

Happy to Help: Further Exploring the Relationship Between Subjective Well-Being and
Prosocial Behaviour

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fulfillment of the requirements for the degree of Bachelor of Science (Honours),
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Abstract

Previous research has indicated a potential causal relationship between prosocial spending and subjective well-being (SWB), with individuals who spend prosocially reporting greater increases in SWB than individuals who spend on themselves. However, these studies have largely been limited to self-report measures. In the present study, 28 participants completed measures of happiness, self-esteem, personality and mood before playing an online game in which correct answers result in real-world donations of rice. Some participants received the opportunity to pledge a donation to a charity before playing, whereas the rest did not. The researcher's primary prediction was that individuals who pledged a donation would earn more rice, with the amount of rice earned correlating with happiness and therefore functioning as a potential behavioural measure of SWB. There was no significant difference in rice earned between the two groups, and happiness did not predict the amount of rice earned. Further analysis showed that among participants who reported high levels of happiness, those who received an opportunity to donate earned significantly more rice than those who did not receive an opportunity. This was true for participants who pledged a donation, as well as for participants who neglected to donate, suggesting that exposure to the pledge sheet was most important in determining the amount of rice earned. Positive affect, openness, and conscientious were also all found to play a role in moderating the amount of rice earned.

Happy to Help: Further Exploring the Relationship Between Subjective Well-Being and Prosocial Behaviour

The value that most people hold for the experience of happiness cannot be understated. In a sample of 7,204 college students from 42 countries, 69% of respondents ranked happiness as having the greatest importance in life, and ratings for the importance of happiness were high for all surveyed nations (Diener, 2000). Only 6% of respondents rated money as being more important than happiness, though money seems to play a fairly large role in facilitating experiences of happiness and well-being. Folk wisdom often offers the tenet that “money buys happiness”, presumably via the goods and services that one can purchase. Indeed, Diener, Tay and Oishi (2013) found robust evidence for this suggestion in a study of 806,526 individuals from 135 nations. They found a significant and enduring relationship between subjective well-being (SWB) and household income, such that growth in household income predicted an increase in SWB that did not diminish over time. This suggests that it is actually the level of income, not merely the growth in income, that affects reports of SWB. Furthermore, they found that this relationship was mediated by financial satisfaction, increased material wealth, and optimism, and that income was no longer a significant predictor of SWB once these factors were taken into account. The implication is that wealth alone has little impact on SWB, and that it is only through its facilitation of change in these other three factors that increases in SWB occur. The relationship between household income and SWB was similar in both poor and wealthy nations, and was not impacted by income comparisons within nations. The effects of absolute income appeared to be universal.

Income, then, plays an important role in the experience of happiness and well-being, primarily through the purchasing power and hope for the future that increase in tandem with income. Many individuals living in wealthier nations have an income that allows for the accumulation of “pocket money” or “spending money”, which is money that remains after needs, bills, and debts have been accounted for and may be spent in any manner. If happiness is of primary importance in life, what is the best way to spend this excess money so as to maximize happiness?

Spending Habits and SWB

Though increases in material wealth may partially mediate the positive relationship between income and happiness, materialism in general seems to have an overall negative impact on well-being. A recent meta-analysis by Dittmar, Bond, Hurst and Kasser (2014) of 175 studies on the relationship between materialism and well-being found a consistent negative relationship between materialism (which included measures of behaviour, values, beliefs and goals) and various measures of well-being. No positive relationships between materialism and well-being were found. Therefore, there is obviously a limit to which material purchases can increase SWB, as indulging in these purchases too much, or even valuing them too much, can be detrimental to well-being.

Rather than spending on material goods, there is also the option of spending one's excess money on experiences (e.g., a vacation, a concert, or a hot beverage), which may actually be the more beneficial approach in regards to enhancing personal well-being. Van Boven and Gilovich (2003) found that the distinction between material and experiential purchases was readily made by participants, and that individuals across

varying demographic categories consistently reported experiencing more happiness after making an experiential purchase as compared to a material purchase. The only exceptions to this finding were among individuals with the lowest levels of income or education, perhaps because they received fewer opportunities to indulge in such leisurely purchases. They also found that contemplating past experiential purchases put participants in a better mood than the contemplation of past material purchases, and that participants thought experiences were more likely to make them happy than material purchases when imagining a purchase made in the distant future or past. Taken together, they suggested three possibilities for these findings: experiences may be more open to positive reevaluations over time, people are more likely to identify with their experiences than with their material possessions, and experiences are often more social in nature than material possessions (Van Boven & Gilovich, 2003).

One possibility directly explored by Carter and Gilovich (2010) is that experiences are more satisfying than material purchases because material purchases are more vulnerable to unfavourable comparisons, and that individuals are more likely to be satisfied with a suboptimal experience than a suboptimal possession. They found that participants were more likely to reflect on alternative options for material purchases rather than experiences, as well as being more concerned about making the best possible choice when purchasing possessions rather than experiences, and that these tendencies negatively impacted their present satisfaction with their material purchases. One particularly interesting study involved asking participants to imagine purchasing a boxed set of music, while manipulating their perception of the item as either a material item or

an experience. The researchers then informed the participants that they could have purchased it for cheaper elsewhere, with the finding that participants who had construed the purchase as a material possession were more dismayed than those who viewed it as an experience.

Another possibility, as mentioned by Van Boven and Gilovich (2003), is that that the social aspect of experiences may partly account for how experiential purchases enhance well-being and deliver more satisfaction than material purchases. Caprariello and Reis (2013) conducted multiple studies to test the degree to which sociality impacts the happiness derived from purchases. Their results showed that sociality played an even larger role than the distinction between experiential and material purchases, with participants rating both social possessions and social experiences as producing more happiness than solitary possessions or experiences. Solitary experiences were found to produce happiness equal to or less than material possessions. A particularly important finding is that, unless prompted otherwise, individuals were more likely to reflect on a social experience when recalling an experiential purchase in general, and more likely to reflect on a solitary possession when asked to reflect on a material purchase (Caprariello & Reis, 2013). This has important implications for other findings regarding the differential effects of experiences and possessions on happiness that neglected to take sociality into account.

Prosocial Spending and SWB

The aforementioned studies primarily focused on purchases directed at the self, though the Caprariello and Reis (2013) study effectively illustrated the importance of

sociality on a purchase's potential to increase happiness. An increasing wealth of literature, however, suggests that spending directly on others may result in significant gains in SWB. Dunn, Aknin and Norton (2008) gave participants either \$5 or \$20 and instructed them to spend it on either a bill, expense, or gift for themselves, or on a charity or gift for someone else. SWB was measured before and after the participants had completed their spending task. The researchers found that those who had been instructed to spend the money on others experienced a significantly greater gain in SWB compared to those who had spent the money on themselves (Dunn et al., 2008). The amount spent had no significant effect. A near identical study was conducted by Geenen, Hohelüchter, Langholf, and Walther (2014), with the addition of an effort condition to determine if SWB gains differed depending on if participants had to work for their spending money. Their results confirmed those of Dunn et al. (2008), though they failed to find a significant interaction between effort and condition.

To investigate if a positive feedback loop existed between prosocial spending and happiness, Aknin, Dunn and Norton (2012) asked participants to recall instances of personal or prosocial spending before presenting them with the choice to spend either \$5 or \$20 on themselves or someone else. They found that participants who recalled an instance of prosocial spending reported significantly more happiness than those who recalled an instance of personal spending, and that participants who were happier were significantly more likely to choose to spend their windfall money on someone else. A direct path between recalling an instance of prosocial spending and choosing to spend

prosocially was not significant, though a model mediated by happiness was significant. This suggests that future prosocial spending choices were facilitated by gains in SWB.

Encouragingly, the relationship between spending prosocially and experiencing greater SWB may be universal. Using data collected from 136 countries, Aknin, Barrington-Leigh, et al. (2013) found a positive relationship between donating to charity and SWB in 120 of the 136, with the relationship reaching significance in 59% of the 120. They also asked participants in Canada, Uganda, and India to recall instances of personal or prosocial spending, finding that participants who recalled spending prosocially reported greater happiness levels in all three countries. To control for the effects of social closeness, they also conducted a study in which participants in Canada or South Africa were assigned the option to buy a bag of treats for either themselves or a sick child in a hospital. Those who bought the bag for the child reported significantly greater happiness than those who bought the bag for themselves.

Regarding charitable donations, it appears that a tangible, clearly defined impact may result in the greatest gains in SWB. Aknin, Dunn, Whillans, Grant and Norton (2013) offered participants the opportunity to donate to either the United Nations International Children's Emergency Fund (UNICEF) or Spread the Net. UNICEF's charitable activity was described broadly, mentioning its impact in general areas of priority (e.g. child protection), whereas Spread the Net's impact was clearly described in relation to the amount donated, as participants were informed that every \$10 dollars donated directly resulted in the donation of an antimalarial bed net to be given to a child in Africa. Larger donations resulted in greater gains in SWB only for participants who

donated to Spread the Net, suggesting that awareness of their impact made participants feel significantly better when donating greater amounts.

These findings together illustrate that spending on others, regardless of social closeness, makes people feel happier than spending on the self. However, social connection still seems to play an important role in determining experiences of SWB. Aknin, Sandstrom, Dunn and Norton (2011) found that participants who were asked to recall spending on someone they were close to reported greater levels of happiness than those who recalled spending on someone they were not very close to. Aknin, Dunn, Sandstrom and Norton (2013) found that when participants were offered the opportunity to donate to a charity, larger donations resulted in greater increases in SWB only when the donation was given to an individual who claimed to be personally involved and felt a connection with the charity. In another study, the researchers gave participants a Starbucks gift card with the instructions to spend it either on themselves alone, themselves with a friend, on both a friend and themselves, or to just give the card to a friend. Participants who spent the card on both a friend and themselves reported significantly greater SWB than participants in the other three conditions. Thus social connection seems to consistently enhance the benefits of prosocial spending in regards to increasing SWB (Aknin, Dunn, Sandstrom, et al., 2013).

The Present Study

While the literature relating prosocial spending and SWB is certainly robust, all of the aforementioned studies relied on self-report measures to determine levels of SWB. As well, the only study to examine a possible feedback loop between prosocial spending and

SWB used an imaginative laboratory study in which participants merely reported their desire to spend prosocially in the future (Aknin et al., 2012). The intention of the present study is to attempt to measure a behaviour that is reflective of SWB, and that increases as a result of spending prosocially. Inspired by the evidence of a positive feedback loop between prosocial spending and SWB, as well as the finding that positive mood has been consistently linked with more helpful behaviour (Carlson, Charlin & Miller, 1988), the present study will include an experimental condition in which participants are offered the opportunity to pledge a donation to a charity (hereafter referred to as the opportunity condition), before being asked to play an online game in which correct answers result in charitable donations. A control condition will consist of participants who play the game without first receiving an opportunity to pledge a donation to a charity (hereafter referred to as the no opportunity condition). Given that Spread the Net has been previously shown to result in SWB gains by maximizing tangible impact (Aknin, Dunn, Whillans, et al., 2013), it is decidedly a good fit to be used in the present study, in order to ensure that participants reap the emotional benefits of their prosocial act. The online game to be used is Free Rice, a game in which every correct answer results in 10 grains of rice donated through the UN World Food Programme, paid for by the sponsored advertisements displayed on the page, to people around the world in need of food (freerice.com).

The primary hypothesis of this study is that participants who pledge a donation to Spread the Net will subsequently play Free Rice for longer and earn more grains of rice than participants who do not pledge a donation. The amount of rice earned is to be interpreted as a potential behavioural measure of SWB. However, even if this suggestion

is not accepted, or is shown to be false, it is hoped that a demonstrable difference in rice earned between the two conditions will at least show that prosocial spending predicts future prosocial behaviour. Additionally, self-esteem (SE), personality, and mood will be measured in order to identify other factors that may moderate the relationship between prosocial spending and rice earned. In a meta-analysis of 249 articles on personality and SWB, Steel, Schmidt and Shultz (2008) found that neuroticism was the strongest predictor of overall SWB, with openness and extraversion also strongly predicting happiness. Therefore, these personality factors may play an indirect role in influencing the amount of rice earned through more direct effects on SWB. Agreeableness has been described as potentially encompassing altruistic tendencies (McCrae & John, 1991), and Carlo, Okun, Knight and de Guzman (2005) found a direct positive relationship between agreeableness and volunteer behaviour, as well as an indirect influence of extraversion and agreeableness on volunteer behaviour through prosocial value motivation. Agreeableness, then, may also play a discernable role in predicting rice earnings. Unfortunately, information directly relating personality traits to prosocial spending, or the SWB benefits that result from spending prosocially, is not readily available, as none of the aforementioned studies on prosocial spending included measures of personality as potential moderators. The inclusion of a personality measure in this study is therefore an important expansion upon the existing prosocial spending literature. Regarding self-esteem, Thoits and Hewitt (2001) found a relationship between increased SE and increased volunteer work, so higher levels of SE may potentially predict greater earnings of rice. Positive mood has already been mentioned as predictive of helping behaviour

(Carlson et al., 1988) and is often included in composite measures of SWB (e.g. Dunn et al., 2008). Therefore it is predicted that positive mood will correlate with happiness, and that higher levels of both will predict greater levels of rice earned.

Method

Participants

Participant recruitment included advertising via an online participant pool for first-year psychology students, making an appearance at the beginning and end of introductory psychology lectures with a sign-up sheet for the study, placing wanted posters around campus with details regarding the study and how to arrange participation, and posting recruitment calls to relevant Facebook groups. In total, 29 individuals participated in the study. One participant misunderstood the instructions for the Free Rice portion of the study and was therefore omitted from the data analysis. Another participant incorrectly completed the measures of personality and mood, therefore her scores on these measures could not be included. Of the 28 participants included in the analysis, 24 were female ($M_{age} = 19.14$, $SD = 2.54$) and 4 were male ($M_{age} = 19.00$, $SD = 1.00$). (Note that age data was not obtained for 3 females and 1 male.)

Materials

Two consent forms were prepared for this study: an informed consent form to be signed before participation began (Appendix A) and a debriefing consent form to be signed after the true nature of the study had been explained (Appendix H). The latter form was necessary to ensure that participants were still willing to contribute their data to the study. All participants consented to the use of their data. Participants were given a copy of the first consent form to keep for their records.

The questionnaire package administered to participants included a single item measure of happiness (adapted from Abdel-Khalek, 2006), as well as self-report

measures of self-esteem, personality and mood. A similar single-item measure of happiness has been used in other studies of prosocial spending (Aknin, Dunn, Sandstrom, et al., 2013; Aknin, Dunn, Whillans, et al., 2013; Dunn *et al.*, 2008) and has demonstrated high concurrent validity with both the Oxford Happiness Inventory and the Satisfaction with Life Scale (Abdel-Khalek, 2006). The measure used in the present study was modified to ask “How happy are you, in general?” rather than “Do you feel happy in general?”, and used a continuous line from “Not Very” to “Very” that could be marked at any point, rather than a five or ten-point scale. The change in phrasing was made to better reflect the gradation of the measure, as a scale from “Not Very” to “Very” seemed more intuitive than a scale from “No” to “Yes”. A continuous line was used to enhance the measure’s sensitivity to differences in SWB. Self-esteem was assessed using the Rosenberg Self-Esteem Scale (Rosenberg, 1965), a measure consisting of 10 items scored on a 4-point Likert scale (labelled SA, A, D, SD) which individuals use to indicate their global feelings of self-worth (e.g. “On the whole, I am satisfied with myself.”). Personality was assessed using the Big Five Inventory (BFI) (John, Donahue, & Kentle, 1991), which asks participants to use a 5-point Likert scale to rate how accurately 44 statements describe their personality (e.g. “In general, I am someone who is helpful and unselfish with others.”). Mood was assessed using the Positive and Negative Affect Schedule (PANAS) (Watson, Clark & Tellegan, 1988), which asks participants to use a 5-point Likert scale to rate 20 feelings based on how much they are currently experiencing each one (e.g. excited, guilty, nervous). The Rosenberg SES, BFI and PANAS have all been extensively used within the field of experimental psychology (see

Brown & Brown, 2015; Byrne, Silasi-Mansat & Worthy, 2015; and Michalaka, Rohdeb & Trojec, 2015 for recent uses of the Rosenberg SES, BFI and PANAS, respectively).

An official Spread the Net promotional picture was used to compliment the short speech about the charity given prior to participation (Appendix B). Participants assigned to the opportunity condition were also presented with an official Plan Canada fundraising pledge form with four pledges already present on the page (Appendix C). A sticky note attached to the top-right corner explained that they could pledge a donation now and include it with their questionnaire package, and that the money would be collected at a later date. The pledge sheet was attached to the front of their questionnaire package, both of which were placed inside an envelope. Participants in the no opportunity condition received an envelope containing only the questionnaire package.

Free Rice (freerice.com) was used as a potential behavioural measure of SWB. The website consists of questions on various subjects that increase in difficulty in response to correct answers, with the default subject being English vocabulary. Players are able to freely adjust the question category and level of difficulty. Each correct answer results in a donation of 10 grains of rice through the UN World Food Programme, paid for by the advertisements displayed on the page.

Procedure

Participants were invited into the study room and offered a seat at the table. They were then told that before beginning the study, the experimenter would like to briefly mention another project he was involved with on campus. Participants were given a brief speech about the Spread the Net charity and received an official promotional picture to

view and keep. The speech concluded with the experimenter mentioning that he was collecting donation pledges, and that they could pledge a donation if they were interested. If participants asked how they could do so, they were told that they would receive an opportunity shortly. They were then presented with the informed consent form. After consenting, they were given a questionnaire package. Each questionnaire package was randomly assigned to either include or not include a pledge sheet with which the participant could pledge a donation to Spread the Net. The questionnaire packages were prepared by the experimenter's supervisor to ensure that the experimenter would not know which participants would get an opportunity to donate. Before stepping out of the room, the experimenter asked participants to fill out the questionnaire package and place it back inside the envelope upon completion, at which point they could signal for him to reenter the room.

Participants were then asked to take a seat in front of the computer. They were asked about their familiarity with the website Free Rice as the experimenter logged in to the study's dedicated account. They were given a brief description of the website, which included how the game is played, how rice is earned, and what organizations facilitate the donations. The experimenter then gave a quick demonstration showing how a correct answer results in earning 10 grains of rice. Participants were also briefly shown the various subjects they could choose from. The experimenter then informed the participant that their only instructions were to play for as long as they would like, and to stop when they felt like they were finished. The experimenter would wait outside the room for the duration of their play. Before leaving the room, the experimenter would discretely note

the current amount of rice earned. Upon exiting the room, the experimenter would start a timer. The experimenter would then wait until the participant signaled for him to reenter the room, at which point the timer was stopped and the current amount of rice recorded. (Rice totals for each participant were calculated by subtracting the start rice total from the end rice total.) Participants were then debriefed about the true nature of the study, given a debriefing consent form to sign if they still wished to contribute their data, and thanked for their participation.

Results

None of the variables significantly correlated with either rice earned or time spent playing, though these variables did correlate highly with each other, $r = .884$, $n = 21$, $p < .001$. (Time was not measured for seven of the participants due to an error on the part of the experimenter.) Therefore, none of the moderators were shown to function as predictors of rice earned independent of the condition the participants had been assigned.

An independent measures t-test determined that there were no significant differences in rice earned between the no opportunity ($M = 790.00$, $SD = 572.93$) and opportunity ($M = 1025.38$, $SD = 624.34$) conditions, $t(26) = -1.04$, $p = .308$, $d = 0.39$. There were also no significant differences in time spent playing between the no opportunity ($M = 388.45$, $SD = 175.49$) and opportunity ($M = 587.20$, $SD = 377.93$) conditions, $t(26) = -1.52$, $p = .153$, $d = 0.67$, as well as no differences in self-reported happiness (SRH) between the no opportunity ($M = 8.87$, $SD = 1.61$) and opportunity ($M = 8.37$, $SD = 2.77$) conditions, $t(26) = .591$, $p = .560$, $d = 0.22$. Though they did not reach significance, the differences in rice and time were in the expected direction, as participants in the opportunity condition earned more rice than those in the no opportunity condition. The study's small number of participants meant that it was fairly underpowered, so it is possible that more participants may have allowed this difference to reach significance. The only measure that differed significantly between the two conditions was agreeableness ($\alpha = .855$). Participants in the no opportunity condition scored higher on agreeableness ($M = 4.23$, $SD = .78$) than those in the opportunity condition ($M = 3.30$, $SD = .49$), $t(25) = 3.68$, $p = .001$, $d = 1.43$.

The design of this experiment relied on the expectation that participants in the opportunity condition would consistently pledge a donation of some amount to the charity. Unfortunately, only 7 of the 13 participants in the opportunity condition actually pledged a donation. The opportunity condition therefore consisted of two nonrandomly assigned conditions: those who pledged a donation and those who neglected to donate. A univariate ANOVA was used to determine if any differences in rice earned emerged after analyzing the participants as three separate conditions: no opportunity to donate, neglected to donate and pledged to donate (see Figure 1). The ANOVA showed no significant differences in rice earned between the no opportunity ($M = 790.00$, $SD = 572.93$), neglected to donate ($M = 973.33$, $SD = 523.63$), and pledged to donate ($M = 1070.00$, $SD = 738.96$) conditions, $F(2, 25) = .56$, $p = .577$, $\eta_p^2 = .04$. The same was done for SRH, which also did not differ significantly between the no opportunity ($M = 8.87$, $SD = 1.61$), neglected to donate ($M = 8.98$, $SD = 3.19$) and pledged to donate ($M = 7.84$, $SD = 2.49$) conditions (see Figure 2). The aforementioned finding of a difference in agreeableness was also clarified using a univariate ANOVA to compare the scores when analyzed as three conditions (see Figure 3). The overall model was significant, $F(2, 24) = 6.60$, $p = .005$, $\eta_p^2 = .36$. Tukey post-hoc tests showed that participants in the no opportunity condition had significantly higher agreeableness scores than those in the both the pledged to donate (mean difference = .99, $p = .010$) and neglected to donate (mean difference = .86, $p = .037$) conditions. Agreeableness scores did not significantly differ between the donated and neglected to donate conditions (mean difference = .13, $p = .933$). Barring a failure of random assignment, this suggests that exposure to the pledge

sheet, regardless of commitment to donate, had a significant effect on agreeableness scores.

Predictor Variable Interactions with Condition

Linear regression was used to investigate how SRH may have interacted with condition to predict rice earnings (see Figure 4). The overall regression was significant, $F(3, 24) = 3.90, p = .021$. A significant interaction was found between SRH and condition, $B = 326.10, p = .004$. Among the no opportunity condition, participants who scored low on SRH earned significantly more rice than those who reported high SRH, $B = -223.73, p = .016$. The opposite was true for the opportunity condition, as participants who reported high SRH earned more than those who reported low SRH. This difference was marginally significant, $B = 102.37, p = .071$. Among participants who reported high SRH, those in the opportunity condition donated significantly more rice than those in the no opportunity condition, $B = 926.87, p = .004$ at 1 *SD* above the mean.

Another regression analysis of the interaction between SRH and condition was performed with the opportunity condition divided into its two nonrandomly assigned subgroups (see Figure 5). The overall regression was marginally significant, $F(5, 22) = 2.31, p = .079$. The interaction term for the no opportunity condition and pledged to donate condition was significant ($B = 323.84, p = .017$), as was the interaction term between the no opportunity condition and neglected to donate condition ($B = 343.23, p = .008$). Participants who reported high SRH earned more rice than those who reported low SRH in both the pledged to donate ($B = 100.12, p = .267$) and neglected to donate ($B = 119.50, p = .127$) conditions, though neither of these differences reached significance.

Among participants who reported high SRH, those in the no opportunity condition earned significantly less rice than those in both the neglected to donate ($B = -843.62, p = .022$ at 1 *SD* above the mean) and pledged to donate ($B = -1018.64, p = .018$ at 1 *SD* above the mean) conditions. The difference in rice earned between participants in the neglected to donate and pledged to donate conditions who reported high SRH was not significant, $B = 175.02, p = .682$ at 1 *SD* above the mean. Therefore, exposure to the pledge sheet, rather than actual donation behaviour, predicted greater rice earnings among participants with high SRH.

The overall regression for the interaction between positive affect (PA) ($\alpha = .855$) and condition to predict rice earnings was not significant, $F(3, 23) = 1.80, p = .175$ (see Figure 6). There was a marginally significant interaction between PA and condition, $B = 571.42, p = .071$. Participants in the opportunity condition who scored high on PA earned significantly more rice than those who scored low on PA, $B = 399.49, p = .070$. Among participants in the no opportunity condition, there was no significant difference in rice earned between those who scored low or high on PA, $B = -171.93, p = .435$. Among participants who scored high on PA, those in the opportunity condition earned significantly more rice than those in the no opportunity condition, $B = 723.91, p = .038$ at 1 *SD* above the mean. The trend was similar when analyzed as three conditions instead of two (see Figure 7). The overall regression was not significant, $F(5, 21) = 1.06, p = .411$. The no opportunity and pledged to donate interaction term was not significant, $B = 743.03, p = .127$. The no opportunity and neglected to donate interaction term also failed to reach significance, $B = 527.44, p = .156$. There were no significant differences in rice

earned between participants with high or low PA within the no opportunity condition ($B = -171.93, p = .453$), neglected to donate condition ($B = 355.508, p = .216$) or pledged to donate condition ($B = 571.10, p = .179$). Among participants who scored high on PA, those in the pledged to donate condition earned more rice than those in the no opportunity condition, with this difference reaching marginal significance, $B = 798.07, p = .076$ at 1 *SD* above the mean. Those in the neglected to donate condition also earned more rice than those in the no opportunity condition, though this difference did not reach significance, $B = 726.22, p = .137$ at 1 *SD* above the mean. There was little difference in rice earned between the neglected to donate and pledged to donate conditions, $B = 71.85, p = .899$ at 1 *SD* above the mean. Again, the implication is that pledge sheet exposure played a larger role than donation behaviour in predicting rice earned.

The overall regression for the interaction between openness ($\alpha = .629$) and condition to predict rice earnings was not significant, $F(3, 23) = 1.80, p = .175$ (see Figure 8). A marginally significant interaction was found between openness and condition, $B = 879.91, p = .095$. Participants in the opportunity condition who scored high or low on openness earned near identical amounts of rice, $B = 22.87, p = .928$. However, the difference in rice earned between those who scored low or high on openness in the no opportunity condition almost reached significance, with participants who scored high on openness earning more, $B = 902.78, p = .051$. Among participants who scored low on openness, there was a marginally significant difference in rice earned between the no opportunity and opportunity conditions, with participants in the opportunity condition earning more, $B = 652.64, p = .067$ at 1 *SD* below the mean. Unlike

the previously reported interactions, a somewhat different trend emerged when analyzed as three conditions instead of two (see Figure 9). The overall regression was not significant, $F(5, 21) = 1.42, p = .259$. The interaction term between the no opportunity condition and the neglected to donate condition was not significant ($B = -767.926, p = .179$), but the interaction term between the no opportunity condition and the pledged to donate condition reached marginal significance ($B = -1876.855, p = .052$). Though the difference did not reach significance, participants in the pledged to donate condition who scored low on openness earned more rice than those with high openness scores, $B = -627.82, p = .153$. Among participants who scored low on openness, those in the pledged to donate condition earned more than those in the no opportunity condition. This difference reached marginal significance, $B = 1621.75, p = .061$ at 1 *SD* below the mean. The amount earned by participants with low openness scores in the neglected to donate condition did not differ significantly from the earnings of those in the no opportunity ($B = -588.06, p = .117$ at 1 *SD* below the mean) or pledged to donate ($B = 1033.69, p = .220$ at 1 *SD* below the mean) conditions.

Within the opportunity condition, the interaction between conscientiousness ($\alpha = .857$) and the two nonrandomly assigned subgroups to predict rice earnings was not significant, $F(3, 9) = 2.02, p = .181$ (see Figure 10). A significant interaction was found between conscientiousness and the two nonrandomly assigned subgroups, $B = 1273.55, p = .045$. Among participants who pledged to donate, those who scored high on conscientiousness earned significantly more rice than those who scored low, $B = 1035.81, p = .045$. Conscientiousness did not play a significant role in predicting rice earnings

among participants who neglected to donate, $B = -237.736$, $p = .475$. Among participants who scored high on conscientiousness, those who pledged a donation earned more rice than those who neglected to donate. This difference was marginally significant, $B = 1199.77$, $p = .056$ at 1 *SD* above the mean.

Discussion

The purpose of this study was to further explore the relationship between prosocial spending and SWB by offering participants the opportunity to pledge a donation to a charity and subsequently asking them to play a game in which correct answers resulted in charitable donations of rice. The main hypothesis was that participants who pledged a donation to the charity would play the game for longer and earn more grains of rice than those who did not donate, with the amount of rice earned potentially reflecting measures of happiness. Overall, no differences in time spent playing, rice earned, or happiness were found between the two conditions. However, the method used to encourage participants to donate was only partially successful, resulting in the experimental condition splitting into two nonrandomly assigned subgroups consisting of participants who either did or did not decide to pledge a donation. Again, no overall differences in time, rice or happiness were found between these three groups.

However, differences between conditions emerged when participants were grouped based on their reported levels of happiness. Participants who reported higher levels of happiness did in fact earn more rice after receiving the opportunity to donate. This seems reminiscent of the finding by Aknin et al. (2012) that happiness levels significantly mediated whether or not a participant who spent prosocially would make another prosocial decision in the future. Still, not all of the participants who received the opportunity to pledge actually made a pledge, yet the same pattern of results were observed among all participants who viewed the pledge form. Cunningham, Steinberg and Grev (1980) found that inductions of both positive mood and guilt can increase

helping behaviours in participants, and one participant in the present study did mention that she did not pledge a donation due to perceived financial constraints. It is possible that participants who neglected to donate felt guilty, and that the separate mechanisms of guilt and previous prosociality both served to motivate happy participants in the neglect and donation conditions, respectively, to earn more rice. The guilt measure included on the PANAS, however, failed to find any differences between the three groups. Perhaps the pledge sheet enhanced participants' perception of the legitimacy of the researcher's charitable intentions, causing them to view him in a higher regard and play the game for longer in an attempt to benefit him. Some participants who received the pledge sheet did note that both the pledge sheet and Free Rice were aimed at helping others. Nichols and Maner (2008) found that participants who were aware of an experimenter's hypothesis were more likely to make decisions that confirmed the hypothesis if they held positive attitudes towards the experiment and experimenter. Participants in the present study were not aware of the hypothesis, but may have intuitively sensed that earning more rice would constitute better performance.

A particularly surprising trend was observed among participants who did not receive an opportunity to donate, as those who reported low levels of happiness earned significantly more rice than those who reported high levels of happiness. This strongly suggests that the amount of rice earned did not function as a behavioural measure of SWB. Manucia, Baumann and Cialdini (1984) found that sad participants helped more than both neutral and happy participants if they believed that they could improve their mood by engaging in helpful behaviour. In the no opportunity condition, participants who

reported low happiness levels may have played for more rice in an attempt to increase their happiness, whereas those who already felt high levels of happiness may have experienced little motivation to play at all.

A similar pattern was observed in the interaction between PA and condition, as participants who reported higher levels of PA donated greater amounts of rice when given the opportunity to pledge a donation. It makes sense that the role of self-reported happiness and PA would similarly moderate the relationship between prosocial spending and future prosocial behavior, as other studies (e.g. Dunn et al., 2008) have included all 10 PA questions on the PANAS alongside a single-item happiness question as components of a more comprehensive measure of SWB. Interestingly, while participants reporting lower levels of happiness donated more rice than happier subjects when denied the opportunity to donate, there was no difference between conditions among participants who reported low levels of PA. Manucia et al. (1984) used a measure that specifically asked about happiness, so perhaps their finding is not as applicable to the dimensions of PA assessed by the PANAS.

Regarding the interaction between openness and condition, it was found that participants high in openness were likely to earn similar amounts of rice regardless of the condition they were in, whereas participants who actually pledged a donation earned the most rice among those low in openness. The explanation for this is perhaps the most intuitive one: since participants reporting high openness are, by nature of the trait, expected to indulge more in new experiences, even participants who did not receive the opportunity to donate likely spent more time exploring the site and its options, therefore

earning more rice. Conversely, participants low in openness felt little motivation to indulge in the game and only donated greater amounts of rice when subject to the experimental manipulation induced by their prosocial spending decision.

The interaction between conscientiousness and the decision to donate also seems rather intuitive. Conscientious individuals are said to be thorough and diligent (McCrae & John, 1992), so it would make sense that those who decided to donate, and therefore behave prosocially, would continue their trend of prosocial behaviour while playing Free Rice. Those who neglected to donate would have experienced no such obligation, perhaps even desiring consistency with their decision to abstain from prosociality. A difference between conditions was not found among those low in conscientiousness, potentially because these individuals placed little value in maintaining consistency in their actions.

The significant difference in agreeableness found between participants who did and did not view the pledge sheet is also worth addressing. Personality is generally regarded as stable and not something that can be experimentally manipulated, so it is very possible that this difference is simply due to a failure of random assignment. However, White et al. (2012) were able to experimentally alter BFI agreeableness scores by exposing participants to a threat of violence. Specifically, participants primed to think about a familiar person reported higher levels of agreeableness than controls, whereas participants who were primed to think about an unfamiliar person reported lower levels of agreeableness than controls. It is perhaps too much of a stretch to suggest that participants suddenly confronted with the pledge sheet, which asked them to part with their money in order to help unfamiliar others, experienced a threat similar to participants

who read a story that included a threat of violence. Nonetheless, this study shows that priming can have a significant influence on BFI agreeableness scores, meaning that the same could have occurred in the present study.

This study suffered from a number of limitations, the primary of which being that its experimental manipulation was not successful. This significantly reduced the potential to directly investigate the relationship between prosocial spending, SWB, and prosocial behaviour, as the experimental condition was split by nonrandom assignment into two groups consisting of participants who did or did not donate. This issue was exacerbated by the very small sample size of this study (13 in the experimental condition, 7 of which actually pledged donation). On a positive note, it did offer the opportunity to compare participants who did and did not pledge a donation, with the unexpected finding that exposure to the pledge sheet, regardless of decision to donate, was predictive of increased rice earnings amongst individuals high in happiness and PA. This prompts further investigation into the effects of prosocial priming on prosocial behaviour, and how exposure to an opportunity to behave prosocially differs in effect from actual engagement in prosocial behaviour.

Furthermore, while this study was ostensibly on prosocial spending, no actual spending occurred during experimentation. A pledge sheet was used in lieu of actual donations in order to ensure that participants could commit to the charity even if they lacked spare change. (Although, as has been mentioned, this was not a surefire approach.) There may be important differences in the emotional experience of individuals who pledge rather than part with money. Zhou, Vohs and Baumeister (2009) found that the

loss of money exacerbates experiences of physical pain, which speaks to the potential impact of spending money on a person's well-being. These effects may be more salient when actually parting with money, rather than simply committing to spend in the future.

Another important limitation is that the potential behavioural measure of SWB, rice earned, did not live up to this expectation. Participants who reported low levels of happiness donated large amounts of rice when they did not receive an opportunity to donate, invalidating rice as an inherent measure of SWB. Fortunately, it still seemed to serve adequately as a measure of prosocial behaviour. Other limitations include issues with blinding, as participants sometimes neglected to place their questionnaire inside their envelopes before prompting the researcher to return to the room, or asked questions regarding the pledge sheet, causing the researcher to become aware of their assigned condition before introducing Free Rice to the participant. All of the speeches promoting the charity, however, were delivered blind, ensuring that each performance was not influenced by knowledge of the participant's condition. As well, Free Rice as a game may have been a somewhat inadequate measure of prosocial behaviour, as there are likely many factors other than prosociality and SWB that determine how long an individual is willing to play a simple online trivia game. (Some participants mentioned that the screen strained their eyes, whereas others thought the game was an endurance challenge.)

While this study was not able to establish a behavioural measure of SWB, it would still be useful to devise such a measure so as to extend the validity of prosocial spending studies beyond the realm of self-reports. Future studies can also further investigate the role of factors such as personality that may moderate the relationship

between prosocial spending and SWB. This has largely been neglected in the prosocial spending literature, yet personality has been shown here to play a significant role in predicting which participants were likely to pledge a donation, as well as predicting the likelihood that they would continue their trend of prosocial behaviour.

In conclusion, this study was able to support the previous finding by Aknin et al. (2012) that participants who spend prosocially are more likely to engage in future prosocial behaviour if they report higher levels of happiness, as well as highlighting the influence that an exposure to a prosocial spending opportunity can have on a person's behaviour independent of his or her decision to act on the opportunity. It also offers support for the implications of personality in influencing prosocial behaviour and its relationship to SWB, an area that remains largely unexplored. The finding that mere exposure to a prosocial opportunity can increase levels of future prosocial behavior as much as actually behaving prosocially has wide implications if it is shown to be a consistent occurrence. For example, a person may be more successful when asking a friend for a ride if he or she first asks the friend for cab fare. On a larger scale, charities may be able to elicit donations or other forms of helping behaviour from individuals if they first ask for some other form of support. This is similar to the door-in-the-face technique, which involves increasing compliance by first asking for an excessively large favour before asking for a more reasonable one (Cialdini et al., 1975). However, the effect proposed here does not require the first favour to be large, but merely for it to be rejected. The caveat to this suggestion is that it may only work on individuals who are fairly happy. For unhappy individuals, help may be most readily elicited after the first

ask, as these individuals may use the opportunity to increase their happiness (Manucia et al., 1984). Overall, this suggests that knowledge about an individual's happiness level may be useful when attempting to elicit prosocial behaviour from that individual.

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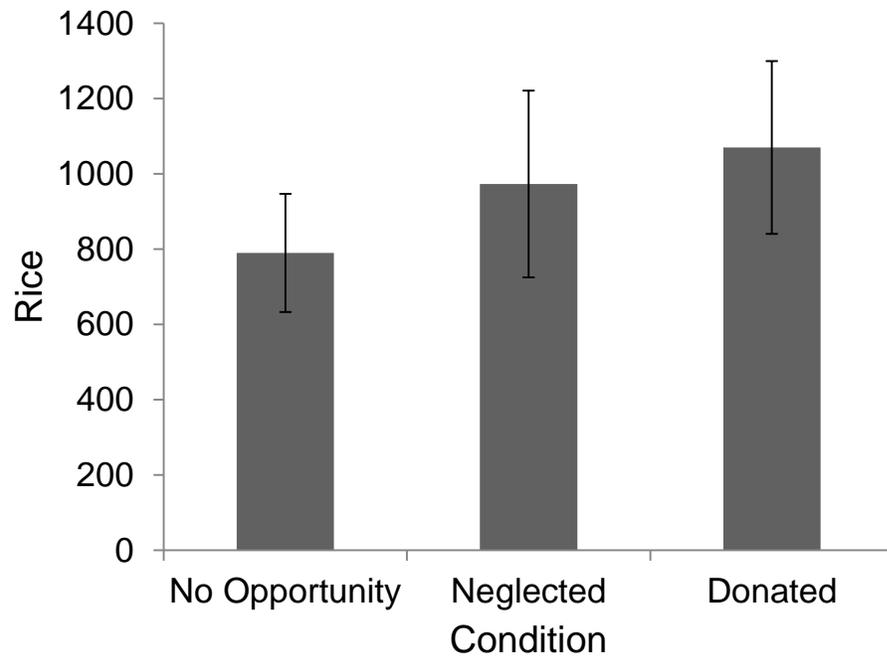


Figure 1. Mean differences in rice earned across the three conditions. Error bars represent standard errors.

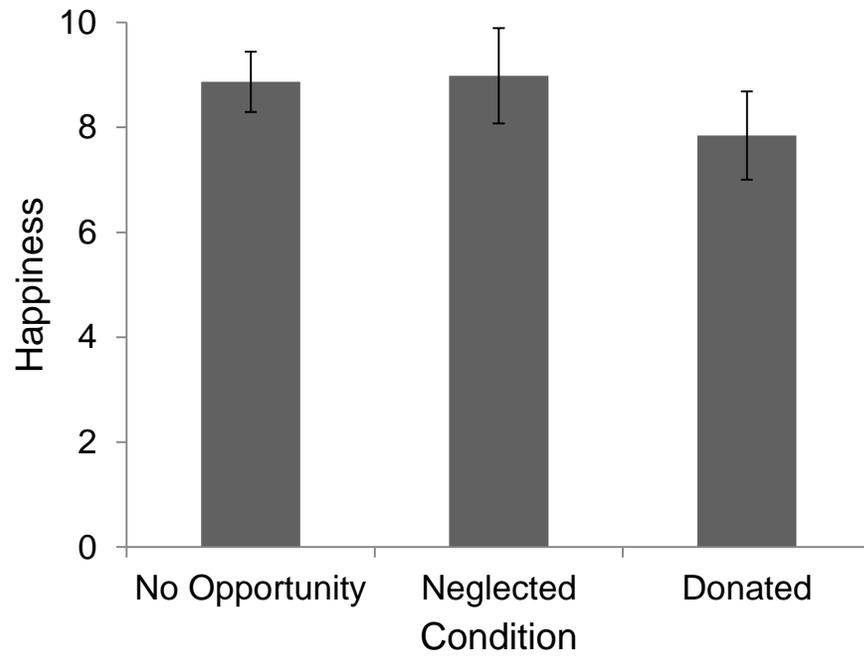


Figure 2. Mean differences in self-reported happiness across the three conditions. Error bars represent standard errors.

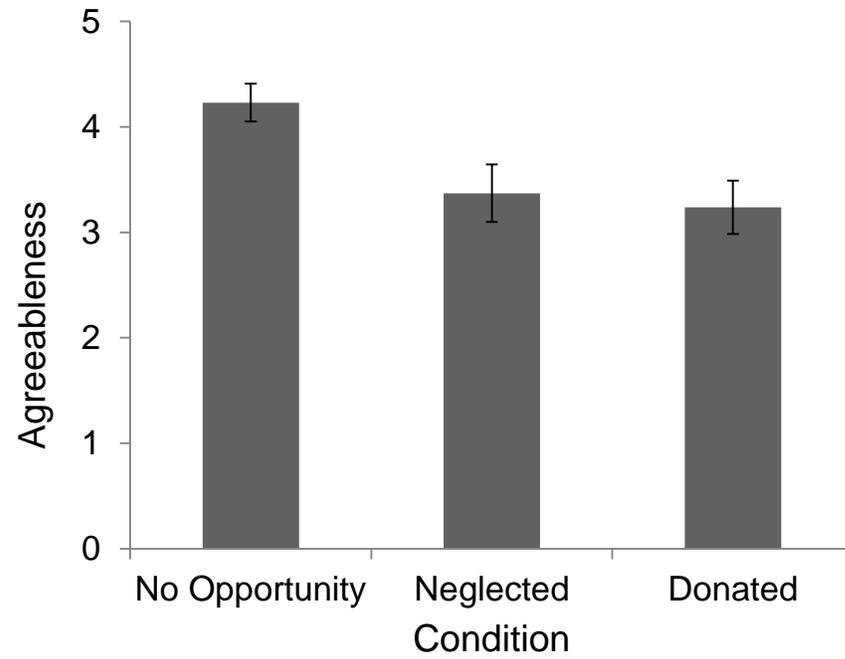


Figure 3. Mean differences in agreeableness scores across the three conditions. Error bars represent standard errors.

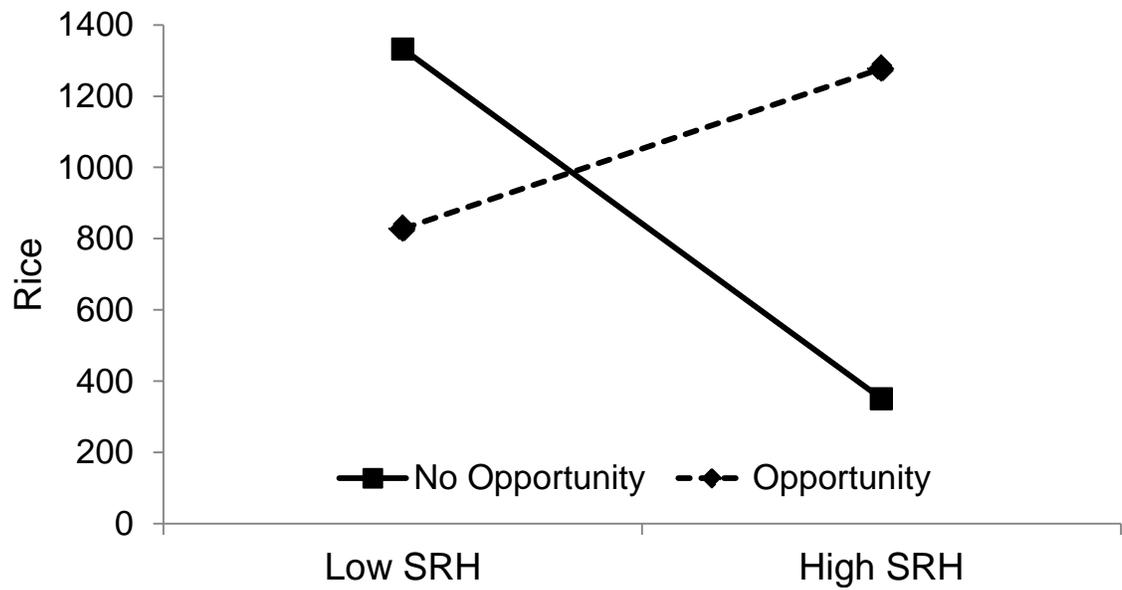


Figure 4. The interaction between SRH and condition to predict participants' rice earnings.

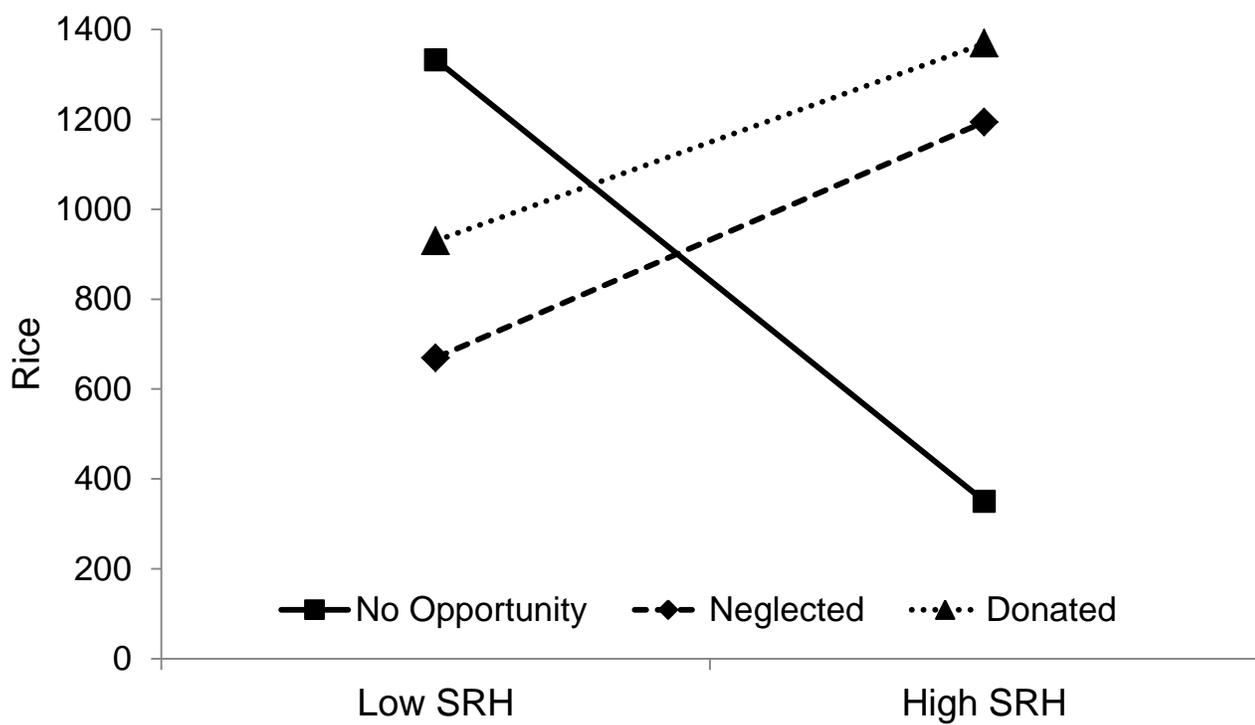


Figure 5. The interaction between SRH and condition to predict participants' rice earnings.

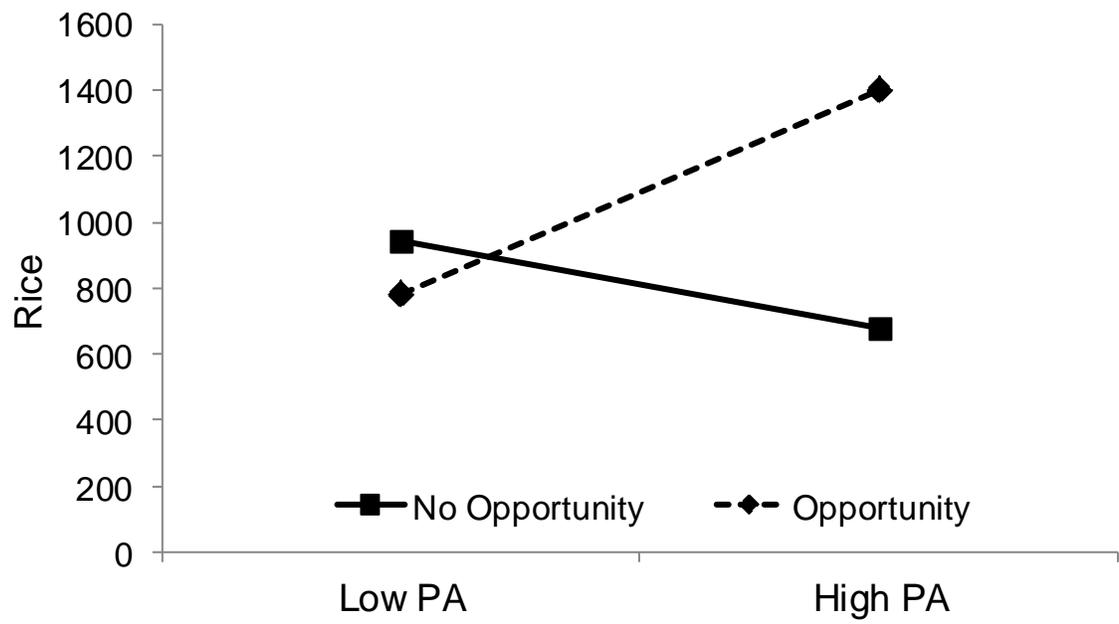


Figure 6. The interaction between PA and condition to predict participants' rice earnings.

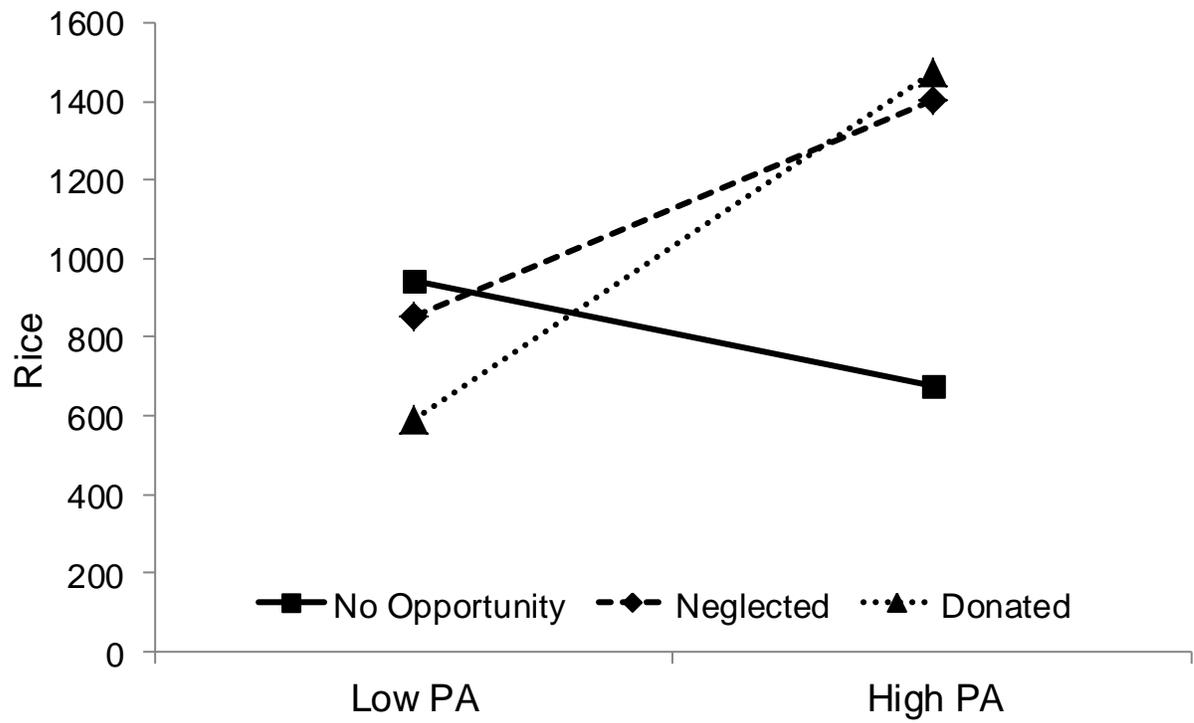


Figure 7. The interaction between PA and condition to predict participants' rice earnings.

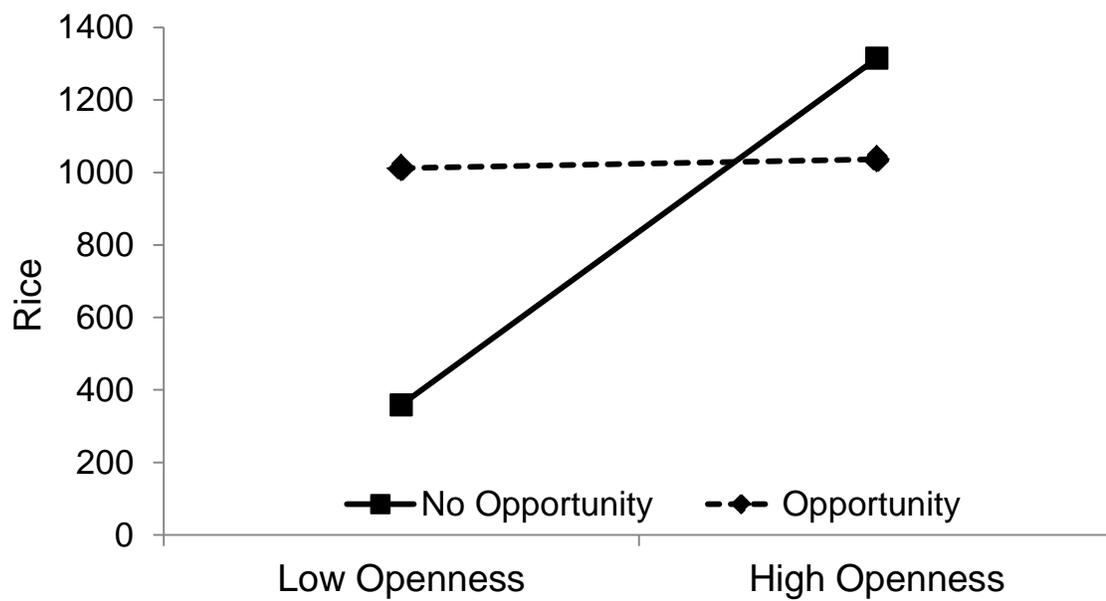


Figure 8. The interaction between openness and condition to predict participants' rice earnings.

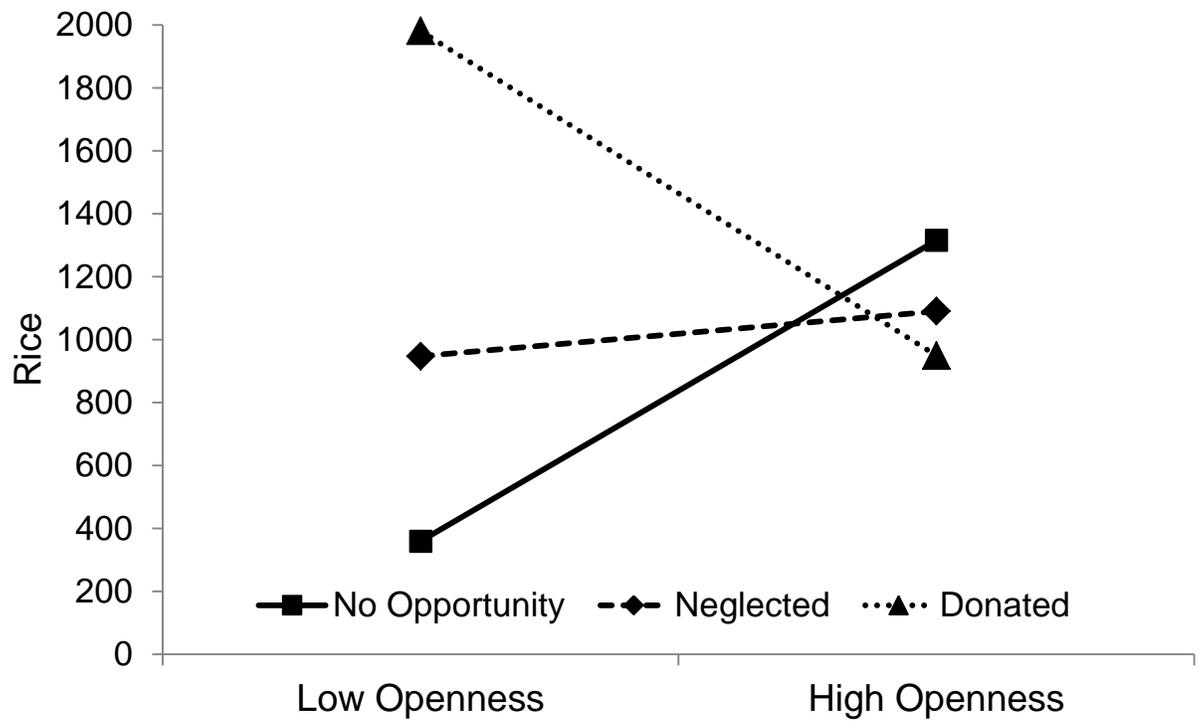


Figure 9. The interaction between openness and condition to predict participants' rice earnings.

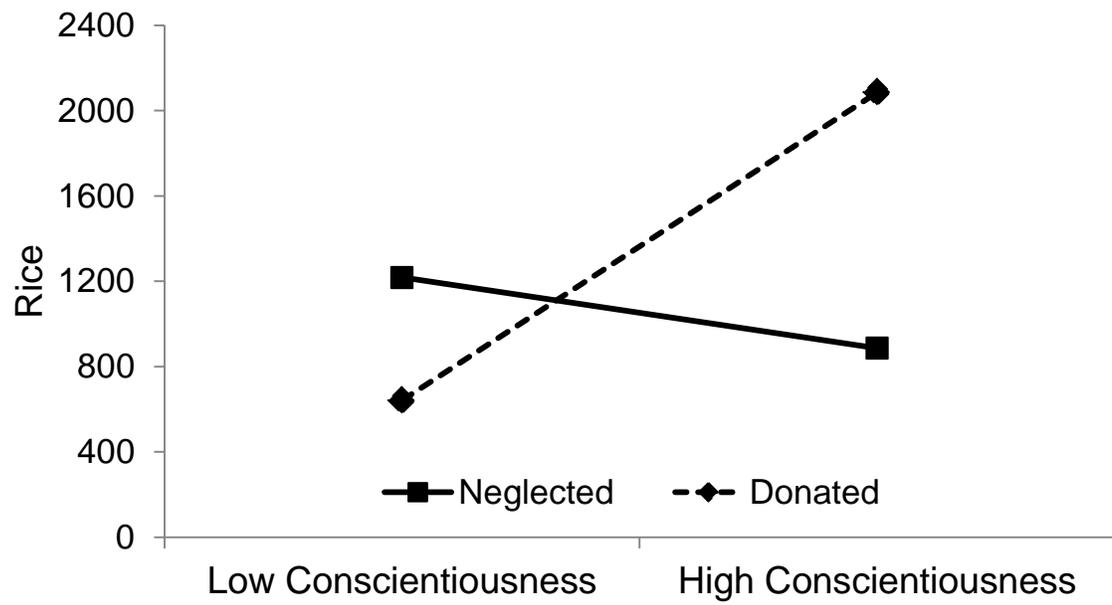


Figure 10. The interaction between conscientiousness and the two nonrandomly assigned subgroups within the experimental condition to predict participants' rice earnings.

Appendix A

Study of a Potential Relationship Between Internet Usage and Subjective Well-Being

Informed Consent Form

The purpose of this Informed Consent Form is to ensure you understand the nature of this study and your involvement in it. This consent form will provide information about the study, giving you the opportunity to decide if you want to participate.

Researchers: This study is being conducted by Brandon Goulding as part of the course requirements for Psychology 4959, Honours Project in Psychology II. I am under the supervision of Dr. Daniel Nadolny.

Purpose: The study is designed to investigate a potential relationship between internet usage and subjective well-being. The results will be used to write an Honours Thesis for Psychology 4959. This study may also be used in a larger research project and may be published in the future.

Task Requirements: You will first be asked to complete measures of subjective well-being, mood, personality and self-esteem. You will then be asked to interact with a certain website for an unspecified amount of time.

Duration: The session will take approximately 20 minutes to complete in total. The duration of the website interaction is entirely under your control.

Anonymity and Confidentiality: Your responses are anonymous and confidential. Please do not put any identifying marks on any of the pages. All information will be analysed and reported on a group basis. Thus, individual responses cannot be identified.

Right to Withdraw: Your participation in this research is totally voluntary and you are free to stop participating at any time.

Contact Information: If you have any questions or concerns about this study, please feel free to contact me at the email address bwgoulding@grenfell.mun.ca, or my supervisor, Dr. Daniel Nadolny, at dnadolny@grenfell.mun.ca. As well, if you are interested in knowing the results of this study, please contact me or Dr. Daniel Nadolny after April 4, 2015. If this study raises any personal issues for you, please contact Dr. Daniel Nadolny at dnadolny@grenfell.mun.ca.

The proposal for this research has been reviewed by the Psychology Research Process at Grenfell Campus. If you have ethical concerns about the research (such as the way you have been treated or your rights as a participant), you may contact Dr. Daniel Nadolny at dnadolny@grenfell.mun.ca.

Signature of Participant

Date

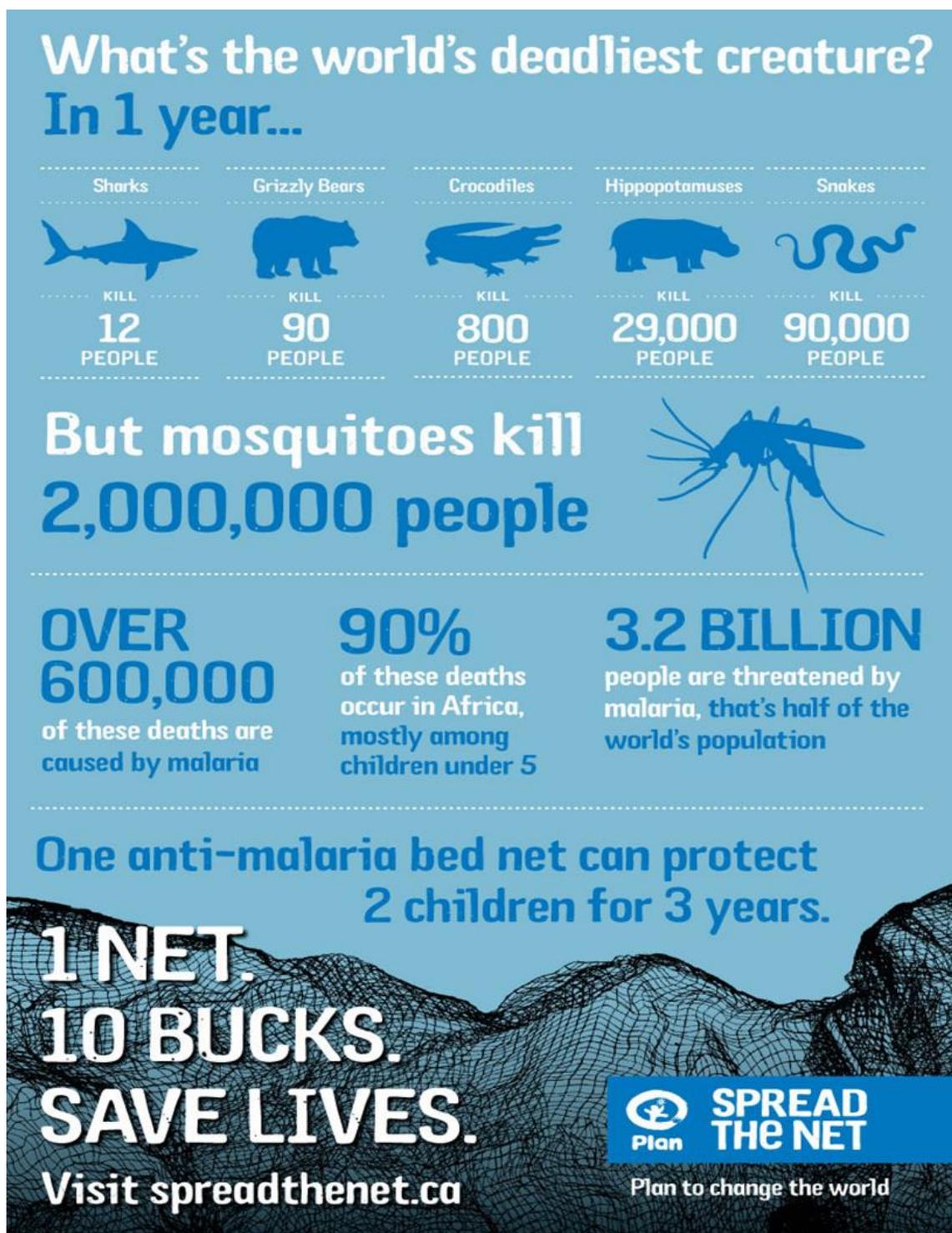
I have explained this study to the best of my ability. I invited questions and gave answers. I believe that the participant fully understands what is involved in being in the study, any potential risks of the study and that he or she has freely chosen to be in the study.

Signature of Student Investigator

Date

Appendix B

Spread the Net Infographic (Plan Canada)

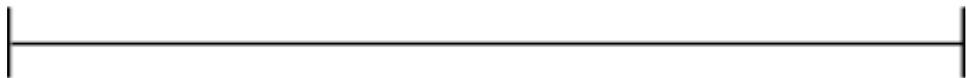


Appendix D

Single-Item Measure of Happiness (Abdel-Khalek, 2006)

How happy are you, in general?

(Draw a line anywhere on the scale to indicate how you feel.)



Not Very Very

Appendix E

Rosenberg Self-Esteem Scale (Rosenberg, 1965)

Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle SA. If you agree with the statement, circle A. If you disagree, circle D. If you strongly disagree, circle SD.

- | | | | | |
|---|----|---|---|----|
| 1. On the whole, I am satisfied with myself. | SA | A | D | SD |
| 2. At times, I think I am no good at all. | SA | A | D | SD |
| 3. I feel that I have a number of good qualities. | SA | A | D | SD |
| 4. I am able to do things as well as most other people. | SA | A | D | SD |
| 5. I feel I do not have much to be proud of. | SA | A | D | SD |
| 6. I certainly feel useless at times. | SA | A | D | SD |
| 7. I feel that I'm a person of worth, at least on an equal plane with others. | SA | A | D | SD |
| 8. I wish I could have more respect for myself. | SA | A | D | SD |
| 9. All in all, I am inclined to feel that I am a failure. | SA | A | D | SD |
| 10. I take a positive attitude toward myself. | SA | A | D | SD |

Appendix F

Big Five Inventory (BFI)**How I am in general**

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who *likes to spend time with others*? Please write a number next to each statement to indicate the extent to which **you agree or disagree with that statement.**

1	2	3	4	5
Disagree strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly

In general, I am someone who:

_____ Is talkative

_____ Tends to be quiet

_____ Tends to find fault with others

_____ Is generally trusting

_____ Does a thorough job

_____ Tends to be lazy

_____ Is depressed, blue

_____ Is emotionally stable, not easily upset

_____ Is original, comes up with new ideas

_____ Is inventive

_____ Is reserved

_____ Has an assertive personality

_____ Is helpful and unselfish with others

_____ Can be cold and aloof

_____ Can be somewhat careless

_____ Perseveres until the task is finished

- | | |
|--|---|
| _____ Is relaxed, handles stress well. | _____ Can be moody |
| _____ Is curious about many different things | _____ Values artistic, aesthetic experiences |
| _____ Is full of energy | _____ Is sometimes shy, inhibited |
| _____ Starts quarrels with others | _____ Is considerate and kind to almost everyone |
| _____ Is a reliable worker | _____ Does things efficiently |
| _____ Can be tense | _____ Remains calm in tense situations |
| _____ Is ingenious, a deep thinker | _____ Prefers work that is routine |
| _____ Generates a lot of enthusiasm | _____ Is outgoing, sociable |
| _____ Has a forgiving nature | _____ Is sometimes rude to others |
| _____ Tends to be disorganized | _____ Makes plans and follows through with them |
| _____ Worries a lot | _____ Gets nervous easily |
| _____ Has an active imagination | _____ Likes to reflect, play with ideas |
| _____ Has few artistic interests | _____ Is easily distracted |
| _____ Likes to cooperate with others | _____ Is sophisticated in art, music, or literature |

Appendix G

PANAS (Watson, Clark & Tellegan, 1988)

Using the scale shown below, please indicate how you feel right now.

1	2	3	4	5
Very Slightly or Not at All	A Little	Moderately	Quite a Bit	Extremely

_____ 1. Interested	_____ 11. Irritable
_____ 2. Distressed	_____ 12. Alert
_____ 3. Excited	_____ 13. Ashamed
_____ 4. Upset	_____ 14. Inspired
_____ 5. Strong	_____ 15. Nervous
_____ 6. Guilty	_____ 16. Determined
_____ 7. Scared	_____ 17. Attentive
_____ 8. Hostile	_____ 18. Jittery
_____ 9. Enthusiastic	_____ 19. Active
_____ 10. Proud	_____ 20. Afraid

Appendix H

Post-Debriefing Consent Form**“Study of a Potential Relationship Between Internet Usage and Subjective Well-Being”**

During the debriefing session, I was given an explanation as to why it was necessary for the researchers to omit the full purposes of the study in order to achieve the desired context. I have now received a complete verbal and written explanation as to the full purpose of the study, and recognize that any money I committed to the “Spread the Net” charity is up to me to donate or not. In addition, I have had an opportunity to ask any questions about the study and to receive acceptable answers to my questions.

I have been asked to give permission for the researchers to use my data (or information I provided) in their study, the results of which will be shared on April 1st at the Psychology Student Research Conference, and may appear in peer-reviewed publications, and agree to this request.

I am aware that this project has been approved by an ethics review process in the Psychology program at Grenfell Campus, Memorial University of Newfoundland and has been found to be in compliance with Memorial University’s ethics policy.

In the event that you have any comments or concerns resulting from your participation in this study, please contact Dr. Daniel Nadolny at dnadolny@grenfell.mun.ca.

Participant’s Name: _____

Participant’s Signature: _____

Witness Name: _____

Witness Signature: _____

Date: _____