Caucasian participants. Perceived norms were hypothesized to predict stigma above and beyond known predictors of stigma. Finally, the difference between Caucasian and Asians in stigmatization was expected to be mediated by social dominance orientation, levels of conservatism, perceived norms, and Asian values (particularly, beliefs regarding familial shame).



**Planned comparisons.** Recovery and contextual approaches were expected to be more successful in reducing stigma than biomedical approaches for Caucasians (with the opposite being true for Asians). In addition, all intervention approaches were expected to be more successful in reducing stigma than the control condition.

**Proposed mediators of change.** The recovery and contextual approaches were anticipated to be more successful in increasing beliefs regarding potential for recovery than the biomedical approach or control condition. Because causation was not addressed in the recovery approach, it was not expected to influence attitudes regarding personal responsibility. However, differences in stigmatization between the recovery and contextual approaches were expected to be mediated by attitudes regarding personal responsibility, as were differences in stigmatization between the biomedical approach, and the recovery approach and control condition. For Asian participants, it was expected that the belief that a family member with depression brings shame to the family would mediate the difference between the biomedical and other conditions.

## **Methods**

### **Participants**

Undergraduate students were recruited through the University of Western Ontario (UWO) research participation pool ( $n = 534$ ) and through advertisement on campus ( $n = 39$ ). Students recruited through the research participation pool received course credit for their participation and students recruited through advertisement on campus received monetary compensation to the amount of \$25. A number of participants were excluded following the procedures outlined in the Schwartz Value Survey User Manual. This manual contains specific guidelines for the inclusion and exclusion of individuals' data

based on how many times they used the same value on the Schwartz Value Survey and is specific to ensuring the validity of this measure. A total of 95 individuals were excluded leaving a sample of 478 participants (295 females and 182 males<sup>2</sup>). Excluded participants reported higher social desirability ( $M = 15.84$ ) compared to non-excluded participants ( $M = 13.99$ ),  $t(570)=3.37$ ,  $p=0.001$ , but did not differ on any other relevant variable.

Participants' self-identified ethnicities were 52% Asian, 42% Caucasian, and 6% other. The term Asian was taken from the American Psychological Association Publication Manual (American Psychological Association, 2009) and included students from East and Southeast Asian, Pakistani, and Indian backgrounds<sup>3</sup>. The generational breakdown for Asians was 52% first generation, 42% second generation, 3% third generation, and 3% fourth generation or higher. The generational breakdown for Caucasians was 6% first generation, 24% second generation, 37% third generation, and 33% fourth generation or

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<sup>2</sup> One participant failed to report gender (this participant also completed part 2 of the study). Gender has generally been found to have little relation to the stigma of mental disorders (Jorm & Oh, 2009) and was therefore not considered further in this thesis.

<sup>3</sup> The majority of Asian students were from Chinese descent and no significant differences were found on key variables between these students and other Asian students. It was therefore decided not to break participants who self-identified as being from Asian ethnicity into further subgroups. Caucasian students were identified as participants from European descent. Participants who were not classified as Caucasian or Asian for the purpose of this thesis were those who reported mixed, African, First Nations, Pacific Islander or Latino ethnicity.

higher. The mean age of participants was 18.65 ( $SD = 1.63$ ) years, with participants ranging in age from 16 to 41 years<sup>4</sup>.

All participants recruited through advertisement ( $n = 39$ ) also completed the second part of the study as did 487 of the 534 participants recruited through the participant pool. Participant data were examined to identify response patterns that would render the data unusable. Nine participants who always endorsed the same scale value on questionnaires, 27 participants who were exposed to more than one experimental condition (due to a computer malfunction), and 35 participants who completed the second part of the study more than one month after their initial participation were excluded from further analyses. Excluded participants did not differ significantly from non-excluded participants on any of the important study variables. Finally, an additional 10 participants were excluded because they did not pass the manipulation check (i.e., they found the article manipulation unpersuasive, endorsing a 1 on a 7-point scale). The final sample was comprised of 445 participants<sup>5</sup>. Participants' ethnicities (self-identified) were 52%

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<sup>4</sup> Because 90% of participants were 18 to 20 years old (restricted range) and age was not correlated with the outcome measures in this study, the influence of age was not considered further in this thesis.

<sup>5</sup> The pool of 445 participants included 68 participants who were excluded from the part 1 analyses due to the criteria of the Schwartz Value Survey. Because the Schwartz Value Survey scoring criteria were not relevant to the validity of the part 2 analyses, the 68 participants were retained.

Asian, 42% Caucasian, and 6% other. The sample consisted of 272 females and 172 males.

### Measures

**Beck Depression Inventory II (BDI-II; Beck, Steer, & Brown, 1996).** The BDI-II consists of 21 items and measures the severity of depressive symptoms experienced by an individual over the past two weeks. This measure is widely used in mood disorder research and shows excellent internal consistency ( $\alpha = 0.91$ ) and solid psychometric properties (Beck et al., 1996; Dozois & Covin, 2004; Dozois, Dobson, & Ahnberg, 1998).<sup>6</sup>

**Depression Attribution Questionnaire-27 (DAQ-27; Kanter, Rusch, & Brondino, 2008).** The DAQ-27 measures public stigma toward people with depression using 27 items, each rated on a 9-point scale. Items include stereotypical views of people with depression (e.g., that they are unpredictable), affective responses towards people with depression (e.g., feeling anger or fear), as well as behavioral intentions (e.g., whether participants would rent an apartment to the depressed individual). This measure can be broken down into 9 factors (3 items each): blame; anger; pity; help; dangerousness; fear; avoidance; segregation; and, coercion. This instrument has shown good internal consistency ( $\alpha = 0.82$ ; Kanter, Rusch, & Brondino, 2008) and has been used in prior stigma reduction research (Rusch et al., 2009). The DAQ-27 was included in the current study to allow for comparisons with other studies that focused on

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<sup>6</sup> This measure was included for exploratory purposes and is therefore not considered further in this thesis.

stigmatization in depression studies. This index also permits the assessment of concurrent validity of the social distance measure and another measure of public stigma.

Participants were presented with a vignette depicting an individual with severe depressive symptoms prior to completing the DAQ-27. In the current study, the measure was altered by giving the individual the initials M. L. The wording of questions related to the person in the vignette was also altered to make both gender and race ambiguous.

**Attitude and Belief Scales.** The attitude and belief scales were constructed from items adopted from previous research that explored attitudes and beliefs involved in the stigmatization of depression. Items related to dangerousness ( $\alpha = 0.95$ ) and shame and disharmony ( $\alpha = 0.75$ ) were obtained from Hsu et al. (2008). Items related to social inappropriateness ( $\alpha = 0.76$ ), continuity with normal experience ( $\alpha = 0.82$ ), personal responsibility and weakness ( $\alpha = 0.79$ ), and change expectancy ( $\alpha = 0.83$ ) were derived from Norman, Windell, and Manchanda (2010). A three-item scale related to beliefs regarding divine punishment as the cause of depression was also included. Finally, a three-item scale related to offset responsibility (whether or not a person with depression is responsible for his or her own recovery) was included as was an exploratory three-item scale related to beliefs regarding the prevalence of depression. The items from each these scales were rated on a seven-point scale ranging from “strongly disagree” to “strongly agree”.

Internal consistency was computed for the various scales used in the current study. Some items were removed in situations in which the internal reliability was suboptimal (e.g., inconsistent items did not fit well together conceptually). The final number of items and internal consistencies (Cronbach’s alpha) for the scales were:

dangerousness (3 items;  $\alpha = 0.61$ ); shame and disharmony (4 items;  $\alpha = 0.82$ ); social inappropriateness (3 items;  $\alpha = 0.66$ ); continuity with normal experience (3 items;  $\alpha = 0.67$ ); personal responsibility and weakness (5 items;  $\alpha = 0.74$ ); change expectancy (4 items;  $\alpha = 0.64$ ); divine cause (2 items;  $\alpha = 0.73$ ); and, prevalence of depression (2 items;  $\alpha = 0.63$ ). The offset responsibility scale was eliminated as it failed to achieve an internal consistency above 0.50.

**Social Distance Scale.** The Social Distance Scale was adopted from Norman, Windell, and Manchanda (2010). The scale consists of 12 items representing behavioral intentions towards the person introduced in the DAQ-27 vignette (e.g., "How likely is it that you would do school work with M. L.?). Items are measured on a five-point scale of behavior likelihood ("I certainly would" to "I certainly would not") and the internal consistency of the scale was 0.93 for the above-mentioned study and 0.91 for the current study. The items on the scale are summed to provide an index of social distance (with lower scores indicating greater desired distance). Research has shown that social distance scales and actual avoidance in social situations are significantly associated (Fishbein & Ajzen, 2010; Jorm & Oh, 2009).

**Perceived norms.** The measure of perceived norms ( $\alpha = 0.89$ ) was adopted from Norman et al. (2008b). This measure used six items from the social distance scale adopted to reflect descriptive (what others would be expected to do) and injunctive (whether others would approve of the participant's decisions) norms. For example, for the item "How likely is it that you would recommended M. L. for a job?", an item was created which read "If you recommend M. L. for a job, people who are important to you (e.g., family and friends) would...". A seven-point scale ranged from "strongly approve"

to “strongly disapprove”. A second item was created which read "How likely is it that people who are important to you (e.g., family and friends), would recommend M. L., for a job, if they were in your position?" with a seven-point scale ranging from “very likely” to “very unlikely”. The items were summed to compute a score for perceived norms with higher scores indicating a perception of stigmatizing attitudes among people who are important to the participant. Internal consistency (Cronbach’s alpha) in the present study was 0.94.

**Crowne-Marlowe Social Desirability Scale (SDS; Crowne & Marlowe, 1960).**

Discrimination and negative attitudes towards individuals with mental disorders may be frowned upon by the wider population and a desire to present a socially appropriate impression may, therefore, influence participants' responses. This scale includes 33 true/false items to measure the tendency to create a socially appropriate impression. Items which reflect positive behavior that is unlikely to be sustainable (e.g., I never hesitate to go out of my way to help someone in trouble) or negative behavior which most people are likely to engage in to some degree (e.g., I sometimes feel resentful when I do not get my way [negatively scored]) are included. The current study found an internal consistency of 0.89.

**Causes of depression.** In order to measure participants’ beliefs regarding the causes of depression prior to the intervention, exploratory items from Goldstein and Rosselli (2003) were included. In that study, a factor analysis was used to identify three different etiological paradigms of depression: biological, psychological, and environmental. Eleven items are rated on a 7-point Likert-type scale (1 = completely disagree; 7 = completely agree) representing the participant’s agreement with these items

as causes of depression. Examples of items included are: chemical/hormone imbalance in the brain; general stress; and feeling helpless or hopeless. The internal consistencies for the biological, psychological, and environmental scales were 0.75, 0.70, and 0.75 respectively.<sup>6</sup>

**Schwartz's Value Survey (SVS; Schwartz, 1992).** Participants are presented with a short description of 58 values and asked to rate the importance of these values on a nine point scale (-1 = opposed to my principles, 7 = of supreme importance). These 58 values represent 10 underlying constructs which, in turn, can be categorized according to four higher-order constructs. The composition of these higher-order constructs is: Self-transcendence (universalism, benevolence); Conservatism (conformity, tradition, security); Self-enhancement (power, achievement, hedonism); and, Openness to experience (stimulation, self-direction, hedonism). Scores on the higher-order constructs are centered relative to the mean importance of all the values in a participant's life. A positive score on a higher-order construct therefore means that a participant believes that he or she is influenced more by the values related to this particular construct than to values on his or her life in general. The SVS has been used in many countries and fields of research and has shown good psychometric properties (Schmitt et al., 1993; Schwartz & Bardi, 2001). The conservatism and self-transcendence subscales demonstrated internal consistencies of 0.88 and 0.92, respectively, in the current study.

**Social Dominance Orientation Scale (SDOS; Pratto et al., 1994).** The SDOS consists of 16 items. Participants rate their level of positive or negative feelings toward each item on a 7-point Likert-type scale (1 = very negative, 7 = very positive). The items reflect ideologies concerning equality or power differences. An example of such an item



is: “It's probably a good thing that certain groups are at the top and other groups are at the bottom”. This scale shows excellent psychometric properties and, in particular, demonstrates convergent validity with belief in several stereotypes used to legitimize discrimination as well as divergent validity from measures related to conservatism, such as Right-Wing Authoritarianism. The validation study (Pratto et al., 1994) included a culturally diverse population and the SDOS has been used in previous mental disorder stigma research (e.g., Phelan & Baslow, 2007). The scale had an internal consistency of 0.90 in the current study.

**Level of Familiarity Scale (LOF).** This scale was adopted from a familiarity with mental illness measure developed by Corrigan (2008) with the items altered to reflect familiarity with depression specifically. An item was also added to the 11-item measure which read "I have taken a course or class in school in which depression was a topic or concept of study". Items were coded from 1 (reflecting no familiarity with depression) to 12 (reflecting intimate familiarity with depression). Participants indicate all items which apply to them (e.g., "A friend of the family has or has had depression") and the highest level of intimacy is computed as the overall familiarity score. The ratings assigned to items were validated by three research assistants familiar with depression research, but not familiar with the study. The interrater-reliability (Krippendorff's Alpha) was 0.95 (Hayes & Krippendorff, 2007). Two exploratory questions related to personal experiences of depression treatment (as potential moderators of reactions to anti-stigma materials) were also included in this section, but were not included in the rankings.

**Vancouver Index of Acculturation (VIA; Ryder, Alden, & Paulhus, 2000).**

The VIA consists of 20 items asking participants to identify how much they seek to

associate with the mainstream culture and their cultural heritage. Examples of two such items are "I would be willing to marry a Canadian person." and "I enjoy Chinese entertainment (movies, etc.)." Participants rate their agreement with each statement on a 9-point scale ranging from disagree to agree. The items related to one's association with Canadian culture are added to create a Canadian sub-score and the items related to the culture of origin are summed to form a Heritage sub-score. Scores above 50 (the effective mid-point of the scale) were taken to indicate that the participant associated with that particular culture, based upon a similar approach reported by Ryder et al. (2000). The combination of association/non-association with Heritage/Mainstream culture categorizes participants into one of four different acculturation strategy categories as proposed by Sam & Berry (2010). This method of placing participants into categories is not specific to the VIA, but is often used in acculturation research (Nesdale, 2002). Internal reliability was 0.91 in the original VIA validation study (which used Asian participants) and scores (both Heritage and Mainstream) were associated with adjustment scores, number of years in Canada, English ability, generational status, and time educated in Canada (Ryder et al., 2000). The validation study also provided support for the independent variation of the two dimensions (association with Heritage culture and association with Mainstream culture).

**Asian American Values Scale—Multidimensional (AAVS-M; Kim, Li, & Ng, 2005).** The AAVS-M is a 42-item measure with five factors related to Asian values: collectivism, conformity to norms, emotional self-control, family recognition through achievement, and humility. The scale was designed reflect values that are shared among different Asian sub-groups (e.g., Chinese, Japanese, Filipino) and was validated

accordingly. Participants rated their agreement with each value on a 7-point scale (1 = strongly disagree; 7 = strongly agree). Internal reliability for each factor and the total score was at least 0.79 in the initial validation study. The scale was correlated with other instruments that measure interdependent self-construal and fears of losing face, and was not correlated with a social desirability scale (Kim, Li, & Ng, 2005). The overall scale had an internal consistency of 0.86 in the current study.

**European American Values Scale for Asian Americans - Revised (EAVS-AA-R; Hong, Kim, & Wolfe, 2005).** The EAVS-AA-R is a 25-item single-factor measure of agreement with European American values (e.g., "I think it is fine for an unmarried woman to have a child") and asks participants to rate their level of agreement with the items on a 4-point scale running from strongly disagree to strongly agree. The scale was validated among different Asian sub-groups. The internal reliability of the measure was calculated at 0.77 in its initial validation. The overall scale had an internal consistency of 0.73 in the current study.<sup>6</sup>

**Demographic information.** Information related to participants' age, sex, intended university major, ethnicity (including Asian sub-groups), generational status, and religious background was collected.

### **Procedure**

The study was conducted online. Participants who indicated interest in the study were informed by e-mail that they would be involved in a 1-hour study with a follow-up 1-hour study to be completed one week later. The study was open to all students initially, but limited to Asian participants only after approximately 200 Caucasian individuals were recruited. In the first part of the study, participants were presented with a consent

form (see Appendix A) and letter of information (see Appendix B) for a “Social Attitudes and Beliefs” study. Participants’ levels of depressive symptoms were assessed using the BDI-II. Public stigma towards individuals with depression was then measured based on a vignette depicting an individual with severe depression (DAQ-27 and SDS). Participants then completed measures related to attitudes and beliefs regarding people with depression, a measure of their beliefs regarding the causes of depression, a perceived norms measure (PNO), a social desirability measure (SDS), and their familiarity with depression (LOF). Participants were then asked to complete scales measuring their acculturation (VIA) and endorsement of certain ideologies and values (EAVS-AA-R, AAVS-M, SDOS, and SVS). Finally, participants completed demographic information.

For the second part of the study, which was initiated by researchers sending a link to participants one week after completing the first part, the same procedure was used with the following changes. After completing the BDI-II, participants were presented with one of three anti-stigma messages (with the exception of participants in the control condition). Causal explanation for depression messages were presented in the form of a recent article published in a reputable journal (*Clinical Psychology Review*) by a supposedly well-known depression researcher who claimed that most evidence points to depression being caused by either biological or contextual factors. The third message conveyed that people with depression can recover from their symptoms and lead meaningful and effective lives. In the control condition, participants read an article on collaborative research between clinical psychology and social psychology. All articles were of the same length (see Appendix C). Participants were informed that they would later be asked some questions regarding the information in the article. After the article

was presented, participants were asked to describe the central message of the article and to indicate how understandable, interesting, and credible it was. Participants who rated the article low in credibility were asked why they did not believe the article. Participants completed the same measures as in the first part with the exception of the personality and ideology measures and demographics. Participants were debriefed, informed that the article was not real, and thanked for their participation. The debriefing form (see Appendix D) for the study contained resources for those participants interested in seeking help for current mood problems.

## **Results**

### **Differences between Asian and Caucasian Populations**

The differences between Asians and Caucasians on key variables are highlighted in Table 1. Differences were largely in line with expectations. Most notably, significant differences were observed in Preferred Social Distance (Asians preferred more social distance from people with depression than did Caucasians) and Public Stigma (as measured by the DAQ-27, with Asians showing greater stigma towards people with depression than Caucasians). The subscales of the DAQ-27 showed similar results, but Asians' tendency to endorse coercive behaviour (e.g., "How much do you agree that M.L. should be forced into treatment with a doctor even if M.L. does not want to?") towards people with depression more was only at trend level and Asians actually showed less pity towards people with depression than Caucasians at trend level<sup>7</sup>.

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<sup>7</sup> Consideration of acculturation strategy used by Asians revealed that 74% preferred to integrate, 11% to assimilate, 9% to separate, and 6% were marginalized. A one-way

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ANOVA showed that acculturation strategy influenced DAQ-27 scores,  $F(3, 227) = 3.02$ ,  $p = 0.031$ , but not social distance scores,  $F(3, 227) = 2.14$ ,  $p = 0.097$ . A post-hoc comparison revealed that a separation strategy was associated with higher stigma than assimilation and integration strategies,  $t(1, 227) = 2.79$ ,  $p = 0.006$ . Similarly, a one-way ANOVA showed that generational status for Asians influenced DAQ-27 scores,  $F(3, 244) = 3.20$ ,  $p = 0.024$ , but not social distance scores,  $F(3, 244) = 0.37$ ,  $p = 0.771$ . A post-hoc comparison revealed that first generational status was associated with higher stigma than was second generational status,  $t(1, 245) = 2.85$ ,  $p = 0.005$ .

Table 1

*Differences between Asians and Caucasians on Relevant Variables*

Variable	Asian	Caucasian	<i>t</i>	<i>P</i>
	<i>M (SD)</i>	<i>M (SD)</i>		
<b>Outcomes</b>				
Social Distance	37.30 (9.21)	40.26 (9.40)	-3.34	<0.001**
DAQ-27	115.71 (24.74)	105.72 (27.08)	4.07	<0.001**
<b>DAQ-27 subscales</b>				
Blame	12.15 (4.49)	10.35 (4.54)	4.20	<0.001**
Anger	11.75 (5.14)	10.08 (5.58)	3.30	0.001**
Pity	19.39 (4.66)	20.14 (4.23)	-1.76	0.080
Dangerousness	10.91 (5.02)	9.96 (5.02)	1.99	0.047*
Fear	10.35 (5.24)	8.59 (5.13)	3.57	<0.001**
Avoidance	16.75 (5.10)	15.45 (5.32)	2.61	0.009**
Segregation	8.95 (4.60)	7.74 (4.57)	2.76	0.006**
Coercion	14.57 (4.63)	13.70 (4.69)	1.95	0.052
Help	10.90 (4.91)	9.71 (4.78)	2.56	0.011*
<b>Values</b>				
Social Dominance	51.41 (13.67)	47.70 (17.14)	2.48	0.013*
Self-transcendence	.27 (2.95)	.47 (3.85)	-0.62	0.533
Conservatism	-1.10 (2.46)	-1.78 (2.28)	3.02	0.003**
Collectivism	30.56 (6.35)	29.64 (6.13)	1.55	0.122
Conformity to norms	28.76 (6.46)	26.59 (6.62)	3.50	<0.001**
Emotional Inhibition	29.59 (7.06)	25.31 (7.04)	6.39	<0.001**
Achievement Focus	65.57 (12.98)	61.98 (13.88)	2.82	0.005**
Humility	24.01 (5.33)	20.92 (5.26)	1.55	0.122
Asian Value Scale	178.90 (23.75)	164.43 (22.75)	6.52	<0.001**
<b>Attitudes and Beliefs</b>				
Perceived Norms	39.22 (13.23)	44.62 (14.76)	-4.07	<0.001**
Level of Familiarity	9.21 (3.03)	9.90 (2.47)	-2.65	0.008**
Acculturation	66.11 (13.86)	77.25 (11.60)	-9.24	<0.001**
Dangerousness	12.32 (2.86)	11.79 (3.18)	1.86	0.063
Familial Shame	11.92 (5.19)	9.02 (3.92)	6.72	<0.001**
Inappropriateness	12.51 (2.82)	11.64 (3.03)	3.11	0.002**
Normal Experience	15.86 (3.02)	16.41 (3.06)	-1.90	0.058
Responsibility	19.65 (5.47)	16.30 (5.64)	6.33	<0.001**
Change Expectancy	15.58 (3.59)	15.23 (3.61)	1.02	0.306
Divine Cause	5.11 (2.80)	3.68 (2.33)	5.92	<0.001**
Prevalence	10.28 (2.41)	11.68 (2.21)	-6.35	<0.001**

\* =  $p < 0.05$ ; \*\* =  $p < 0.01$

### **Perceived Norms as Unique Predictor**

Table 2 displays the correlation coefficients among key study variables. The two outcome variables were strongly correlated, but did not appear to represent overlapping constructs. Perceived norms and social distance were strongly correlated, but perceived norms and the DAQ-27 only show a medium to strong correlation. There was also a medium to strong correlation between the DAQ-27 and some of the attitudes and beliefs that are posited to be relevant to this instrument, such as dangerousness of people with depression and responsibility of people with depression for their own disorder. The correlations of dangerousness and responsibility with social distance, however, were small to medium. It appears, therefore, that the DAQ-27 serves to further validate findings from using the SDS as primary outcome measure, while also providing further information regarding specific components of stigma.

Perceived norms and conservatism demonstrated small to medium correlations with other values and attitudes and belief measures, indicating that they are largely distinct from our other predictor variables. Social dominance correlated highly with self-transcendence which may be explained by the fact that both of these values reflect distinctions between in- and out-groups. The belief that depression brings shame on the whole family also showed medium to high correlations with the belief that people with depression are dangerous, that depression is not continuous with normal experience, that people with depression are responsible for their disorder, that depression has a divine cause, and that depression is not prevalent in Canada.

A hierarchical linear regression analysis was conducted to evaluate whether perceived norms contributed significantly to the explanation of variance in the outcome



Table 2.

*Correlation Coefficients of Variables for All Participants*

	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Social Distance	-.58**	.66**	-.38**	-.22**	.27**	-.23**	-.33**	-.18**	.16**	-.27**	-.01	-.12*	.19**	.13**
2 Stigma (DAQ-27)		-.42**	.45**	.27**	-.22**	.41**	.48**	.16**	-.21**	.47**	.05	.35**	-.38**	-.14**
3 Perceived Norms			-.18**	-.10*	.16**	-.31**	-.18**	-.29**	-.07	-.28**	.06	.04	.05	.11*
4 Social Dominance				.14**	-.48**	.20**	.42**	.16**	-.22**	.27**	-.06	.32**	-.31**	.01
5 Conservatism					-.07	.10*	.28**	-.01	-.18**	.19**	.03	.21**	-.19**	-.06
6 Self-transcendence						-.05	-.18**	-.08	-.01	-.10*	-.04	-.04	.05	.03
7 Dangerousness							.40**	.26**	-.05	.40**	-.11*	.18**	-.16**	-.08
8 Familial Shame								.10*	-.34**	.46**	-.09*	.54**	-.49**	-.01
9 Inappropriateness									-.05	.17**	-.08	-.01	-.09*	-.07
10 Normal continuity										-.15**	-.10*	-.46**	.42**	.03
11 Responsibility											-.03	.42**	-.43**	-.15**
12 Change Expectancy												-.03	-.10*	-.01
13 Divine Cause													-.51**	.02
14 Prevalence														.16**
15 Familiarity														

\* =  $p < 0.05$ ; \*\* =  $p < 0.01$

variables beyond known correlates. Social desirability was entered in step 1, values known to correlate with stigma were entered in step 2, attitudes and beliefs known to correlate with stigma were entered in step 3, and perceived norms was entered in step 4. Values are generally viewed as less amenable to change and more enduring throughout a person's life and were therefore entered before attitudes and beliefs which may be more amenable (Albarracin, Wang, Li, & Noguchi, 2008).

The results from the regression analysis using social distance as outcome are presented in Table 3. Values and social desirability accounted for 17% of the variance in social distance. Adding attitudes and beliefs increased the variance explained to 23%. Finally, perceived norms increased the variance explained to 54% with perceived norms emerging as a significant predictor of social distance after known correlates were accounted for statistically. Other variables that were unique predictors of social distance after step 4 included social dominance, conservatism, the belief that having depression brings shame to one's family, and the belief that depression is on a continuum with normal experience.

The results of the regression analysis, using the DAQ-27 as the outcome variable, are presented in Table 4. Values and social desirability accounted for 24% of the variance in social distance. Attitudes and beliefs increased the variance explained to 41%. Finally, perceived norms increased the variance explained to 46% with perceived norms emerging as significant predictors of public stigma after known correlates were taken into account. Other unique predictors of public stigma after step 4 were social dominance, conservatism, the belief that people with depression are dangerous, the belief that having depression brings shame to one's family, the belief that people with depression are

Table 3.

*Standardized Coefficients of Predictors for Preferred Social Distance*

Predictors	Adjusted $R^2$ Change	F	$\beta$	$p$
<b>Step 1:</b>				
Social Desirability Scale	.01	4.10	.09	.043*
<b>Step 2:</b>				
	.16	30.76		<.001**
Social Desirability Scale			.07	.116
Social Dominance Orientation			-.28	<.001**
Self-transcendent Values			.10	.052
Conservative Values			-.19	<.001**
<b>Step 3:</b>				
	.06	4.99		<.001**
Social Desirability Scale			.07	.148
Social Dominance Orientation			-.21	<.001**
Self-transcendent Values			.09	.063
Conservative Values			-.14	.002**
Dangerousness			-.06	.246
Familial Shame			-.16	.005**
Social Inappropriateness			-.07	.127
Continuity of Experience			.09	.079
Responsibility			-.11	.030*
Change Expectancy			-.03	.461
Divine Cause			.14	.011*
Prevalence			-.02	.718
Level of Familiarity			.10	.020*
<b>Step 4:</b>				
	.31	307.86		<.001**
Social Desirability Scale			.03	.368
Social Dominance Orientation			-.16	<.001**
Self-transcendent Values			.05	.174
Conservative Values			-.10	.005**
Dangerousness			.04	.250
Familial Shame			-.11	.012*
Social Inappropriateness			.04	.206
Continuity of Experience			.13	.001**
Responsibility			.01	.744
Change Expectancy			-.03	.334
Divine Cause			.03	.480
Prevalence			<.01	.961
Level of Familiarity			.06	.059
Perceived Norms			.63	<.001**

Adjusted  $R^2 = .537^{**}$

\* =  $p < 0.05$ ; \*\* =  $p < 0.01$



Table 4.

*Standardized Coefficients of Predictors for Public Stigma (DAQ-27)*

Predictors	Adjusted <i>R</i> <sup>2</sup> Change	F	$\beta$	<i>p</i>
<b>Step 1:</b>				
Social Desirability Scale	<.01	.01	<.01	.938
<b>Step 2:</b>				
	.24	49.95		<.001**
Social Desirability Scale			.03	.562
Social Dominance Orientation			.42	<.001**
Self-transcendent Values			-.01	.761
Conservative Values			.20	<.001**
<b>Step 3:</b>				
	.17	16.49		<.001**
Social Desirability Scale			<.01	.962
Social Dominance Orientation			.25	<.001**
Self-transcendent Values			-.03	.453
Conservative Values			.11	.003**
Dangerousness			.21	<.001**
Familial Shame			.13	.013*
Social Inappropriateness			.01	.721
Continuity of Experience			<.01	.933
Responsibility			.18	<.001**
Change Expectancy			.10	.010*
Divine Cause			.03	.549
Prevalence			-.08	.111
Level of Familiarity			-.07	.048*
<b>Step 4:</b>				
	.05	47.07		<.001**
Social Desirability Scale			.01	.740
Social Dominance Orientation			.23	<.001**
Self-transcendent Values			-.02	.702
Conservative Values			.10	.007**
Dangerousness			.16	<.001**
Familial Shame			.11	.030*
Social Inappropriateness			-.03	.376
Continuity of Experience			-.01	.734
Responsibility			.13	.004**
Change Expectancy			.10	.007**
Divine Cause			.08	.105
Prevalence			-.08	.061
Level of Familiarity			-.06	.106
Perceived Norms			-.27	<.001**

Adjusted *R*<sup>2</sup> = .466\*\*

\* = *p* < 0.05; \*\* = *p* < 0.01



responsible for their disorder, and the belief that positive change is likely for people with depression.

In sum, there was overlap between the results for social distance and the DAQ-27 in terms of the values of social dominance and conservatism as well as the belief that having depression brings shame to one's family. Some predictors also accounted for unique variance.

### **Mediation Analysis**

Multiple mediation analyses were conducted to determine whether the variables of social dominance, conservatism, perceived norms, and familial shame mediated the relationship between ethnicity (Asian vs. Caucasian) and both outcome measures, social distance and the DAQ-27. The PROCESS module for SPSS (Hayes, 2013) was utilized for these analyses. The PROCESS module uses bootstrapping which has become the most recommended approach to evaluating mediation effects (Hayes, 2013). The significance of the mediation paths were evaluated by using 10,000 bootstrap iterations and by considering the lower and upper limits of the 95% bias-corrected bootstrap intervals. Indirect effects were estimated by multiplying the effect of ethnicity on each mediator with the effect of each mediator on social distance (while holding all other mediators constant). The direct effect of ethnicity on social distance was calculated while holding all mediators constant.

The outcomes for social distance and the DAQ-27 are reported in Table 5 and Table 6, respectively. For both outcome variables, the four proposed mediators were significant with the direct effect of ethnicity on the outcome variables no longer significant. The dominant mediator for social distance was perceived norms. The other

Table 5.

*Multiple Mediation Analysis Results (Mediation between Ethnicity and Social Distance)*

Mediators and Comparisons	Unstandardized Estimate	Lower Limit	Upper Limit
(1) Social Dominance	.457*	.145	.938
(2) Perceived Norms	2.114*	1.117	3.244
(3) Conservatism	.325*	.099	.681
(4) Familial Shame	.616*	.194	1.155
Direct Effect	-.442	-1.719	.836
Total Effect	3.070*	1.343	4.800
(1) vs. (2)	-1.657*	-2.837	-.596
(1) vs. (3)	.131	-.316	.647
(1) vs. (4)	-.160	-.732	.507
(2) vs. (4)	1.788*	.758	2.939
(2) vs. (3)	1.497*	.382	2.707
(3) vs. (4)	-.291	-.870	.279

\* = statistically significant (95% CI)



Table 6.

*Multiple Mediation Analysis Results (Mediation between Ethnicity and Public Stigma)*

Mediators and Comparisons	Unstandardized Estimate	Lower Limit	Upper Limit
(1) Social Dominance	-1.790*	-3.315	-.569
(2) Perceived Norms	-3.013*	-4.959	-1.447
(3) Conservatism	-1.052*	-2.189	-.378
(4) Familial Shame	-4.255*	-6.485	-2.518
Direct Effect	.188	-3.810	4.186
Total Effect	-9.922*	-14.744	-5.099
(1) vs. (2)	1.223	-.877	3.510
(1) vs. (3)	-.738	-2.394	.788
(1) vs. (4)	2.465*	.242	4.839
(2) vs. (4)	-1.960*	-3.990	-.137
(2) vs. (3)	1.242	-1.391	3.876
(3) vs. (4)	3.203*	1.134	5.605

\* = statistically significant (95% CI)

three mediators were not significantly different in their effect. For the DAQ-27, however, the dominant mediator was familial shame, with the other three mediators not significantly different in their effect.

### **Effectiveness of Intervention Approaches**

The pre-post values for outcome variables are shown in Table 7. Mixed ANOVAs (Between group: 2 [ethnicity] x 4 [interventions]; Repeated measures: Pre-and post outcomes) were conducted to evaluate the significance of changes in both social distance and the DAQ-27 using the SPSS GLM Repeated Measures procedure. Significant main effects were observed for positive change in social distance over time,  $F(1, 406) = 9.36, p = 0.002$ , as well as the difference in social distance between ethnicities (Asians preferring more social distance),  $F(1, 406) = 9.55, p = 0.002$ . Other main effects and interactions terms were not significant. Finally, none of the planned comparisons were significant.

Significant main effects were found for DAQ-27 differences between Asians and Caucasians,  $F(1,406) = 13.06, p < 0.001$ , and for the interaction between ethnicity and time,  $F(1,406) = 9.01, p = 0.003$ . Follow-up analyses using a Bonferonni adjustment revealed that Caucasians demonstrated a reduction in stigma (whereas Asians showed a marginal increase in stigma) between the two time points,  $F(1,406) = 5.67, p = 0.018$ . Caucasians and Asians also differed in their levels of stigma pre-intervention,  $F(1,406) = 5.93, p = 0.015$ , and post-intervention,  $F(1,406) = 19.21, p < 0.001$ . None of the planned comparisons, other main effects or interactions was significant.

Table 7.

*Pre-and-Post Values for Outcome Measures for Asians and Caucasians*

Intervention and outcome	Pre-intervention	Post-intervention	
	<i>M (SD)</i>	<i>M (SD)</i>	<i>n</i>
<b>Social Distance - Asian</b>			
Biomedical	37.51 (9.44)	38.31 (9.68)	71
Contextual	38.01 (9.12)	38.48 (9.24)	69
Recovery	36.50 (9.74)	38.96 (10.34)	52
Control	38.43 (8.96)	38.97 (8.84)	37
Total	37.58 (9.30)	38.62 (9.52)	229
<b>DAQ-27 - Asian</b>			
Biomedical	115.55 (23.16)	114.27 (23.99)	71
Contextual	113.55 (26.68)	116.10 (22.83)	69
Recovery	114.52 (25.58)	114.04 (29.31)	52
Control	110.03 (21.73)	117.89 (24.76)	37
Total	113.82 (24.52)	115.35 (24.96)	229
<b>Social Distance - Caucasian</b>			
Biomedical	38.03 (8.54)	39.40 (8.53)	40
Contextual	41.90 (10.33)	42.14 (10.24)	51
Recovery	41.06 (9.69)	42.04 (10.05)	53
Control	40.95 (8.60)	42.00 (9.85)	41
Total	40.61 (9.44)	41.49 (9.73)	185
<b>DAQ-27 - Caucasian</b>			
Biomedical	115.88 (23.10)	109.23 (23.04)	40
Contextual	104.63 (32.89)	101.22 (30.49)	51
Recovery	102.00 (25.43)	101.83 (25.72)	53
Control	105.61 (27.11)	103.73 (29.71)	41
Total	106.52 (27.85)	103.68 (27.45)	185

\* =  $p < 0.05$ ; \*\* =  $p < 0.01$  (difference from control)

### **Mediation of Change in Outcome Measures**

Because no differences were found in social distance or the DAQ-27 between different articles and the control condition, further mediational tests (i.e., of how articles functioned to achieve their effect) were not pursued.

### **Discussion**

#### **Ethnicity and Stigma**

Asians preferred greater social distance from people with depression than Caucasians and reported more public stigma on the DAQ-27. These findings are in line with previous research. With regard to traditional Asian values, it was surprising that there was no significant difference between Asians and Caucasians on levels of collectivism. It was also surprising that Caucasians found symptoms of depression to be on a continuum with normal experience more than Asians, but only at trend level.

The construct of perceived norms was a significant predictor of social distance and public stigma above and beyond known correlates similar to previous research (Hsu et al., 2008; Norman et al., 2008b). The belief that having depression brings shame to one's family also remained a significant predictor when entered into the regression analysis with other predictors. The belief regarding familial shame was also correlated with a number of other beliefs which appears to center around the idea that a person's behaviour is unusual or morally wrong. Finally, the differences in social distance and the DAQ-27 between Asians and Caucasians were mediated by conservatism, social dominance orientation, perceived norms, and the belief that having depression brings shame upon one's family. This finding matches the predicted model and also concurs with and extends the findings of Hsu et al. (2008).

As previously noted, beliefs are generally seen to be less long-standing and more amenable to change than are values. Anti-stigma programs addressing perceived norms and/or shame may therefore help to reduce the difference in public stigma and social distance between Asians and Caucasians (as opposed to addressing conservatism or collectivism). Based on the multiple mediation analysis, addressing perceived norms may be especially useful for reducing social distance among Asians, whereas addressing familial shame may be especially useful for reducing public stigma generally (as measured by the DAQ-27). The current thesis focuses largely on social distance, suggesting that an intervention using perceived norms may be most relevant for Study 2.

### **Anti-stigma Programs**

Contrary to expectations, there were no significant changes in social distance for Asians and Caucasians in response to any of the anti-stigma programs. There are insufficient studies that evaluate the effectiveness of anti-stigma programs for depression using social distance as an outcome measure. As such, any comment on whether the current findings represent a significant departure from previous research is precluded. One possibility may be that the programs used in this dissertation were designed around the principle of reducing beliefs regarding personal responsibility and increasing expected change. These variables may be less relevant for influencing social distance than other variables.

Some change in public stigma was observed using the DAQ-27 measure. In particular, Caucasians displayed a reduction in public stigma relative to Asians across all conditions. This result may reflect the fact that the content of most anti-stigma programs is designed by Caucasians based on findings from research largely involving Caucasian

participants. One factor potentially limiting the ability of the different articles to produce change in the current study is that it focused on education only (in particular, the opinion of an expert). Most current anti-stigma programs also include contact with an individual with a mental disorder in order to effect change. The amount of change observed in the experimental conditions was small relative to previous research (e.g., Rusch et al., 2009).

## Study 2

The findings from Study 1 suggest that the most promising avenue for reducing preferred social distance in an Asian population (and potentially in a Caucasian population) may lie in manipulating perceived norms. Such a manipulation would presumably function through changing perceptions of perceived norms, but might also work by altering beliefs regarding familial shame, or some other variables (e.g., variables that have not been explored in Study 1, but have been implied in models of behaviour change, such as feelings of empathy, perceived self-efficacy, or beliefs regarding the costs and benefits of interacting with people with depression).

The objective of Study 2 was to test the effectiveness of an anti-stigma intervention based upon the findings of Study 1; in particular, an intervention that focused on manipulating perceived norms in order to positively influence preferred social distance. Interventions that manipulate perceived norms (also called social proof interventions) can either seek to influence what individuals perceive others to do in particular situations (descriptive norms) or to influence how individuals expect significant others to react (approving or disapproving) when significant others observe them behaving in a certain way (injunctive norms). Such interventions may, however, also create changes in attitudes and other variables of potential interest such as self-efficacy. Study 2 therefore also evaluated the mechanisms by which a perceived norm intervention would work and the implications of this for future research and anti-stigma programs. The intervention consisted of a video recording that featured two actresses. One actress represented a student at UWO with depression whereas another represented a UWO professor who provided education regarding depression. Both Asian and Caucasian

actresses were used in order to evaluate the influence of ethnicity (more specifically, the influence of increased similarity to the participants).

A popular model of behavioural change, the reasoned action approach, which was used in this thesis to evaluate the mechanisms by which the proposed intervention worked to effect change in behavioural intention, is reviewed next. Following this, the literature on using interventions to change behaviour using social proof (perceived norms) is considered. Finally, the interventions designed for the current study are discussed.

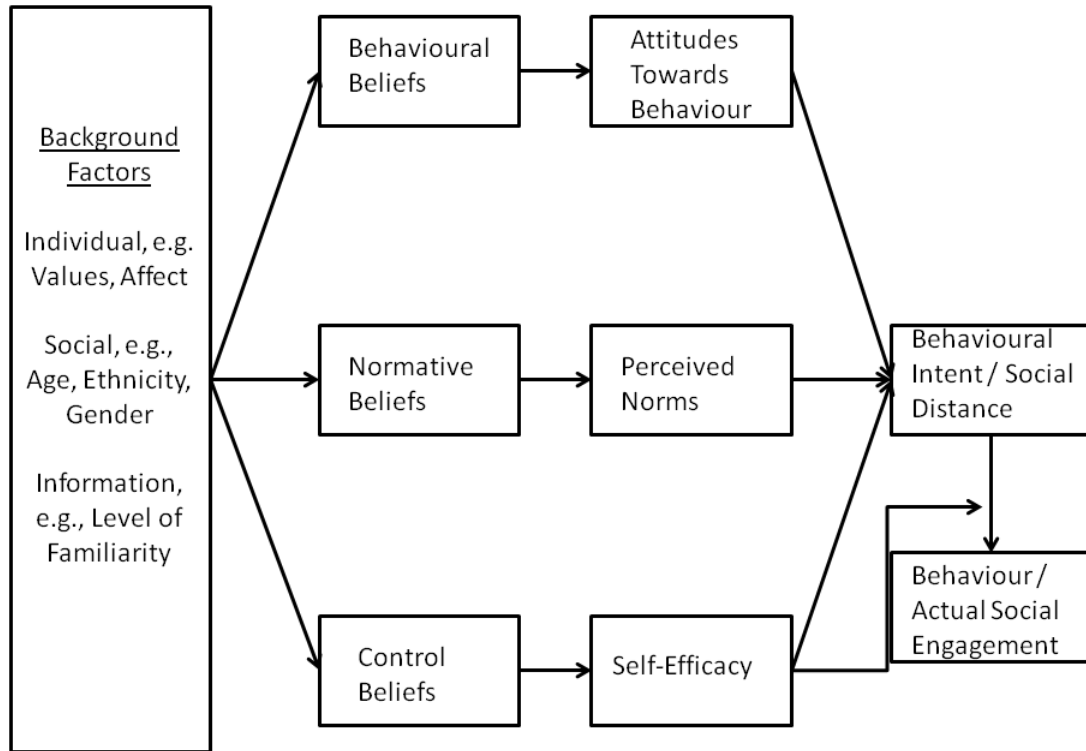
### **Reasoned Action Approach**

The reasoned action approach (see Figure 1) is a model of human behaviour change that has been used effectively in a wide variety of areas, including environmental problems (e.g., recycling), health concerns (e.g., changing behaviour after a cardiac arrest), and reducing prejudice (Albarracin et al., 2001; Armitage & Conner, 2001; Hagger, Chatzisarantis, & Biddle, 2002; Hardeman et al., 2002; Johnson & Boynton, 2010). This model has also been applied to non-western cultures (Kasprzyk & Montano, 2007). According to the reasoned action approach, people form an intention to engage in behaviour based on three proximal factors: attitudes, perceived norms, and perceived behavioural control. A number of other factors that have been proposed to influence behaviours have been conceptualized as more distal (e.g., values and demographic variables are seen as background factors that influence the three more proximal factors). The intent to perform a particular behaviour is believed to be the primary determinant of whether the behaviour actually takes place. The three proximal factors have been shown to explain a significant amount of variance in behavioural intention (Fishbein & Ajzen,



Figure 1.

*The Reasoned Action Approach*



Adapted from "Schematic presentation of the reasoned action model" by M. Fishbein and I. Ajzen, 2010, *Predicting and changing behavior*, p.22. Copyright 2010 by Psychology Press.

2010). Interventions that focus on changing one or more of the proximal factors have often been found to inadvertently influence the other proximal factors as well. Attempts to highlight a benefit of engaging in certain behaviour may, for example, contradict perceived norms, potentially causing a decrease in the intention to perform the behaviour. Similarly, highlighted perceived norms may communicate new information regarding the benefits of a particular behaviour, creating a change in the attitudes towards it. Despite the focus on perceived norms in Study 2, attitudes and perceived behavioural control were also evaluated to fully understand the effect of the proposed interventions. These factors, and the link between intention and behaviour, are reviewed next.

**Attitudes.** The overall attitude towards a behaviour in the reasoned action approach refers to the net cost or benefit that is associated with performing the specific behaviour (Fishbein & Ajzen, 2010). The overall attitude towards hunting animals may, for example, be influenced by the belief (likelihood) that hunting will reduce stress (benefit) and the belief that hunting will involve having to touch dead animals (cost; Daigle, Hrubes, Ajzen, 2002; Hrubes, Ajzen, & Daigle, 2001). The value of each outcome is also relevant (e.g., how much the reduction of stress is valued by an individual). The various outcome beliefs and the value of these outcomes can then be aggregated to determine the overall attitude towards hunting which will influence the individual's intention to engage in hunting. A direct measure of the perceived cost and benefits of engaging in a behaviour (e.g., "Joining a hunting expedition this year will be harmful/beneficial") may, however, also be used as an alternative or in conjunction with the expected outcome and outcome value measure.

With regard to the measurement of attitudes in the current study, only beliefs and attitudes that directly pertain to the outcome variable (i.e., social engagement with people with depression) were taken into account for the final model. As discussed previously, the stigma literature has identified a number of beliefs and attitudes that are of importance in the stigmatization of depression. In particular, beliefs that people with depression are dangerous, that people with depression may act in a socially inappropriate manner, that interacting with people with depression may cause emotional contagion, and that supporting people with depression will support their recovery may be important in determining the attitude of people towards engaging socially with people with mental disorders. Other beliefs which are relevant to stigma, but which do not reflect a direct cost or benefit of interacting with people with depression, include the belief that people with depression bring shame to their family, that depression is continuous with normal experience, that depression is due to personal responsibility or a divine cause, as well as perceptions of the prevalence of depression and change expectancy. This distinction between proximal and distal beliefs and attitudes for the stigma of depression has not been explored in previous research, however; therefore, all these beliefs were measured in Study 2 to determine their relevance for determining social distance towards people with depression.

**Perceived norms.** As discussed previously, perceived norms consist of both descriptive (what someone believes people in his or her in-group do) and injunctive (how someone believes people in his or her in-group will react to his or her behaviours) norms. Perceived norms can be measured by reference to particular individuals within someone's in-group (e.g., mother, sibling, friend) and the importance of the particular individual's

opinions to that person. A direct measure of perceived norms (i.e., just asking how people close to someone would act or react) has, however, been found to be sufficient (see Fishbein & Ajzen, 2010, for a review). In Study 2, a direct measure of perceived norms (both descriptive and injunctive) was used that referred to the same behaviours for which behavioural intent (social distance) was measured.

**Perceived behavioural control.** The concept of perceived behavioural control refers to an individual's perceived ability to perform an action effectively (i.e., to accomplish a specific goal) and the perception that the individual controls whether or not he or she will perform the action. The definition is similar, and largely equivalent, to self-efficacy (Bandura, 1997). This factor can be measured by considering the perceived presence of obstacles and facilitating circumstances as well as the degree to which these obstacles and facilitating circumstances influence the behaviour. Alternatively (or complementary), a direct measure of self-efficacy can measure perceived ability and control. In Study 2, a direct measure was used that measured a participant's belief that he or she can effectively engage a person with depression in a social setting and a participant's belief that he or she controls the factors that would influence the effectiveness of such an engagement.

**Intention and behaviour.** Proximal factors are believed to influence the intention to engage in a behaviour rather than the actual engagement itself. A number of studies and meta-analyses have, however, demonstrated a strong link between intentions and actual behaviours (see Fishbein & Ajzen, 2010, for a review). Of relevance for Study 2, Webb and Sheeran (2006) conducted a meta-analysis on behavioural interventions which showed that subsequent changes in behavioural intentions had a medium to strong

association with subsequent changes in behaviour. Study 2 did not involve the measurement of actual behaviours, but measured intention to engage socially with a person with depression through a social distance measure.

**Summary.** In order to obtain a more comprehensive understanding of the mechanisms of the interventions that were used in Study 2, the influence of the interventions on the three proximal factors that has been identified by the reasoned action approach to behaviour change were evaluated. The reasoned action approach has shown its applicability in many areas of behaviour change, including health behaviours and reducing prejudice. Direct measures of perceived norms and perceived behavioural control were used, and beliefs (but not value of outcomes) related to the costs and benefits of engaging socially with people with depression were measured. A number of interventions using the framework have been evaluated in past research and one such group of interventions, that uses social proof to effect change, is reviewed next.

### **Using Social Proof to Manipulate Perceived Norms**

Robert Cialdini is recognized as one of the most influential researchers in the area of persuasion (Schaller, Kenrick, & Neuberg, 2012). Cialdini (2009) identified six primary ways of persuading others to change their intended behaviour: creating reciprocity, creating commitment, presenting social proof, enhancing liking, citing authority, and emphasizing scarcity. Study 1 of this dissertation, for example, cited authority in an attempt to change social distance. Study 2 focused primarily on presenting social proof in an attempt to change social distance, but enhancing liking and citing authority were also used in the anti-stigma intervention. Social proof interventions present participants with information regarding how others behave in similar situations

(descriptive norms) or with information regarding how an in-group expects members of the group to behave within a situation (injunctive norms).

**Prior research on social proof interventions.** One of the most well-known studies using social proof was concerned with changing hotel guest behaviour to reuse towels over a multiple-day stay (Goldstein, Cialdini, & Griskevicius, 2007, 2008). Participants were presented with a number of different messages on a card in the bathroom to influence their behaviour. The least successful message highlighted the benefits to the hotel (15.6% compliance rate), possibly highlighting participants' sensitivity to influence attempts that are clearly self-serving (Cialdini, Goldstein, & Griskevicius, 2011). A message focusing on co-operation (the hotel would donate a percentage of their savings to charity) fared better (30.7% compliance rate), although a direct appeal to protect the environment showed an even better compliance rate (35.1%). The best outcome, however, came from a descriptive norm intervention which claimed that 75% of hotel guests used their towels more than once (44.1% compliance rate).

Another often-cited study concerned the prevention of environmental crime; in particular, preventing visitors to the Arizona's Petrified National Park from stealing pieces of petrified wood during their visit. Park officials put up a sign that highlighted that tons of petrified wood was being stolen each year and that it was threatening the future of the park. Despite the officials' good intentions, theft increased. Cialdini (2003) emphasized two errors made by the officials. First, they called attention to low base rate behaviour, using language ("tons of petrified wood") that may have insinuated that theft occurred more often than it really did. The descriptive norm therefore encouraged increased theft. Second, the officials highlighted that the resources (petrified wood) may

soon be lost, potentially leaving visitors wanting a piece of a scarce resource before it was all gone. In an experiment reported in Cialdini (2003), the researchers included three conditions. In the first, no signs were put up and the rate for theft from the park was 2.96%. In the second, a sign was put up which showed three people stealing petrified wood from the park. This increased theft to 7.92%. In the third condition, a sign showed a lone visitor stealing petrified wood from the park, which decreased theft to 1.67%. Although this experiment did not cite actual rates of theft to participants, it did marginalize the person portrayed as stealing from the park, potentially setting both a descriptive and injunctive norm.

One of the largest attempts to reduce adolescent substance use in the USA involved the Drug Abuse and Resistance Education (D.A.R.E) program. The program focused on injunctive norms ("just say no to drugs") and training adolescents how to refuse drugs from others (self-efficacy). A report by Donaldson et al. (1995), however, showed that the intervention was not just ineffective in changing behaviours, but actually harmful in promoting first substance abuse among some adolescents. The D.A.R.E intervention focused on a low base rate behaviour potentially increasing the perception of the prevalence of adolescent substance use. The effects of the D.A.R.E program were compared with programs which focused on descriptive norms (Donaldson, Graham, & Hansen, 1994). Programs which corrected adolescent perceptions (generally vast overestimates of drug use prevalence, especially among adolescents who considered starting to use or who were using drugs) were actually much more effective in reducing drug use. It should be noted that the idea of building self-efficacy was not a problem in itself, but rather that it led participants to overestimate the prevalence of drug use among

their peers. In interventions that, for example, encourage people at risk for HIV to use condoms, building skills for asking sexual partners for condom use has been found to be critical components of HIV prevention programs (Albarracin et al, 2003).

Overall, when encouraging an increase in positive behaviours, highlighting descriptive norms that show that others in similar situations behave in positive ways seems to be effective. In contrast, when encouraging a decrease in negative behaviours, marginalizing those who engage in such behaviours or reporting descriptive norms that highlight the low base rate behaviour may be effective (Cialdini et al., 2011).

**The influence of similarity.** The persuasion effect of social proof has been shown to be more effective (and to function more through changing perceived norms) if the person being influenced strongly associates with the group that is portrayed as having specific norms (Bandura, 2011; Terry & Hogg, 1996; Terry, Hogg, & White, 1999). Ethnicity is one such factor that influences association with a group. Study 2 therefore also manipulated the ethnicities of the individuals portrayed in the anti-stigma programs. Similar context has also been shown to be a relevant factor. In the Goldstein et al. (2008) study, the compliance rate for towel reuse was further increased (49.3%) when the message on the card indicated that 75% of guests who stayed in the same room as the participant recycled their towels. Contexts which were further removed from the situation in which the participant found themselves (e.g., guests at other hotels in the same state, as opposed to guest at the same hotel), produced lower compliance rates. In Study 2, the individuals portrayed in the anti-stigma program as well as the individual in the vignette preceding the outcome variables were allegedly from UWO and close to the same academic year (and age) as the research participants. Other factors found to influence



perceptions of similarity include background, life-styles, shared opinions, personality traits, common interests, religion, politics, and dress (see Cialdini, 2009 for a review). The importance of similarity was also emphasized by Bandura (1986) in his discussion of the use of role modeling in learning.

There are, however, some limitations on the influence of similarity. Crano et al. (2007) showed that adolescents trusted medical doctors with information regarding the long-term physical effects of substance abuse, but not with information regarding social consequences of drug use. On the other hand, the adolescents trusted a peer who had used substances in the past with information regarding the social consequences of drug use, but not the long-term physical effects. Information regarding depression based upon research evidence was therefore communicated in Study 2 by an actress depicting a professor rather than the actress depicting a student.

The degree to which a group of people endorse collectivistic values has also been shown to be important in determining the degree to which they are influenced by posited norms. Ybarra and Trafimow (1998) demonstrated that the proportion of influence on behaviour due to change in perceived norms, compared to change in attitudes, was higher among individuals higher in collectivism than among individuals lower in collectivism. Priming collectivism or individualism produced a similar effect in this study. Similar findings regarding the influence of social proof interventions in Eastern and Western cultures were also reported by Bond and Smith (1996) as well as by Cialdini et al. (1999) when comparing the influence of social proof between American (less collectivist) and Polish (more collectivist) participants. Asian participants in Study 2 may therefore be more influenced by depicted norms than Caucasian participants.

**The influence of uncertainty.** Cialdini (2009) and Schultz et al. (2007)

highlighted that compliance to perceived norms is heightened in situations of uncertainty. This view was also put forth by Bandura (1986) who emphasized the importance of observational learning in situations where people are presented with novel or frightening situations. Situations where all observers are uncertain result in failure to engage in expected behaviours such as helping others, also called the "bystander effect" (Latane & Darley, 1968)<sup>8</sup>. On the positive side, the effect of observational learning was shown to be powerful enough to treat children with dog phobia with videos showing other children interacting with dogs (Bandura, Grusec, & Menlove, 1967; Bandura & Menlove, 1968; also see O'Connor, 1972 for a similar intervention with social anxiety). Goldstein and Mortensen (2012) indicated that people who enter a new environment (e.g., immigrants in a new country) may take cues for their own behaviour from observing the behaviours of those who have lived in the environment for a longer period of time. In Study 1, Asians displayed less familiarity with the concept of depression than did Caucasians. It was also pointed out in Study 1 that the diagnosis of depression is often avoided in Asian countries. A possible implication of this finding is that Asians may be more susceptible to depictions of perceived norms related to interactions with people with depression than Caucasians.

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<sup>8</sup> Although diffusion of responsibility also plays a role in the bystander effect, Latane and Darley (1968) showed that collective uncertainty as to whether a person requires help plays a significant role in determining bystanders' reactions.

**The influence of descriptive and injunctive norms.** Goldstein and Mortensen (2012) reviewed the merit of influencing either descriptive or injunctive norms as well as the interaction between these norms (also called the focus theory of normative conduct; Cialdini, Reno, & Kallgren, 1990). Emphasizing descriptive norms seems to produce an effect similar to the regression to the mean phenomenon. In general, people tend to view the degree to which others engage in a behaviour as a measure of what the effective or adaptive level of behaviour is for a certain situation (Cialdini, 2009). In a study by Schultz et al. (2007), households who were informed that they conserved more energy than the average household (descriptive norm) increased their consumption, whereas households who were informed that they used more energy than the average household decreased their consumption. Emphasizing injunctive norms appears to function through calling people's attention to informal social rewards and punishments for behavioural compliance. Households who conserved more energy and who also received an injunctive norm (i.e., were informed that their behaviour was seen as desirable by others through a smiley face on their usage report) maintained their lower level of consumption. For study 2, participants' level of social distance was unknown (as it generally would be in actual anti-stigma campaigns). Therefore, a desirable level of contact was presented in one condition (positive descriptive norm) and a non-desirable (lower) level of contact presented in another (negative descriptive norm). In order to avoid the effect where those individuals who currently engage with people with depression reduce their level of engagement, an injunctive norm reflecting the desirability of engaging with people with depression was presented in both conditions.

**Summary.** A number of studies have demonstrated the effectiveness of using social proof as a persuasion technique. Factors which influenced the effectiveness of social proof include similarity with the portrayed individual(s) and the degree to which the situation is familiar to the person being influenced. These factors were taken into account in Study 2 and the focus was on manipulating descriptive norms. Injunctive norms were biased towards the promotion of interaction with people with depression in both the positive and negative descriptive norm conditions. The injunctive norm manipulation was implemented by having the actress depicting the student with depression either praising those who engaged with her (social reward for engaging in the "correct behaviour") in the positive descriptive norm condition or noting how much it hurt her when others did not engage with her (social punishment for engaging in the "wrong behaviour") in the negative descriptive norm condition. The potential moderating influence of collectivism among Asian participants, for whom this value may be of more importance, was also taken into account.

### **Other Design Considerations**

Study 2 aimed to recreate anti-stigma programs as they are currently being utilized. Such programs usually include a period of contact with an individual who has/had a mental disorder, some education, and a period of time for interaction. Study 2 included video (non-interactive) contact with an individual with depression (potentially utilizing liking for persuasion) as well as education by a purposed professor at UWO (utilizing authority for persuasion), but no interaction with the individual with depression. This methodology introduced the potential for additional variables that needed to be considered.

**Influencing attitudes.** In Study 2, the actress portraying the professor emphasized the benefit of engaging people with depression for their recovery, whereas the actress portraying the student who had depression emphasized the role of other students engaging with her in her recovery. It can be expected that the intervention will also influence perceptions of dangerousness, social inappropriateness, and emotional contagion to some degree, but these attitudes were not directly addressed. A number of factors have been found to influence the perception of authority (Cialdini, 2009) were utilized in the current study: titles (the use of the titles Dr. and professor), clothes (the actress dressed in a business suit), and trappings of power (the interview was filmed in an office). The information presented in Study 2 also directly addressed a number of peripheral beliefs such as continuity with normal experience, cause of depression, prevalence, and change expectancy.

**Liking and empathy.** Batson et al. (1997) showed that inducing empathy for a member of a stigmatized group could improve attitudes towards the stigmatized group as a whole. An intervention which includes contact with an individual with depression may therefore create empathy, and thereby improve attitudes and intentions to be more socially engaged with people with depression. Fishbein and Ajzen (2010) have considered the importance of affective responses, but concluded that they are more distal variables related to the intention to behave in a certain fashion. Similar to the claim by Batson et al. (1997), these researchers would therefore propose that empathy influences intentions and eventual behaviour through a change in attitudes, perceived norms, and perceived behavioural control. Feeling empathy may create meta-cognitive changes by, for example, focusing participants' attention and memory on positive interactions they or

others had with people with depression, influencing attitudes and perceived norms and impacting their belief that they could interact well with people with depression. Whether change in attitudes, perceived norms, and perceived behavioural control mediated the influence of change in empathy on intention was also considered in Study 2.

### **Main Hypotheses**

Study 2 included contact (through watching a video) with an actress portraying a UWO student who previously had depression as well as education by an actress portraying a professor. The UWO student and professor either posited positive descriptive norms in the environment (the student was engaged by others and the professor indicated that engaging people with depression is increasing) or negative descriptive norms (the student was rejected by others and the professor indicated that rejecting people with depression is increasing). In both cases, however, engaging socially with people with depression was indicated as the desirable outcome. One set of videos had Asian actresses and another set had Caucasian actresses.

Greater positive change in social distance was expected to occur in the positive descriptive norms intervention than in the negative descriptive norms intervention and the control condition for Asians (planned comparisons). The possibility existed, however, that this effect may be attenuated among Caucasians due to less uncertainty regarding expected behaviour as well as a lower base rate of desired social distance (closer to people with depression) for Caucasians in the control condition. Participants were expected to show increased change in social distance (closer) when their ethnicity matched that of the actresses (planned comparisons). The reasoned action approach was expected to be relevant to the intervention such that changes in attitudes, perceived

norms, and perceived behavioural control would account for a significant amount of the change between the various conditions using multiple regression methods. Adding empathy, values (social dominance, conservatism, and collectivism), and distal beliefs to the multiple regression model using hierarchical multiple regression was not expected to significantly increase the overall variance explained in social distance, because their contribution was expected to be captured by the more proximal variables. A multiple mediation model including changes in attitudes, perceived norms, and perceived behavioural control was expected to show that changes in perceived norms was a significant component of the overall intervention for the positive descriptive norms intervention compared to the negative descriptive norms intervention and the control condition. Collectivism was expected to be a significant moderator such that Asian participants higher in collectivism would respond stronger to the descriptive norm intervention (positively or negatively depending on the nature of the descriptive norm intervention) than the control group.

## **Methods**

### **Participants**

Undergraduate students were recruited through the UWO research participation pool ( $n = 287$ ). Students received course credit for their participation. The sample consisted of 198 females and 87 males<sup>9</sup>. Participants' self-identified ethnicities were 46% Asian, 45% Caucasian, and 9% other. The generational breakdown for Asians was 55% first generation, 39% second generation, 3% third generation, and 3% fourth generation

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<sup>9</sup> Two participants failed to report gender.

or higher. The generational breakdown for Caucasians was 7% first generation, 23% second generation, 36% third generation, and 34% fourth generation or higher. The mean age of participants was 18.69 ( $SD = 4.01$ ) years, with participants ranging in age from 16 to 54 years.

## Measures

**Beck Depression Inventory II (BDI-II; Beck et al., 1996).** Psychometric properties and details regarding this measure are outlined in Study 1.<sup>10</sup>

**Depression Attribution Questionnaire-27 (DAQ-27; Kanter, Rusch, & Brondino, 2008).** The internal consistency of this measure (which was used in Study 1) in the current study was 0.89.

**Social Distance Scale.** This measure was unchanged from Study 1. The internal consistency in the current study was 0.92.

**Crowne-Marlowe Social Desirability Scale (SDS; Crowne & Marlowe, 1960).** The internal consistency in the current study was 0.73.

**Asian American Values Scale—Multidimensional (AAVS-M; Kim, Li, & Ng, 2005).** The collectivism scale from the AAVS-M (discussed in Study 1) was used in the current study. The collectivism scale consists of seven items related to the importance of putting the interests of the group above that of the individual. The collectivism scale had an internal consistency of 0.72 in the current study.

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<sup>10</sup> This measure was included for exploratory purposes and is therefore not considered further in this thesis.



**Schwartz's Value Survey (SVS; Schwartz, 1992).** The survey was altered to present participants with a short description of 27 values and they were asked to rate the importance of these values on a nine point scale (-1 = opposed to my principles, 7 = of supreme importance). Only items related to the higher-order constructs of self-transcendence and conservatism were included. The individual items were summed to construct a self-transcendence and conservatism scale. Conservatism and self-transcendence scale values from Study 1 using this method correlated 0.55 and 0.58, respectively, with conservatism and self-transcendence scale values using the original scoring system. The conservatism and self-transcendence subscales demonstrated internal consistencies of 0.87 and 0.88, respectively, in the current study.

**Social Dominance Orientation Scale (SDOS; Pratto et al., 1994).** This measure has excellent psychometric properties as previously highlighted. The scale had an internal consistency of 0.89 in the current study.

**Batson Empathy Scale (BES; Batson, 1991; Batson et al., 1997).** This scale consists of six items that measure the extent to which participants experience feelings of empathy towards another person. Participants rate how much they experience the following towards the other person: sympathy, compassion, softheartedness, warmth, tenderness, and feeling moved. Ratings are given on a seven-point scale (1 = not at all; 7 = extremely). The scale has been used in prior research on the impact of empathy on stigma (Batson et al., 1997). The internal consistency of the scale in the current study was 0.91.

**Level of Familiarity Scale (LOF).** This measure was unchanged from Study 1.<sup>10</sup>

**Perceived norms.** Psychometric properties and details regarding the descriptive and injunctive norms are outlined in Study 1. Internal consistency (Cronbach's alpha) for this scale was 0.94 in the present study. Six exploratory items were introduced depicting the same situations as for descriptive and injunctive norms, but focusing on personal norms (personal beliefs regarding one's moral duties) instead. These items were worded as personal imperatives, e.g., "I should become a friend of M.L." The internal consistency of the personal norm scale was 0.89. Six exploratory items measuring role norms were also included, focusing on perceived moral duties while in a friend relationship. An example of such an item is "If M.L. was my friend, I should recommend M.L. for a job." The internal consistency of the role norm scale was 0.85.

**Attitude and Belief Scales.** Internal consistency was computed for the various scales used in the current study. The following scales were retained from the previous study: shame and disharmony (4 items;  $\alpha = 0.84$ ), social inappropriateness (3 items;  $\alpha = 0.67$ ), continuity with normal experience (3 items;  $\alpha = 0.63$ ), personal responsibility and weakness (5 items;  $\alpha = 0.81$ ), divine cause (2 items;  $\alpha = 0.78$ ), and prevalence of depression (2 items;  $\alpha = 0.68$ ). Items were added to the offset responsibility scale, but it was again eliminated as it failed to achieve an internal consistency above 0.50. Two existing scales were changed: one item previously eliminated from the dangerousness scale was added back (4 items;  $\alpha = 0.59$ ) and four items adapted from the Depression Change Expectancy Scale (DCES; Eddington, Dozois & Backs-Dermott, in press) were added to the change expectancy scale (8 items;  $\alpha = 0.66$ ). Four new scales were added. Three scales were derived from items suggested in Fishbein & Ajzen (2010) for measuring factors relevant to the reasoned action approach to predicting behavior. Two

of these scales were related to the costs and benefits of engaging with people with depression: the emotional contagion scale (4 items;  $\alpha = 0.74$ ) and the expected benefit of support scale (4 items;  $\alpha = 0.78$ ). The other scale related to factors implied in the reasoned action approach measured the self-efficacy of participants in engaging with people with depression (4 items;  $\alpha = 0.75$ ). The final new scale was exploratory and was derived from the existing familial shame scale to reflect the personal shame a participant may experience from having depression (4 items;  $\alpha = 0.72$ ).

**Value Engagement Survey.** This exploratory measure was derived from the items contained in the Short Schwartz's Value Survey (SSVS; Lindeman & Verkasalo, 2005). Participants are presented with ten values and asked to rate how important each value is in their decision on how to behave towards M.L. on a seven point scale (1 = not important at all, 7 = of supreme importance). Four higher-order values are calculated from the importance assigned to the values. The composition of these higher-order values is: Self-transcendence (universalism, benevolence); Conservatism (conformity, tradition, security); Self-enhancement (power, achievement, hedonism); and, Openness to experience (stimulation, self-direction, hedonism). The internal consistency for the two higher-order values of interest in the current study (conservatism and self-transcendence) was 0.71 and 0.73, respectively.<sup>10</sup>

**Demographic information.** Information related to participants' age, sex, intended university major, ethnicity (including Asian sub-groups), generational status, and religious background was collected.

## **Procedure**

The first part of the study was conducted online. Participants who indicated interest in the study were informed by e-mail that they would be involved in a half-an-hour study online followed by an hour-and-a-half study to be completed at a lab. The study was open to all students initially, but limited to Asian participants after approximately 100 Caucasian individuals were recruited. In the first part of the study, participants were presented with a consent form (see Appendix E) and letter of information (see Appendix F) for a “Social Marketing - Attitudes and Beliefs” study. Participants’ levels of depressive symptoms were assessed using the BDI-II. Participants were then asked to complete scales measuring their endorsement of certain ideologies and values (AAVS-M, SDOS, and SVS). They also completed a social desirability measure (CMS) and reported their familiarity with depression (LOF). Finally, participants completed demographic information.

For the second phase of the study, participants attended a psychology lab at a pre-arranged time. They were presented with one of four different anti-stigma programs (with the exception of participants in the control condition who only completed questionnaires) in the form of 15 minute video presentations. A professional videographer and four actresses were recruited to shoot these videos. The videos alternated presenting a purported UWO student who claimed to have had a major depressive episode in the past and a purported UWO clinical psychology professor who provided education regarding depression. Two factors were manipulated in these four videos. First, the ethnicities of the UWO student and professor were either Asian or Caucasian. Second, the UWO student reported encountering either positive or negative attitudes from others when they had a depressive episode. Similarly, the UWO professor reported that public stigma

against people with depression were either very prevalent (negative social norms) or improving significantly (positive social norms). The scripts for the videos are presented in Appendix G.

Participants were then asked to report how much they empathized with the person in the video (using the BES; not presented for participants in the control condition). Public stigma towards individuals with depression was then measured based on a vignette depicting an individual with severe depression (DAQ-27). Participants were also asked how much they were able to empathize with the person in the vignette (BES). Respondents then completed a measure of their preferred social distance from the person in the vignette (SDS). Participants then completed measures related to attitudes and beliefs regarding people with depression, a perceived norms measure (PNO), and a measure of how much their values were engaged in the decision-making regarding the person with depression (VES). Participants were debriefed, informed that the people in the video were actresses, and thanked for their participation. The debriefing form (see Appendix H) for the study contained resources for those participants interested in seeking help for current mood problems.

## **Results**

### **Variables Related to Outcome Measures**

Table 8 displays the correlation coefficients among the outcome variables and the variables considered proximal in the reasoned action approach across all conditions for both Asians and Caucasians. The social distance and DAQ-27 outcome variables were again strongly correlated. The variables which represented proximal factors of intentions for the reasoned action approach showed medium to very strong correlations with social

Table 8.

*Correlation Coefficients of Key Variables for Asians and Caucasians - Study 2*

	2	3	4	5	6	7	8
1 Social Distance	-.57**	.72**	.46**	-.30**	-.27**	-.40**	.29**
2 Stigma (DAQ-27)		-.38**	-.46**	.44**	.14*	.52**	-.41**
3 Perceived Norms			.31**	-.20**	-.27**	-.36**	.12
4 Self-efficacy				-.21**	-.13*	-.35**	.56**
5 Dangerousness					.20**	.49**	-.04
6 Social Inappropriateness						.21**	.14*
7 Emotional Contagion							-.20**
8 Value of Support							

\* =  $p < 0.05$ ; \*\* =  $p < 0.01$

distance: Perceived norms, self-efficacy, dangerousness, social inappropriateness, expectations of emotional contagion, and perceived value of support. Variables which represent values and which are normally seen as distal factors showed medium to very low correlations with social distance: Social dominance ( $r = -.26$ ), collectivism ( $r = .15$ ), and conservatism ( $r = -.01$ ). Empathy (also usually seen as distal), however, had a strong correlation with social distance ( $r = .49$ ). Other beliefs which are seen as distal had low to medium correlations with social distance: Familial shame ( $r = -.32$ ), continuity with normal experience ( $r = .17$ ), responsibility and weakness ( $r = -.30$ ), change expectancy ( $r = .32$ ), divine cause ( $r = -.19$ ), and prevalence ( $r = .20$ ).

### **Effectiveness of Perceived Norms Approaches**

The effectiveness of the intervention approaches for the follow-up portion of the study is shown in Table 9. A two-way ANOVA (3 [interventions] x 2 [ethnicity]) was used to analyze the effectiveness of the approaches<sup>11</sup>. The Levene's Test of Equality of Variances was not significant,  $F(5, 254) = 0.20$  (i.e., the variances were largely equal between cells). The main effect for ethnicity was significant,  $F(1, 254) = 5.01, p = 0.026$ , whereas the main effect for the interventions was marginal,  $F(2, 254) = 2.52, p = 0.082$ , as was the interaction term,  $F(2, 254) = 2.71, p = 0.068$ . Planned comparisons revealed that the positive norms approach,  $t(1, 254) = 3.12, p = 0.002$ , had a positive effect on

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<sup>11</sup> Because only 2 control groups (one for each ethnicity) were used, the use of a three-way ANOVA would result in several empty cells. Analyzing 2 two-way ANOVAs were therefore chosen as an alternative method of analysis. Also note that, unlike Study 1, there were no repeated measures in Study 2.

Table 9.

*Outcomes for Perceived Norms Intervention Approaches*

Outcome	<i>M (SD)</i>	<i>n</i>
<b>Asian Participants Only</b>		
Social Distance - Positive Norms	42.77 (9.85)**	48
Social Distance - Negative Norms	41.72 (9.34)*	54
Social Distance - Control	35.86 (9.06)	29
Social Distance - Total	40.81 (9.78)	131
DAQ-27 - Positive Norms	101.83 (26.64)**	48
DAQ-27 - Negative Norms	110.42 (27.54)	54
DAQ-27 - Control	121.14 (18.00)	29
DAQ-27 - Total	109.65 (26.24)	132
Social Distance - Caucasian Actor	42.93 (9.81)**	54
Social Distance - Asian Actor	41.42 (9.29)*	48
Social Distance - Control	35.86 (9.06)	29
Social Distance - Total	40.81 (9.78)	131
DAQ-27 - Caucasian Actor	109.38 (27.65)*	55
DAQ-27 - Asian Actor	103.02 (26.86)**	48
DAQ-27 - Control	121.14 (18.00)	29
DAQ-27 - Total	109.65 (26.24)	132
<b>Caucasian Participants Only</b>		
Social Distance - Positive Norms	43.42 (9.24)	53
Social Distance - Negative Norms	42.08 (9.71)	52
Social Distance - Control	43.13 (8.82)	24
Social Distance - Total	42.82 (9.31)	129
DAQ-27 - Positive Norms	88.23 (19.96)	53
DAQ-27 - Negative Norms	87.85 (20.54)	52
DAQ-27 - Control	92.83 (25.16)	24
DAQ-27 - Total	88.93 (21.15)	129
Social Distance - Caucasian Actor	43.10 (10.57)	51
Social Distance - Asian Actor	42.43 (8.36)	54
Social Distance - Control	43.13 (8.82)	24
Social Distance - Total	42.82 (9.31)	129
DAQ-27 - Caucasian Actor	87.65 (22.49)	51
DAQ-27 - Asian Actor	88.41 (17.87)	54
DAQ-27 - Control	92.83 (25.16)	24
DAQ-27 - Total	88.93 (21.15)	129

\* =  $p < 0.05$ ; \*\* =  $p < 0.01$  (difference from control)



preferred social distance among Asian participants compared to the control condition, but not compared to the negative norms approach,  $t(1, 254) = 0.56, p = 0.575$ . A post-hoc comparison (using Bonferonni adjustment) showed that the negative norms approach,  $t(1, 254) = 2.70, p = 0.044$ , also had a positive effect on preferred social distance among Asian participants compared to the control condition. Further post-hoc comparisons revealed that no significant differences existed between interventions for Caucasians<sup>12</sup>.

Another two-way ANOVA (3 [interventions] x 2 [ethnicity]) was used to evaluate the influence of actress ethnicity. The Levene's Test of Equality of Variances was not significant,  $F(5, 254) = 0.99$ , (i.e., the variances were largely equal between cells). The main effect for ethnicity was significant,  $F(1, 254) = 5.23, p = 0.023$ , whereas the main effect for the ethnicity of the actresses was marginal,  $F(2, 254) = 2.45, p = 0.089$ , as was the interaction term,  $F(2, 254) = 2.68, p = 0.070$ . Planned comparisons revealed no significant difference,  $t(1, 254) = 0.81, p = 0.420$ , when comparing social distance between Asian participants who saw the videos featuring the Asian actresses and those who saw the videos featuring the Caucasian actresses. Similarly, there was no statistically significant difference,  $t(1, 254) = 0.37, p = 0.715$ , when comparing social distance between Caucasian participants who saw the videos featuring the Asian actresses and those who saw the videos featuring the Caucasian actresses.

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<sup>12</sup> An alternative approach to these comparisons showed that there were significant differences in social distance between Asians and Caucasians in the control condition,  $F(1, 254) = 7.81, p = 0.006$ , but not in the positive norms,  $F(1, 254) = 0.12, p = 0.732$ , and negative norms,  $F(1, 254) = 0.04, p = 0.846$ , conditions.

### **Test of Reasoned Action Approach using Hierarchical Multiple Regression**

A two-step hierarchical multiple regression (see Table 10) was conducted to determine the amount of change explained by the proximal factors noted in the reasoned action approach and to determine if factors believed to be more distal significantly changed the amount of variance explained. All the proximal factors (according to the reasoned action approach) related to changing behavioural intention were entered into the equation first. The proximal factors explained 60% of the variance in social distance. Perceived norms, self-efficacy, perceptions of dangerousness, and perceived value of support emerged as significant unique predictors of variance. The distal factors related to changing behavioural intention (values, beliefs, and empathy) were entered second, and explained an additional 5% of variance, which was statistically significant. Perceived norms and self-efficacy remained significant unique predictors of variance. Empathy and conservatism also emerged as significant unique predictors of variance.

### **Mediation of Change in Outcome Measures**

The analysis of the mediation of change between the norm manipulations and the control condition for Asian participants<sup>13</sup> is displayed in Table 11. The potential mediators considered were the proximal factors for the reasoned action approach. When considering the positive norms manipulation using social distance as outcome, perceived norms and self-efficacy emerged as significant mediators. The variable of perceived

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<sup>13</sup> Due to the lack of effectiveness of the norms approaches compared to the control condition for Caucasian participants, the mediational analyses were limited to Asian participants.

Table 10.

*Hierarchical Multiple Regression Analysis for Reasoned Action Approach - Study 2*

Predictors	Adjusted $R^2$ Change	F	$\beta$	$p$
<b>Step 1: Proximal Factors</b>	.60	64.47		<.001**
Perceived Norms			.60	<.001**
Self-efficacy			.15	.004**
Dangerousness			-.11	.016*
Social Inappropriateness			-.08	.074
Emotional Contagion			-.04	.413
Value of Support			.14	.008**
<b>Step 2: Distal Factors</b>	.05	4.46		<.001**
Perceived Norms			.57	<.001**
Self-efficacy			.11	.045*
Dangerousness			-.08	.083
Social Inappropriateness			-.07	.093
Emotional Contagion			-.02	.691
Value of Support			.05	.431
Empathy			.23	<.001**
Social Dominance Orientation			-.07	.123
Collectivism			.05	.256
Conservatism			-.10	.023*
Familial Shame			.08	.196
Normal Continuity			.03	.514
Responsibility and Weakness			.03	.531
Change Expectancy			.08	.095
Divine Cause			-.08	.200
Prevalence			.01	.822

Adjusted  $R^2 = .646$ \* =  $p < 0.05$ ; \*\* =  $p < 0.01$

Table 11.

*Multiple Mediation Analysis Results for Asian Participants for Study 2*

Mediators	Unstandardized Estimate	Lower Limit	Upper Limit
<b>Social Distance - Positive norms vs. Control</b>			
(1) Perceived Norms	-2.993*	-6.082	-.422
(2) Value of Support	-.281	-1.379	.504
(3) Dangerousness	-.517	-2.144	.272
(4) Social Inappropriateness	.070	-.478	.965
(5) Emotional Contagion	.048	-.959	1.057
(6) Self-efficacy	-1.977*	-4.502	-.615
Direct Effect	-1.258	-4.402	1.887
Total Effect	-6.909*	-11.390	-2.428
<b>Social Distance - Negative norms vs. Control</b>			
(1) Perceived Norms	-3.227*	-6.173	-.840
(2) Value of Support	-.905*	-2.453	-.105
(3) Dangerousness	-.242	-1.420	.154
(4) Social Inappropriateness	-.369	-1.577	.108
(5) Emotional Contagion	-.195	-1.222	.220
(6) Self-efficacy	-.741	-2.780	.434
Direct Effect	-.182	-3.436	3.072
Total Effect	-5.860*	-10.094	-1.626

\* = statistically significant (95% CI)

norms was also a significant mediator when considering the negative norms manipulation. The perceived value of supporting those with depression also emerged as a significant mediator, but self-efficacy no longer mediated this relation significantly.

An analysis of the mediation of change between the norm manipulations and the control condition which considered empathy (and emerged as a significant unique predictor of variance in the hierarchical multiple regression mentioned above) is displayed in Table 12. When considering the positive norms manipulation using social distance as outcome, perceived norms, empathy, and self-efficacy emerged as significant mediators. Perceived norms and empathy were also significant mediators when considering the negative norms manipulation, but self-efficacy was no longer a significant mediator.

### **Possible Moderators**

Collectivism was considered as a potential moderator for the norm manipulation among Asians. The PROCESS module for moderation in SPSS (Hayes, 2013), which essentially uses multiple regression to determine the influence of the interaction between two factors on the regression after the factors themselves have been entered, was used. Collectivism emerged as a moderator,  $F(1,98) = 5.48, p = 0.021$ , such that Asians high in collectivism showed positive outcomes in social distance compared to Asians low in collectivism in the positive norms manipulation. In contrast, Asians high in collectivism showed similar outcomes in social distance compared to Asians low in collectivism in the negative norms manipulation (see Figure 2).

Table 12.

*Multiple Mediation Analysis Results for Asian Participants for Study 2 with Empathy Included.*

Mediators	Unstandardized Estimate	Lower Limit	Upper Limit
<b>Social Distance - Positive norms vs. Control</b>			
(1) Perceived Norms	-2.672*	-5.442	-.458
(2) Empathy	-1.263*	-3.532	-.139
(3) Value of Support	.096	-.720	1.521
(4) Dangerousness	-.579	-2.253	.146
(5) Social Inappropriateness	.122	-.325	1.067
(6) Emotional Contagion	.233	-.570	1.394
(7) Self-efficacy	-1.767*	-4.171	-.461
Direct Effect	-1.078	-4.093	1.936
Total Effect	-6.909*	-11.390	-2.428
<b>Social Distance - Negative norms vs. Control</b>			
(1) Perceived Norms	-2.816*	-5.466	-.730
(2) Empathy	-1.039*	-2.925	-.124
(3) Value of Support	-.599	-2.069	.171
(4) Dangerousness	-.285	-1.405	.129
(5) Social Inappropriateness	-.409	-1.654	.093
(6) Emotional Contagion	-.155	-1.197	.295
(7) Self-efficacy	-.702	-2.577	.376
Direct Effect	.144	-3.016	3.304
Total Effect	-5.860*	-10.094	-1.626

\* = statistically significant (95% CI)

Figure 2.

*Moderation Effect for Collectivism between Positive and Negative Descriptive Norm Approaches for Asians.*



Low collectivism was identified at the 10th percentile of the Asian population and high collectivism was identified at the 90th percentile of the Asian population.

## Discussion

Social distance showed strong correlations with both self-efficacy and perceived norms as expected, and medium to strong correlations with attitudes considered to be proximal to behavioural intention. These findings are generally consistent with meta-analytic studies that reported correlations relevant to the reasoned action approach (Fishbein & Ajzen, 2010). The observed correlation for perceived norms ( $r = .72$ ) was quite high compared to the mean correlations in the meta-analyses (ranging from .34 to .42) and the observed correlation for self-efficacy ( $r = .46$ ) was within the observed range in the meta-analyses (.35 to .46). The observed correlations for attitudes (.27 to .40) were, however, somewhat below the usually observed range (.45 to .60). It should be noted, however, that large variation in the importance of attitudes, self-efficacy, and perceived norms is common for different behaviours (Fishbein & Ajzen, 2010) and that the current findings may therefore represent an accurate reflection of the importance of these variables for intentions to socially interact with individuals with stigmatizing conditions.

Observed correlations with more distal beliefs were low to moderate, but empathy demonstrated a high correlation with social distance ( $r = .49$ ). Empathy may, however, operate through the proximal variables and this possibility was considered in the multiple regression and mediation analyses.

### Efficacy of Perceived Norm Interventions

Both videos emphasizing positive and negative descriptive norms were effective in producing positive outcomes in social distance compared to the control condition among Asian participants. The effectiveness of the positive norms approach was



expected, but the largely equal effectiveness of the negative norms approach was surprising. This finding was explored further using mediational analyses.

The ethnicity of the actresses unexpectedly made no difference in desired social distance compared to the control condition for either Asians or Caucasians. One possibility is that the environmental context in the video largely centered on university life at UWO. Participants may have been able to identify with the purported UWO students, regardless of their ethnicity. It is certainly possible that the ethnicity of the actresses may have been more important if a context was represented in which ethnicities were less integrated. Another possibility is that the relative anonymity of the person with depression presented in the vignette (M.L.) focused participants' attention on the only information they had in common with the person (an undergraduate student at UWO), thereby making ethnicity less salient.

Although the norm interventions were expected to be less effective for Caucasians than Asians, the lack of positive outcomes in social distance for Caucasians related to the interventions was surprising. One explanation may be the nature of the control conditions. Compared to Study 1, the Asian control group showed increased (lower scores) desired social distance ( $M = 37.30$  [Study 1] vs.  $M = 35.86$ ) and higher scores on the DAQ-27 ( $M = 115.71$  vs.  $M = 121.14$ ). In contrast, the Caucasian control group showed reduced (higher scores) desired social distance ( $M = 40.26$  [Study 1] vs.  $M = 42.82$ ) and lower scores on the DAQ-27 ( $M = 105.72$  vs.  $M = 92.83$ ). These differences may represent random variation in the makeup of the control groups or an actual change in social distance and stigma in students over time (Study 1 was completed in 2012 and Study 2 in 2013 with participants largely coming from the first year intake in each year).

Another consideration with regard to observing outcomes in social distance is the possibility of ceiling effects. Although there is room for change within the measure of social distance (observed mean of 42.82 for Caucasians compared to a possible maximum of 60), it is unclear how much social distance participants would generally desire from another UWO student who were not known to them. It is possible that irrespective of whether a person has depression or not, people may simply be reserved in their openness to interacting on a social level with new people, especially where the social interactions are quite intimate or emotionally laden (e.g., having someone marry your sister). Having such a baseline value available can potentially allow for a better determination of both the actual influence of the condition of depression on desired social distance and the amount of change in social distance that can realistically be expected through interventions.

### **The Reasoned Action Approach**

The proximal factors of the reasoned action approach explained 60% of the variance in social distance. Fishbein and Ajzen (2010) reported twelve studies that have tested the ability of the reasoned action approach to predict intentions across a variety of behavioural domains. The twelve studies had a mean multiple regression coefficient ( $R$ ) of .77. The current study found a multiple regression coefficient of .78, comparing well to the prediction of behavioural intent found in other domains. Perceived norms and self-efficacy were significant independent predictors, as were the attitudes of dangerousness and perceived value of support.

The sufficiency of the reasoned action approach was also considered. Variables such as beliefs, values, and affect, usually add significant, but minor, additional predictive power to behavioural intentions (Fishbein & Ajzen, 2010). In the current

study, 6 distal beliefs, 3 values, and an empathy variable explained an additional 5% of the variation in behavioural intent. This result seems to be largely due to the addition of empathy and the effect of this variable was therefore considered further in the multiple mediation analyses.

### **Mediators of Change**

A multiple mediation analysis revealed that the positive norm intervention largely worked through improved perceived norms and higher self-efficacy for Asian participants. The influence of attitudes for changing behavioural intent was less relevant. For the negative norm intervention, the influence through perceived norms was surprisingly still significant and preferred social distance was also influenced by participants feeling that engaging with the person with depression would be beneficial. Interestingly, however, participants did not feel more efficacious in actually being able to successfully engage people with depression.

It seems straightforward that the video showing positive descriptive and injunctive norms would influence social distance through a perceived norms mechanism. The positive effect through perceived norms for the video showing negative descriptive norms was, however, more puzzling. One possibility is that, although the base rate for engaging with people with depression was posited to be lower in the negative norms condition, no actual rate was ever specified. Asian participants may have believed that a higher rate of interaction with people with depression was present even in the negative norms condition than what they perceived themselves to engage in. Another possibility, however, is that injunctive norms, which were positive in both conditions, were more influential than expected with regard to social distance. Reno, Cialdini, and Kallgren

(1993) highlighted that injunctive norms may overrule descriptive norms in conditions where the injunctive norms are made salient. Injunctive norms were emphasized in the negative norms condition by highlighting the disapproval of the student with depression of the behaviours of those who avoided her. It is possible that the emotional salience of social punishment in this condition may have influenced the participants, especially those for whom the opinions and approval of their peers were of significance. Similar to the negative norms condition, the social reward experienced when the student in the positive norms condition praised those who did not judge her and listened to her, could also have influenced the participants.<sup>14</sup>

Although the focus of Study 2 was not on the influence of self-efficacy, the finding that this variable was a mediator in the positive norms manipulation, but not the negative norms manipulation, has significant implications. The first implication is related to previous findings that self-efficacy not only influences behavioural intent, but may also moderate whether intentions actually lead to behaviour (see Fishbein & Ajzen, 2010, for a review). Specifically, once people are confronted with actual obstacles to performing a given behaviour, their confidence that these obstacles can be overcome is important in determining whether they will perform the behaviour as well as their

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<sup>14</sup> An exploratory mediational analysis which separated injunctive and descriptive norm components of the perceived norms measure was conducted. The positive norm intervention appeared to work through descriptive norms, but not through injunctive norms. The negative norm intervention, in contrast, worked through injunctive norms, but not through descriptive norms.

perseverance in the face of difficulty. When confronted with a person with depression who rejects attempts to influence his or her mood, self-efficacy may therefore be of critical importance. Another finding highlighted by Fishbein and Ajzen (2010) is that perceived norms reduce in importance in determining behaviour as self-efficacy rises. Essentially, people become confident in being able to achieve a desired outcome, and depend less on the opinion of others with regard to how they should behave. Finally, increasing knowledge regarding a potentially stigmatizing condition without providing efficacy in being able to interact with people with this condition could cause social avoidance. The emergency of HIV, for example, led to a large-scale effort to educate the public on the risks of this condition. People who did not feel safe (efficacious) in their ability to avoid infection or who were unsure how to communicate with others with a terminal condition, may well have avoided engaging with people with HIV (Green, 2009). Once life expectancy for people with HIV improved and people became more certain of how to avoid infection, stigma appeared to decrease.

The lack of influence of attitudes for determining behavioural intentions for Asians may reflect the degree of familiarity that Asian participants have with people with depression. Fishbein and Ajzen (2010) highlighted that as attitudes become more strongly held through actual experience (e.g., experiencing emotional contagion when interacting with someone with depression), their influence on intentions increase. Asians displayed less familiarity with depression than did Caucasians in this study and their attitudes may have been less strongly formed. Another possibility, however, is that all relevant proximal attitudes may not have been captured in this study. A direct measure of attitudes (i.e., a measure which directly questioned the perceived cost and benefit of interacting

with someone with depression) may have been useful in the current study if participants' actual experience of specific costs and benefits were low. This methodology would have also permitted the evaluation of attitudes (overall costs and benefits) as a single determinant of behaviour (thereby increasing internal consistency), rather than a combination of four different attitudes. One attitude, the belief that interacting with people with depression would support their recovery, was a significant mediator for the negative norms condition. One possibility is that participants may have been alerted to the importance of social interaction by the student in the video emphasizing how much social isolation had hurt her. This emphasis may have made the potential benefit of social interaction more salient in the negative norms condition than in the positive norms condition.

The way items related to attitudes and self-efficacy were constructed may have limited their degree of association with behavioural intentions and conversely the degree to which they were found to mediate the relationship between the interventions and social distance. Items related to perceived norms made direct reference to the activities included in the social distance scale (e.g., renting a room to someone with depression). Increasing similarity of context between scales have indeed inflated the association between them (Fishbein and Ajzen, 2010). The attitudes and self-efficacy scales in contrast referred to social engagement with people with depression generally, without mentioning specific activities. Reconstructing these scales to be closer in context to the social distance scale may lead to the finding that attitudes and self-efficacy are of more importance in determining behavioural intentions than reflected in the current results.

### **The Role of Empathy**

The finding that empathy has unique predictive value and that it acts as a significant mediator (when included in a multiple mediation analysis) for the influence of the interventions compared to the control condition, raises the question of how this construct influences intentions. One possibility is that empathy largely functions through small changes in more proximal variables. Another possibility is that empathy represents a proximal influence (i.e., a direct effect that is not mediated by other variables) that the model used in Study 2 failed to take into account. Fishbein and Ajzen (2010) highlighted that anticipated affect and, in particular, the perceived consequences of not engaging in a given behaviour may be a critical part of attitudes that are often not taken into account. Empathy in Study 2 may therefore reflect anticipated consequences (e.g., guilt or loss; lost opportunity for feeling good for supporting others) of not engaging socially with people with depression. This finding is consistent with Robert Cialdini's view which holds that empathy is essentially self-motivated and that people may act in an altruistic manner to prevent negative feelings such as guilt and loss (see Brown & Maner, 2012, for a review on this literature) or to alleviate triggered emotions which are similar to that of the other person involved (e.g., feeling low mood when engaging someone with depression [emotional contagion]). Future research utilizing a measure of attitudes that relates to anticipated consequences of not engaging someone with depression socially can help to answer the viability of this explanation. Finally, other opinions in social psychology hold that altruism (social engagement) may be a pure consequence of caring for another and that a response that creates and preserves social bonds is natural when we do not feel at risk of being exploited (Brown & Maner, 2012). In this case, empathy may

be more likely to function through perceived norms or may even present a significant direct effect on behavioural intent that is not captured by the reasoned action approach.

### **Collectivism as a Moderator**

The emergence of collectivism as a moderator for Asians suggests that values that may be important in a certain context for one culture may be less relevant in that same context for another culture. Asians desired increased social distance from (and less exposure to) people with depression compared to Caucasians and the effect of presenting a negative descriptive norm was not influenced by participants' collectivist attitudes. When a contrasting descriptive norm was presented, however, Asian participants high in collectivism responded more positively to this newly presented norm. This finding is congruent with Goldstein and Mortensen (2012) who found that people who are relatively new to a culture are more likely to adopt the behaviours of those in the culture under conditions of uncertainty.

### **Conclusion**

The perceived norms manipulation was effective for Asian participants as expected, but ineffective for Caucasian participants. Presenting different descriptive norms did not produce differences in overall effectiveness, but an analysis of the mechanisms of change revealed that the positive norms manipulation may hold certain advantages over a negative norms manipulation. Perceived norms and self-efficacy emerged as significant factors influencing social distance, with attitudes apparently playing a less significant role. Implications for future research and current anti-stigma programs are considered next before an overall review of the contribution of this thesis.



### **General Discussion**

The findings from Study 1 suggest that interventions which manipulate the perceived cause of depression may not be effective in reducing social distance towards people with depression for Asians or Caucasians. Study 1 identified mediators of the difference in DAQ-27 scores and social distance between Asians and Caucasians. Perceived norms and the belief that depression brings shame to one's family emerged as especially important mediators. Two perceived norm interventions using videos were then used in Study 2 in order to determine whether influencing perceived norms was indeed effective in improving behavioural intentions (social distance) towards people with depression. The interventions were effective for Asian, but not Caucasian participants. Both interventions appeared to work through perceived norms and a possible role for empathy was suggested. Positive norms, however, had the added benefit of also working through an increase in perceived self-efficacy for engaging socially with people with depression.

### **Implications of Reasoned Action Approach Findings**

Study 2 provided support for the applicability of the reasoned action approach to the prediction and manipulation of intentions to engage with people with depression. Although the best predictors are not necessarily the factors most amenable to change (Van Baaren & Dijksterhuis, 2012), perceived norms and self-efficacy emerged as both more significant predictors and potentially more amenable to change than attitudes, especially among Asians. The most effective way to improve behavioural intentions among Caucasians is unfortunately still unclear. Overall, however, measuring and evaluating differences in the proximal factors of the reasoned action approach can be an

effective way to obtain a greater understanding of how anti-stigma programs work. The number of items pertaining to proximal factors in the questionnaire was fairly small and can be reduced even further by using a direct measure of attitudes and shortening the perceived norms questionnaire, also making this a practical and efficient method for gaining feedback regarding program mechanisms.

### **Implications of Findings for Current and Future Anti-Stigma Programs**

In their most recent interim report, the MHCC (2013) indicated that they would be evaluating the most effective components of individual anti-stigma programs to design a distributable anti-stigma package. This approach (i.e., working on program components) focuses on program theory which has the advantage of highlighting the practical implications and outcomes of individual program components (Donaldson & Crano, 2011). A theory of change, on the other hand, focuses on the mechanisms by which an intervention works to accomplish its outcomes. The advantage of a theory of change is high internal validity, but the disadvantage involves uncertainty as to how the findings might be best implemented in actual programs. An increased focus on understanding the mechanisms of change in the work of the MHCC may, however, be helpful by focusing anti-stigma programs more strongly on the most important mechanisms of change.

A number of MHCC programs that seek to change attitudes of adolescents have been successful. It is, however, risky to assume that the changes in attitudes will lead to changes in behaviours. Study 2 demonstrated that changing attitudes may have less influence on actual behaviours towards people with depression, although reducing perceptions of dangerousness and emphasizing the value of support did show some value. Measuring outcome through behavioural intentions or actual behaviours where this is

possible would therefore be important for an accurate evaluation of the success of MHCC programs. Study 2 also suggests that focusing on perceived norms and self-efficacy may be more effective for future anti-stigma programs than focusing on attitudes, especially for Asian populations. Perceived norms could be communicated through a direct statement of descriptive and injunctive norms, providing social approval and disapproval (injunctive) cues, or implying positive descriptive norms through environmental and behavioural cues. Self-efficacy could be improved through actual practice of the behaviour, social modeling (e.g., including the person interacting with the person with depression in a video), or education. Fishbein and Ajzen (2010) highlighted that because change in a single factor is sometimes compensated for by an opposing change in another factor, targeting multiple factors at the same time would also be of importance.

The influence of the stage of change (Prochaska & Norcross, 2002) that the target audience is most likely to be present in is also an important consideration. Building motivation through changing attitudes (highlighting costs and benefits) and perceived norms (highlighting what others do and reflecting social reward and punishment) may be more important while people are contemplating change (e.g., considering talking to someone who appears to have depression). Building self-efficacy (skills in communicating with someone with depression) may be more important once the person has decided to engage the person with depression, but is uncertain how to do so (the planning phase in the stages of change model). The effectiveness of the Study 2 intervention, among Asian participants, could imply that Asian participants are mostly in the contemplation and maybe even planning phases of change. The lack of effectiveness of the intervention among Caucasian participants, however, implies that Caucasians may

have progressed beyond these phases and that emphasizing consistent action and maintenance of current behaviours may be more important.

The influence of empathy suggests that including contact with a person with depression who is similar to the targeted audience is indeed an important part of anti-stigma interventions. The interventions in Study 2, as well as some of the MHCC program interventions, have been successful despite relying on limited interaction (e.g., through videos or a talk and question and answer period with someone with depression). Research on cooperation and improving social relations, however, suggests that having such limited interaction may be less effective for changing long-term social interaction (Johnson, Johnson, & Stevahn, 2011). Other elements of contact that may be useful to consider is creating positive interdependence (working with people with depression towards a common goal and joint rewards) and interacting directly with the person with depression (allowing people to get to know each other better [reducing contact anxiety and promoting empathy] and further disconfirming stereotypes).

Although some of these findings may be applicable to all mental disorders, it is also important to emphasize that mental disorders may differ in their influence on people's attitudes, perceived norms, and self-efficacy. Disorders such as schizophrenia and substance use, which have been the target of increased stigma, may require a different approach from that highlighted in this thesis.

### **Limitations**

Although behavioural intentions are strongly correlated with actual behaviour, this relation does not hold equally true for all behaviours (Fishbein & Ajzen, 2010), and Study 2 did not measure the strength of this relationship for engaging socially with

someone with depression. This shortcoming also limits conclusions regarding the clinical significance of the findings. It is unclear whether Asian participants who completed the experimental conditions will support the recovery of people with depression in a way that from Asian participants in the control condition. The lack of a pre-post design also precludes the calculation of relevant clinical significance measures such as the Reliable Change Index (Jacobson & Truax, 1991).

Intentions were also not measured temporally and the possibility exists that intentions to engage someone with depression may reduce over time without continuous intervention. The level of exposure to the intervention was also kept constant; therefore, it is not possible to ascertain whether a longer intervention (as is often used in actual anti-stigma programs) with similar material would have produced stronger effects.

Finally, participants were mostly young adults in their first year of university. Although the age of participants in this thesis is very close to adolescents who are the focus of many anti-stigma interventions for mental disorders, the findings may not be applicable to an older sample. For example, Asians in the general community may differ in their level of acculturation compared to the Asian university students and may respond differently to the interventions. Considering the influence of similarity in context, it is in fact quite probable that the intervention would have to be modified to be effective in such a population.

### **Ethical Considerations**

An important consideration in the design of interventions to encourage behavioural change is whether the information provided is to be accurate or biased. Providing accurate information may be the most ethically justifiable solution, but

emphasizing higher than expected base rates of behaviours that are harmful, for example, may increase such behaviours. A program aimed at reducing harmful eating behaviours among young women included many young women who testified regarding their disordered eating, and lead to higher eating disorder symptoms among participants (Mann et al., 1997). Positing lower base rates or overemphasizing the risk of social rejection in such cases may seem to be a viable alternative if the harmful behaviours can be reduced. Overwarning regarding consequences or misrepresenting base rates carry its own risk, however (e.g., increasing resistance to change or reaction formation). In a study by Skenderian et al. (2008), adolescents were informed that marijuana use often led to social rejection which turned out not to be true for most adolescents who experimented with marijuana, subsequently increasing their marijuana use. Another alternative may be focusing on promoting self-efficacy for interacting with people with depression, although even in this case the issue of whether a full representation of, for example, some of the difficulties of working with people with depression (e.g., their tendency to dismiss evidence against their negative beliefs) should be represented. Understanding the audience and the objectives of the intervention (e.g., wanting members of the public to engage, but not serve as therapists for people with depression) can be important in this situation and can serve as a guide for which information and skills would be most useful and relevant for the audience.

### **Contribution and Conclusion**

This thesis culminated in the evaluation of an anti-stigma intervention that was similar to interventions currently used in practice (external validity), but which also maintained methodical rigor in the testing of its operation and its experimental control

(internal validity). The two studies contained in this thesis allowed for a greater understanding of the nature of the stigma of depression and how it can be influenced among Asians with a particular focus on the roles of perceived norms, self-efficacy, and collectivism. These studies highlighted that attitudes may potentially be less important for influencing social interaction with people with depression and that older anti-stigma approaches which focused on responsibility may now have limited utility. Although newer approaches may be a step in the right direction, particularly with their ability to create increased empathy, they can benefit from evaluating their mechanisms of change and from an increased focus on the importance of self-efficacy and perceived norms, especially among Asian populations.

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Appendix A

Consent Form - Study 1

No. \_\_\_\_\_

**Research Consent Form**

**Project Title:** Social Attitudes and Beliefs

**Investigators:** Francois B. Botha, M. Sc., Ph. D. Candidate; Amanda L. Shamblaw,  
B.ScN; Dr. David J.A. Dozois

I have read the Letter of Information, have had the nature of the study explained to me,  
and I agree to participate. All questions have been answered to my satisfaction.

\_\_\_\_\_

Participant's Printed Name

\_\_\_\_\_

Participant's Signature

\_\_\_\_\_

Experimenter's Printed Name

\_\_\_\_\_

Experimenter's Signature

\_\_\_\_\_

Today's Date

\_\_\_\_\_

Today's Date

## Appendix B

## Letters of Information - Study 1

**Part 1**

The purpose of this two-part study is to examine the influence of attitudes and values on beliefs regarding depression. Please read the following information carefully:

1. You will be asked to complete a series of short tasks including questionnaires concerned with demographics (including age, ethnicity, religious affiliation, and country of origin), your values, and your attitudes and behaviour towards people with physical and mental health concerns.
2. During part 1 of this study you will be asked some questions concerning your current mood.
3. Part 1 of this study will take approximately 1 hour to complete and you will receive one research credit. Please ensure that you complete this study in a single session without any interruptions. Please refrain from exiting the study at any point or using the back button on your browser.
4. Please be aware that your participation in part 1 is completely voluntary, and you may withdraw from the study at any time or to refuse to answer any of the questions, without loss of promised research credit.
5. All responses will be kept completely confidential. Your name and contact information will be unconnected to the questionnaires and measures and subsequently your answers. All data will be stored on a secure server which only the experimenters and IT administrative personnel have access to. Any published results will be in

- aggregate form, and your responses will not be distinguishable. Results will be used for research purposes only. All data will be stored for 5 years post-publication.
6. This is the first part of a two-part study. The second part of this study will commence one week following your completion of the first part. You will be notified through e-mail once you are eligible to participate.
  7. You will receive electronic feedback at the conclusion of the study. Please feel free to ask the experimenter any questions you may have during or after the study. If you have any questions about the conduct of this study or your rights as research participant, you may contact the Director of the Office of Research Ethics at xx or xx. You may also direct any questions or concerns to: Francois Botha at xx or to Dr. David Dozois at xx.

## **Part 2**

The purpose of the current study is to examine the influence of attitudes and values on beliefs regarding depression. Please read the following information carefully:

1. This is the second part of a two-part study. Please only complete this part of this study if you have completed the first part and have been alerted by the researcher through e-mail to complete the second part.
2. You will be asked to read a short article and to indicate your views regarding the information presented in the article. You will then be asked to complete a series of short tasks including your attitudes and behaviour towards people with physical and mental health concerns.
3. During the study you will be asked some questions concerning your current mood.

4. Part 2 of this study will take approximately 1 hour to complete and you will receive 1 experimental credits for your participation. Please ensure that you complete this study in a single session without any interruptions. Please refrain from exiting the study at any point or using the back button on your browser.
5. Please be aware that your participation in part 2 of this study is completely voluntary, and you may withdraw from the study at any time or to refuse to answer any of the questions, without loss of promised research credit.
6. All responses will be kept completely confidential. Your name and contact information will be unconnected to the questionnaires and measures and subsequently your answers. All data will be stored on a secure server which only the experimenters and IT administrative personnel have access to. Any published results will be in aggregate form, and your responses will not be distinguishable. Results will be used for research purposes only. All data will be stored for 5 years post-publication.
7. You will receive electronic feedback at the conclusion of the study. Please feel free to ask the experimenter any questions you may have during or after the study. If you have any questions about the conduct of this study or your rights as research participant, you may contact the Director of the Office of Research Ethics at xx or xx. You may also direct any questions or concerns to: Francois Botha at xx or to Dr. David Dozois at xx.

## Appendix C

## Articles and Instructions

**Instructions****Article task**

Please read the summary of an upcoming article carefully. You will be asked some questions regarding the content of the article afterwards. The original article will be published in the June 2013 edition of *Clinical Psychology Review*. *Clinical Psychology Review* is a journal that publishes substantive reviews of topics relevant to clinical psychology and is highly regarded by individuals in that discipline.

**Biomedical Article Summary**

The article was written by Dr. Harris Segal from Harvard University, a world-renowned expert in the area of depression research. Dr. Segal and his colleagues conducted a comprehensive review of the last 30 years of research on the causes of depression. Their primary conclusion is that “Depression is a biological illness that is largely the result of biomedical factors.”

One of the primary biomedical factors involved in depression is an imbalance in neurotransmitters in the brain. Neurotransmitters are chemicals that bridge the gap between neurons in the brain allowing for the transmission of information. A lack of one type of neurotransmitter, Serotonin, is related to low mood and changes in appetite and sleep, all symptoms of depression. When expected serotonin levels return to normal, the depressive symptoms also tend to improve. Other neurotransmitters are also believed to be involved in depression, including norepinephrine and dopamine.



Evidence from family adoption and twin studies support another biomedical factor: genetic vulnerability. The risk for depression is much higher among monozygotic (identical) twins than among dizygotic (non-identical) twins indicating that vulnerability to depression is heritable. Similarly, the risk for depression is higher for someone who has a first-degree relative (e.g., parent) with depression than it is for someone who does not have a first-degree relative with depression.

The biomedical basis of the cause of depression is also supported by evidence that depression is related to dysfunction of the hypothalamic-pituitary-adrenal axis (which influence stress responses) and hormonal processes.

Other depression researchers who read an advance copy of the review agreed with the findings and now seek to build upon the foundation laid by Dr. Segal.

### **Contextual Article Summary**

The article was written by Dr. Harris Segal from Harvard University, a world-renowned expert in the area of depression research. Dr. Segal and his colleagues conducted a comprehensive review of the last 30 years of research on the causes of depression. Their primary conclusion is that “Depression is largely the result of contextual factors.”

One of the primary contextual factors involved in depression is the occurrence of unpredictable and severely disruptive events. Research has shown that people who are exposed to displacement, assault, and intimidation by strangers are much more likely to develop depression than people who are insulated from these events. The incidence of depression also increases significantly after periods of political upheaval (e.g., civil wars).

Other situations associated with depression are conditions of entrapment (i.e., situations in which a person is helpless to do anything to improve his or her condition). An example of entrapment is when elderly people lose their savings during an economic crash and are unable to work and without adequate financial support.

Depression is also associated with the experience of significant losses in life. The death of a family member, romantic partners, and especially children can heighten the risk that someone will experience an episode of depression.

Losses related to work and status also represent significant negative events for individuals which increase the risk of depression. For instance, depression is common after widespread layoffs.

Other depression researchers who read an advance copy of the review agreed with the findings and now seek to build upon the foundation laid by Dr. Segal.

### **Recovery Article Summary**

The article was written by Dr. Harris Segal from Harvard University, a world-renowned expert in the area of depression research. Dr. Segal and his colleagues conducted a comprehensive review of the last 30 years of research on the course and outcome of depression. Their primary conclusion is that “People with depression will usually recover from their disorder (i.e., no longer have significant depressive symptoms). Even those people who experience repeated episodes of depression can live meaningful and fulfilling lives.”

Depression is a treatable condition and the majority of people who seek treatment will recover successfully. There are a variety of treatments available. The good news is that if one type of treatment is not effective people often recover when they try another

type of treatment. Many people will also recover spontaneously (i.e., without receiving any particular treatment).

About half of people who have had an episode of depression will not have any further episodes of depression. The majority of depressive episodes do not last longer than six months. Although the symptoms people experience during this time can be severe and can create significant suffering, people have been able to pursue meaning and fulfillment in their lives after an episode is over.

Half of people who have had an episode of depression will have at least one more episode in the future. Some recent treatments, however, reduce the odds of having another episode of depression. Even people who have multiple episodes of depression can be capable of maintaining romantic relationships, friendships, and raising children. With support and accommodation, they can also be capable of being productive workers and managing a fulfilling job.

Other depression researchers who read an advance copy of the review agreed with the findings and now seek to build upon the foundation laid by Dr. Segal.

### **Control Condition Article**

The article was written by Dr. Harris Segal from Harvard University, a world-renowned expert in the area of clinical research. Dr. Segal has been collaborating with colleagues in personality and cognitive psychology for over 30 years. Dr. Segal states emphatically: "Collaboration is the future of research in psychology."

Collaboration between researchers in clinical psychology and researchers in other areas of psychology have been increasing over the last 10 years as evidenced by articles

appearing in clinical psychology journals increasingly being co-authored by researchers outside of the discipline of clinical psychology.

One area of collaboration, for example, has been in the area of perfectionism. Perfectionism is associated with anxiety disorders and certain personality disorders. Clinical psychologists and personality psychologists have combined their expertise on mental disorders and personality characteristics respectively to determine how to measure and identify different types of perfectionism.

Another contribution to the study of anxiety disorders resulted from collaboration between cognitive psychologists and clinical psychologists. Cognitive psychologists have developed sophisticated methods to study human mental processes, including the use of mathematical models. By adopting these methods, clinical psychologists have been able to predict how people with mental disorders may perform in certain situations and conditions.

Dr. Segal also believes that collaboration is essential in developing an integrative framework of mental illness. He feels that working with colleagues in other fields has enriched his understanding of mental disorders and has created exciting new avenues of research.

## Appendix D

## Debriefing forms - Study 1

**Part 1**

You were asked to complete a series of measures on your personal values and beliefs, your attitudes and behaviours towards people with physical and mental health issues, your level of depressive symptoms, and previous contact with persons with depression. When you complete the second part of the study, we will provide you with more extensive information regarding the nature of the study. If you do not complete the second part of the study, we will forward you this information by e-mail.

All of the data that you provided for this study is kept strictly confidential, and the results will only be presented openly in terms of group data (i.e., thesis defense, conferences presentations, and articles). All data will be kept in a secured area. If you have any other questions regarding the experiment, please do not hesitate to contact the research team (Francois Botha and Amanda Shamblaw).

Participants dealing with problematic mood (e.g., persistent sad mood) and/ or suicidal thinking are strongly encouraged to speak with a mental health professional. For example, students at UWO are offered free psychological counseling at the Student Development Centre. You may also speak directly with Dr. David Dozois (xx). Other resources and self-help references are provided below.

Francois B. Botha, B.A., M.Sc.

Email: xx

Amanda L. Shamblaw, BScN

Email: xx

Advisor: Dr. David Dozois

Email: xx

If you have questions about your rights as a research subject, you should contact the Director of the Office of Research Ethics at xx or xx.

## **Part 2**

In 2008, the Mental Health Commission of Canada (MHCC) initiated a ten-year stigma and discrimination reduction initiative to reduce the stigma of mental disorders in Canada. Public stigma has been defined as the negative beliefs and attitudes towards people with depression held by others. Public stigma can cause people with depression to avoid help-seeking to avoid prejudice and discrimination (Corrigan, 2005). The study you completed will supplement the effort by the MHCC by focusing on factors that are relevant to public education initiatives.

Previous research has identified several factors associated with how people view depression and whether they desire social distance from a person with a mental disorder, including depression. Social distance towards people with mental disorders is associated with a variety of beliefs, for example, that people with mental disorders are dangerous and socially inappropriate (Lauber et al., 2004). The study you completed will examine the differential contribution that these various attitudes and beliefs have on the desired level of social distance from someone with depression.

Previous research has suggested that cultures differ in their views of depression and their desired level of social distance from a person with depression. In this study, we will examine whether values and beliefs specific to different cultures predict differences in desire for social distance from those with depression among cultures. For example, a

number of beliefs related to Asian values may account for differences in preferred social distance between Asians and Caucasians for depression (Hsu et al., 2008).

Anti-stigma campaigns previously focused on biomedical casual explanations for depression. The objective was to reduce stigma by reducing feelings of blame towards people with depression. However, some research has shown that focusing on contextual (environmental) explanations may be more effective in reducing stigma (Rusch, Kanter, & Brondino, 2009). The MHCC has decided to not focus on casual explanations, but to rather focus on the ability of people with depression to recover from depression (MHCC, 2008). There is unfortunately a lack of research on the effectiveness of this approach and the second study (part 2) you just completed seeks to address this shortcoming.

It is also unclear whether the anti-stigma approaches mentioned above are effective among non Caucasians. We will examine the differences in how Caucasians and people from other cultures respond to the different anti-stigma approaches.

Our hypothesis is that the most effective way to decrease stigma among Caucasians would be to focus on contextual causes or on the possibility for recovery. We believe that this effect will be explained through an increased belief that people with depression can recover from their symptoms. We predict that focusing on biomedical causes would be more effective in reducing stigma among certain other cultures. For example, as a means of saving "face", Asians may care more about being seen as having a biological illness, rather than being seen as being able to recover from a mental disorder.

You were assigned to read one of four article excerpts in which the responsibility for the cause and recovery from depression was manipulated. You were informed that the

article that you were reading was going to be published in *Clinical Psychology Review*. The article itself is, however, not real. The study of the cause of depression is complex and multifaceted and evidence exists for a variety of potential causes, including the ones you were presented with in this study. We used the articles in order to get an accurate approximation of the effect of the communication of causes of and hope for recovery from depression on stigma. It should also be noted that Dr. Harris Segal is not an actual person. The article presented does not necessarily reflect the views of faculty at Harvard University on depression.

All of the data that you provided for this study is kept strictly confidential, and the results will only be presented openly in terms of group data (i.e., thesis defense, conferences presentations, articles). All data will be kept in a secured area. If you have any other questions regarding the experiment, please do not hesitate to contact the research team (Francois Botha and Amanda Shamblaw).

Participants dealing with problematic mood (e.g., persistent sad mood) and/ or suicidal thinking are strongly encouraged to speak with a mental health professional. For example, students at UWO are offered free psychological counseling at the Student Development Centre. You may also speak directly with Dr. David Dozois (xx). Other resources and self-help references are provided below.

Francois B. Botha, B.A., M.Sc.

Email: xx

Amanda L. Shamblaw, BScN

Email: xx

Advisor: Dr. David Dozois



Email: xx

If you have questions about your rights as a research subject, you should contact the Director of the Office of Research Ethics at xx or xx.

### References

Corrigan, P.W. (2005). *On the Stigma of Mental Illness: Practical Strategies for Research and Social Change*. Washington, DC: American Psychological Association.

Hsu, L. K. G., Wan, Y. M., Change, H., Summergrad, P., Tsang, B. Y. P., & Chen, H. (2008). Stigma of depression is more severe in Chinese Americans than Caucasian Americans. *Psychiatry*, *71*(3), 210-218.

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Mental Health Commission of Canada. (2008). *Countering stigma and discrimination: Operational plan: Version 3*. Retrieved from <http://www.mentalhealthcommission.ca/SiteCollectionDocuments/Anti-Stigma/Operational%20Plan%20SD%202008%20sept2908.pdf> on July 13, 2009.

Rusch, L. C., Kanter, J. W., & Brondino, M. J. (2009). A comparison of contextual and biomedical models of stigma reduction for depression with a nonclinical undergraduate sample. *The Journal of Nervous and Mental Disease*, *197*(2), 104-110.

**Below are a variety of resources if you are interested in learning more about depression, how you can help yourself, or how you can arrange for professional help.**

***Websites for information:***

**xx****Self-Help References:**

If you would like to look up some good self-help books on changing negative thinking, please see:

- ❖ Burns, D. D. (1980). *Feeling good*. New York: Penguin.
- ❖ Burns, D. D. (1989). *The feeling good handbook*. New York: Penguin.
- ❖ Greenberger, D., & Padesky, C. A. (1995). *Mind over mood: Change the way you feel by changing the way you think*. Guilford Press.
- ❖ Wright, J. H., & McCray, L. W. (2011). *Breaking free from depression: Pathways to wellness*. Guilford Press

**Available Services**

There are several ways in which individuals can access psychological or psychiatric help both on campus and within the City of London, Ontario. If you are feeling depressed or anxious or feel that you could benefit from some individual assistance, the following information may be of use to you.

**The Student Development Centre at the University of Western Ontario**

- Individual appointments are available for students. To make an appointment you can call xx, or you can make an appointment in person at xx.
- Psychological Services Staff will make every effort to respond as quickly as possible when an individual student requires an emergency appointment.
- Psychological Services Staff can help you deal with a variety of issues including those related to Traumatic Events, Sexual or Physical Assault, Date rape, Interpersonal Violence, and Gay, Lesbian, Bisexual, or Transgendered situations.

- More information about the services offered at SDC can be found on the World Wide Web at xx

### **London Crisis Centres**

Psychological Services Staff will make every effort to respond as quickly as possible when an individual requires an emergency appointment. If you are in crisis when the office is closed please call one of the numbers listed below.

- **Mental Health Crisis Centre:** xx
- **Sexual Assault Centre London Crisis Line:** xx
  - Also 24 hour support line for sex trade workers: xx
- **Women's Community House Help Line:** xx
  - Out-of-Town calls: xx
- **Zhaawanong (Atenlos) Shelter:** xx
  - Outside of the London area code: xx
  - 24 hour crisis line: xx
- **St. Joseph's Sexual Assault and Domestic Violence Centre:** xx

### **Student Health Services Counselling Centre**

- SHS is located in xx.

- The Student Health Services Counselling Centre provides individual counselling for students. The Counselling Centre can be reached at xx.

- The Counselling Centre's Hours of Operation are as follows: Monday to Friday 8:30 a.m.- 4:30 p.m. (Please note the Counselling Centre will be closed when the university is closed.)

### **London & District Distress Centre**

- This is a 24-hour Distress Line: **xx**
- Crisis Response Line: **xx**
- Access by e-mail at: **xx**
- Each problem is handled in an atmosphere of confidentiality, anonymity & impartiality. You do not have to give your name nor does the service use call display; they will not try to identify the caller.

### **Addiction Services of Thames Valley**

- Alcohol & Drug Services of Thames Valley is located at **xx**
- A community service, funded by the Provincial Ministry of Health, Ontario Substance Abuse Bureau. There are currently no charges for clinical services, although fees may be charged for training or seminars.
- Service is available to any resident of Middlesex, Elgin or Oxford County. There are no admission restrictions.
- Provide early intervention to persons who are concerned about substance use and/or problem gambling.
- ADSTV is a gay, lesbian, bisexual, transsexual, and transgender positive environment
- Services include assessment of individuals who have an alcohol and/or drug related problem. Assessments are also available for problem gambling. Based on these assessments the ADS will develop treatment plans for clients and assist with referrals to provide outpatient counselling and aftercare.
- Hours of operation in London are as follows: Monday to Friday - 8:30 a.m. to 4:30 p.m.; Tuesdays- 8:30 a.m. to 9:00 p.m. (closed 12 until 1 p.m. each day and 4:30 to 5:30 p.m. on Tuesdays).

- Self-referrals are welcome, call **xx**.

### **Emergencies After Hours**

- If you are in distress during an after-hours time, please go to the **nearest hospital emergency room**.

**On Campus:** University Hospital: xx.

**South London:** Victoria Hospital: xx

**North London:** St. Joseph's Hospital: xx

### **Referrals to Other Resources**

- Family physicians can provide you with counselling services, and can make referrals to other community resources as needed.

- Specialized services for emotional and interpersonal problems are available, however, a referral from a physician is often necessary.

*We hope that this information is helpful to those who need it.*

*If you are suffering from distress, we encourage you to seek help from an appropriately qualified individual or service centre. Please contact a University or Community Agency that can help you, or to speak with a physician who can refer you to the appropriate resource.*

Appendix E

Consent Form - Study 2

No. \_\_\_\_\_

**Research Consent Form**

**Project Title:** Social marketing - Attitudes and Beliefs

**Investigators:** Francois B. Botha, M. Sc., Ph. D. Candidate; Amanda L. Shamblaw,  
B.ScN; Dr. David J.A. Dozois

I have read the Letter of Information, have had the nature of the study explained to me,  
and I agree to participate. All questions have been answered to my satisfaction.

\_\_\_\_\_

Participant's Printed Name

\_\_\_\_\_

Participant's Signature

\_\_\_\_\_

Today's Date

\_\_\_\_\_

Experimenter's Printed Name

\_\_\_\_\_

Experimenter's Signature

\_\_\_\_\_

Today's Date

## Appendix F

## Letters of Information - Study 2

**Part 1**

The purpose of this two-part study is to examine the influence of attitudes and values on beliefs regarding depression. Please read the following information carefully:

1. You will be asked to complete a series of short tasks including questionnaires concerned with demographics (including age, ethnicity, religious affiliation, and country of origin), and your beliefs and values.
2. During part 1 of this study you will be asked some questions concerning your current mood.
3. Part 1 of this study will take approximately half an hour to complete and you will receive 0.5 research credits. Please ensure that you complete this study in a single session without any interruptions. Please refrain from exiting the study at any point or using the back button on your browser.
4. Please be aware that your participation in part 1 is completely voluntary, and you may withdraw from the study at any time or to refuse to answer any of the questions, without loss of promised research credit.
5. All responses will be kept completely confidential. Your name and contact information will not be connected to any of your answers in any way. All data will be stored on a secure server which only the experimenters and IT administrative personnel have access to. Any published results will be in aggregate form, and your responses will not be distinguishable. Results will be used for research purposes only. All data will be stored for 5 years post-publication.

6. This is the first part of a two-part study. The second part of this study will commence on the date you booked on the Participant Pool website and will take place at xx.
7. Please feel free to ask the experimenter any questions you may have during or after the study. If you have any questions about the conduct of this study or your rights as research participant, you may contact the Director of the Office of Research Ethics at xx or xx. You may also direct any questions or concerns to: Francois Botha at xx or to Dr. David Dozois at xx.

## **Part 2**

The purpose of the current study is to examine the influence of attitudes and values on beliefs regarding depression. Please read the following information carefully:

1. This is the second part of a two-part study. Please only complete this part of this study if you have completed the first part. Please alert the researcher at this point if you have not completed the first part yet.
2. You will be asked to view a video clip and to indicate your views regarding the contents of the video. You will then be asked to complete a series of short tasks evaluating your attitudes and behavior towards people with physical and mental health concerns.
3. Part 2 of this study will take approximately 1.5 hours to complete and you will receive 1.5 experimental credits for your participation. Please ensure that you complete this study in a single session without any interruptions. Please refrain from exiting the study at any point or using the back button on your browser.



4. Please be aware that your participation in part 2 of this study is completely voluntary, and you may withdraw from the study at any time or to refuse to answer any of the questions, without loss of promised research credit.
5. All responses will be kept completely confidential. Your name and contact information will be unconnected to the questionnaires and measures and subsequently your answers. All data will be stored on a secure server which only the experimenters and IT administrative personnel have access to. Any published results will be in aggregate form, and your responses will not be distinguishable. Results will be used for research purposes only. All data will be stored for 5 years post-publication.
6. You will receive electronic feedback at the conclusion of the study. Please feel free to ask the experimenter any questions you may have during or after the study. If you have any questions about the conduct of this study or your rights as research participant, you may contact the Director of the Office of Research Ethics at xx or xx. You may also direct any questions or concerns to: Francois Botha at xx or to Dr. David Dozois at xx.

Appendix G

Video Scripts

**Student:** Title below her: Lisa, Second Year Social Science Undergraduate Student,  
Western University

Hi, I'm Lisa and I am going to talk a little bit about my experience with depression.

**Screen:** 10-15% of people experience at least one episode of depression over their  
lifetime

**Student:** I'm in my second year of University right now. I guess my depression began in  
the summer before first year, after graduating from High school.

**Screen:** The incidence of depression among college-age students has risen significantly  
over the past 5 to 10 years.

**Student:** Umm... up until then my life was alright. I had a fairly normal childhood. I  
mean I wasn't popular but I always had friends... you know. I've always been someone  
who people generally view as easy going, somewhat shy I guess. I was picked on a bit in  
grade school. I remember feeling sad about this. But everyone feels sad sometimes, right.

**Professor:** Title below her: Dr. Carpenter (Caucasian) / Chen (Asian), Professor:  
Clinical Psychology, Western University

Depression does not seem to affect everyone equally. Women are twice as likely as men  
to experience an episode of depression. College students and young adults are also more  
likely than older adults to experience depression, while people over the age of 50 are least  
likely to be experiencing depression.

**Screen:** 4% of people in Canada and the United States can be expected to have  
depression at any one time

**Professor:** We know less about how prevalent depression is outside of Canada and the US, because other countries and cultures may define depression differently or may not be monitoring the rate of depression in the country. When we look at people from different ethnicities in Canada, however, rates of depression are largely the same.

**Student:** The summer started out fairly normal. I had a job at Gap. I had been working there for about 2 years, mostly during the summer. A few friends moved away. I think my depression started slowly. You know, I started to feel tired a lot. I had trouble getting out of bed; I was tired during the day. I just didn't have a lot of energy really; to do anything.

**Professor:** There is no one single cause of depression. The most popular theory at the moment emphasizes what we call a biopsychosocial model. This model acknowledges that there are biological, environmental, and psychological factors which are associated with depression.

**Screen:** Picture of a biopsychosocial model

**Professor:** On the biological side, we know that certain genes seem to confer a vulnerability to depression and that this makes depression partly heritable. We also know that the degree to which people are sensitive to stress is related to developing depression and finally, that an imbalance in the level of certain neurotransmitters, which allow for information to be transmitted through the brain, are associated with depression. The neurotransmitters that are most often implicated are serotonin, norepinephrine and dopamine.

**Screen:** Picture of neurotransmission

**Professor:** A number of people develop depression after negative events in their lives, for example, failing at school, which we might call a performance failure, or the loss of a relationship, which is more a negative interpersonal event. People who experience traumatic events are also more likely to develop depression. Everyone's vulnerability to depression is somewhat different though - one person may be unaffected by failing at school, whereas another could develop depression as a consequence. This suggests that psychological factors are also at play. People's interpretations of events may differ and this could determine whether they develop depression or not.

**Professor:** It is rare for anyone to develop depression purely for biological, psychological, or environmental reasons. There is usually an interplay among these factors which determines whether a person may be vulnerable to developing depression.

**Student:** After a little while I didn't want to eat. Nothing appealed to me. Really, I didn't want to do anything anymore. It's horrible realizing that you don't *like* to do anything, that nothing is enjoyable.

**Screen:** "I don't feel anything anymore. Not sadness, not happiness, not anger. I'm empty and emotionless" - Anonymous (Blog post)

**Student:** I was never happy. After a while I couldn't even remember what happiness felt like.

**Professor:** The main symptoms associated with depression are an inability to experience pleasure from normally pleasurable events and intense feelings of sadness or unhappiness.

**Student:** The hardest part of depression is finding a way to tell people. It is like you are hiding a terrible secret. I think I felt ashamed of myself for getting depression, like

somehow I had failed. That's what depression does to you: it makes you feel like a terrible failure. There are still those quite close to me who probably don't know that I've had depression. I remember that people didn't know what to say in response. I made excuses not to hang out with my friends. I pretended to be "fine." I held my job all summer but it was challenging. Every day required so much effort. I made it through the summer. Looking back I'm amazed at the strength I had.

**Screen:** "What is depression like? It's like drowning... Except you can see everyone around you breathing"

**Student:** I moved into Res in September. I thought maybe a change of environment would help me "snap out of it." I admit I still had hope that the cloud would pass and I could get on with my life. It didn't though. I just felt more alone. I became horrible to everyone around me. I didn't go out. It became so much work to fake happiness so I just stopped. I think people just thought I was being a "downer." They didn't know what I felt like because I didn't want to talk about it. My parents didn't get what was happening. I didn't want to tell them how I felt. They thought it was a phase, maybe they didn't want to think otherwise. I was having a lot of trouble at school. I had no motivation to do anything. I couldn't concentrate.

**Professor:** Along with depressed mood and loss of interest or pleasure, other symptoms of depression include changes in sleep and appetite, a loss of energy, trouble concentrating, and feeling worthless. In the moderate to severe forms of depression, someone may eventually have recurrent thoughts of death and suicide and may experience emotional numbness.

**Screen:** List symptoms as the professor mentions them.

**Professor:** Initially people often only experience some of the symptoms of depression.

The symptoms often interact to form what we may call a depressive cycle, or a downward spiral. For example, lacking energy, the person may avoid going out with others or have trouble studying. The lack of reinforcement from social activities and accomplishing tasks can lead to the person feeling worthless and judging him or herself harshly. This leads to increased feelings of sadness followed by less energy and more trouble concentrating. This may impair their ability to view a situation in a realistic manner or solve the problems they are facing. Once this cycle of negative thoughts, behaviors, feelings, and physical concerns start it can be quite difficult to interrupt.

**Screen:** Draw depressive cycle

**Student:** I just wanted it to go away. My marks dropped and I barely made it through Christmas exams. When I came back in January I felt heavy. Life was a struggle. My depression didn't go away. I was lucky to make it to one class a week. It was horrible waking up every day feeling like "no I don't want to wake up; I don't want to be here." I cried all the time. If I wasn't crying I just felt numb. The numb feeling was worse. I didn't feel alive. It was like being in a dark hole. The pain was unbearable.

**Screen:** "Sometimes the most difficult thing for humans to do is be human" - Lorenzo Colocado

**Student:** This was my lowest point... I couldn't face seeing people at all or even speaking to them on the phone. Why? Because you feel like a hollow shell; you feel worthless. Why would anyone want to talk to you? How can you possibly tell someone that you feel like you want to die? That you cry yourself to sleep wishing you wouldn't wake up. To think time is just passing by with no real reason. This doesn't make sense to people. I

thought about killing myself but I didn't want to hurt the people who loved me. I think it was at this point that I realized I needed help. Nothing could be worse. I didn't have the energy to hide it anymore. I didn't care.

**Screen:** "Remember that everyone you meet is afraid of something, loves something, and has lost something" - H. Jackson Brown Jr.

### **Norms Manipulation Starts - Positive Norms**

**Professor:** Stigma refers to the negative beliefs and feelings people have about those who have depression, as well as the negative behaviors towards those who have depression that they engage in. People with depression may become aware of these attitudes and behaviors and in turn start believing that they are indeed weak and undesirable.

Fortunately, as people have learned more about depression and have come more into contact with people with depression, their attitudes and behaviors have improved.

**Student:** I had made a friend in Res. More acquaintance but really the only person I felt some connection with here. I told her what I was going through. She listened and didn't judge. She knew that I was often on auto pilot, that I seemed down. She told me that she respected me... *respected me*. She didn't treat me any differently than she ever had. Well that's not true. She treated me with even more kindness and respect than ever before for telling her. I guess that was what I realized... people supported me. My friends never gave up, they continued to call and text despite the fact that I often ignored them. She suggested speaking with our floor leader who was an upper year student. Together they helped me contact the Psychology Services at the Student Development Centre and *reminded* me of my appointment... because well this was still hard to do. Admit that I needed help.

**Screen:** “I felt like it... but I wasn’t alone, there was a clearing in the fog.”

**Professor:** The concept of depression has also become more familiar and acceptable among people from different cultures. Most people now support others with depression through difficult periods by spending time with them, including them in activities, and encouraging them to seek treatment. This support can help to interrupt the depressive cycle and speed up the recovery process, especially if the person with depression also seeks professional treatment. At colleges and universities, faculty and staff are often trained in how to assist students with depression, and professional help is usually available at campus counseling centers and campus health services.

**Student:** I had an assessment and was diagnosed with Major Depressive Disorder. The psychologist I saw was amazing. She talked to me about depression in general and treatment more specifically. I received cognitive behavioural therapy. Like the name suggests we worked on both increasing my activity and on the way I was thinking about things in my life. Because I was so low at the time I was also prescribed an anti-depressant from a Psychiatrist at Student Health. It took three different anti-depressants for me to find one that worked... but I did.

**Professor:** Fortunately there are now a wide variety of treatments available for depression and the majority of people who seek treatment will be successful in recovering from depression. The most well-known treatment is probably anti-depressants. These can be prescribed by a doctor or psychiatrist and many different types of anti-depressants exist. Anti-depressants work by changing the availability of neurotransmitters in the brain, for example, by increasing the availability of Serotonin. Because Serotonin is also involved in many other mental and bodily functions, however, anti-depressants



usually have side-effects, although newer anti-depressants tend to have less side-effects. One positive regarding the wide variety of drugs available is that someone with depression may well respond to a different drug if the first drug tried is not effective or if the side-effects are unacceptable.

**Professor:** A number of psychological treatments have also been shown to be effective for depression. The most popular treatment is called Cognitive-Behavioral Therapy, or CBT for short, and have been shown to be as effective as drug treatment. This treatment attempts to reverse the depressive cycle I mentioned earlier by working on people's thoughts and behaviors. The treatment consists of helping people with depression re-engage with pleasurable activities and with activities which make them feel competent and capable. People with depression are also taught to interpret their experiences in a more realistic manner.

**Slide:** Shot of undergraduate student walking by the Thames river

**Professor:** One exciting finding regarding CBT is that it may actually decrease the odds that someone will have another episode of depression. As with drug treatment, if CBT is not effective, other types of psychological treatment may be attempted.

**Slide:** List other effective psychological treatments

**Professor:** Another interesting research finding is that seeking both drug and psychological treatment may lead to better outcomes than seeking just the one or the other - the treatments are therefore complimentary.

**Student:** Treatment was a process. It took time but eventually the cloud lifted. I started to feel reconnected to the world... to people. I felt my energy coming back. At first, I went for walks, painted, and spent time with people... because that was part of my treatment.

Soon I found I was enjoying it. Those moments of enjoyment were precious. They gave me hope that I could beat this depression.

**Professor:** Despite the success of these treatments for depression, only half of people with depression actively seek help for their symptoms.

**Student:** I passed first year... barely albeit... but I passed. I'm choosing to re-take a few courses because my marks were low and I hope to go to graduate school. I'm in the middle of second year and I'm happy to say that my grades are back, I joined two intramurals, and I've made some new friends... I feel alive. I'm thankful for the support I received. I think looking back I only wish I had reached out sooner. I was afraid that people would react... well negatively. I was surprised about the number of people who supported me... both people who had been touched by depression in some way and others who depression was "new" to. Now that I have recovered from depression I am more aware of what people say... how they say it. I'm careful to look beyond other peoples responses of 'not so good' 'a bit down' and just check that they are ok. Depression gives you an insight into suffering which can only help you become a kinder, more understanding person. I am thankful for that. I'm thankful for the support I received. I have met some amazing people on my journey. I guess that was my reason for speaking out. I think a lot of people who are depressed are scared to tell their family or their friends... maybe this is a result of feeling so down about yourself... I'm not entirely sure. What I am getting at is that sure some people may not "get it"... this is like anything really... but there is so much support out there and treatment can help you recover... help you get your life back.

**Screen:** “The people I have met have shown me what it means to be a strong person, that is beyond the physical definition, what it means to be the best you can be even on the worst of days when you just want to close out the world and hide.”

### **Norms Manipulation Starts - Negative Norms**

**Professor:** Stigma refers to the negative beliefs and feelings people have about those who have depression, as well as the negative behaviors towards those who have depression that they engage in. For example, someone may believe that people with depression are weak and decide not to be friends with them. People with depression may become aware of these attitudes and behaviors and in turn start believing that they are indeed weak and undesirable.

**Student:** I told two of my friends from high school. I inched my way along to a full disclosure... you know... “I’ve not been feeling too good”... “I’m a little down.” At first they really didn’t get the message. So I just said “I think I’m depressed.” They said “Oh, you’re probably just tired... you’ve been working too hard... you’ll feel better soon...” If you’ve suffered depression you’ll know how hollow these things sound. How completely insignificant this makes you feel... because well you already feel like a failure. I think people found it hard to accept this “new me.” I found it hard. My friends stopped calling or texting. I wasn’t invited out. I began to isolate to my room; staying in bed mostly... eating at my desk.

**Screen:** Include picture of written message by student with depression asking for help

**Student:** Then of course there are some who don’t want to accept that you are depressed at all... like it’s some sort of choice. With depression, telling people is a personal choice. I think it is important to keep talking and to be honest with people closest to you. Of course

no one should feel ashamed of being depressed but there is a stigma attached to depression.

**Screen:** “Ask yourself, would you rather post on Facebook that you can’t get out of bed because of a broken leg or because you’re depressed?”

**Professor:** Negative attitudes and behaviors have shown little improvement over the last ten years and many people still avoid others with depression and exclude them from their activities. This unfortunately isolates the person with depression, making it harder for them to recover and maintains the depressive cycle. Professional help is usually available at campus health and counseling centers, but many people are not referred or encouraged to make use of these services. In cultures where the concept of depression is relatively new, stigma may be especially prevalent.

**Student:** I finally contacted the Psychology Services at the Student Development Centre. I knew I couldn’t live like this anymore. I had an assessment and was diagnosed with Major Depressive Disorder. The psychologist I saw was amazing. I finally felt like someone understood what I was going through. She talked to me about depression in general and treatment more specifically. I received cognitive behavioural therapy. Like the name suggests we worked on both increasing my activity and on the way I was thinking about things in my life. Because I was so low at the time I was also prescribed an anti-depressant from a Psychiatrist at Student Health. It took three different anti-depressants for me to find one that worked... but I did.

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**Screen:** Shot of undergraduate student walking by the Thames river

**Professor:** One exciting finding regarding CBT is that it may actually decrease the odds that someone will have another episode of depression. As with drug treatment, if CBT is not effective, other types of psychological treatment may be attempted.

**Screen:** List other effective psychological treatments

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**Professor:** Despite the success of these treatments for depression, only half of people with depression actively seek help for their symptoms.

**Student:** I passed first year... barely albeit... but I passed. I'm choosing to re-take a few courses because my marks were low and I hope to go to graduate school. I'm in the middle of second year and I'm happy to say that my grades are back, I joined two intramurals, and I've made some new friends... I feel alive. Now that I have recovered from depression I am more aware of what people say... how they say it. I'm careful to look beyond other peoples responses of 'not so good' 'a bit down' and just check that they are ok. Depression gives you an insight into suffering which can only help you become a kinder, more understanding person. I am thankful for that. I guess that was my reason for speaking out. People with depression need support. We shouldn't have to face stigma from others... the battle of depression itself is already enormous. Treatment is effective and is available! I wish I hadn't of waited so long... I guess at the time it was difficult to fathom that I could get better. As a society we need to take action in reducing the stigma towards depression. I think awareness is key... as more and more people speak

out about their depression I truly believe that society will change. There is treatment and support. People should access it. I did and I got my life back.

**Screen:** Include picture of an anti-stigma campaign advertisement

## Appendix H

## Debriefing Sheets - Study 2

**Part 1**

You were asked to complete a series of measures related to your personal values and beliefs, your level of depressive symptoms, and basic demographic information about yourself (e.g., age, sex, ethnicity). When you complete the second part of the study, we will provide you with more extensive information regarding the nature of the study. If you do not complete the second part of the study, we will forward this information to you by e-mail. The second part of the study will take part at xx at the time you have signed up for on the Participant Pool Website.

All of the information that you provided for this study is kept strictly confidential, and the results will only be presented openly in terms of group data (i.e., thesis defense, conferences presentations, and research articles). All data will be kept in a secured area. If you have any other questions regarding the experiment, please do not hesitate to contact the research team (Francois Botha or David Dozois).

Participants dealing with problematic mood (e.g., persistent sad mood) and/ or suicidal thinking are strongly encouraged to speak with a mental health professional. For example, students at UWO are offered free psychological counseling at the Student Development Centre. You may also speak directly with Dr. David Dozois (xx). Other resources and self-help references are provided below.

Francois B. Botha, B.A., M.Sc.

Email: xx

Amanda L. Shamblaw, BScN



Email: xx

Advisor: Dr. David Dozois

Email: xx

If you have questions about your rights as a research subject, you should contact the Director of the Office of Research Ethics at xx or xx.

## **Part 2**

In 2008, the Mental Health Commission of Canada (MHCC) initiated a ten-year stigma and discrimination reduction initiative to reduce the stigma of mental disorders in Canada. Public stigma has been defined as the negative beliefs and attitudes towards people with depression held by others. Public stigma can cause people with depression to avoid help-seeking to avoid prejudice and discrimination (Corrigan, 2005). The study you completed will supplement the effort by the MHCC by focusing on factors that are relevant to public education initiatives.

Previous research has identified several factors associated with how people view depression and whether they desire to distance themselves from a person with a mental disorder, including depression. Social distance towards people with mental disorders is associated with a variety of beliefs, for example, that people with mental disorders are dangerous and socially inappropriate (Lauber et al., 2004). Previous research has also suggested that cultures differ in their views of depression and their desired level of social distance from a person with depression.

Anti-stigma campaigns previously focused on biomedical casual explanations for depression. The objective was to reduce stigma by reducing feelings of blame towards people with depression. The MHCC has decided to not focus on casual explanations, but

rather to focus on the ability of people with depression to recover from depression (MHCC, 2008). The anti-stigma campaigns funded by the MHCC include educating people about depression and exposing people to someone who has experienced depression. The video you watched is an example of the typical content of such a campaign.

It is unclear whether the MHCC anti-stigma approach mentioned above is effective among non Caucasians. We will examine the differences in how Caucasians and people from other cultures respond to the videos and also whether the ethnicity of the people depicted in the videos influence the effectiveness of the video in reducing stigma.

Early attempts at exposing viewers to people who experienced depression often focused on highlighting how stigma made it more difficult to recover from depression. Our previous research has shown that people often decide on how to behave towards people with depression based upon how people close to them (their in-group) behave towards people with depression. Despite highlighting the problems people with depression experience due to stigma, programs which highlight discrimination in the general population may therefore actually increase negative behaviors towards people with depression (because viewers take their cue from how others behaved towards the people with depression).

You were assigned to watch one of four videos in which the ethnicity of the actresses and the norms presented in the video were manipulated. You were informed that the people in the video were students and professors at Western. Although the students in the videos are indeed students at Western, their accounts of their experiences were fictionalized and not reflective of their actual personal experiences. The professors in the

videos were paid actresses and do not actually work for Western. The information presented in the videos by the professors is, however, accurate. The video you watched may have focused more on the negative information and experiences related to stigma, rather than the more positive information. This was done in order to determine the influence of norms communicated in the videos on people's intended behavior towards people with depression.

You may also not have watched a video during this experiment. This meant that you were in the control condition and that we will be using your data to gain an approximation of the average attitudes towards people with depression in our participant group.

Our hypothesis is that reflecting positive norms will reduce stigma more than reflecting negative norms. We also believe that matching the ethnicity of the actors to the ethnicity of the participant will result in increased stigma change. We suspect that this will occur due to people with a similar ethnicity being more likely to being seen as part of one's in-group or social reference group.

All of the data that you provided for this study is kept strictly confidential, and the results will only be presented openly in terms of group data (i.e., thesis defense, conferences presentations, articles). All data will be kept in a secured area. If you have any other questions regarding the experiment, please do not hesitate to contact the research team (Francois Botha, Amanda Shamblaw or David Dozois).

Participants dealing with problematic mood (e.g., persistent sad mood) and/ or suicidal thinking are strongly encouraged to speak with a mental health professional. For example, students at UWO are offered free psychological counseling at the Student

Development Centre. You may also speak directly with Dr. David Dozois (xx). Other resources and self-help references are provided below.

Francois B. Botha, B.A., M.Sc.

Email: xx

Amanda L. Shamblaw, BScN

Email: xx

Advisor: Dr. David Dozois

Email: xx

If you have questions about your rights as a research subject, you should contact the Director of the Office of Research Ethics at xx or xx.

### References

Corrigan, P.W. (2005). *On the Stigma of Mental Illness: Practical Strategies for Research and Social Change*. Washington, DC: American Psychological Association.

Lauber, C., Nordt, C., Falcato, L., & Rossler, W. (2004). Factors influencing social distance toward people with mental illness. *Community Mental Health Journal*, 40(3), 265-274.

Mental Health Commission of Canada. (2008). *Countering stigma and discrimination: Operational plan: Version 3*. Retrieved from <http://www.mentalhealthcommission.ca/SiteCollectionDocuments/Anti-Stigma/Operational%20Plan%20SD%202008%20sept2908.pdf> on July 13, 2009.

**Below are a variety of resources if you are interested in learning more about depression, how you can help yourself, or how you can arrange for professional help.**

***Websites for information:***

**xx**

**Self-Help References:**

If you would like to look up some good self-help books on changing negative thinking, please see:

- ❖ Burns, D. D. (1980). *Feeling good*. New York: Penguin.
- ❖ Burns, D. D. (1989). *The feeling good handbook*. New York: Penguin.
- ❖ Greenberger, D., & Padesky, C. A. (1995). *Mind over mood: Change the way you feel by changing the way you think*. Guilford Press.
- ❖ Wright, J. H., & McCray, L. W. (2011). *Breaking free from depression: Pathways to wellness*. Guilford Press

**Available Services**

There are several ways in which individuals can access psychological or psychiatric help both on campus and within the City of London, Ontario. If you are feeling depressed or anxious or feel that you could benefit from some individual assistance, the following information may be of use to you.

**The Student Development Centre at the University of Western Ontario**

- Individual appointments are available for students. To make an appointment you can call xx, or you can make an appointment in person at xx.
- Psychological Services Staff will make every effort to respond as quickly as possible when an individual student requires an emergency appointment.

-Psychological Services Staff can help you deal with a variety of issues including those related to Traumatic Events, Sexual or Physical Assault, Date rape, Interpersonal Violence, and Gay, Lesbian, Bisexual, or Transgendered situations.

-More information about the services offered at SDC can be found on the World Wide Web at xx

### **London Crisis Centres**

Psychological Services Staff will make every effort to respond as quickly as possible when an individual requires an emergency appointment. If you are in crisis when the office is closed please call one of the numbers listed below.

- **Mental Health Crisis Centre:** xx
- **Sexual Assault Centre London Crisis Line:** xx
  - Also 24 hour support line for sex trade workers: xx
- **Women's Community House Help Line:** xx
  - Out-of-Town calls: xx
- **Zhaawanong (Atenlos) Shelter:** xx
  - Outside of the London area code: xx
  - 24 hour crisis line: xx
- **St. Joseph's Sexual Assault and Domestic Violence Centre:** xx

### **Student Health Services Counselling Centre**

-SHS is located in xx Main telephone line: xx.

-The Student Health Services Counselling Centre provides individual counselling for students. The Counselling Centre can be reached at xx.

- The Counselling Centre's Hours of Operation are as follows: Monday to Friday 8:30 a.m.- 4:30 p.m. (Please note the Counselling Centre will be closed when the university is closed.)

### **London & District Distress Centre**

- This is a 24-hour Distress Line: **xx**.
- Crisis Response Line: **xx**
- Access by e-mail at: **xx**
- Each problem is handled in an atmosphere of confidentiality, anonymity & impartiality. You do not have to give your name nor does the service use call display; they will not try to identify the caller.

### **Addiction Services of Thames Valley**

- Alcohol & Drug Services of Thames Valley is located at **xx**
- A community service, funded by the Provincial Ministry of Health, Ontario Substance Abuse Bureau. There are currently no charges for clinical services, although fees may be charged for training or seminars.
- Service is available to any resident of Middlesex, Elgin or Oxford County. There are no admission restrictions.
- Provide early intervention to persons who are concerned about substance use and/or problem gambling.
- ADSTV is a gay, lesbian, bisexual, transsexual, and transgender positive environment
- Services include assessment of individuals who have an alcohol and/or drug related problem. Assessments are also available for problem gambling. Based on these

assessments the ADS will develop treatment plans for clients and assist with referrals to provide outpatient counselling and aftercare.

-Hours of operation in London are as follows: Monday to Friday - 8:30 a.m. to 4:30 p.m.; Tuesdays- 8:30 a.m. to 9:00 p.m. (closed 12 until 1 p.m. each day and 4:30 to 5:30 p.m. on Tuesdays).

-Self-referrals are welcome, call **xx**.

### **Emergencies After Hours**

-If you are in distress during an after-hours time, please go to the **nearest hospital emergency room**.

**On Campus:** University Hospital: xx

**South London:** Victoria Hospital: xx

**North London:** St. Joseph's Hospital: xx

### **Referrals to Other Resources**

-Family physicians can provide you with counselling services, and can make referrals to other community resources as needed.

-Specialized services for emotional and interpersonal problems are available, however, a referral from a physician is often necessary.

*We hope that this information is helpful to those who need it.*

*If you are suffering from distress, we encourage you to seek help from an appropriately qualified individual or service centre. Please contact a University or Community Agency that can help you, or to speak with a physician who can refer you to the appropriate resource.*



## Appendix I

## Ethics Facesheet



**Department of Psychology** The University of Western Ontario  
 Room 7418 Social Sciences Centre,  
 London, ON, Canada N6A 5C1  
 Telephone: (519) 661-2067 Fax: (519) 661-3961

## Use of Human Subjects - Ethics Approval Notice

<b>Review Number</b>	12 10 09	<b>Approval Date</b>	12 10 09
<b>Principal Investigator</b>	David Dozois/Francois Botha	<b>End Date</b>	13 04 30
<b>Protocol Title</b>	Social attitudes and beliefs		
<b>Sponsor</b>	n/a		

This is to notify you that The University of Western Ontario Department of Psychology Research Ethics Board (PREB) has granted expedited ethics approval to the above named research study on the date noted above.

The PREB is a sub-REB of The University of Western Ontario's Research Ethics Board for Non-Medical Research Involving Human Subjects (NMREB) which is organized and operates according to the Tri-Council Policy Statement and the applicable laws and regulations of Ontario. (See Office of Research Ethics web site: <http://www.uwo.ca/research/ethics/>)

This approval shall remain valid until end date noted above assuming timely and acceptable responses to the University's periodic requests for surveillance and monitoring information.

During the course of the research, no deviations from, or changes to, the protocol or consent form may be initiated without prior written approval from the PREB except when necessary to eliminate immediate hazards to the subject or when the change(s) involve only logistical or administrative aspects of the study (e.g. change of research assistant, telephone number etc). Subjects must receive a copy of the information/consent documentation.

Investigators must promptly also report to the PREB:

- changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
- all adverse and unexpected experiences or events that are both serious and unexpected;
- new information that may adversely affect the safety of the subjects or the conduct of the study.

If these changes/adverse events require a change to the information/consent documentation, and/or recruitment advertisement, the newly revised information/consent documentation, and/or advertisement, must be submitted to the PREB for approval.

Members of the PREB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussion related to, nor vote on, such studies when they are presented to the PREB.

Clive Seligman Ph.D.

Chair, Psychology Expedited Research Ethics Board (PREB)

The other members of the 2012-2013 PREB are: Mike Atkinson (Introductory Psychology Coordinator), Rick Goffin, Riley Hinson Albert Katz (Department Chair), Steve Lupker, and TBA (Graduate Student Representative)

CC: UWO Office of Research Ethics

*This is an official document. Please retain the original in your files*

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**FRANCOIS B. BOTHA, B.A., M.Sc., Ph. D. Candidate**


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**EDUCATION**

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|---------------------|--|
| <i>2010-present</i> | <p><b>University of Western Ontario, Department of Psychology</b><br/>         Clinical Psychology Program (CPA Accredited)<br/>         Ph.D. expected August 2015.<br/>         Doctoral Proposal: <i>Mediators of change in the stigmatization of depression among Caucasian and Asian populations.</i></p>   |
| <i>2008-2010</i>    | <p><b>University of Western Ontario, Department of Psychology</b><br/>         Clinical Psychology Program (CPA Accredited)<br/>         Master of Science, Clinical Psychology<br/>         Master's Thesis: <i>Effect of Casual Explanations for Depression on Public Stigma and Self-Stigma.</i></p>  |
| <i>2005-2008</i>    | <p><b>University of British Columbia</b><br/>         Bachelor of Arts, Honours: Psychology<br/>         Honors Thesis: <i>Awe and religious belief: Effect of the experience of awe on implicit and explicit religious belief.</i><br/>         Honors Thesis: <i>Malleability of religious beliefs: Effect of secular argument on implicit and explicit religious beliefs.</i></p> |
| <i>1997-1999</i>    | <p><b>University of South Africa</b><br/>         Bachelor of Science, Major: Computer Science</p>   |
| <i>1996</i>         | <p><b>University of South Africa</b><br/>         Bachelor of Commerce, Honours: Accounting</p>  |
| <i>1993-1995</i>    | <p><b>University of Pretoria</b><br/>         Bachelor of Commerce, Major: Accounting</p>  |

**PRACTICA**


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*Sep 2010-Apr 2014* **Student Development Centre, University of Western Ontario**  
 Provided therapy for students presenting with mild to severe mental health concerns. Age of students (undergraduate and graduate) ranged from 17 to 38 years. Worked 10 hours per week on average. Experienced treating large variety of mood and anxiety disorders, adjustment disorders, and problems of living. Received supervision in and practiced mostly using CBT, ACT, MI, MBCT, DBT, and IPT. Co-led two groups, one involving international students, and led one group.

Supervisors: Gail Hutchinson, Ph.D. (Sep 2012 - Aug 2013); Elspeth Evans, Ph. D. (Sep 2011 - Aug 2012); Susan Ruscher, Ph. D. (Sep 2010 - Aug 2011)

*Sep 2012-Aug 2013* **Concurrent Disorders Program, Regional Mental Health Care - London**

Provided therapy for clients referred to supervisor by case managers. Worked with clients with alcohol, cannabis, and opioid dependence. Concurrent disorders included schizoaffective disorder, bipolar disorder, and major depressive disorder. Age of clients ranged from 26 to 44 years. Worked 10 hours per week on average. Treated three clients for mood problems, substance dependence, and psychotic symptoms. Received supervision in and practised mostly using CBT, MI, DBT, and Psychodynamic therapy. Attended patient rounds which included psychiatrists, occupational therapists, recreational therapists, social workers, and psychiatric nurses. Conducted an adult ADHD assessment and one comprehensive personality assessment.

Supervisor: David LeMarquand, Ph. D.

*May 2012-Aug 2012* **Rheumatology Clinic, St. Joseph's Health Care, London, ON**

Conducted group sessions for clients diagnosed with Fibromyalgia, Lupus, Rheumatoid Arthritis, and/or Osteoarthritis. Age of clients ranged from 18 to 72 years. Groups ran for 2-4 weeks. Worked for 15 hours per week on average. Subject matter covered during the group sessions included cognitive therapy techniques, assertiveness, pain education, relaxation techniques, and relapse prevention. Conducted intake interviews for potential clients and wrote reports indicating their suitability for group therapy. Was observed conducting groups by at least one qualified psychologist for the majority of group sessions. Theoretical orientation was cognitive-behavioral. Provided and received peer supervision from intern and fellow practicum student. Attend multi-disciplinary rounds involving physiotherapists, occupational therapists, and social workers.

Supervisors: Marilyn Hill, Ph. D. & Warren Nielsen, Ph. D.

*Sep 2011-May 2012* **Private Practice (Psycho-vocational Assessment), London, ON**

Conducted psycho-vocational assessments for clients referred to Dr. Breiter by vocational rehabilitation organizations. Clients experienced work injuries which included physical and mental harm (e.g., trauma). Age of clients ranged from 21 to 62 years. Worked 5 hours per week on average. Administered and scored a wide range of vocational, cognitive, and mental health assessment instruments and conducted clinical interviews. Completed several comprehensive assessments reports.

Supervisor: Hans Breiter, Ph. D.

*Jan 2010-Apr 2010* **Mood and Anxiety Program, Regional Mental Health Care - London**

Conducted psychological assessments for inpatients on the Mood and Anxiety Ward. Age of clients ranged from 21 to 60 years. Worked 5 hours per week on average. Administered several mental

health assessment instruments and completed a comprehensive assessment report for a young woman with bipolar disorder.

Supervisor: Mushtaq Khan, Ph. D.

*Jan 2010-Apr 2010* **Children's Hospital, London, ON**

Conducted cognitive testing and comprehensive assessment report for an outpatient child. Client experienced epilepsy. Age of client was 9 years. Worked 5 hours per week on average.

Supervisor: Ellen Vriezen, Ph. D.

## **AWARDS AND SCHOLARSHIPS**

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<i>Fall 2011</i>	Ontario Mental Health Foundation Research Studentship (\$16,000 per year for three years)
<i>Fall 2010</i>	Ontario Graduate Scholarship (\$15,000).
<i>Fall 2008</i>	Joseph Armand Bombardier Canada Graduate Scholarships - Master's Competition (\$17,500), Social Sciences and Humanities Research Council of Canada. Proposed research: <i>The effect of emotions related to mystical experience on beliefs and behaviors.</i>
<i>Fall 2007</i>	Trek Excellence Scholarship for Continuing Students (\$1500), University of British Columbia.

## **PRESENTATIONS**

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**Botha, F.B., Shamblaw, A. L. & Dozois, D. J. A.** (2014, June). *Reducing the Stigma of Depression among Asian and Caucasian Populations: The Effectiveness of a Social Norms Approach.* Poster presented at 75th Annual Convention of the Canadian Psychological Association in Vancouver, BC.

**Shamblaw, A. L., Botha, F.B. & Dozois, D. J. A.** (2013, June). *Cultural variables associated with the stigmatization of depression among Asians: Accounting for differences between Asians and Caucasians.* Poster presented at 74th Annual Convention of the Canadian Psychological Association in Quebec, QC.

**Botha, F.B., Shamblaw, A. L. & Dozois, D. J. A.** (2013, June). *Mediators of change in the stigmatization of depression among Caucasian and Asian populations*. Poster presented at 74th Annual Convention of the Canadian Psychological Association in Quebec, QC.

**Botha, F.B. & Dozois, D. J. A.** (2011, June). *The influence of justification ideologies on public stigma and self-stigma for depression*. Poster presented at 72nd Annual Convention of the Canadian Psychological Association in Toronto, ON.

**Botha, F.B. & Dozois, D. J. A.** (2011, January). *Effect of causal explanations for depression on public stigma and self-stigma*. Poster presented at 12<sup>th</sup> Annual Society for Social and Personality Psychology Meeting in San Antonio, TX.

**Botha, F.B., Shariff, A., & Norenzayan, A.** (2008, March). *The experience of awe and its effect on religious belief*. Paper presented at the 10<sup>th</sup> Annual UBC Psychology Undergraduate Conference in Vancouver, BC.

**Botha, F.B., Shariff, A., & Norenzayan, A.** (2007, March). *Malleability of religious beliefs: Effect of secular argument on implicit and explicit religious beliefs*. Poster presented at the 9<sup>th</sup> Annual UBC Psychology Undergraduate Conference in Vancouver, BC.

## BOOK CHAPTERS

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**Dozois, D. J. A. & Botha, F. B.** (2012). Concepts of abnormality throughout history. In Dozois, D. J. A. (Eds.), *Abnormal Psychology: Perspectives* (5th ed.). Pearson Education Canada.

## MANUSCRIPTS SUBMITTED FOR PUBLICATION

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**Botha, F. B. & Dozois, D. J. A.** Emphasizing Psychological Causes of Depression in Anti-Stigma Programs: The Role of Change Expectancy.

**Shamblaw, A. L., Botha, F. B. & Dozois, D. J. A.** The Role of Perceived Social Norms in Depression Stigma: Accounting for Differences between Asians and Caucasians.

## RESEARCH ACTIVITIES

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*Fall 2008-August 2014* *Research Assistant, Mood and Anxiety Research Group,  
University of Western Ontario*

Designed studies examining the reduction of public stigma of depression among Asian and Caucasian populations. Supervised an honours student and several volunteers. Analyzed data and did computer programming for studies.

Supervisor: David Dozois, Ph.D.

*Fall 2007-May 2008* *Research Assistant, Behavioral Cardiology Lab, University of  
British Columbia*

Validated questionnaires to be used for research projects. Involved in computer programming for research projects.

Supervisor: Wolfgang Linden, Ph.D.

*Fall 2006-May 2008* *Research Assistant, Culture and Cognition Lab, University of  
British Columbia*

Designed study examining the effects of the experience of awe on religious belief. Developed study protocol, recruited participants, created online questionnaires, and performed data analysis.

Involved in computer programming and data analysis for other research projects.

Supervisor: Ara Norenzayan, Ph.D.

## **PROFESSIONAL MEMBERSHIPS**

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*2011-present* Student member of the Association of Behavioural and Cognitive Therapies

*2010-present* Student member of the Canadian Association of Cognitive and Behavioural Therapies

*2008-present* Student member of the Society for Personality and Social Psychology

2008-present Student affiliate of the Canadian Psychological Association  
2007-present Student affiliate of the Association for Psychological Science  
2006-present Student affiliate of the American Psychological Association

## **TEACHING EXPERIENCE**

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*Fall 2010-Apr 2011 Teaching Assistant and Lab Instructor, Statistics for Psychology, University of Western Ontario*  
Professor: Tony Vernon, Ph.D.

*Summer 2010 Teaching Assistant, Research Methods and Statistical Analysis in Psychology, University of Western Ontario*  
Professor: Paul Gribble, Ph.D.

*Fall 2009-Apr 2010 Teaching Assistant and Lab Instructor, Statistics for Psychology, University of Western Ontario*  
Professor: Tony Vernon, Ph.D.

*Fall 2008-Apr 2009 Teaching Assistant and Lab Instructor, Research Methods and Statistical Analysis in Psychology, University of Western Ontario*  
Professor: Riley Hinson, Ph.D.