EXTRAVERSION AND SELF-MONITORING: EXPLORING DIFFERENTIAL RESPONSES TO DESCRIPTIVE AND INJUNCTIVE NORMATIVE MESSAGES WITHIN THE FRAMEWORK OF THE ELABORATION LIKELIHOOD MODEL OF PERSUASION

by

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Abstract

The purpose of this research program was to explore how the personality traits of extraversion and self-monitoring may impact a persuasive appeal within the framework of the Elaboration Likelihood Model of persuasion. Using both descriptive and injunctive normative messages, I hypothesized that under conditions of low elaboration, when one is unable and unmotivated to process a message; those high in the traits of extraversion and self-monitoring would be more compliant to a persuasive appeal that utilized a descriptive normative message. Further, I hypothesized that under conditions of low elaboration, those low in the aforementioned traits would be more compliant to an appeal utilizing injunctive normative messages. I did not expect to find any differences relating to personality under conditions of high elaboration. In order to examine these expected interactions, I pre-tested messages to ensure they were adequately descriptive or injunctive (study one) and then presented these messages to participants who had previously completed measures of extraversion and self-monitoring (study two). In study one I successfully created both injunctive and descriptive normative messages that were adequately divergent. In study two, I manipulated elaboration by giving participants in the low elaboration condition a distracter task while they were reading the message, and by reducing personal relevance of the message, whereas for those in the high elaboration condition, there were no distractions and personal relevance was high. Contrary to predictions, I did not find the expected three-way interactions between extraversion, message type, and elaboration or self-monitoring, message type, and elaboration. However, I did find evidence supporting a two-way interaction between message type
and elaboration, suggesting that descriptive messages are more persuasive under conditions of low elaboration whereas injunctive messages are more persuasive under conditions of high elaboration. Explanation for these findings, as well as implications of the findings both theoretical and practical, will be discussed in terms of the persuasion literature.
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# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>ii</td>
</tr>
<tr>
<td>Acknowledgements</td>
<td>iv</td>
</tr>
<tr>
<td>List of Figures</td>
<td>vi</td>
</tr>
<tr>
<td>List of Tables</td>
<td>vii</td>
</tr>
<tr>
<td>Chapter 1</td>
<td>v iii</td>
</tr>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Chapter 2</td>
<td>11</td>
</tr>
<tr>
<td>Study One</td>
<td>11</td>
</tr>
<tr>
<td>Method</td>
<td>12</td>
</tr>
<tr>
<td>Participants</td>
<td>12</td>
</tr>
<tr>
<td>Procedure</td>
<td>12</td>
</tr>
<tr>
<td>Measures</td>
<td>14</td>
</tr>
<tr>
<td>Results</td>
<td>14</td>
</tr>
<tr>
<td>Discussion</td>
<td>15</td>
</tr>
<tr>
<td>Chapter 3</td>
<td>15</td>
</tr>
<tr>
<td>Study Two</td>
<td>15</td>
</tr>
<tr>
<td>Method</td>
<td>16</td>
</tr>
<tr>
<td>Participants</td>
<td>16</td>
</tr>
<tr>
<td>Procedure</td>
<td>17</td>
</tr>
<tr>
<td>Measures</td>
<td>20</td>
</tr>
<tr>
<td>Results</td>
<td>23</td>
</tr>
<tr>
<td>Chapter 4</td>
<td>33</td>
</tr>
<tr>
<td>General Discussion</td>
<td>33</td>
</tr>
<tr>
<td>Summary of Findings</td>
<td>33</td>
</tr>
<tr>
<td>Implications of Findings</td>
<td>34</td>
</tr>
<tr>
<td>Future Directions</td>
<td>39</td>
</tr>
<tr>
<td>References</td>
<td>42</td>
</tr>
<tr>
<td>Appendix A: Information Sheet, Consent Form, Debriefing</td>
<td>45</td>
</tr>
<tr>
<td>Appendix B: Persuasive Messages</td>
<td>49</td>
</tr>
<tr>
<td>Appendix C: Extraversion Measure</td>
<td>52</td>
</tr>
<tr>
<td>Appendix D: Self-Monitoring Measure</td>
<td>56</td>
</tr>
</tbody>
</table>
Appendix E: Dependent Measures..........................58
List of Figures

Figure 1: Two-way Interaction between Message Type and Elaboration on Participant Intent to Join Program .................................................................26

Figure 2: Two-way Interaction between Message Type and Elaboration on Participant Thought Favourability ..............................................................29

Figure 3: Percentage of Participant e-mail Sign-ups (behavioural measure) as a Function of Message Type and Elaboration ...................................32
List of Tables

Table 1: Cell sizes (N) for the Intentions and Behavioural Measure Analyses…………20

Table 2: Cell sizes (N) for the Thought Favourability Analysis………………………20
Chapter 1

Introduction

“People Start Pollution, People Can Stop It.” This was the slogan from the award-winning public service announcement (PSA) broadcast extensively in the 1970s and 1980s in the United States. In this PSA, “Iron Eyes Cody”, a Native American man, observes several forms of pollution including debris in the river and litter on the highway, all of which bring a tear to his eye. Although this PSA was wildly popular, research suggests that the tactics used may have been ineffective or even counter-effective at reducing littering (Cialdini, 2003). Research indicates that one of the ways in which attempts at compliance are effective is a form of social validation (Cialdini & Trost, 1998). That is, people look to similar others to guide their own behaviour in various situations. One of the central ways appropriate behaviour is understood is through assessment of social norms, because this is an efficient and simple way to choose one’s own actions (Cialdini, Reno, & Kallgren, 1990). Looking back to the “Iron Eyes Cody” PSA, we can see that by showing so much litter and pollution in the environment, viewers would see that littering and polluting are in fact the social norm and may be more likely to engage in these undesirable behaviours.

When using normative explanations for behaviour, it is important to point out that there are two categories of norms that serve as useful guidelines. Injunctive norms convey behaviour that most people deem to be correct, whereas descriptive norms convey behaviour in which most people engage in a situation, regardless of the injunctive norms.
Essentially, injunctive norms are what one ‘ought’ to do, while descriptive norms are based on what others are actually doing at the time (Cialdini & Trost, 1998). An example of these different norms in action would be the issue of littering; most people believe that we should not litter, that it is bad for the environment, and that it is socially reprehensible. This is the injunctive norm at work. However, a look at any park or public space in a large city would tell us that littering is indeed a problem. Because we see others littering, and litter is already present in public spaces, littering behaviour seems normative.

Cialdini et al. (1990) found evidence to support these normative differences. In one study, the authors observed littering behaviour of visitors (subjects) to a parking lot that was either filled with litter (pro-littering norm) by the experimenters or kept clean (anti-littering norm) by the experimenters. As they walked to their car, half of the subjects saw a confederate holding a handbill and then dropping it to the ground. An identical handbill had been placed on the subject’s windshields, so that when approaching their car they would see the handbill and need to take it off in order to drive. What did the subjects do with their handbills? Demonstrating the power of descriptive norms, in the littered environment, 54% of subjects littered the handbill when they saw the confederate litter while only 32% of the subjects littered the handbill when the confederate simply walked by. When anti-littering was the norm and the parking lot was clean, only 6% followed the littering confederate, while 14% littered if the confederate walked by. In a follow-up study, Cialdini et al. (1990) showed that only 18% of people would litter into a clean environment, and this number dropped to 10% when there was only one item of
litter in the environment. However, once two or more litter objects were in the environment, subjects littering behaviour rose steadily.

The authors suggest that having no litter is a clear indicator of the descriptive norm that “no one here litters”, and that having just one piece of litter actually draws attention to this norm, as if to say “only one norm-violator littered here”. However, as the number of litter pieces jumps above two, the norm then shifts to one of pro-littering. The finding that more littering occurred in the clean environment when a confederate walked by compared to when the confederate littered clearly demonstrates that there is more at play than simple modeling of others behaviour; both of these studies clearly demonstrate the power of descriptive norms over behaviour.

When then do injunctive norms play a role in guiding behaviour? In the same program of research, Cialdini et al. (1990) replicated the aforementioned study in the parking lot by either having litter strewn throughout the lot or by having it neatly swept into piles. Once again, handbills were placed on subjects’ cars, and as they walked to their cars the subjects either saw a confederate drop a handbill or simply walk by. When the injunctive norm (that one ought not to litter) was highlighted by neatly swept litter, subjects littered less after watching the confederate litter, whereas when the injunctive norm (litter everywhere) and descriptive norm (littering confederate) matched, subjects littered more. Further, when the authors placed handbills on windshields featuring messages that varied in the degree of injunctive norm conveyed, they found that the least amount of littering occurred when the handbill message contained a strong anti-littering
norm, and as the messages gradually contained less direct anti-littering norms, the rate of littering went up.

However, whilst these norms can be utilized very effectively to garner the desired behaviour change, it is important to note that they can easily backfire. For example, many public health campaigns such as anti-smoking advertisements show young people smoking, and then warn youth of the harms of smoking. Although this clearly presents the injunctive norm that one should not smoke, it also shows images of the peer group engaging in the undesirable behaviour. The presence of this descriptive norm has been shown to actually increase the undesirable behaviour. For example, Cialdini, Barrett, Bator, Demaine, Sagarin, Rhoades et al. (2003) tested two types of signage aimed at reducing theft of petrified wood in Petrified Forest National Park. The descriptive-norm sign stated, “Many past visitors have removed petrified wood from the Park, changing the natural state of the Petrified Forest”, and featured photos of three visitors taking wood. The injunctive message sign simply asked people not to remove wood from the park in order to preserve the forest, and featured a picture of someone picking up a piece of wood with a red circle and bar symbol over his hand. Showing how descriptive norms can affect behaviour in an undesired way, the authors found that using the descriptive-norm message resulted in significantly more theft (7.92%) than using the injunctive-norm message (1.67%). This finding is particularly interesting when contrasted with the baseline of thefts by park visitors is just under 3%, meaning that utilizing the descriptive norm message more than doubled the typical rate of theft in the national park.
Following this, Cialdini (2003) demonstrated that descriptive norms can be used to increase a desired behaviour, in this case, recycling in a suburban community. By designing a PSA featuring descriptive norms such as actors actively recycling as well as injunctive norms including actors speaking disapprovingly of not recycling, the authors were able to increase recycling by 25.35% in areas where the PSA was broadcast (compared to areas in which no PSA was broadcast). Further, in examining another conservation issue, Goldstein, Cialdini, and Griskevicius (2008) showed that hotel patrons reused their towels most in hotel rooms where the signage aimed at increasing reuse featured descriptive norms most relevant to hotel guests. In their study, guests exposed to signs stating that, “The majority of guests in this room reuse their towels” had the highest rate of towel reuse, while a more general descriptive norm, “the majority of guests reuse their towel” yielded lower towel reuse rates, and the strictly injunctive norm appeal discussing the environmental impacts had the lowest level of towel reuse. Unfortunately, virtually no hotels use the most effective type of descriptive normative appeal - they often use the standard environmental message, resulting in much lower rates of towel reuse than would be ideal (Goldstein et al., 2008).

As demonstrated in the literature, there is a distinction between descriptive and injunctive norms in terms of how they operate. When paired appropriately, descriptive and injunctive norms can optimize compliance – increasing prosocial behaviours and decreasing behaviours deemed negative by society, such as littering. However, the aforementioned literature points to the fact that the use of descriptive and injunctive norms can have unforeseen consequences including increasing the undesired behaviour.
Therefore, it is important to investigate further how individuals may differ in response to various manipulations to normative messages because currently, it is unclear when and why descriptive versus injunctive messages will be effective in promoting compliance.

One contextual factor that may provide some clarity on the influence of descriptive and injunctive norms in compliance to persuasive messages is the ability and motivation people have to elaborate on the message. Models such as the Elaboration Likelihood Model (ELM) of persuasion (Petty & Cacioppo, 1986) and the Heuristic-Systematic Model (HSM) (see Chaiken, 1987; Chaiken, Liberman, & Eagly, 1989) have demonstrated the ways in which deep versus shallow processing can influence persuasion. While these theories differ in some respects, for the purposes of the present research, they essentially make the same predictions. Therefore, in the present research I will use the ELM terminology to explore how processing motivation and ability can impact persuasion. The ELM posits that persuasion occurs along a continuum of how able and or motivated one is to process a message. In the ELM, this processing is known as elaboration, and can take the form of critical thinking and evaluation of the message being presented. It has been shown on the one hand that as elaboration increases, people are more persuaded by issue-relevant arguments and less influenced by peripheral cues such as the expertise of the person conveying the message. That is, when an individual is fully able and motivated to carefully process the message, the content of the message will be scrutinized, and individuals will thus base their attitude on the information presented. Conversely, when one is unable or unmotivated to carefully elaborate on a persuasive message, they may use alternate information, known as ‘cues’, to come to a decision. In
this case, a factor such as the credibility of the speaker may act as a cue that the message is worthwhile; resulting in the listener agreeing with the message without fully processing its content.

Cialdini (2003) has suggested that descriptive norms may be more influential than injunctive norms because they require less cognitive processing. Thus, descriptive norms that describe what others are doing act as a cue for how to behave in a given situation. In the case of descriptive norms, one simply has to look to those around them to judge appropriate behaviour, whereas one must understand the morals of a group in order to act upon injunctive norms, and this would require more cognitive elaboration (Cialdini, 2003). Therefore, in non-thoughtful conditions when ability and motivation to elaborate on a message is low, descriptive messages may be more persuasive.

However, Cialdini’s (2003) idea has not been empirically tested, and the reasoning behind it is not necessarily self-evident. After all, it is possible that injunctive norms may not always require more processing, but may simply be understood as social mores that require as little elaboration as descriptive norms. It seems that one explanation of why descriptive or injunctive norms are influential at a given time may have to do with dispositional differences. This is because the content of descriptive messages may coordinate well with certain personal tendencies, whereas injunctive messages could coordinate well with others. There are individuals who are more focused on the behaviours of others and look to others for appropriate cues for behaviour, and it would thus make sense that these kinds of people may respond better to a message that is descriptive; focused on what others are doing. Conversely, people that generally have a
more inward focus and are not as dependent on external cues to guide behaviour may respond better to the injunctive message, focusing on morals and personal values.

Following this, neither type of norm may be inherently ‘easier’ to process than the other, but certain individuals may be inclined to one versus the other based on their tendencies to look to the social world for guidance, as opposed to looking towards their internal values. Yet, it seems likely that when given the chance to process a message effectively, these different dispositional tendencies may not be as critical. When cognitive resources are strained, however, it is plausible that outward focused individuals may respond better to descriptive messages, whereas inward focused individuals may respond better to injunctive messages, as these are more in line with their dispositional tendencies. There could be several reasons for this. Under low elaboration, if the content of the message ‘matches’ an individual’s disposition it can be used as a cue to guide behaviour. For example, if the message features descriptive norms and the person receiving the message is dispositionally outward focused, the receiver may feel that the message applies to them and thus should be followed. Another possibility is that when the message and the individual’s disposition do match, the person may be somewhat more motivated to process the message, even when elaboration is difficult because they feel it relates more to them (Petty & Wegener, 1998).

*Personality factors affecting compliance to normative appeals*

The personality characteristics of extraversion and self-monitoring are ideal for examining such issues because of how they affect individuals’ reactions to others, and how individuals may behave or think in a given situation. Individuals who score high on
the trait extraversion tend to be characterized by concern with things outside the self, and
directing one’s interest and attention towards outward objects and events. Conversely,
those scoring low on the extraversion scale tend to direct their attention inwards, and are
more focused on their own thoughts and feelings rather than outward experiences. As
such, extraversion is indeed a construct with many social consequences. Those scoring
high on measures of extraversion tend to have good social skills, are gregarious, and have
numerous friendships (McCrae & Costa, 1999, p.143). With the impacts of extraversion
on social behaviour, it is logical that there would be differences between high and low
extraverts in response to various types of persuasive appeals. Although there is little work
examining this directly, in one study researchers primed participants with extraversion or
introversion and then gave them a persuasive message that was either framed as
extraverted (e.g., “With this VCR, you’ll be the life of the party”) or introverted (e.g.,
“With this VCR, you get the benefits of seeing movies without the crowds”). The authors
found that when the personality prime and message type matched, participants rated the
quality of the message they read as higher (Wheeler, DeMarree, & Petty, 2008). Clearly
then, there is an impact of personality, in this case extraversion, on acceptance of a
persuasive appeal.

While there is some debate about the measurement of the self-monitoring
construct (e.g. Briggs, Cheek, & Buss, 1980; Gabrenya & Arkin, 1980), the Self-
Monitoring Scale (Snyder & Gangestad, 1986) is one of the most widely used and
accepted methods of measuring this personality trait that relates to self-presentation.
Individuals differ in terms of how they would like to be perceived publicly, and
differences in how this is expressed have been coined as differences in *self-monitoring*. Therefore, those who are high self-monitors tend to adapt their responses to social cues readily, and are highly keen to cues of others and the situation. In contrast, low self-monitors are more likely to express themselves based on their inner attitudes, thoughts, and feelings, and are less influenced by external cues and the desire to be viewed in a certain way. Snyder (1987) found that although low self-monitors tend to base their decisions on their attitudes, high self-monitors are much less likely to do so, instead viewing their decisions as based on concerns about interpersonal goals. Further, for low self-monitors, expressing an attitude frequently leads to greater accessibility of that attitude, whereas this is not the case for high self-monitors (Snyder & DeBono, 1995).

Snyder and DeBono (1985) found that high self-monitors were more positive towards advertisements that focused on image, were more willing to try products advertised with an image focus, and were willing to spend significantly more money on these products. Conversely, low self-monitors responded more positively to advertisements featuring a quality focus, were more willing to try new ‘high quality’ products, and were willing to spend more money on products when their advertisements were focused on quality. Petty and Wegener (1998) gave participants descriptions of several products that had either strong or weak claims about the quality of the product or strong or weak claims about the image of the product. The authors found that for people who were high self-monitors, the effects of strong and weak arguments were amplified when the message about the product was image focused, although the quality focused message brought about the same results for the low self-monitors. This research points to
the idea that a match between dispositional characteristics and type of persuasive appeal can have a significant impact on how the message is perceived and how the receiver responds to the message.

The goal of the current research was to expand on previous research in the field of compliance and increase our understanding of the effects of dispositional traits in responsiveness to persuasive messages. Although there was some research examining the influence of personality in response to different types of messages, there was no research investigating personality differences in response to descriptive versus injunctive messages specifically. Further, the goal of the current project was to interface these proposed differences within the framework of the ELM, and attempt to show the interactions between extraversion and self-monitoring, descriptive and injunctive norms, and the extent to which one elaborates on the message.

Chapter 2

Study One

Before undertaking the major study of interest, it was important to ensure that the materials were adequate to reflect the differences in descriptive and injunctive norms. As such, a pilot study was created to test the descriptive and injunctive normative messages, so that I could be certain that the two versions of the message were distinct and clearly represented the two different types of norms.
Method

Participants

Participants were 18 undergraduate psychology students who completed the study for course credit.

Procedure

Up to six participants at a time were brought into the lab and seated at individual desks. The experimenter then told the participants that their university was considering the adoption of a new program for undergraduate students, and has requested that students read about the program and answer some questions about it. Participants were then given a questionnaire package, with approximately a half-page message describing the “Healthy You” program, a nutrition and exercise program that was ostensibly planned for implementation at their university (see Appendix B for messages).

The descriptive message began by informing the reader that due to student requests for more campus programming, a nutrition and exercise program was being considered for implementation. The program was described as involving a five day per week commitment, with exercise classes beginning at seven o’clock in the morning three days per week, and nutritional counselling two evenings per week. The program was described in this way to ensure the program was viewed as a substantial commitment and was relatively undesirable so that if participants indicated interest, I would know it was due to the persuasive appeal and not to the inherent appeal of the program. Following the description of the program itself, participants were told that the majority of students already surveyed indicated interest in the program, which was then supported by several
‘testimonials’ from a range of fictitious students from that university, with their full
names, academic program, and year of study mentioned. These included phrases such as,
“Alana Tupper, a 2nd year Arts and Science student said, ‘I would definitely sign up, and I
know my housemates are signing up too. In fact, everyone I have talked to about the
program plans on signing up!’” It was then reinforced that the demand from other
undergraduate students for such a program was high. The message concluded by
reminding the participants that other students agree that involvement in extracurriculars is
important, and finally, were appealed to, “follow the lead of their peers,” and sign up for
“Healthy You” today.

The injunctive message mirrored the descriptive message in terms of content,
however, the normative aspect of the appeal was altered. The message began by stating
that there was overwhelming evidence that a focus on students’ well-being is essential for
overall health, and that exercise and nutrition are an important aspect of this. The
description of the content of the program was identical to the aforementioned descriptive
message. Participants then read that the university had done research into the importance
of such a program, and found that the majority of citizens surveyed indicated that it was a
social responsibility to be healthy due to the fact that being unhealthy takes a huge toll on
our economy. Furthermore, participants were told that the majority of ‘survey
respondents’ had expressed the sentiment that being healthy was a sign of self-respect
and self-discipline in the face of so many distractions such as television and junk food.
The message concludes by re-iterating that although nutrition and exercise take time,
responsible individuals ensure they are accomplished. In the final line, participants were
asked to indicate if they would like to “do the right thing” and sign up for the “Healthy You” program. Both the descriptive and injunctive messages were equal in length, and participants received either the descriptive or injunctive message.

**Measures**

*Confirmation of message type.* Participants were asked two questions aimed at identifying whether the message they had received was descriptive or injunctive. They were asked, “To what extent do you think the description of the “Healthy You” program conveys information about values related to the program?” (injunctive), and, “To what extent do you think the description of the “Healthy You” program conveys information about how others perceive the program?” (descriptive). These were both measured on an incremental scale ranging from one (Not at all) to seven (Strongly).

**Results**

Although I was primarily interested in showing differences in the messages on a descriptive level, I conducted an independent samples *t*-test based on the ratings participants provided when asked the two questions about the message. I expected that the mean response for the question “To what extent do you think the description of the “Healthy You” program conveys information about values related to the program?” would be significantly higher for those participants who read the injunctive message as compared to the descriptive message. The injunctive message readers indeed rated their message as more reflective of values than did those participants who read the descriptive message, \((M = 5.00, SD = 1.41 \text{ vs. } M = 4.00, SD = 1.58, \text{ respectively})\). This difference was in the expected direction but did not reach significance \((t(16) = -1.41, p = .17)),
presumably because of the small sample size. However, the effect size was large \( (d = .67) \) and so for my purposes, the messages appeared to diverge appropriately. For “To what extent do you think the description of the “Healthy You” program conveys information about how others perceive the program?” I expected the opposite effect, whereby those in the descriptive message condition would have a significantly higher mean on the item than those in the injunctive message condition. This proved to be the case; with the descriptive message readers rating the message higher on this item \((M = 6.11, SD = 0.78)\), than the injunctive message readers \((M = 4.67, SD = 1.41)\), \((t(16) = 2.68, p = .02, d = 1.26)\).

Discussion

Overall, the messages appeared to convey descriptive versus injunctive norms adequately. Although the difference in means for the ‘values’ question was only trending in terms of significance, it was in the expected direction and based on the small number of participants, was deemed satisfactory. As such, these messages were deemed appropriate for use in Study two.

Chapter 3

Study Two

The goal of study two was to test my main hypothesis: I predicted that two three-way interactions would emerge for my dependent measures of compliance; level of elaboration by message type by extraversion, and level of elaboration by message type by self-monitoring. Specifically, under conditions of low elaboration, those scoring low on
the personality traits of self-monitoring and extraversion should be more persuaded by injunctive normative messages, while those scoring high on the above traits should be more persuaded by descriptive normative messages. Conversely, I predicted that under conditions of high elaboration, when participants have the ability and motivation to process the message, we should not see such differences. These predictions diverge from what has previously been posited in the literature. Cialdini (2003) suggested that descriptive messages should be more persuasive under conditions of low elaboration because they require less cognitive processing. Although he does not make any explicit prediction for high elaboration, it follows that injunctive messages should be equally if not more persuasive than descriptive messages under conditions of high elaboration. However, as previously stated, there is reason to believe that personality traits, specifically extraversion and self-monitoring, have a role to play in the persuasiveness of descriptive and injunctive normative appeals within the framework of the ELM, and I wanted to explore these relationships further in study two.

Method

Participants

Participants were undergraduate psychology students (N = 282, 72.4% female) who had completed measures of extraversion on the NEO Five-Factor Inventory (NEO-FFI; McCrae & Costa, 2004) and/or the Self-Monitoring Scale (Snyder & Gangestad, 1986) during pre-screening at the beginning of the academic year. Because these measures were undertaken at the beginning of the term, some participants in the
study had not completed both measures. Only participants who had completed at least one of the extraversion measure or the self-monitoring measure from the pre-screening package were included in the analyses. 282 participants had useable data, though not all of them had data for both personality measures. The mean age of participants was 18.48 years ($SD = 4.48$), and the majority of participants were Caucasian (76%) followed by Asian (14.7%).

**Procedure**

The design of the study was a 2 (Elaboration: High/Low) x 2 (Message type: Descriptive/Injunctive) x 3 (Extraversion: High/Medium/Low) x 3 (Self-Monitoring: High/Medium/Low) between participants design. Therefore, there were four conditions in the experiment (high/low elaboration by descriptive/injunctive message), and participants were randomly assigned to one of the four conditions using an online research randomizer. For participants who completed the prescreening measures of self-monitoring and extraversion, a tertiary split on scores was performed to assign participants as low, medium, or high on both traits.

Up to six participants at a time were brought into the laboratory, and were seated individually at computer stations. The experiment was presented entirely on MediaLab v2008 (Jarvis, 2008). Participants were told that they were participating in a university survey designed to gather information on students’ attitudes toward various programs being considered for implementation (see Appendix A for information sheet and consent form). All participants were presented with written descriptions of two different fictitious programs being offered (“Diversity in University” program, and “Healthy You”
The “Diversity in University” program was given first as a filler task to make the cover story believable. The description of this program was about half a page in length, and was informational in nature (did not feature persuasive appeals). The program was described as an education course on diversity and multiculturalism, where students would learn history, customs, and cooking of various cultures represented on campus (see Appendix B for messages). After reading this message participants were asked filler questions about stylistic qualities of the message (e.g. “How well written was the message?”), and completed a thought-listing task (TLT; Cacioppo & Petty, 1981). These responses were not used in any analysis, but were simply included to maintain the cover story and make the filler task appear similar to the target task, the “Healthy You” message. The “Healthy You” message was identical to that used in the pilot study as it was found to be effective in conveying the injunctive and descriptive normative appeals, and was shown to participants immediately after they had completed the filler task. After reading the message, participants were asked several questions about their interest in such a program and whether they would sign up.

Elaboration was manipulated in several ways. Participants in the high elaboration condition read about both “Diversity in University” and “Healthy You” and completed all of the measures without any distractions or deliberate limits placed on their cognitive abilities. They were also highly motivated to process the message because personal relevance was manipulated. This was done by telling participants in the high elaboration condition that the programs were going to be available at their own university in the upcoming year.
Conversely, in the low elaboration condition participants were presented with an eight-digit number to remember immediately after having read the general description of each program in the filler and target tasks, under the auspices that we were pairing the study with a study on memory. Participants were given ten seconds to memorize this number, and were told not to write it down. Participants were told that they would need to recall this number at a later time, which required them to hold the number in mind as they were viewing the normative message (in the case of the target task) and responding to the measures. After completing the measures for each of the filler and target tasks participants were asked to actually recall the number and told whether or not their answer was correct in order to reinforce the idea that the memory task was a major objective of the study.

After completing all three tasks, participants in every condition were asked to complete a cognitive response task in which they reported the thoughts they had as they were reading the normative message and deciding whether or not to register for the “Healthy You” program. They then went back and rated these thoughts as positive, negative or neutral. After completing the experiment, participants were fully debriefed (see Appendix A for debriefing form).

Presented in Table 1 and Table 2 below are the final number of participants in each condition for all three dependent measures.
Table 1

*Cell sizes (N) for the Intentions and Behavioural Measure Analyses*

<table>
<thead>
<tr>
<th></th>
<th>Descriptive Message</th>
<th>Injunctive Message</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Elaboration</td>
<td>70</td>
<td>61</td>
<td>131</td>
</tr>
<tr>
<td>High Elaboration</td>
<td>64</td>
<td>63</td>
<td>127</td>
</tr>
<tr>
<td>Total</td>
<td>134</td>
<td>124</td>
<td>258</td>
</tr>
</tbody>
</table>

Table 2

*Cell sizes (N) for the Thought Favourability Analysis*

<table>
<thead>
<tr>
<th></th>
<th>Descriptive Message</th>
<th>Injunctive Message</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Elaboration</td>
<td>70</td>
<td>61</td>
<td>131</td>
</tr>
<tr>
<td>High Elaboration</td>
<td>63</td>
<td>63</td>
<td>126</td>
</tr>
<tr>
<td>Total</td>
<td>133</td>
<td>124</td>
<td>257</td>
</tr>
</tbody>
</table>

*Measures*

*Extraversion.* Participants completed the NEO-FFI (McCrae & Costa, 2004), which is a 60-item questionnaire examining five facets of personality, including extraversion\(^1\) (see Appendix C). For each item in the scale, participants were asked to rate the degree to which they agreed with the statement presented. There were five response options, ranging from ‘strongly disagree’ to ‘strongly agree’, with ‘neutral’ as the midpoint, which were scored from one (1) to five (5) for the purpose of analyses. In the

\(^1\) The items measuring the extraversion subscale of the NEO-FFI are marked with an asterisk in Appendix C.
current study, 267 participants completed the extraversion subscale ($M = 42.65$, $SD = 6.45$). The distribution was relatively normal, with a skewness = -.56, kurtosis = .28 ($\alpha = .81$).

**Self-Monitoring.** In a prescreening questionnaire package distributed to undergraduate psychology students at the beginning of the year, participants completed the 18-item Self-Monitoring Scale (Snyder & Gangestad, 1986) (see Appendix D). This is a true/false measure, where scores can range from zero (very low self-monitor) to eighteen (very high self-monitor). Participants received a point for every statement that would endorse high self-monitoring. Of the participants in the current study, 273 had completed this measure ($M = 10.03$, $SD = 3.38$). The distribution was relatively normal, with a skewness = -.13, kurtosis = .29 ($\alpha = .68$).

**Scoring.** Both extraversion and self-monitoring were trichotomously split to create groups of high, medium, and low for both personality traits. After examining the distributions, the bottom third of extraversion scores were less than or equal to 38, the mid-range was above 38 and below or equal to 41, and top third was above 41. For self-monitoring, the bottom third were those participants scoring under or equal to 8, the mid-range was greater than 8 and less than or equal to 11, and the top third was greater than 11. A series of ANOVAs were then used to analyze the impact of these personality traits on our dependent measures.\(^2\) Scores on the extraversion and self-monitoring measures were moderately positively correlated, $r = .29$, $p < .01$.

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\(^2\) For self-monitoring and extraversion, I have reported the results for the trichotomous splits. However, because these were continuous variables, I did perform a General Linear Model with these variables centered. There were no differing results between these two analyses on thought favourability index or intent to participate.
**Intentions to participate.** (see Appendix E). Participants were asked to rate on a one (not at all) to seven (very) scale how interested they would be in joining the “Healthy You” program, how committed they would be to the program if they joined, and how likely they would be to participate in the program if it were to be offered the following year. Reliability for these items was high at $\alpha = .90$. These items were aggregated into one measure of post-message attitude for each participant. For this post-message attitude score the mean was $M = 3.58$ ($SD = 1.03$), with a relatively normal distribution (skewness = -.54, kurtosis = -.37).

**Cognitive response.** (see Appendix E). Upon completion of reading the message, participants completed the thought-listing task (TLT; Cacioppo & Petty, 1981), where they were asked to fill in ten boxes with any thoughts that came to mind while they were reading the message, placing one thought per box. They were then asked to rate the thought as favourable, unfavourable, or neutral to the “Healthy You” program. For example, if participants said, “I think this is a good idea”, they would indicate that the thought was favourable. The number of favourable, unfavourable, and neutral thoughts for each participant was subtotalled, and a cognitive response index was created by subtracting the number of negative thoughts from the number of positive thoughts, and then dividing this by the total number of thoughts for each participant. Therefore, cognitive response scores could range from negative one (completely unfavourable) to positive one (completely favourable). In the present data set, the average was fairly neutral, though slightly more positive than negative ($M = .15$, $SD = .29$).
Behavioural measure. (see Appendix E). Participants were asked to provide their email address if they were interested in participating in the program, or to type “no” if they were not. If participants gave their email, it was scored as ‘one’, and if not, it was scored as ‘zero’. On this measure, just over half of participants gave their email ($M = .55$, $SD = .50$).

Results

Elaboration Manipulation

First, it was important to ascertain whether our elaboration manipulation was successful. One of the ways this can be done is simply summing the total number of relevant thoughts for each participant, with the prediction that there should be more relevant thoughts for participants under high elaboration. To examine this I coded (blind to condition) the thoughts for every participant, counting the number of relevant thoughts they had regarding the message. I also counted the total number of thoughts for each participant, and then created an index of the proportion of relevant thoughts to total thoughts. In support of a successful elaboration manipulation, participants in the high elaboration condition ($M = 4.41$, $SD = 1.72$) had significantly more relevant thoughts than participants in the low elaboration condition ($M = 3.89$, $SD = 2.04$), $t(280) = 2.32, p = .02$. We found further support for the success of our elaboration manipulation by examining the difference in proportion of relevant thoughts to total thoughts, with the idea being that under conditions of low elaboration, there should be a lower proportion of relevant thoughts due to (in this case) distraction and personal irrelevance of the “Healthy You” program. Again, those in the high elaboration condition ($M = .96$, $SD = .13$) had a
significantly higher proportion of relevant thoughts compared to participants in the low elaboration condition ($M = .88, SD = .25$), $t(272) = 3.46, p < .001$.

Yet another way to test whether our elaboration manipulation was successful was to conduct a linear regression to examine whether thought favourability would predict intentions to participate in the program in both elaboration conditions. One would expect that under high elaboration conditions, the thought to intention relationship should be stronger than in conditions of low elaboration. Thoughts significantly predicted intentions and explained a significant proportion of variance in both the high elaboration condition, $B = 2.21, t(138) = 8.63, p < .001, R^2 = .35, F(1, 138) = 74.52, p < .001$, and the low elaboration condition, $B = 1.70, t(140) = 6.95, p < .001, R^2 = .26, F(1, 140) = 48.33, p < .001$. The difference between these two regressions was not significant, but seemed to be trending in the appropriate direction ($z = 1.46, p = .14$), and with the success of the previous tests, I felt comfortable that the elaboration manipulation was satisfactory.

Given confirmation that we successfully manipulated elaboration, I examined compliance to the persuasive appeal. Compliance to the persuasive appeal to join the “Healthy You” program was assessed asking participants several questions relating to their intent to join the program. As mentioned above, these included an opportunity to sign up with their email address, and questions regarding their attitudes towards the program. Further, the cognitive response index was created to assess their overall thoughts about the program. Each of these measures was analyzed separately, however, as would be expected, the correlation among these dependent measures was significantly positive, $r = .41$ to $r = .56, p < .01$. 
Dependent Measures

**Intent to join the program.** I first wanted to examine whether participants overall intent to join the program was impacted by elaboration, message type, and level of extraversion and self-monitoring. To assess this I conducted a 2 (elaboration: high vs. low) x 2 (message type: descriptive vs. injunctive) x 3 (extraversion: high vs. medium vs. low) x 3 (self-monitoring: high vs. medium vs. low) ANOVA, with the measure of intent to join as the dependent variable. I predicted that there would be no main effects of level of extraversion, level of self-monitoring, message type, or elaboration on participants’ demonstrated intent (interest, commitment, likelihood) to join the “Healthy You” program. Interestingly, there was a significant main effect of extraversion on intent to join the program, $F(2, 242) = 4.03, p = .02$. Those high in extraversion ($M = 3.81, CI_{95} = 3.56, 4.05$) had significantly higher scores on the intent measure than those medium in extraversion ($M = 3.57, CI_{95} = 3.35, 3.79$) as demonstrated by the mean for high extraversion residing outside of the 95% confidence interval for medium extraversion. The medium extraverts in turn showed more intent when compared to those scoring low on extraversion ($M = 3.21, CI_{95} = 3.01, 3.55$), with a mean outside of the 95% confidence interval for low extraversion. As such, it seems that the more extraverted participants were, the more likely they were to demonstrate an intent to join the “Healthy You” program.

Cialdini (2003) has posited that a two-way interaction between message type and elaboration should occur, such that descriptive messages should be more persuasive than injunctive messages under conditions of low elaboration because they require less
cognitive processing. Cialdini (2003) makes no explicit predictions about how descriptive and injunctive messages may act under high elaboration, however, there seems to be two plausible ways in which injunctive messages may have their effect. It is possible that descriptive and injunctive messages could be equally persuasive under conditions of high elaboration. Alternatively, a reversal could occur such that in conditions of high elaboration, the injunctive message is actually more persuasive than the descriptive message.

I wished to examine whether there were any two-way interactions in support of previous suggestions by Cialdini (2003). Indeed, there was a significant two-way interaction, $F(1, 242) = 7.50, p < .01$. In Figure 1 below, the Y-axis represents participants’ mean score on the intention measure.

Figure 1

*Two-way Interaction between Message Type and Elaboration on Participant Intent to Join Program*
Although the range of the scale was one to five, the range presented here is that of the current data set. As can be seen on the left of Figure 1, concurrent with Cialdini’s (2003) suggestion, I found that under low elaboration, the descriptive message led to significantly more intentions to join \((M = 3.84, CI_{95} = 3.58, 4.10)\) than the injunctive message \((M = 3.36, CI_{95} = 3.05, 3.67)\), as demonstrated by both means lying outside of the other’s 95% confidence interval. As we move to the right, we can examine the high elaboration condition, for which Cialdini (2003) did not make explicit predictions. One can see that under high elaboration, the injunctive message \((M = 3.66, CI_{95} = 3.38, 3.93)\) was significantly more effective than the descriptive message \((M = 3.35, CI_{95} = 3.06, 3.64)\).

This interaction demonstrates a complete reversal of the impact of descriptive and injunctive norms under high versus low elaboration, indicating that the descriptive message may have indeed been easier to process than the injunctive message, and thus, when participants were distracted by the memorization task and were concurrently reading about a university other than their own, the descriptive message provided a basis for their increased intent to join the “Healthy You” program. Conversely, when the participants were reading about their own university, free of distraction, the injunctive message was more effective at increasing participants’ intent to join the program.

My central prediction was that Cialdini’s (2003) suggestion may not necessarily hold true, and that the effect of descriptive and injunctive messages would not be the same for people with different dispositional characteristics. As such, I predicted a three-way interaction between level of extraversion, message type, and elaboration, as well as a
three-way interaction between level of self-monitoring, message type, and elaboration. However, I did not find support for the predicted three-way interactions. The interaction between level of extraversion, message type, and elaboration was not significant, $F(2, 242) = .00, p = 1.00$. Further, the interaction between level of self-monitoring, message type, and elaboration was also not significant, $F(2, 242) = .54, p = .58$. The model also tested the four-way interaction among our independent measures, and consonant with predictions, no interaction was found.

*Thought favourability index.* In the previous analysis, I found evidence that the descriptive normative message was more persuasive under conditions of low elaboration, whereas the injunctive message was more persuasive under high elaboration. The next step was to examine the effect of the independent variables on the dependent measure of thought favourability. The predictions remained the same as for the intention dependent measure, and I conducted another ANOVA to examine these relationships. Again, I did not expect to find any main effects in this model, and no main effects were found. I also did not expect any two-way interactions, though because of the strong crossover interaction for the intent to join dependent variable, this was something to investigate further. Although not quite marginal in significance, $F(1, 241) = 2.55, p = .11$, the two-way interaction between message type and elaboration was worth examining based on the previous findings.
Figure 2

*Two-way Interaction between Message Type and Elaboration on Participant Thought

*Favourability*

![Graph showing mean thought favourability for low and high elaboration conditions for injunctive and descriptive messages.](image)

Figure 2 above indicates participants’ mean thought favourability on the Y-axis for the elaboration by message type interaction. Although thought positivity could theoretically range from negative one to positive one, this axis simply reflects the range of scores in the present sample. On the left, one can see that participants in the low elaboration condition had significantly more favourable thoughts towards the “Healthy You” program when they read the descriptive message ($M = .20, CI_{95} = .13, .28$) as compared to the injunctive message ($M = .11, CI_{95} = .02, .20$). As we move to the right, we see that under high elaboration, although the trend in the opposite direction is there, it is not significant. Those who read the injunctive message ($M = .16, CI_{95} = .08, .24$) did not show significantly greater thought favourability than those who read the descriptive
message \((M = .12, CI_{95} = .04, .20)\). However, overall this finding is intriguing in conjunction with the previous finding for the intention measure, and does provide some further evidence in support of Cialdini’s (2003) assertion regarding how these two types of normative messages may operate. Again, Cialdini (2003) did not explicitly mention how descriptive and injunctive norms may operate under high elaboration, and so a non-significant finding in that condition is not entirely surprising.

Again, I originally predicted three-way interactions between level of extraversion, message type, and elaboration, and level of self-monitoring, message type, and elaboration, however, these were not significant; \(F(2, 241) = .32, p = .73\) and \(F(2, 241) = .04, p = .96\), respectively. Further, no four-way interactions were predicted, and none were found.

**Behavioural measure.** The above analyses provided evidence that descriptive messages were more effective at increasing participants’ intent to join the “Healthy You” program and their thought favourability towards the program under low elaboration conditions, while under high elaboration conditions, the injunctive message seemed to be more effective at least in increasing participants’ intentions to join the program. I next wanted to examine the third dependent variable; whether participants actually signed up for the proposed program. To address this question, I conducted a 2 (elaboration: high vs. low) x 2 (message type: descriptive vs. injunctive) x 3 (extraversion: high vs. medium vs. low) x 3 (self-monitoring: high vs. medium vs. low) log linear analysis, with the dichotomous behavioural outcome (signing up for the program via providing an email address versus saying “no”) as the dependent variable. No main effects were predicted,
and none were found. The first effect of interest at this point was the two-way interaction between elaboration and message type; would the behavioural measure replicate the pattern of my other dependent measures?

If we look below to Figure 3, we can see the same pattern emerging. On the left of the figure, we see that under low elaboration, 50% of participants indicated interest in signing up for the program after reading the descriptive message, while 45% of people indicated interest in signing up for the program after reading the injunctive message, however, this difference was not significant, $\chi^2(1, N = 68) = .94, p = .33$. Conversely, looking to the right we see that under conditions of high elaboration, 59% of participants who read the descriptive message indicated interest in signing up, while 66% of participants who read the injunctive message indicated interest in signing up. However, again this difference was not significant, $\chi^2(1, N = 87) = .29, p = .59$. This interaction among message type and level of elaboration on the behavioural measure was not significant overall, $L^2(2, N = 242) = 4.49, p = .11$. However, it is encouraging that the trend was in the same direction as the previous two dependent measures and thus should be seen as support of the crossover interaction effect descriptive versus injunctive message may have under high versus low elaboration.
Similar to the previously mentioned dependent measures, I predicted two three-way interactions of level of extraversion or self-monitoring, elaboration, and message type on the behavioural measure of whether or not participants signed up for the program. I expected that under low elaboration conditions, those high in self-monitoring and/or extraversion would be more likely to provide their email address to sign up for the “Healthy You” program if they read the descriptive message, while those low in self-monitoring and extraversion would be more likely to do so if they read the injunctive message. I did not make any explicit predictions under high elaboration conditions. Contrary to my initial predictions, but consonant with my findings on both the intention to join and thought favourability measures, neither the three-way interaction for extraversion, $L^2(2, N = 242) = .30, p = .80$, or self-monitoring, $L^2(2, N = 242) = 1.21, p = .75$ was
significant. Further, no four-way interactions were predicted, and none were found.

Chapter 4

General Discussion

Summary of Findings

The purpose of the present research was to examine whether the persuasive impact of descriptive versus injunctive normative messages differed depending on one’s level of extraversion and self-monitoring, and suggested that these differences would mainly be relevant under conditions of low elaboration. The present research did not support my hypothesis in this regard, but provides theoretically valuable advances to the literature. First, I found a main effect of extraversion on intentions to join the “Healthy You” program – those higher in extraversion were significantly more likely to join that those lower in this trait. This could be because the advertised program was social in nature and involved being part of a group, and was thus more attractive to extroverts. However, no main effects emerged for the other dependent measures. Further, I did not find evidence for the two predicted three-way interactions between elaboration, message type, and extraversion/self-monitoring I expected for the three dependent measures. However, in study two I found a significant two way interaction on the dependent measure of intention to join the program. Under conditions of low elaboration, participants were significantly more likely to show intent to join the “Healthy You” program when they read the descriptive rather than the injunctive message. In a reversal of this effect, under conditions of high elaboration, intent to join the program was
significantly higher for those who read the injunctive rather than the descriptive message.
Although not statistically significant, this general pattern of results also emerged for the
other two dependent measures; participants’ thought favourability and their behavioural
measure. This significant two-way interaction for the intention measure and the trending
two-way interactions for the thought favourability and behavioural measures provide
evidence in support of Cialdini’s (2003) suggestion that descriptive norms are more
persuasive under conditions of low elaboration, and also extends Cialdini’s (2003)
suggestions by providing evidence for injunctive messages being generally more
effective under conditions of high elaboration.

Implications of Findings

In the persuasion literature, there is ample evidence that descriptive and injunctive
normative messages can work together to increase a desired behaviour or decrease an
undesired behaviour. For example, Cialdini et al (2003) showed that a prevalent problem
behaviour (such as stealing wood from a petrified forest) would best be addressed by the
use of injunctive norms, because the descriptive norm would simply reinforce the
problem behaviour. Alternatively, if a desired behaviour is already occurring, but the goal
is to further increase this behaviour (such as recycling), the most effective approach
would be to use both injunctive and descriptive norms (Cialdini, 2003). Interestingly,
Cialdini (2003) found that recycling PSAs featuring descriptive norms directly influenced
viewers’ intentions to recycle, while PSAs featuring injunctive norms influenced viewers’
perception that the ad was persuasive, which in turn influenced their intentions to recycle.
Despite the research showing that descriptive and injunctive norms can be utilized in different ways to garner the desired outcome, until this research program, there had been no research on how these two types of norms could function differently under different elaboration conditions. The data in the present research are the first to speak to Cialdini’s (2003) suggestion that descriptive norms are more persuasive when one has limited cognitive processing ability. I found clear evidence that descriptive normative messages were more effective at garnering intended participation in the fictitious program when elaboration was low – participants seemed to be using others behaviour as a guide for how they should behave. Cialdini (2003) made no clear predictions about what may occur for injunctive messages, and here my research has made a significant contribution. I found a reversal effect for conditions of high elaboration, such that under high elaboration, participants were significantly more likely to join our program when they read the injunctive message.

I had originally predicted that a differential impact of descriptive and injunctive norms would be moderated by the personality traits of self-monitoring and extraversion. After all, there did not seem to be evidence for Cialdini’s (2003) assertion that descriptive norms should be more persuasive simply because they require less processing – perhaps for some individuals, injunctive norms would align better with their traits and tendencies, and thus would be more persuasive. However, I found evidence that this is not that case. Even participants scoring in the bottom third of self-monitoring and extraversion were significantly more persuaded by the descriptive message under low elaboration and the injunctive message under high elaboration, with no moderating effect of personality.
Why then might descriptive norms work better than injunctive norms under low elaboration? We know it is not related to the complexity of the two messages, because these were carefully constructed and edited to be of near identical length, with similar language and phrasing used throughout. Likely, Cialdini’s (2003) suggestion is correct; descriptive norms require less scrutiny and so when cognitive resources are depleted, looking to others behaviour as a guide is a quick heuristic to make a decision. Such an explanation is supported by theories such as Festinger’s (1954) social comparison theory, in which he suggests that when there is no objectively correct outcome for a decision, and therefore no real criteria for making a decision, individuals look to others to guide their own behaviour. In the case of low elaboration, individuals do not have the motivation and ability to necessarily create their own opinion, and so use others’ behaviour as a guide.

Following this, what might explain the reversal effect I found; that under conditions of high elaboration, participants were more persuaded by the injunctive norm? Kallgren, Reno, and Cialdini (2000) found that personal norms (injunctive norms related to individual values) are weak predictors of behaviour unless they are at the forefront of one’s attention when the norm-relevant behaviour arises. Therefore, conditions of high elaboration would be the ideal scenario for injunctive norms to be effective; the person is able to focus on the message and relate it to their own personal values. Because being healthy is generally a value most people would hold, it seems plausible that when given the opportunity to elaborate on a message, the injunctive normative appeal was a better ‘fit’ for participants’ own norms and feelings, and as such, increased intentions to join the program. Further, because injunctive norms deal with values and morality, when they are
presented it is probable that the individual must actively cognitively process these messages to assess whether they fit with their own values or the values of society at large. Conversely, descriptive norms do not require this in depth thought, and can act as a simple heuristic for behaviour.

Interestingly, the ‘intentions to join’ dependent measure was the only one that yielded a significant interaction between message type and elaboration, though the other two dependent measures of thought favourability and the behavioural sign-up measure did show trends in a similar direction. There could be several reasons for this. The intentions measure seems to be less rigorous measure of compliance because it asked participants how interested and committed they were to such a program, as well as how likely they were to join. However, at this point the program was not a reality for the participants, and so amongst a young university population, indicating interest in such a program may be rather common. While the behavioural measure was not significant we did see a differential impact of message type under conditions of high versus low elaboration. It is possible that this measure did not yield significant findings because it was a single dichotomous measure, and thus had lower reliability than the aforementioned intentions measure, which comprised of three continuous items.

In terms of thought favourability, recall that participants’ scores could range from negative one (all negative thoughts) to positive one (all positive thoughts). One possible issue is that participants’ thoughts seemed to be mostly neutral \((M = .14, \ SD = .26)\). It is possible that participants did not have strong thoughts one way or another about the program, or at least did not express them in this measure. Another issue is that the
thought listing task generally captures high elaboration, because thinking about the message and describing and rating these thoughts is inherently a fairly high elaboration task. Therefore, it is possible that thought favourability would not predict low elaboration successfully.

Of interest in the present research is addressing the issue of why the personality traits of extraversion and self-monitoring had no role to play in the relationship between message type and elaboration. The scales that I used for both personality measures are valid, reliable, and have been used countless times in previous research. Further, one could argue that perhaps I simply did not have enough power to show the moderating role of personality in response to descriptive and injunctive messages. However, I suggest it would be safe to conclude this is not the issue, as the three-way interactions for these variables were so far from significance (between $p = .58$ and $p = 1.00$) on all dependent measures for both extraversion and self-monitoring. Another possibility is that I did not manipulate our messages adequately to differentially represent descriptive and injunctive norms. However, I did conduct pre-testing of our messages in study one, and participants did rate the injunctive messages as more reflective of values and the descriptive message as more reflective of what others were doing. Further, the fact that I found differences for the two-way interaction of elaboration by message type indicates that a problem with my messages probably is not the reason for null findings for the personality by message type by elaboration interactions.

This research program yields some interesting findings in terms of application of social norms to everyday persuasion. The finding that injunctive messages work
significantly better than descriptive messages under conditions of high elaboration has several ‘real world’ applications. Imagine an individual is doing research on buying a big ticket item, such as a new washing machine. This individual will be devoting a lot of cognitive resources to finding the best washing machine. When they are reading flyers advertising washing machines or listening to a salesperson describe the various virtues of a particular machine, the individual will be both motivated and able to attend to the message. In such a situation, advertisers or salespeople would be well advised to utilize the power of injunctive norms to gain compliance. On the contrary, imagine a harried mother rushing through the grocery store aisles with two screaming children in her cart. She really needs new laundry detergent as her old brand has been discontinued, and does not have an idea about which brand she will now purchase. There is a sign beside the “XYZ” brand detergent saying, “#1 selling detergent in store!” This would act as a quick heuristic for the mother to choose that detergent, demonstrating the impact of descriptive norms under conditions of low elaboration.

**Future Directions**

I have found evidence that descriptive messages are more persuasive under conditions of low elaboration, and injunctive messages are more persuasive under high elaboration. However, I did this using only one target message pertaining to an exercise and nutrition program ostensibly slated for commencement at a university. A first step in continuing this research program would be to replicate the findings with other messages featuring a wide range of issues. Because the population of university students in my study was likely quite image conscious and was exposed to various forms of exercise, it
would be interesting to ascertain whether our findings would hold for issues that were less salient to them. Messages used in past research that could be utilized in this regard include messages advocating the use of nuclear power or bringing a new vaccine onto the market.

While my elaboration manipulation was very successful, I could utilize alternative methods of manipulating elaboration to extend future research. While I manipulated personal relevance by having participants in the low elaboration condition read that the program was being considered at another university, I could add to this by manipulating personal responsibility. In the high elaboration condition, participants would be told that they are a select group of students who are being asked their opinion about the program, and that administration highly valued their input. In the low elaboration condition, participants would be told that they were one of many students being asked, and that student opinions may not be considered by the administration of the university.

Lastly, future research should address the fact that I only found a significant interaction for one of our three dependent measures (intent to join). In this regard, it would be valuable to include an actual behavioural measure in future studies. This could take the form of telling participants there was a second part to the study, and if they indicated they were interested in the program, the second study would provide them with an orientation to said program, for example. This would simply extend the findings beyond mere intentions or email sign-ups to actually attending. Overall, the finding that descriptive and injunctive norms function differently under high and low elaboration is an
an exciting finding; thus, it seems there are several avenues to explore with regards to this program of research.
References


Appendix A: Information Sheet, Consent Form, Debriefing

Letter of Information – Opinion

This research is being conducted by Maia Kredentser, who is a graduate student working with Dr. Leandre Fabrigar, Professor of the Department of Psychology at Queen's University in Kingston, Ontario.

What does this study involve? You will be presented with information regarding several University programs and asked to give your opinions about those programs and answer a few questions about yourself. We estimate that it takes about 30 minutes to complete this portion of the experimental session and that there are no known physical, psychological, economic, or social risks associated with them; this research has been cleared by the Queen's University General Research Ethics Board.

Is my participation voluntary? Yes. Although it be would be greatly appreciated if you would answer all material as frankly as possible, you should not feel obliged to answer any material that you find objectionable or that makes you feel uncomfortable. You may also withdraw at any time with no effect on your standing in school.

What will happen to my responses? We will keep your responses confidential. We will store the data in a locked room until the raw data is no longer needed. Only authorized researchers will have access to the data. The data may also be presented in professional psychological journals or at scientific conferences, but any such presentations will be of general findings and will never breach individual confidentiality. Should you be interested, you are entitled to a copy of the findings.

Will I be compensated for my participation? Yes. In exchange for your help with this experimental session, we will reward you with 1.0 of a maximum 5.0 credits you may earn toward your final Psychology 100 grade by participating in departmental experiments, or with a payment of $5.00 for the full session if all of your credits have been completed or you are not a part of the Psychology 100 subject pool.

In the event that you have any complaints, concerns, or questions about this research, please feel free to contact Dr. Leandre Fabrigar (613 533-6492, fabrigar@queensu.ca), Maia Kredentser (maia.kredentser@queensu.ca), the Head of the Department of Psychology (613 533-6012, psychead@queensu.ca), or the Chair of the General Research Ethics Board (613 533-6081, chair.GREB@queensu.ca) at Queen's University.

Again, thank you. Your interest in participating in this research study is greatly appreciated.

Dr. Leandre Fabrigar        Maia Kredentser
Professor                 MSc Student
Consent Form- OPINION

Name (please print clearly): _____________________________________________

1. I have read the Letter of Information and have had any questions answered to my satisfaction.
2. I understand that I will be participating in the study called OPINION. I understand that this means that I will be presented with information regarding several University programs and asked to report my opinions about those programs as well as answering questions about myself.
3. I understand that my participation in this study is voluntary and I may withdraw at any time and this will not affect my credits, and I can request that part or all of my data is removed.
4. I understand that every effort will be made to maintain the confidentiality of the data now and in the future. The data will be stored in a locked room until the raw data is no longer needed. The data may also be presented in professional psychological journals or at scientific conferences, but any such presentations will be of general findings and will never breach individual confidentiality. If I am interested, I am entitled to a copy of the findings.
5. I am aware that any questions about study participation may be directed to Maia Kredentser at maia.kredentser@queensu.ca. Any ethical concerns about the study may be directed to the Chair of the General Research Ethics Board at 613-533-6081 or Chair.GREB@queensu.ca.

I have read the above statements and freely consent to participate in this research:

Signature: ________________________________

Date: ________________________________
You have just participated in a study examining compliance. The purpose of this study is to examine how personality can impact that social norms have on compliance when the level of thought that is committed to the persuasive message is varied.

Compliance refers to any instance in which someone freely agrees to a request made by another person. This happens every day in many instances and may include anything from a friend requesting to borrow a book to a company requesting brand loyalty from its customers. There are a variety of tactics that people use in order to increase the chances that another person will comply with their request, and researchers are interested in identifying and understanding these tactics in order to better understand how compliance works. One tactic for producing compliance is to describe social norms related to the request. These norms may be one of two types; descriptive, which suggest how most other people would behave in a similar situation, or injunctive, which suggest what most people believe is the correct or best behaviour to adopt in a situation.

This study examines how these norms work by providing participants with information regarding three University programs that they may register for and presenting them with either a descriptive message or an injunctive message. In addition, we looked at how these effects change when people are either able to think extensively about the message or if they are unable to think extensively about the message. Therefore, half of the participants in this study were given a number to remember while reading the information in order to distract them and were made to be relatively unmotivated to process the message because they were not made to feel less personally affected by the information. This was done by telling some participants that the programs were going to be implemented here at Queen’s (personally relevant) or that the programs were going to be implemented at St. Mary’s University, and were not being considered in Ontario. Further, we are examining how personality traits may influence response to these messages.

All of the programs presented were fictitious. You will not be expected to attend workshops or engage in any other tasks. All information provided by you during this session will remain confidential and will not be used for any purpose other than the present study. You were asked to provide your email address if you wished to register for any of these programs. If you provided this information, it will only be used to determine whether or not you registered for the program, and for no other purpose.

Please do not discuss this study with anyone outside of the laboratory. By speaking to others, you may disclose the nature of the study and negatively affect the results. Your cooperation is appreciated.

Please also note that you are free to withdraw your data from the study. Remember that your results are confidential to me and my supervisor, and that all results are published anonymously as group data. If participating in this experiment has caused sufficient distress to you that you wish to speak to a counsellor, please contact Queen’s Counselling at 613 533-2506, or TALK Distress and Information Line at 613 533-1771.

For more information regarding social norms and compliance, please refer to:


In the event that you have any complaints, concerns, or questions about this research, please feel free to contact my supervisor, Dr. Leandre Fabrigar (613 533-6492, fabrigar@queensu.ca), Maia Kredentser (maia.kredentser@queensu.ca), the Head of the Department of Psychology (psychead@queensu.ca), the Chair of the General Research Ethics Board (chair.GREB@queensu.ca). Thank you very much for participating!
Appendix B: Persuasive Messages

Target Message – Descriptive
Queen’s University (St. Mary’s University) is considering the adoption of a nutrition and exercise program called “Healthy You”, due to an increased demand from students for an increased focus on the health and wellbeing of undergraduates. The university’s administration is trying to recruit people for the program so that students are registered and ready to go as soon as the program is implemented.

The program would consist of a 3 day/week exercise program, including intense cardio activity and weight lifting, every Monday, Wednesday, and Friday at 7:00 am. In addition, the program will involve weekly nutritional classes so that participants can learn about healthy eating habits, quick and easy recipes, and smart menu choices, on Tuesdays or Thursdays at 7:00 pm. The final aspect of the program would be a weekly group meeting on Saturdays at 9:00 am, to gauge participants progress and help participants learn tips on how to maintain and improve their program.

Last year the university did some research into the popularity and interest in this program, and the response has been very positive. In an initial survey of 425 undergraduates, 83% supported the implementation of the program, and 79% of those students said they would sign up themselves. Alana Tupper, a 2nd year Arts and Science student said, “I would definitely sign up, and I know my housemates are signing up too. In fact, everyone I have talked to about the program plans on signing up!” Sasha Beardsley, a 2nd year student said, “I found out almost all of my friends were signed up and I was actually really embarrassed, it seems like I am really missing out. I’m going try to sign up now.”

Some undergraduate students were recruited to pilot test the program. Jeremy Williams, a 3rd year engineering students said, “I joined the program and I think everyone should sign up.” Additionally, surveys of first-year students indicated that the demand for such a program was high, and many intended to participate if given the opportunity.

Queen’s University (St. Mary’s University) strongly encourages participation in extra-curriculars by their students, and it is clear that this program specifically is favoured by students. Please indicate whether you would like to follow the lead of your peers and join the “Healthy You” program today (for low elaboration: if it were to become available at Queen’s).
Target Message - Injunctive

Queen’s University (St. Mary’s University) is considering the adoption of a nutrition and exercise program called “Healthy You”, due to the overwhelming evidence that an increased focus on the health and wellbeing of undergraduates is beneficial. The university’s administration is trying to recruit people for the program so that students are registered and ready to go as soon as the program is implemented.

The program would consist of a 3 day/week exercise program, including intense cardio activity and weight lifting, every Monday, Wednesday, and Friday at 7:00 am. In addition, the program will involve weekly nutritional classes so that participants can learn about healthy eating habits, quick and easy recipes, and smart menu choices, on Tuesdays or Thursdays at 7:00 pm. The final aspect of the program would be a weekly group meeting on Saturdays at 9:00 am, to gauge participants progress and help participants learn tips on how to maintain and improve their program.

The university has done research into the perceived importance and interest in this program, and the response has been clear. The general consensus amongst a representative sample of Canadians surveyed is that it is the responsibility of citizens to be healthy, due to the fact that being unhealthy comes at a great cost to our society, specifically our healthcare system. Being healthy and active is a sign of self-respect.

Additionally, maintaining a healthy lifestyle shows a great deal of self-discipline. It is admirable that one exercises and eats well in response to so many temptations like television and junk food. Some people may feel that it is selfish to take time out for themselves for exercise or cooking healthy meals, but it is important to remember that making time to be a healthy member of society is the responsible thing to do.

Queen’s University (St. Mary’s University) strongly encourages participation in extracurriculars by their students, and it is clear that this program specifically serves an important need in our society. Please indicate whether you would like to follow the lead of your peers and join the “Healthy You” program today (for low elaboration: if it were to become available at Queen’s).
Filler Message

Queen’s University (St. Mary’s University) is considering the adoption of a cultural awareness program called “Diversity in University”, due to the importance in our society of multiculturalism. The university’s administration is trying to recruit people for the program so that students are registered and ready to go as soon as the program is implemented.

The program would consist of bi-weekly sessions to educate students about other cultures and present opportunities to get involved in cross cultural issues. There will be language classes, historical lectures, and a focus on breaking stereotypes. Additionally, students can sign up for extra classes on cooking various ethnic foods, and attending cultural events.

The language classes will feature native speakers with teaching experience leading classes on the basics of language, such as grammar, comprehension, and the use of basic phrases. Students will have the opportunity to practice with other interested students. In terms of cooking classes, student volunteers with an interest in cooking will present classes on their cultures cuisine. Students in the class will learn about the history of the cuisine and will then get the chance to cook with the resident expert. Additionally, they will be able to get recipe suggestions to try at home. As a complement to the cooking classes, students will have the opportunity to attend potlucks featuring a variety of foods representing the diversity on the Queen’s campus. With both the language and cooking classes, students will be able to decide which culture they are most interested in pursuing, and focus on that, or, can attend a variety of the classes to get a feel for many different cultures.

Professors from the history department at Queen’s will prepare lectures on the history of various cultures, so students enrolled in the program have a chance to learn about the development of these cultures as well as some of the current issues they face. Student input into desired topics will be influential in deciding which subjects will be discussed. Additionally, experts in the fields of stereotyping and cross-cultural harmony will be invited to speak so students can gain a better understanding of how stereotypes operate and what we can do to combat them.

Queen’s University (St. Mary’s University) strongly encourages diversity and acceptance both on and off campus. Please indicate whether you would be interested in joining the “Diversity in University” program today.
Appendix C: Extraversion Measure

This questionnaire contains 60 statements. Please read each item carefully and circle the one answer that best corresponds to your agreement or disagreement. Please answer all questions honestly.

SD = Strongly Disagree
D = Disagree
N = Neutral
A = Agree
SA = Strongly Agree

1. I am not a worrier.  SD  D  N  A  SA
2. *I like to have a lot of people around me.  SD  D  N  A  SA
3. I don’t like to waste my time daydreaming.  SD  D  N  A  SA
4. I try to be courteous to everyone I meet.  SD  D  N  A  SA
5. I keep my belongings clean and neat.  SD  D  N  A  SA
6. I often feel inferior to others.  SD  D  N  A  SA
7. *I laugh easily.  SD  D  N  A  SA
8. Once I find the right way to do something, I stick to it.  SD  D  N  A  SA
9. I often get into arguments with my family and co-workers.  SD  D  N  A  SA
10. I’m pretty good about pacing myself so as to get things done on time.  SD  D  N  A  SA
11. When I’m under a great deal of stress, sometimes I feel like I’m going to pieces.  SD  D  N  A  SA
12. *I don’t consider myself especially “light-hearted.”  SD  D  N  A  SA
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<tr>
<td>13.</td>
<td>I am intrigued by the patterns I find in art and nature.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
</tr>
<tr>
<td>14.</td>
<td>Some people think I’m selfish and egotistical.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
</tr>
<tr>
<td>15.</td>
<td>I am not a very methodical person.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
</tr>
<tr>
<td>16.</td>
<td>I rarely feel lonely or blue.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
</tr>
<tr>
<td>17.</td>
<td>*I really enjoy talking to people.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
</tr>
<tr>
<td>18.</td>
<td>I believe letting students hear controversial speakers can only confuse and mislead them.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
</tr>
<tr>
<td>19.</td>
<td>I would rather cooperate with others than compete with them.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
</tr>
<tr>
<td>20.</td>
<td>I try to perform all the tasks assigned to me conscientiously.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
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<tr>
<td>21.</td>
<td>I often feel tense and jittery.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
</tr>
<tr>
<td>22.</td>
<td>*I like to be where the action is.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
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<tr>
<td>23.</td>
<td>Poetry has little or no effect on me.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
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<tr>
<td>24.</td>
<td>I tend to be cynical and skeptical of others’ intentions.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
</tr>
<tr>
<td>25.</td>
<td>I have a clear set of goals and work toward them in an orderly fashion.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
</tr>
<tr>
<td>26.</td>
<td>Sometimes I feel completely worthless.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
</tr>
<tr>
<td>27.</td>
<td>*I usually prefer to do things alone.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
</tr>
<tr>
<td>28.</td>
<td>I often try new and foreign foods.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
</tr>
<tr>
<td>29.</td>
<td>I believe that most people will take advantage of you if you let them.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
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<tr>
<td>30.</td>
<td>I waste a lot of time before settling down to work.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
</tr>
<tr>
<td>31.</td>
<td>I rarely feel fearful or anxious.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
</tr>
</tbody>
</table>
32. *I often feel as if I’m bursting with energy.  
SD D N A SA

33. I seldom notice the moods or feelings that different environments produce.  
SD D N A SA

34. Most people I know like me.  
SD D N A SA

35. I work hard to accomplish my goals.  
SD D N A SA

36. I often get angry at the way people treat me.  
SD D N A SA

37. *I am a cheerful, high-spirited person.  
SD D N A SA

38. I believe we should look to our religious authorities for decisions on moral issues.  
SD D N A SA

39. Some people think of me as cold and calculating.  
SD D N A SA

40. When I make a commitment, I can always be counted on to follow through.  
SD D N A SA

41. Too often, when things go wrong, I get discouraged and feel like giving up.  
SD D N A SA

42. *I am not a cheerful optimist.  
SD D N A SA

43. Sometimes when I am reading poetry or looking at a work of art, I feel a chill or wave of excitement.  
SD D N A SA

44. I’m hard-headed and tough-minded in my attitudes.  
SD D N A SA

45. Sometimes I’m not as dependable or reliable as I should be.  
SD D N A SA

46. I am seldom sad or depressed.  
SD D N A SA

47. *My life is fast-paced.  
SD D N A SA
48. I have little interest in speculating on the nature of the universe or the human condition.  
49. I generally try to be thoughtful and considerate.  
50. I am a productive person who always gets the job done.  
51. I often feel helpless and want someone else to solve my problems.  
52. *I am a very active person.  
53. I have a lot of intellectual curiosity.  
54. If I don’t like people, I let them know it.  
55. I never seem to be able to get organized.  
56. At times I have been so ashamed I just wanted to hide.  
57. *I would rather go my own way than be a leader of others.  
58. I often enjoy playing with theories or abstract ideas.  
59. If necessary, I am willing to manipulate people to get what I want.  
60. I strive for excellence in everything I do.
Appendix D: Self-Monitoring Measure

The following statements concern your personal reactions to a number of different situations. No two statements are exactly alike, so consider each statement carefully before answering. If a statement is TRUE or MOSTLY TRUE as applied to you, select 'True'. If a statement is FALSE or NOT USUALLY TRUE as applied to you, select 'False'.

1. I find it hard to imitate the behaviour of other people. T F
2. At parties and social gatherings, I do not attempt to do or say things that others will like. T F
3. I can only argue for ideas which I already believe. T F
4. I can make impromptu speeches even on topics about which I have almost no information. T F
5. I guess I put on a show to impress or entertain others. T F
6. I would probably make a good actor. T F
7. In a group of people I am rarely the center of attention. T F
8. In different situations and with different people, I often act like very different persons. T F
9. I am not particularly good at making other people like me. T F
10. I’m not always the person I appear to be. T F
11. I would not change my opinions (or the way I do things) in order to please someone or win their favour. T F
12. I have considered being an entertainer. T F
13. I have never been good at games like charades or improvisational acting. T F
14. I have trouble changing my behaviour to suit different people and different situations. T F
15. At a party I let others keep the jokes and stories going. T F
16. I feel a bit awkward in company and do not show up quite as well as I should. T F
17. I can look anyone in the eye and tell a lie with a straight face (if for a right end). T F
18. I may deceive people by being friendly when I really dislike them. T F
### Appendix E: Dependent Measures

**Intentions to participate**

**How interested would you be in participating in the “Healthy You” program?**

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<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<tr>
<td>Not at all</td>
<td>Interested</td>
<td>Very</td>
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**How committed would you be to “Healthy You” program?**

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<tr>
<td>Not at all</td>
<td>Committed</td>
<td>Very</td>
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**How likely would you be to participate in for the full duration of the “Healthy You” program?**

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<tr>
<td>Not at all</td>
<td>Likely</td>
<td>Very</td>
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</table>
*Behavioural*

If you would like to participate in this program, please provide your name and email address on one line so that we may contact you. If you do not want to participate in the program, please type 'N/A'.
**Thought Listing Instructions**

We are interested in what thoughts came to mind while you were reading about the “Healthy You” program and deciding whether or not to register for it. That is, as you read the information about the “Healthy You” program, you probably had positive reactions and thoughts to what you were reading, negative reactions and thoughts to what you were reading, or neutral or unrelated reactions and thoughts. Whatever your thoughts were is perfectly fine. We are simply interested in knowing what those thoughts were.

On the following pages you will find a series of boxes. Simply list what it was that you were thinking about while you read the information regarding the "Healthy You" program and decided whether or not to register for it. Write down the first idea that comes to mind in the first box, the second idea in the second box, and so forth. Please put only one thought or idea in each box.

Only try to record those ideas, reactions, and thoughts that you were thinking while you were actually reading the information. Do not worry about grammar or having complete sentences. Use only as many boxes as you need. If you can remember only four thoughts, use only four boxes. However, you are required to make a response so for the remaining boxes you are not using, you may enter the word "None." If you can remember more, use as many boxes as you need. But you do not have to use each and every box; only as many as you need.
Thought Rating Instructions

We now want you to read back over the thoughts that you have listed in the previous boxes. FOR EACH BOX THAT YOU HAVE WRITTEN A THOUGHT IN, read the thought and decide if that thought is unfavourable towards the "Healthy You" program, neutral towards the "Healthy You" program, or favourable towards the "Healthy You" program.

If the thought is unfavourable towards the program, click on the minus (-) by the box. If the thought is neutral towards the program, click on the zero (0) by the box. If the thought is favourable towards the program, click on the plus (+) by the box.