

Can everyday acts of prosociality support well-being during first-year students' transition to university?

by

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Abstract

Life transitions are an inevitable part of human existence. While often exciting, life transitions can be stressful as they involve shifts in identity, routine and expectations. Informed by past research demonstrating the benefits of engaging in prosocial behaviour, I examined whether prosociality could support well-being during life transitions at university using a pre-registered 6-week diary study conducted with new students (N = 193) during their first semester of university. I hypothesized that (i) students would engage in prosocial acts, and (ii) engaging in prosocial behaviour would predict greater well-being. As predicted, an MLM analysis revealed that participants engaged in prosocial acts each week and reported higher levels of well-being during weeks in which they participated in more prosocial acts. This research extends our understanding of the robust relationship between prosociality and well-being and could spur greater insight into how to support individuals who are engaging in other life transitions.

Keywords: Prosocial Behaviours; Life Transitions; Identity-Based Retirement; Well-being

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Table of Contents

Declaration of Committee	ii
Ethics Statement	iii
Abstract	iv
Acknowledgements	v
Table of Contents	vi
Chapter 1. Introduction	1
Chapter 2. Methods	7
Chapter 3. Results	14
Chapter 4. General Discussion.....	19
References.....	24
Appendix A. Tables and Figures	32
Appendix B. List of other exploratory dimensions and tables.....	41

Chapter 1.

Introduction

Life transitions are a common and inevitable part of human existence. From age-based transitions, like maturing from adolescence to adulthood, and circumstantial transitions, like marrying a partner or having children, most people experience several large transformations over the course of their lives. Life transitions, which involve changing from one often discrete stage or category to another, can be stressful and negatively impact well-being because they involve adjustments in identity, self-image, and routine. What strategies could help people through these difficult transitions? While there may be several options, informed by past research documenting the benefits of prosociality (e.g., Curry et al., 2018; Dunn et al., 2014), I examined whether engaging in kind acts during an important life transition predicts greater well-being.

Beginning University is a Common Life Transition

The start of university can be one of the most salient life transitions. The time between the week before university begins (i.e., the week of orientations, move-in, etc.) until the end of the first semester, is a period of new experiences and challenges. For instance, when starting university, people are faced with higher expectations, a new daily schedule, and novel environment. Many students may move away from home for the first time, forcing them to become more independent, make new friends, and learn new life skills (e.g., how to clean, cook, and grocery shop; Compas et al., 1986). In addition to these life changes and because of these challenges, the transition from high school to post-secondary education can contribute to an increase in depressive symptoms (Geller & Greenburg, 2009; Lee et al., 2014). Additionally, these changes may effect a large number of students. According to the United States Department of Education (2020), 2.2 million high school students transition from high school to university each year in the United States. Locally, in British Columbia, Canada, 54,000 students complete high school each year, with many beginning post-secondary education afterward (Lazaruk, 2020). With the volume of students engaging in this challenging transition, what strategies are there to support student well-being?

Prosociality: A Strategy to Support Well-being

Past work in health-related fields has explored a number of ways that people deal with stressful situations. Common strategies include, exercise, sleep, and proper nutrition (Trochel et al., 2000). These strategies have many benefits, such as allowing people to build new and healthy habits. However, directing too much attention towards oneself during stressful times could have costs. For example, Nolen-Hoeksema and colleagues (2008) have shown that focusing too much on the self could reveal deficiencies and trigger rumination. Thus, well-being strategies that focus attention outward towards other people could be beneficial.

Consistent with this notion, research suggests that one possible externally-focused strategy to promote well-being could be directing one's attention and energy on helping others through prosocial acts. Prosociality is defined as kind or generous behaviour that is meant to benefit another person (Jensen, 2016) and can take many forms, such as donating care packages to someone in need, helping to edit an essay or homework, and volunteering in one's community (Aknin & Whillans, 2020). Critically, all forms of prosocial behaviour involve supporting and helping an individual or community (Penner et al., 2005), yet this strategy has received relatively less attention as a potential tool to support people through difficult times.

A growing body of research demonstrates that engaging in kind action leads to emotional benefits for the actor (Aknin & Whillans, 2020; Curry et al., 2018). For instance, research by Dunn, Aknin, and Norton (2008) found that spending as little as five or twenty dollars on someone else, as opposed to oneself, led to higher levels of happiness at the end of the day. Subsequent research suggests that the emotional rewards of generous action may be detectable in most humans around the globe, including adults and children from rich and poor countries (Aknin et al., 2013; 2015). Aknin, Hamlin, and Dunn (2012) examined this question in early stages of human development. In a sample of twenty toddlers under two years of age, researchers found that toddlers appeared to exhibit greater happiness after giving edible treats away to a puppet than when receiving edible treats themselves (Aknin et al., 2012). More recently, Hanniball and colleagues (2019) examined whether the emotional rewards of prosocial action were detectable in samples of recent criminal offenders and gang-involved youth. In one large study, 501 ex-offenders were randomly assigned to recall a time they spent

\$20 on themselves or someone and then report their happiness. Consistent with the idea that engaging in or recalling acts of kindness leads to happiness, those who recalled a time they spent on others reported higher positive affect afterward than those randomly assigned to recall a time that they spent on themselves. Most recently, the emotional rewards of prosocial action were detected in large-scale registered replication report implementing the most rigorous methods to date (Aknin et al., 2020) and within a meta-analysis of diverse samples (Hui et al., 2020). Additionally, O'Brien and Kassirer (2018) found that this warm glow of giving is self-sustaining and the well-being benefits last. Taken together, these findings suggest that the well-being benefits of prosocial action are robust.

The Benefits of Prosociality are Detectable During Challenging Times

Prosocial action promotes well-being in various populations, but relatively little is known about whether prosociality might predict well-being in times of acute, episodic challenge or stress. A few lines of research suggest that prosocial action could.

To begin, people appear to seek out and engage in prosociality during times of stress, suggesting that kind acts may be salutary. For instance, Von Dawans and colleagues (2012) recruited 72 male students and randomly assigned them to either a stress condition, in which participants were given a public-speaking, arithmetic, and attention test, or a control condition in which participants did not experience socio-evaluative threat. Participants then played various games – one being the “sharing game” where the target participant had the choice to keep a reward or to share the reward with their interaction partner. Supporting the possibility that prosocial behaviour helps to mitigate stress, participants in the stress condition engaged in substantially more prosocial behaviour than participants in the control condition. These findings dovetail with a literature review by Buchanan and Preston (2014) which discusses how stress can promote prosocial behaviour in situations where there is a cost to the giver. Indeed, these researchers found that people engage in costly prosocial acts in highly stressful states, suggesting that kind actions are beneficial for an individual's own well-being despite its costs.

Other research suggests that individuals in vulnerable groups, such as older adults and members of disenfranchised communities who tend to face more stress, also

experience a positive link between prosociality and greater well-being. For instance, Dulin and Hill (2013) found that altruism was linked to positive affect among low-income older adults who were actively involved in altruistic activities through their community service program. This finding suggests that prosociality may promote psychological benefits, even when individuals face challenging life circumstances and when helping may seem burdensome (Dulin & Hill, 2013). Other research conducted with long-term caregivers for ill or disabled spouses has found that helping predicts greater positive affect among caregivers, especially among caregivers who perceive themselves as an individual within their relationship as opposed to seeing themselves as a part of their relationship only (Poulin et al., 2010). This finding suggests that helping in a challenging situation may be beneficial for the caregiving partner, even when the stressor is lengthy or sustained.

Converging data demonstrates that prosocial action is associated with greater well-being during a global pandemic. For example, using a daily diary design, Sin and colleagues (2021) collected information on prosociality and well-being for seven days and found that engaging in more prosocial activities during the COVID-19 pandemic was associated with better daily affective and social well-being in adults (see also Varma et al., 2022). Moreover, older adults – participants that the researchers identified as a vulnerable population – engaged in more prosocial activities (i.e., donating to charity and providing free meals) than the other age groups. These findings dovetail with previous research on the potential well-being benefits of prosociality during times of stress or challenge.

Beyond the COVID-19 pandemic, other research suggests that prosociality may support well-being when people experience daily stress. Specifically, Raposa and colleagues (2016) used a daily diary study to examine the relationship between prosociality, emotional well-being, and stress among a sample of 77 adults recruited for a study on hazardous drinking. Participants completed a daily diary for 14 consecutive days reporting on their daily stressors, engagement in prosocial behaviour, positive affect, and mental health. The researchers found that stress was associated with lower levels of positive affect but that this relationship was attenuated when the actor engaged in higher-than-average levels of prosocial behaviour. Thus, prosocial behaviour reduced the impact of stress on mental health, suggesting that prosocial behaviour may be an effective coping method when people face daily, acute stress. However, this study like

many others examined the potential benefits of prosociality among daily or “ambient” sources of stress that are chronic and non-urgent. How does the stress of life transitions, which tends to be more episodic and intense, influence well-being, and might prosociality confer similar emotional benefits in these contexts?

While past work suggests that prosociality could promote well-being during life transitions, it is also possible that periods of acute stress may undermine or reverse this pattern. Why? Intense periods of challenge or stress may demand that people to focus inward to take care of themselves, perhaps especially so if the life transition provides a time for reflection. Exposure to stress can sometimes prompt “compassion fatigue” – a state in which people find it overwhelming to consider helping others (Cameron & Payne, 2011, Västfjäll et al., 2014) – making prosociality a burden and depleting act. Indeed, past research suggests that the benefits of prosocial action are reduced, and that helping another person may even be harmful for one’s own well-being when helpers are overtaxed (Brown & Brown, 2014). Thus, if individuals are strained or feel vulnerable due to the stresses of a life transition, helping may be detrimental for the giver.

The Present Research

Given the competing predictions raised by past research and far-reaching relevance of this question, I aimed to assess the association between prosociality and well-being among a large sample of first-year students as they transition to university. As noted above, the start of university can be one of the most salient life transitions because it often involves new challenges, higher expectations, and new relationships. Therefore, I was interested in seeing how prosociality and well-being are related during this time of social, identity, and environmental change, as this particular transition represents the larger concept of life transitions that I am interested in.

To examine this question, I conducted a weekly diary study in which participants reported their well-being and prosocial acts over six consecutive weeks during the first semester of university. This study design allowed me to investigate (a) whether students engage in prosocial behaviour during their transition to university, and (b) to what extent prosocial behaviours predict various well-being outcomes during this transition period. Critically, this study offers a first look at how real-world acts of kindness are associated with various facets of mental health among a relevant sample managing a meaningful

life transition. This study was approved by Simon Fraser University's (SFU) institutional review board (2020s0260).

Chapter 2.

Methods

Participants

Based on guidance from Bolger and Laurenceau (2013) and practical constraints, I determined a priori that I would recruit a target sample of 200 participants to test my questions using a weekly diary study and analyzing through Multi-level Modeling (MLM). I recruited first-year university students through Simon Fraser University's online Research Participation System (RPS) that provides students enrolled in introductory classes an opportunity to earn course credit by participating in psychology studies. Because most students enrolled in introductory classes are new to SFU and thus beginning their university education, this recruitment tool offered an easy method of accessing many eligible participants. MLM is robust to some missing data, which allows for greater inclusion (Bolger & Laurenceau, 2013). For this study, I've included anyone with at least 3 assessment points.

I collected data from a total of 199 participants across two waves, with 193 total participants included (97% of the sample): Wave 1 in Fall 2020 ($n = 108$, $M_{\text{age}} 17.92$, 89% Female, 82% Hetero sexual, 13% Queer, 54% Asian) and Wave 2 in Fall 2021 ($n = 85$, $M_{\text{age}} 17.95$, 85% Female, 58% Hetero sexual, 30% Queer, 44% Asian); see Table A.1. for full data set demographics.

Procedure

Baseline assessment (T1)

During the second week of term (September 2020/2021), first-year university students were recruited for the study through the RPS. A research assistant closely monitored registration so that new participants were sent an introductory email containing a link to a consent form and baseline survey within 1-2 days of enrollment.

The baseline survey asked participants to complete several validated scales described in detail below (see Measures section). To capture psychological well-being, I asked participants to respond to the 4-item Subjective Happiness Scale (Happiness

SHS; Lyubomirsky & Lepper, 1999), the 8-item Flourishing Scale (Flourishing; Diener et al., 2009), the 10-item Brief Inventory of Thriving (Thriving BIT; Su et al., 2014), the 20-item State Trait Anxiety Inventory (Anxiety; Spielberger, 1983), the 10-item Resilience Scale (Resilience; Connor & Davidson, 2003), 10-item Revised Life Orientation Test (Optimism LOT-R; Scheier et al., 1994), and the 20-item Revised UCLA Loneliness Scale (UCLA Loneliness; Russell et al., 1980). I also asked participants to complete several exploratory measures to help examine whether some people may be better able to manage transitions and how other social dimensions affect well-being during transitions; these scales included the Exeter Identity Scale to assess Transition Identity (EXITS; Haslam et al., 2008), the Relationship Satisfaction Scale (Burns & Sayers, 1992), the Brief Measure of the Big-Five Personality Scale (Personality; Gosling et al., 2003), and a one-item Trust in People Scale (Yamagishi, 1986).

The baseline survey also included several demographic and related questions to learn more about the participants' backgrounds and current statuses. Demographic questions asked participants to report their age, gender, ethnicity, and sexual orientation. Additional questions asked participants their campus status (i.e., if they live on or off campus), country status (i.e., if they are a domestic or international student), and about their parent or guardian's highest level of education.

Toward the end of the survey, participants were presented with four open-ended questions to gain insight into their thoughts and feelings about starting university. Specifically, participants were asked: How are you feeling about this transition to University/SFU?; Are you a part of any clubs, organizations, activities at SFU?; What are your strategies to feel more grounded and at home while at SFU?; What are your strategies to try and find community while at SFU? Finally, participants were asked to provide an email address that they monitor frequently so that they would receive the weekly surveys. Each participant provided a unique digit code (their student number), allowing me to link their responses over time and offer remuneration. Participants who did not complete the baseline survey within three days were prompted again with a reminder email.

Weekly survey (weeks 1 – 6) (T2)

On the first Sunday after completing the baseline survey and each Sunday thereafter for five weeks, participants received an email with a link to a weekly survey. This survey was designed to capture well-being and prosociality over the previous week. Specifically, each survey included three items of each well-being scale: SHS, Flourishing, BIT, Anxiety, Resilience, Optimism, and the UCLA Loneliness scale. Additionally, the weekly survey included one open-ended question (“How was the past week for you?”). Importantly, each survey also asked participants to complete a Behavioral Checklist in which they indicated which of 43 unique actions (4 of which are distractor items) they had completed (and how many times) over the past week. More information on the Behavioural Checklist is provided in the Measures section below.

As noted above, prompts for the weekly survey were sent on Sunday and participants were asked to complete the survey that day. If participants did not comply, they were sent a reminder email the following morning (Monday). If a participant had not completed the survey by Wednesday, they were sent a final reminder email to complete the survey that day, or they would be removed from the study and given credits for the portion of the study they had completed. After the sixth weekly survey, students were sent an email thanking them for their participation thus far and were reminded of the follow-up survey that would receive at the end of the semester.

Follow-up Assessment (T3)

The follow-up assessment was sent in the last weekend of November, during the last week of class and before final exams. This survey was almost identical to the baseline survey, except that it did not include the measures of trust, personality, and demographics, because I expected those constructs to be relatively stable over the assessment period. However, the follow-up survey included several new open-ended questions, such as: “What were your most grounded or connected moments over the past few months?”, and “Are there any suggestions you would give to incoming students for Fall 2021/Fall 2022?”

After completing of the follow-up survey, participants received a debriefing message thanking them for their participation and explaining the study’s purpose.

Measures

Table A.2. lists the constructs and scales used in the baseline, weekly, and follow-up surveys, along with the scale mean or sum, its standard deviations and alpha for each time point.

Trait happiness

To assess trait happiness, I used the 4-item Subjective Happiness Scale (Lyubomirsky & Lepper, 1999). A sample item from this scale is: “In general, I consider myself...”; and responses were provided on a Likert scale ranging from 1- not a very happy person, to 7 - a very happy person. Mean responses were computed for each assessment period. (see Table A.2.). Average reliability on this scale across all surveys was 0.87.

Flourishing

To assess flourishing, defined as having greater psychological resources and strengths, I used the 8-item Flourishing Scale (Diener et al., 2009). A sample item from this scale is: “I lead a purposeful and meaningful life” and responses were provided on a Likert scale ranging from 1 - strongly disagree, to 7 - strongly agree. The sum of responses was computed for each assessment period. Average reliability across all surveys was 0.86.

Thriving

To assess thriving, defined as the ability to grow, develop or prosper, I used the 10-item Brief Inventory of Thriving (BIT; Su et al., 2014). A sample item from this scale is: “In most activities I do, I feel energized” and responses were provided on a Likert scale ranging from 1 - strongly disagree, to 5 - strongly agree. Mean responses were computed for each assessment period. Average reliability across all surveys was 0.77.

Resilience

To assess resilience, defined as the capacity to recover quickly from difficulties, I used the 10-item Connor-Davidson Resilience Scale (Connor & Davidson, 2003). A sample item from this scale is: “I am able to adapt when changes occur” and responses were provided on a Likert scale ranging from 0 - not true at all, to 4 - true nearly all of the

time. The sum of responses was computed for each assessment period. Average reliability across all surveys was 0.86.

Optimism

To assess optimism, often defined as hopefulness and confidence about the future, I used the 10-item Revised Life Orientation Test (Scheier et al., 1994). A sample item from this scale is: “I don’t get upset too easily” and responses were provided on a Likert scale ranging from 0 - strongly disagree, to 4 - strongly agree. The sum of responses was computed for each assessment period. Average reliability across all surveys sample was 0.77.

Anxiety

To assess anxiety, I used the 20-item State Trait Anxiety Inventory (Spielberger, 1983). A sample (reverse scored) item from this scale is: “I feel calm” and responses were provided on a Likert scale ranging from 1 - not at all, to 4 - very much so. Mean responses were recruited for each assessment period. Average reliability across all surveys was 0.81.

Loneliness

To assess loneliness, defined as an unpleasant emotional response to perceived isolation, I used the 20-item Revised UCLA Loneliness Scale (Russell et al., 1980). A sample item from this scale is: “There is no one I can turn to” and responses were provided on a Likert scale ranging from 1 - never, to 4 - often. Mean responses were computed for each assessment period. Average reliability across all surveys was 0.88.

Other Measures

Transition-Identity. Social identity, or how an individual’s self-concept is related from their group membership, is as an important component of a person’s understanding of life (Tajfel & Turner, 1979; Hogg & Ridgeway, 2003). During a life transition, people may also develop a transition identity – a new way of seeing themselves during or as a result of change (Ecclestone et. al., 2009; Kralik et al., 2006; Sussman, 2000). Transition identity has been shown to be especially important among young adults who are transitioning into university, as the more flexible, positive, and open an identity is during

a transition the better the experience or the better the well-being (MacFarlane, 2018). Indeed, considering that the prosocial acts that one participates (within university) might lead to more engagement with this transition identity, I am interested in exploring whether transition identity mediates the relationship between prosocial acts and well-being. To measure this mediator, I used three items from the group identity sub-scale and four items from the new identity sub-scale of the Exeter Identity Scale (Haslam et al., 2008). A sample item measuring group membership is: "I believe I will belong to the same groups." A sample item measuring new individual identity is: "My life will change a lot." Responses were provided on a Likert scale ranging from 1 - do not agree at all to 5 - agree completely. I collapsed the seven items into one index. Based on this index, reliability across both baseline and follow-up surveys was .70.

Other scales. I also asked participants to complete exploratory measures of relationship satisfaction, personality and trust (see Appendix B). Analyses pertaining to these additional exploratory measures will not be discussed in the main text but readers can view the additional exploratory measures in the appendix (Table B.1).

Behavioural Checklist

To capture prosociality – my key predictor variable – I created a check list of behaviours with 43-items that was included in each weekly survey (see Table A.3.). The majority of these items were prosocial, although four distractor items were included (see below for more information). The prosocial behaviours were deemed relevant and applicable through pre-testing and discussion with approximately 15 undergraduate volunteer research assistants during study design. The checklist asked participants to indicate if they had engaged in any of the 43 unique actions over the past week (e.g., returned a lost item, donated money to a good cause, etc.). If participants selected "yes" for any of the behaviours on the checklist, they were asked to indicate how many times they had completed that action over the past week. I used the total number of prosocial categories enacted per week for analyses, not the frequency of acts. For example, if a participant indicated that they opened the door for a stranger two times, and shopped for groceries for a neighbor three times, the total number of prosocial categories counted would be two (opening the door for a stranger and shopping for groceries). I decided to count the number of categories enacted as opposed to the frequency of prosocial acts because I thought that participants would have a clearer memory for this information.

The checklist also included four distractor items: go out with friends, call a family member, consume social media, and engage in self-care. Some of these items may also be positively associated with well-being (Trochel et al., 2000), however, are not clear examples of prosociality. Thus, they were not included in the analysis of the prosocial checklist.

Hypotheses

Informed by previous research, I expected that students would engage in prosocial acts during their transition to university and that greater engagement in prosocial action would be associated with greater well-being during this potentially stressful time. Specifically, I pre-registered the following confirmatory hypotheses on the Open Science Framework (<https://osf.io/937hp>).

Hypothesis 1: I predicted that new students would engage in prosocial acts during their transition to university. Specifically, I hypothesized that the weekly average number of prosocial acts would be significantly above zero.

Hypothesis 2: I predicted that new university students would report higher levels of psychological well-being during weeks in which they had engaged in more prosocial acts.

Chapter 3.

Results

Descriptive Statistics

Means and standard deviations for of the seven well-being constructs assessed in the weekly surveys can be seen in Table A.4. Visual inspection reveals that well-being varied on all measures during the first several weeks of the semester ($t_s > 43.60$, $p_s < .001$; see Figure A.1.) For example, loneliness was at its highest reported levels during the second and fourth week of assessment (i.e., weeks 4 and 6 of the semester), and anxiety was highest in the fifth week of assessment (i.e., week 7 of the semester).

Weekly means and standard deviation information for the prosocial behaviour checklist reveals two notable findings (Table A.4. and Figure A.1.). First, average rates of weekly prosocial action are above 0, which is discussed in more detail below (see Hypothesis 1). Second, rates of prosocial behaviour declined throughout the semester ($t(1126) = 50.28$, $p < .001$, CI 95% 6.38 - 6.69). This latter finding could be interpreted in many ways. For instance, it is possible that helping behaviour declined because of student time or bandwidth limitations as the semester continued. Alternatively, students could have been busy with other obligations or opportunities, such as more social groups. Result below expand on my pre-registered hypotheses and prosocial trends.

Confirmatory Analyses

Hypothesis 1. I predicted that first-year university students would engage in prosocial acts during the first weeks of their transition to university. Specifically, I predicted that the average number of prosocial acts per week would be significantly above zero. I tested this prediction using one-sample t-tests in which I compared the average number of weekly prosocial acts to zero. As predicted, the one sample t-tests revealed that each weekly average of prosocial acts was significantly above zero ($t_s > 18.25$, $p_s < .001$; see Table A.4. and Figure A.2. for means). Thus, this finding supports my first hypothesis and suggests that students did engage in prosocial acts during their transition to first-year of university.

Hypothesis 2. I hypothesized that first-year university students would report higher levels of psychological well-being on weeks in which they engaged in more prosocial action. Participants recorded their well-being on seven validated measures each week for of 6 weeks. Due to the nested structure of my data (i.e., multiple weeks nested within each individual), I used a MIXED (multi-level analysis; (Kenny, Kashy, and Cook, 2006)) model in SPSS using AR1 (covariance matrix) to examine how each well-being construct was associated with the number of prosocial acts that each student completed each week, while controlling for the relevant baseline score. I included a random statement, using UN (covariance matrix) that allowed the intercept and slope of the week to vary across participants.¹ Degrees of freedom were calculated using the Satterwaite approximation and all predictors were grand-mean centered to allow distinct measures of between group variation.

Trait Happiness

I predicted a positive relationship between trait happiness and prosociality, such that students would report greater happiness on the weeks in which they reported higher numbers of prosocial actions. I tested this prediction with a MIXED analysis which accounted for changes each week with a directional one-tailed alpha set at .05. Consistent with my pre-registered hypothesis, results revealed a positive association between weekly prosociality and weekly trait happiness ($B = 0.07$, $t(1053) = 7.63$, $p < .001$, [.95 CI = .05, .08]). This finding indicates that students were happier on weeks when they engaged in more prosocial behaviours.

Thriving

I predicted a positive relationship between thriving and prosociality, such that students would report greater levels of thriving on the weeks in which they reported higher numbers of prosocial actions. I tested this prediction with a MIXED analysis which accounted for changes each week with a one-tailed alpha set at .05. Consistent with my pre-registered hypothesis, the analysis revealed a positive association between weekly prosociality and weekly thriving ($B = 0.04$, $t(1045) = 7.62$, $p < .001$, [.95 CI = .03, .05]).

¹ UN was used for all constructs except Optimism which wouldn't converge. Instead, I used a DIAG covariance matrix here so that the model would converge.

This finding indicates that students who engaged in more prosocial behaviours also reported a greater sense of thriving those same weeks.

Flourishing

I predicted a positive relationship between flourishing and prosociality, such that students would report greater levels of flourishing on the weeks in which they reported higher numbers of prosocial actions. I tested this prediction with a MIXED analysis which accounted for changes each week with a one-tailed alpha set at .05. Consistent with my pre-registered hypothesis, the analysis revealed a positive association between weekly flourishing and weekly prosociality ($B = 0.21$, $t(1030) = 8.31$, $p < .001$, [.95 CI = .16, .26]). This finding suggests, that on the weeks that students engaged in more prosocial behaviours they also had higher levels of flourishing.

Optimism

I predicted a positive relationship between optimism and prosociality, such that students would report greater levels of optimism on the weeks in which they reported higher numbers of prosocial actions. I tested this prediction with a MIXED analysis which accounted for changes each week with a one-tailed alpha set at .05. Consistent with my pre-registered hypothesis, the analysis revealed a positive association between weekly optimism and weekly prosociality ($B = 0.06$, $t(1026) = 5.15$, $p < .001$, [.95 CI = .04, .09]). This finding suggests, that students had higher levels of optimism on weeks that they engaged in more prosocial behaviour.

Resilience

I predicted a positive relationship between resilience and prosociality, such that students would report greater levels of resilience on the weeks in which they reported higher numbers of prosocial actions. I tested this prediction with a MIXED analysis which accounted for changes each week with a one-tailed alpha set at .05. Consistent with my pre-registered hypothesis, the analysis revealed a positive association between weekly resilience and weekly prosociality ($B = 0.12$, $t(999) = 7.27$, $p < .001$, [.95 CI = .09, .15]). This finding suggests, that on the weeks that students engaged in more prosocial behaviours also had higher levels of resilience.

Anxiety

I predicted a negative relationship between anxiety and prosociality, such that students would report lower levels of anxiety on the weeks in which they reported higher numbers of prosocial actions. I tested this prediction with a MIXED analysis which accounted for changes each week with a one-tailed alpha set at .05. Consistent with my pre-registered hypothesis, the analysis revealed a negative association between weekly anxiety and weekly prosociality ($B = -0.06$, $t(1024) = -3.27$, $p = .001$, [.95 CI = -0.10 , -0.02]). This finding suggests, that on the weeks that students engaged in more prosocial behaviours also had lower levels of anxiety.

Loneliness

I predicted a negative relationship between loneliness and prosociality, such that students would report lower levels of loneliness on the weeks in which they reported higher numbers of prosocial actions. I tested this prediction with a MIXED analysis which accounted for changes each week with a one-tailed alpha set at .05. Consistent with my pre-registered hypothesis, the analysis revealed a negative association between weekly loneliness and weekly prosociality ($B = -0.11$, $t(1049) = -5.88$, $p < .001$, [.95 CI = -0.15 , -0.07]). This finding suggests, that on the weeks that students engaged in more prosocial behaviours also had lower levels of loneliness.

Taken together, the data support my second hypothesis. Specifically, on weeks where students participated in more prosocial acts, they also reported higher happiness, thriving, flourishing, optimism, resilience, as well as lower anxiety and loneliness (Table A.5.).

Exploratory Analyses

Transition Identity

Transition identity captures the way in which an individual predicts their identity to change. I predicted that the transition identity may mediate the relationship between prosocial action and well-being. I tested this question using an ANOVA regression model – given that the identity measure was only assessed end of term rather than during the weekly surveys – to see if the total number of prosocial acts committed over the full study (x) predicted end of term well-being (y) via transition identity (m).

I first examined whether the total number of prosocial acts committed over the 6-week period of data collection predicted end of term happiness, while controlling for baseline happiness (see Figure A.3., Path C). Consistent with the analyses reported above and past research, I found that the total number of prosocial acts completed over the 6-week assessment period predicted greater happiness at the end of the term while controlling for baseline happiness ($b = .05$, $SD = .01$, $t(1131) = 5.72$, $p < 0.001$, [.95 CI = .04, .07]).

Next, I looked to see if the total number of prosocial acts committed over the 6-week period of data collection predicted end of semester ratings of transition identity, while controlling for baseline levels of transition identity (see Figure A.3.; in Path A). Analyses revealed that, that the cumulative prosocial acts committed by participants predicted end of term transition identity ($df = 2$, Sum of Squares = 1199.98, Mean Squares = 599.99, $F = 101.25$, $p < .001$).

Finally, I checked to see if end of term transition identity mediated the relationship between cumulative prosocial acts and end of term well-being, while controlling for baseline happiness and baseline transition identity (see Figure A.3.; in Path B). Results revealed that end of term transition identity mediated the relationship between cumulative prosocial acts and end of term well-being ($df = 3$, Sum of Squares = 1236.89, Mean Squares = 412.30, $F = 69.92$, $p < .001$). This finding suggests that prosocial action predicts higher ratings in self-perceived identity change, which, in turn, predicts greater happiness. In this sense, prosociality may help a student to move through the change in their identity, which influences their overall well-being.

Chapter 4.

General Discussion

Do people engage in acts of kindness and are these acts of generosity associated with greater well-being while experiencing a major life transition, such as the start of post-secondary education? While past research suggests that times of stress may reduce prosocial tendencies and mitigate their emotional rewards, I found that first-year university students navigating their first semester of post-secondary education not only engaged in prosocial action but also reported greater psychological well-being during the weeks in which reported committing more prosocial behaviour. These findings were detected in a large, pre-registered longitudinal survey of nearly 200 students navigating a consequential life change.

Findings Align with Literature

Students did not stop helping others while engaging in this important life transition. Two interesting findings emerged. First, consistent with my predictions, I found that students did engage in weekly prosocial acts ($M_{\text{acts}} = 6.66$), though rates did decline as the semester continued. These findings are comforting in that they support the use of the Behavioural Checklist (BC) as a useful assessment tool to capture meaningful forms of prosociality over the semester. Second, prosocial engagement remained above zero even as most students were presumably beginning to write exams and their time available time to help others may have lessened, suggesting that prosocial engagement does not disappear in stressful times. In fact, some work has shown a surge of prosociality during times of exceptional stress, (e.g., Post earthquakes, tsunamis, COVID-19; Varma et al., 2022; Helliwell et al., 2022). While these data do not reveal an increase in prosociality over the semester, they do show that students are still helping (as indexed by helping above zero) when most classes have important assessments.

Consistent with past research and Hypothesis 2, helping was associated with greater well-being, even during stressful times. Previous research has demonstrated a causal link between prosocial action and well-being. Most recently, the benefits of prosociality and well-being have been explored during times of challenge and expand on

prosociality offering an emotional boost during ambient stress (Raposa et al., 2016; Von Dewans et. al., 2012). Adding to the literature, this present research converges with more recent work by Sin and colleagues (2021) who have documented a positive link between prosocial behaviour and higher well-being during the COVID-19 pandemic, which can be seen as a more direct time of challenge.

It is worth noting that the results presented here showed remarkable consistency across seven well-being scales assessing various facets of mental health: higher trait happiness, flourishing, thriving, optimism, resilience, and lower anxiety and loneliness. This consistency suggests that these findings are unlikely due to chance and, as such, offer a strong foundation to continue exploring this question in other demographics and life transitions.

Transition Identity as a Mediator for Prosocial Acts and Well-being

I conducted exploratory analyses to examine whether a student's view of their change in individual and group identity mediates the relationship between prosocial acts and happiness. Findings supported this possibility, revealing that transition identity did mediate the relationship between cumulative prosocial acts and well-being. Importantly, this mediation suggests that prosocial behaviours predicted a student's engagement in transition identity, which then predicted happiness. This finding gives way to more questions around the engagement of identity as it relates to the strategy of prosociality and well-being. For example, the Behavioural Checklist included in this study was carefully curated to support potential prosocial acts of university-age students. Would prosocial behaviours predict greater well-being if they were not directly related to their transition identity (e.g., if students were asked to do prosocial behaviours at a retirement facility)? Future researchers could consider assessing the frequency of prosocial behaviours that are closely (vs. distantly) related to one's transition identity to see if relevance predicts well-being outcomes. These inclusions could further the potential benefits of prosocial acts on well-being during life transitions.

Theoretical and Practical Implications

These findings broaden our understanding of the robust relationship between prosociality and well-being. While past research indicates that the hedonic benefits of prosociality can be detected in children and adults, across the economic spectrum, and

among individuals with different personal histories (Aknin et al., 2013; Aknin et al., 2012; Aknin & Whillans, 2020; Curry et al., 2018; Hannibal et al., 2019), the present findings suggest that giving may be beneficial under stress (specifically, during transition stress). Moreover, these particular findings offer an extension to ambient vs. acute stress. While previous research (Raposa et al., 2016; Sin et al., 2020) demonstrates that prosociality can support well-being when people are dealing with ongoing or everyday stressors, this study expands on the idea of prosociality being a strategy that could support those who have stress in the moment as a part of a larger, more direct experience like transitioning to university for the first time.

With consistent experimental support, this research could help empower first-year students who are experiencing a change in structure, space, and place while transitioning into a different identity. Specifically, universities could implement programming to focus first-year student engagement on giving to others through prosocial acts. Acts such as sharing class notes or helping to edit homework could also support other students within the program creating a benevolent cyclical effect of giving, creating happier transitioning students.

More broadly, seeing that life transitions are common, these findings have the potential to possibly inform how people cope with other life transitions (i.e., transitioning to parenthood, retirement transitions, immigration to a new country, etc.). There are a myriad of stressful transitions that people experience as a part of the human life. With this groundwork, there is a potential to support many other acute, episodic transitions that take the foreground. As transitions are situations where external circumstances impact internal emotions, looking outward instead of inward by utilizing prosociality as a benevolent source could be a critical untapped approach.

Limitations & Future Directions

This study is not without limitations. First, I cannot infer causality from the present data because this study did not utilize an experimental design. It is possible that the association between prosociality and well-being that I observed could be the result of alternative explanations or reverse causality. For instance, students may have been more likely to engage in more prosocial behaviour during the weeks when they experienced greater well-being (i.e. reverse causality), as opposed to prosociality

promoting greater well-being. Therefore, I plan to conduct an experiment wherein first year students will be randomly assigned to either focus on helping themselves through self-care or focus on helping others during the first few weeks of university. Students will also be asked to complete well-being measures each week. I will compare student well-being across the two experimental conditions to see if students randomly assigned to engage in prosocial actions (vs. self-focused action) report greater well-being during this life transition. If so, these findings would support the idea that prosociality leads to well-being even during times of acute personal stress.

Second, the measure of prosocial action that I used in this study relied on accurate recall and self-reporting of weekly events. It is possible that students did not remember their actions from the previous week with clarity (memory bias) or inflated their responses to look good (social desirability). While both these concerns may have impacted the data, it is worth noting that I intentionally focused on the categories of prosocial actions committed, rather than the exact frequency, to minimize memory bias concerns. Moreover, while students may have exaggerated their weekly prosocial actions to look good, this possibility seems unlikely to account for the present findings because prosocial acts are related to well-being and varied in predictable ways throughout the term. That said, future studies could use objective assessments of prosocial behaviour to alleviate this concern.

Future work is needed to determine whether findings from the present study conducted during a global pandemic are generalizable to other times, places, and life transitions. The COVID-19 pandemic created an extraordinary experience for many, which may have exacerbated the typical stressors associated with starting university. Indeed, the transition to university for many students could be seen as an even more stressful time with the additional complications of moving to online for courses, having to follow safety protocols when coming in person to campus, and new roles within the classroom (e.g., assisting professors with the use of technology). Fortunately, these data provide a unique snapshot into how a sizable sample of students managed their transition during this time. Future research should continue to examine student well-being to see if findings differ without this backdrop.

Despite the pressures of the COVID-19 pandemic, I was able to include data from 97% of the students who participated in this study. This high inclusion rate was

supported by the fact that Multi-level Modeling is robust to some missing data (Kenny, Kashy & Cook, 2006). Additionally, the retention rate of this study might have been supported by the fact that students were searching for novel ways to be involved and contribute during the pandemic. This study aided in these novelties, adding beneficial strategies of prosociality to the day-to-day life of transitioning students.

Conclusions

In the present research I utilized a well-powered, pre-registered, 6-week longitudinal study to investigate (i) whether students engage in prosocial actions during a salient life transition, and (ii) whether prosocial acts are associated with greater well-being during a life transition. Consistent with my predictions, findings revealed that, as a whole, participants did engage in prosocial acts during their first semester of university. Moreover, participants reported greater well-being on the weeks in which they provided more help for others. Exploratory analyses also examined how transition identity could be an important pathway linking prosociality and well-being. This research may begin important conversations on how externally focused strategies, such as giving to others, can be a viable and important approach to supporting the established social connections that we have access to during life transitions. By giving to others, can we create a better experience for ourselves and those who we support?

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Appendix A. Tables and Figures

Table A.1. Demographic Information

Dataset	n	M_{age}	SD_{age}	Gender	Sexual Orientation	Ethnicity
Total	193	17.95	.93	F M N-B 87%, 11% 2%	H Q N/A 70%, 22%, 9%	A/SA ME W H/MR N/A 49%, 7%, 27%, 1%, 17%
Fall 2020	108	17.92	1.04	89%, 10%, 1%	82%, 13%, 5%	54%, 7%, 19%, 1%, 19%
Fall 2021	85	17.95	.77	85%, 12%, 3%	58%, 30%, 12%	44%, 6%, 35%, 1%, 14%

Note. .5% chose not to answer the gender identification question. Gender: F – Female, M – Male, N-B – Non-Binary/Gender Queer. Sexual Orientation: H – Heterosexual, Q – Queer, N/A – Chose not to say. Ethnicity: A/SA – Asian/South Asian, ME – Middle Eastern, W – White, H/ME – Hispanic, Multiple Races, N/A – missing information

Table A.2. Descriptive statistics and reliability information for all measures.

Construct	Baseline		Weekly		Follow Up	
	Mean*/Sum^ (SD)	Alpha	Mean*/Sum^ (SD)	Alpha Avg.	Mean*/Sum^ (SD)	Alpha
Well-being Scales						
SHS	4.51* (1.16)	0.86	4.37* (1.34)	0.91	4.32* (1.08)	0.83
Flourishing	43.80^ (7.12)	0.87	14.88^ (3.57)	0.79	42.04^ (7.49)	0.91
BIT	3.66* (0.58)	0.86	3.24* (0.76)	0.73	3.54* (0.58)	0.88
Resilience	34.93^ (6.82)	0.88	9.75^ (2.42)	0.81	34.60^ (6.52)	0.89
Optimism	31.62^ (5.32)	0.71	6.02^ (1.83)	0.81	31.35^ (5.62)	0.78
Loneliness	47.22^ (7.66)	0.91	8.62^ (2.81)	0.82	42.80^ (11.04)	0.92
Anxiety	47.74^ (11.17)	0.75	11.08 (2.59)	0.76	47.24^ (11.59)	0.92

Note. Some entries are listed as n/a because this scale was not included in this time point. ^are Sums, *are Means

Table A.3. Behavioural checklist items.

1. Helping neighbours/community members with getting groceries and supplies
2. Having regular check-in Zoom or Facetime calls with friends!
3. Let someone go ahead of you in a lineup or queue
4. Yield or give way for a car
5. Express thanks to another driver
6. Provide a helpful reminder to someone (“Your gas/petrol cap is off”, or “Your bag zipper is open”)
7. Pick up garbage or litter
8. Return a lost item
9. Baking cookies (treats in general) and dropping them off to friends!
10. Donating care packages (pantry staples, masks, sanitizer) to those in need
11. Help someone carry items (e.g., groceries, baby stroller, luggage)
12. *Engage in self-care*
13. Offer roadside assistance to vehicles that have broken down
14. Give someone directions, or show them the way
15. Ask someone if they are lost
16. Make Masks for vulnerable populations
17. Sharing hand sanitizer with friends/others who forgot theirs
18. Give up their seat (e.g., on the bus or train)
19. Share class notes
20. Help edit an essay or homework
21. Sharing/reminding people what the zoom link is for class/meetings/hang outs
22. *Call a family member*
23. Make conversation with a cashier
24. Ask barista “How are you doing?”
25. Give praise or compliments
26. Put out or return their neighbors bin/trash can
27. Housesit for a neighbor that is on holiday/vacation
28. Buy someone coffee or a snack
29. Lend an ear to a troubled person/comfort somebody that’s upset
30. Plan a surprise treat
31. Supporting small businesses (restaurants, local stores, etc.) by purchasing products or gift cards for later
32. Buy gifts for others for no reason
33. Do favors without being asked
34. Run an errand for a busy friend/colleague/family member
35. *Consume Social Media*
36. Take on extra work to lighten someone’s load
37. Give money to those who are short at the check-out
38. Donate money to a good cause
39. Donate blood
40. Donate goods to a charity shop
41. Volunteer in the community (e.g., litter picking)
42. Fundraise for a charity
43. Petition for better rights for those in need
44. Intervene when others are being bullied/harassed
45. Put yourself in danger to protect others
46. Change plans to accommodate someone
47. *Go out with friends*

Note. Italicized items are considered distractor items and not prosocial behaviours.

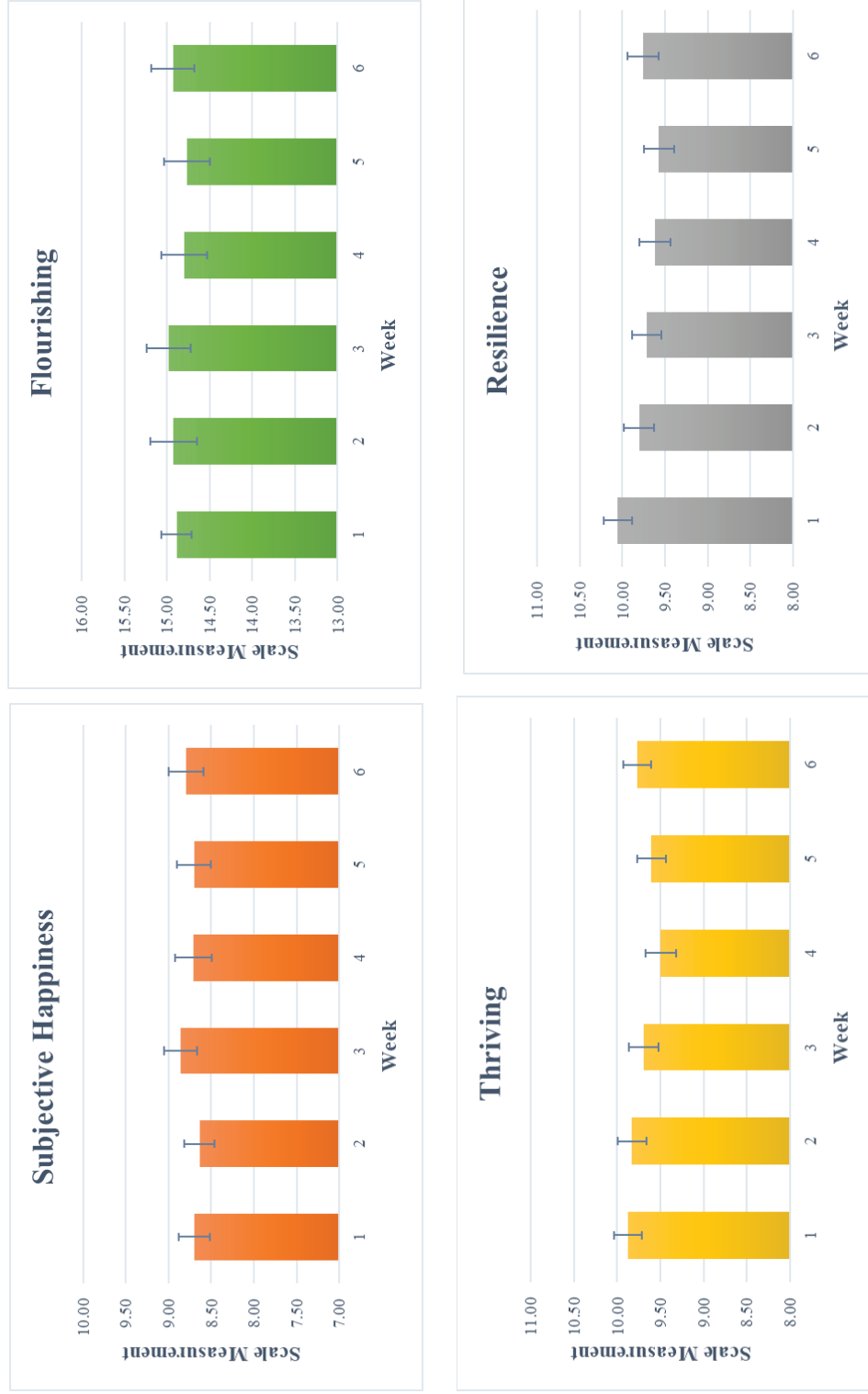
Table A.4. Weekly Mean and t-tests across weeks for Well-being Constructs

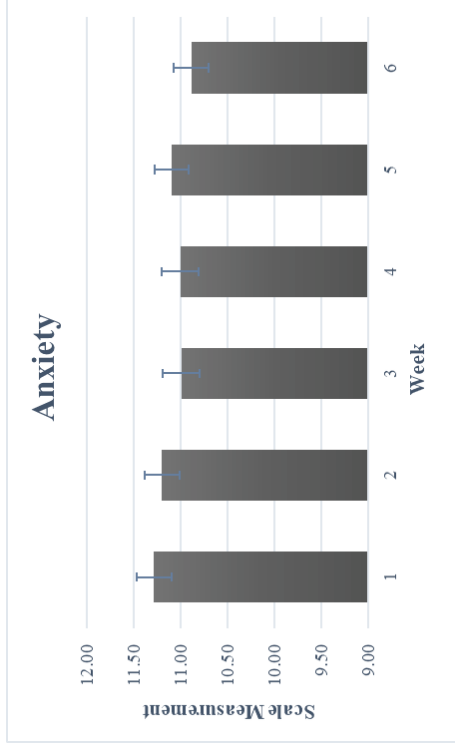
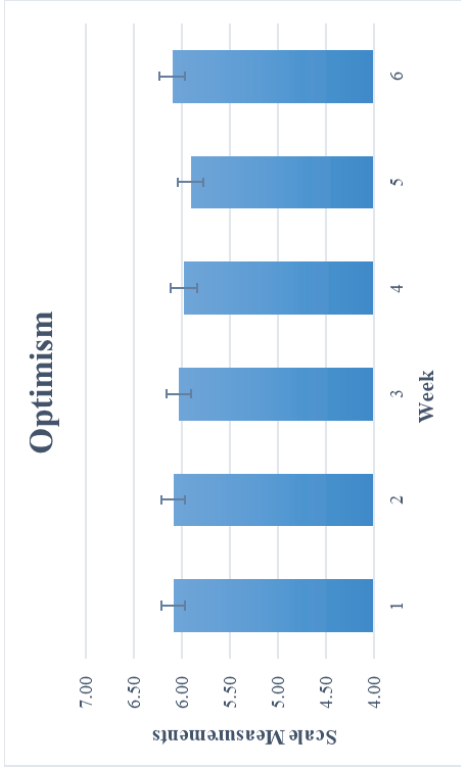
<i>Weekly Mean and t-test of psychological well-being constructs</i>						
Construct	Weekly Mean	SD	DF	t	Sig	
SHS	8.70	2.53	184	46.69	p < .001	
Flourishing	14.89	3.31	184	61.15	p < .001	
BIT	9.88	2.24	184	60.07	p < .001	
Resilience	10.05	2.31	184	59.21	p < .001	
Optimism	6.09	1.72	184	48.21	p < .001	
Loneliness	8.95	2.95	184	41.22	p < .001	
Anxiety	11.29	2.55	184	60.12	p < .001	

Table A.5. Findings for Pre-registered Confirmatory Hypothesis 2

<i>Multi-level analysis of prosocial acts on the psychological well-being constructs</i>						
Construct	B	SD	DF	t	Sig	95% CI
SHS	.07	0.01	1053	7.63	p < .001	[.05, .08]
Flourishing	.21	0.03	1030	8.31	p < .001	[.16, .26]
BIT	.04	0.01	1045	7.62	p < .001	[.03, .05]
Resilience	.12	0.02	999	7.27	p < .001	[.09, .15]
Optimism	.06	0.01	1026	5.15	p < .001	[.04, .09]
Loneliness	-.11	0.02	1049	-5.88	p < .001	[-.15, -.07]
Anxiety	-.06	0.02	1024	-3.27	p = .001	[-.10, -.02]

Figure A.1. Weekly Well-being Means (95% CI Error Bars)





Loneliness

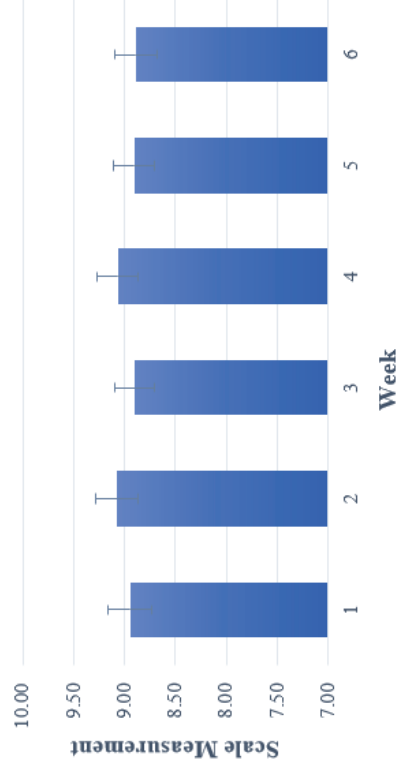


Figure A.2. Weekly Prosocial Means (95% CI Error Bars)

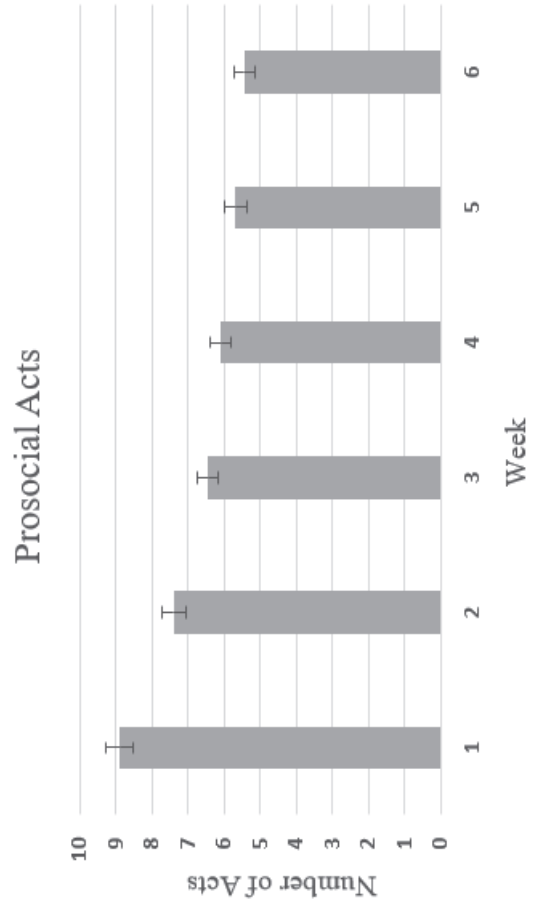
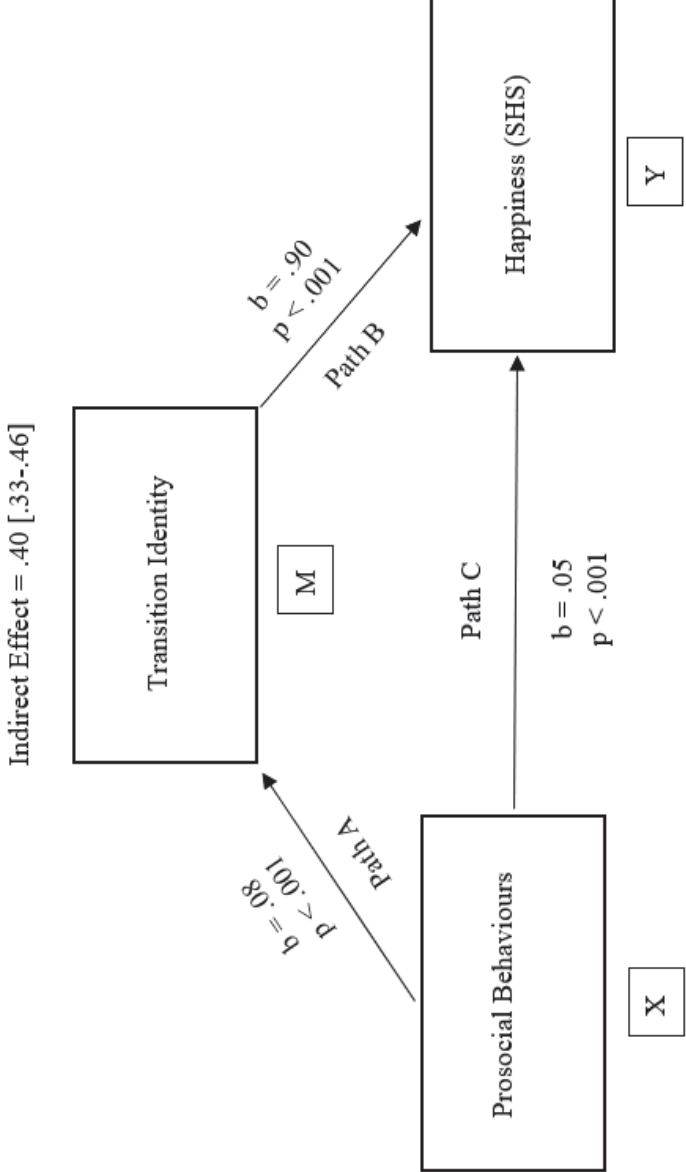


Figure A.3. Transition Identity Mediation Model between Prosocial Acts and Well-being



Appendix B.

List of other exploratory dimensions and tables

Transition-Identity. Transition Identity can be defined as the identity that individuals undertake as they respond to a passage of change over time (Kralik et al., 2006). To measure this construct of schema of transition identity, I used three items from section 3 (a 6-item subscale – group identity) and four items from section 4 (a 7-item subscale – new identity) of the Exeter Identity Scale (Haslam et al., 2008). A sample item from section 3, which measures group membership is: “I believe I will belong to the same groups” and responses are provided on a Likert scale ranging from 1, do not agree at all, to 5, agree completely. A sample item from section 4, which measures group maintenance and new group membership is: “My life will change a lot” and responses are provided on a Likert scale ranging from 1, do not agree at all, to 5, agree completely. Reliability for both baseline and follow-up survey is .703.

Relationship Satisfaction. Social relationships are seen as a critical factor in experiencing overall well-being (Diner & Seligman, 2002). To measure the construct of relationship satisfaction within first-year transitioning students, I used the 7-item Revised Life Orientation Test (Burns & Sayers, 1992). A sample item from this scale is: “Describe the amount of satisfaction you feel in your closest relationship” – “communication and openness.” Responses are provided on a Likert scale ranging from 0, very dissatisfied, to 6, very satisfied. Reliability for both baseline and follow-up is .925.

Personality. As an exploratory measure, I wanted to understand how personality might influence into transitions into university. I used the 10-item Personality Inventory (Gosling et al., 2003) to measure the construct of personality in first-year students. A sample item from this scale is: “Rate the extent to which each pair applies to you” – “reserved, quiet” and responses are provided on a Likert scale ranging from 1, strongly disagree, to 7, strongly agree. This scale is based on sum-scores.

Trust. Interpersonal trust is another important exploratory measure to consider for well-being (Poulin & Haase, 2015). To assess trust, I used the one-item Trust in People scale (Yamagishi, 1986). The item is: “Generally speaking, would you say that most people can be trusted or that you can’t be too careful in dealing with people?” chosen from either (a) most people can be trusted or (b) you can’t be too careful. Responses are coded at 1 and 2, respectively.

Table B.1. Exploratory Analysis

Construct	B	SD	DF	t	Sig	CI
Relationship Satisfaction	-.002	0.00	1073	-2.67	p = .01*	[-.003, -.00]
Trust	-.03	0.02	1110	-1.39	P = .16	[-.06, .01]
Agreeableness	-.01	0.01	1114	-0.97	p = .33	[-.02, .01]
Extraversion	-.002	0.01	1120	-0.28	p = .78	[-.02, .01]
Conscientiousness	-.01	0.01	1113	-0.84	p = .40	[-.02, .01]
Emotional Stability	-.002	0.01	1078	-0.32	p = .75	[-.02, .01]
Openness	-.01	0.01	1068	-1.67	p = 0.10	[-.03, .00]