

Giving Leads to Happiness in At-Risk and Antisocial Populations

by

Katherine Britt Hanniball

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Approval

Name: Katherine Hanniball

Degree: Master of Arts (Psychology)

Title: Giving Leads to Happiness in At-Risk and Antisocial Populations

Examining Committee: **Chair:** Rachel Fouladi
Associate Professor

Lara Aknin
Senior Supervisor
Assistant Professor

Kevin Douglas
Supervisor
Professor

Roger Tweed
External Examiner
Instructor
Psychology
Kwantlen Polytechnic University

Date Defended/Approved: June 7, 2017

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Abstract

Research suggests that the emotional benefits of prosocial behaviour may be universal; adults and children from various countries around the world experience happiness from engaging in prosocial action. Importantly, psychological universals may not only be detectable in diverse contexts, but across a range of actors as well – including individuals with antisocial tendencies. Three studies examined whether individuals with criminal histories and antisocial inclinations experience hedonic rewards from engaging in prosocial behaviour. In Experiment 1, high-risk youth and juvenile offenders (N = 64) who were randomly assigned to purchase candy for a children’s charity reported greater positive affect than those who purchased candy for themselves. In Experiment 2, adult ex-offenders (N = 501) randomly assigned to recall and describe the last time they spent money on someone else reported higher positive affect controlling for baseline levels of well being than those who recalled spending on themselves. In Experiment 3, adult ex-offenders (N = 777) randomly assigned to donate funds to a charity organization reported higher positive affect than those who used the funds to purchase an item for themselves. Self-reported antisocial tendencies did not moderate the emotional rewards of prosocial spending in any study. These findings suggest that the hedonic rewards of prosocial behaviour are detectable in high-risk and ex-criminal populations, providing further support for the universal benefits of generosity.

Keywords: Prosocial behavior, giving, well-being, positive affect, antisocial populations

Dedication

This work is dedicated to my mother, Ann Hanniball, and my father, Dean Hanniball. Without the two of you, and your never-ending support, love, warmth, and guidance I would never have reached the point I am today.

I would also like to dedicate this work to my Grandmother, Alice Hanniball, whose courage and perseverance have provided me with inspiration throughout my life; as well as my grandfather, Roy Nelson who has served as an unshakeable breakwater for as long as my memory stretches.

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Chapter 1.

Introduction

To a greater extent than other species, humans engage in behaviour aimed at helping others, and do so even when generosity comes at a personal cost. The question is why? Theorists from many different disciplines have offered explanations for the prevalence of prosociality among humans. Given the socially dependent nature of our species, it is likely that altruism evolved as an adaptive trait, allowing for large-scale cooperation within early human groups (Darwin, 1982; Hamilton, 1963; Wilson, 1975). Moving beyond origin, the continued presence of prosociality within our species has been explained via incentive based models such as direct reciprocity (Trivers, 1971), indirect reciprocity/future reputational concerns (Heinrich & Heinrich, 2006; Nowak & Sigmund, 1998), and as a method of social signaling (Becker, 1974; Benabou & Tirole, 2006; Glazer & Konrad, 1996; Giskevicius, et. al., 2007). Still others have argued that prosocial action is primarily sustained through cultural reinforcement mechanisms, such as explicit teaching, social learning, and direct imitation of prominent role models (de Guzman, Do & Kok, 2014; Eisenberg & Mussen, 1989). While all these arguments are likely beneficial for understanding the continued presence of altruistic behaviour in our species, explanations for why individuals engage in potentially costly acts of generosity may be further strengthened by looking to the emotional benefits associated with giving.

A growing body of research demonstrates that prosocial behaviour confers emotional benefits to the actor. For example, correlational research indicates that volunteers typically report higher levels of positive affect, life satisfaction and lower levels of depression than non-volunteers (Musick & Wilson, 2003; Schwarz & Sendor, 1999). Furthermore, experiments demonstrate that individuals randomly assigned to commit kind acts for others or the world report significantly higher levels of well-being six-weeks later than individuals assigned to engage in personally beneficial or neutral acts (Nelson, Layous, Cole & Lyubomirsky, 2016). Along similar lines, using one's financial resources to assist others yields emotional rewards for the giver. People who spend money on others in an average month report higher levels of happiness than those who spend less (Dunn, Aknin, & Norton, 2008). Moreover, the emotional rewards

of prosocial spending are causal. For example, individuals in North America randomly assigned to spend a small windfall of \$5 or \$20 on others reported significantly higher levels of happiness at the end of the day than those randomly assigned to spend money on themselves (Dunn et al., 2008). Notably, the emotional rewards of financial generosity are not only witnessed through self-report, but are also detectable via higher levels of activation in pleasure centers of the brain (Harbaugh, Mayr, & Burghart, 2007; Tankersley, Stowe, & Huettel, 2007) and in emotional expressions viewed by third-party observers (Aknin, Fleerackers & Hamlin, 2014). The emotional benefits of prosocial spending emerge even when donors have no contact with the beneficiary, suggesting that happiness is not merely the result of anticipated social praise or the opportunity to forge new social ties (Aknin, et. al., 2013).

1.1. Hedonic Reward as a Functional Universal

Importantly, the emotional rewards or “warm-glow” of prosocial behaviour may represent a functional psychological universal – a feature detectable in most humans to varying degrees around the globe (Norenzayan & Heine, 2005). Consistent with this claim, recent research demonstrates that the hedonic benefits of prosocial action are detectable across a wide span of human experience: evident in adults and children from rich and poor countries around the world. For instance, analysis of Gallup World Poll data from 136 countries reveals a positive relationship between prosocial spending and life satisfaction in a majority of nations. These trends are supported by experimental evidence demonstrating that individuals from diverse cultures (Canada, Uganda, India) report higher levels of subjective well-being (SWB) when randomly assigned to recall spending money on others, as compared to those who recall spending money on themselves (Aknin, et. al., 2013). Further, experimental work conducted in small-scale villages on the islands of Vanuatu (no running water, no electricity, hut houses, minimal access to formal education) provides particularly strong evidence that the relationship between subjective well-being and prosocial action remains intact—even where people have very little to give. In this study, individuals who were randomly assigned to purchase candy for others (a rare item for villagers) reported greater happiness than those who purchased the candy for themselves (Aknin, Broesch, Hamlin & Van deVondervoort, 2015).

Further, despite lay conceptions that young children are inherently selfish, the emotional rewards of generous behaviour are even detectable in childhood. Not only do young children offer spontaneous and costly help (Hepach, Haberl, Lambert, & Tomasello, 2016; Warneken, 2013), they appear to be intrinsically motivated to see others get the assistance they need (Hepach, Harberl, Lambert, Tomasello, 2017; Hepach, Vaish & Tomasello, 2012). This may explain why 22-month-old toddlers smile significantly more when giving treats away to others than when receiving treats themselves (Aknin, Hamlin & Dunn, 2012). In fact, toddlers appear to be happier after engaging in costly helping behaviour (i.e. giving away one of their own treats) than after engaging in non-costly helping behaviour (i.e. giving an identical treat that did not belong to them; Aknin, Hamlin, & Dunn, 2012). Collectively these findings support the possibility of a psychological universal; the emotional rewards of prosocial action appear to be detectable among most people in a variety of contexts.

However, while the positive emotional consequences of prosociality have been recognized across the globe and lifespan, if these benefits are truly universal they might also be detectable among *a range of actors* (Norenzayan & Heine, 2005). Accordingly, the present study examines whether the emotional rewards of one form of prosocial behaviour – prosocial spending – are detectable among individuals with a history of engaging in criminal behaviour and who endorse elevated levels of antisocial personality characteristics.

1.2. Antisocial Populations and Prosocial Action

Many have argued that violent behaviour, aggressive and antisocial action, and criminal offending are indicative of dampened concern for others (e.g. Baumeister, Smart, & Boden, 1996; Hastings et. al., 2000; Jolliffe & Farrington, 2007). This may be especially true for certain subsets of criminal populations, such as those endorsing psychopathic traits. Indeed, a particular sub-domain of psychopathy—that related to callousness and unemotionality (CU)—is *defined* by externalizing problems, such as a lack of empathetic response and guilt, shallow and deficient emotions, manipulative tendencies, and cruelty (Frick, Ray, Thornton, & Kahn, 2014; Venables & Patrick, 2012). Further, research documents a clear link between elevated antisocial or violent behaviour and psychopathic traits—particularly those related to callousness (Douglas, Vincent, & Edens, 2006; Frick & Dickens, 2006; Frick & White, 2008; Kahn, Byrd, &

Pardini, 2013). These findings are explained in part by work demonstrating that individuals endorsing psychopathic traits may experience cognitive and affective deficits that result in decreased empathetic behavior and moral emotion development, as well as decreased inhibition for antisocial behavior (Hiatt & Newman, 2006; Patrick, 1994; Patrick, Bradley, & Lang, 1993). Given that prosocial behaviour frequently involves elements of self-sacrifice and is often motivated by concern for others (Batson, 1991; Eisenberg, 1986; Eisenberg & Miller, 1987; Hepach, Vaish & Tomasello, 2012), it is possible that individuals with a marked history of serious criminal offending and/or elevated psychopathic tendencies may not experience the emotional rewards of altruistic action. For example, results of one recent study suggest that the relationship between prosocial spending and happiness may depend on the extent to which individuals endorse self-transcendence values, or concern for persons outside the individual (Hill & Howell, 2014). Therefore criminal or antisocial actors may not experience the emotional rewards of giving. However, while criminal or antisocial actors may elect to engage in generous action at a lower rate than other populations, it is also possible that these actors *do* experience emotional rewards from prosocial behaviour. Indeed, anecdotal evidence from prosocially focused prison programming seems to support this notion (PatriotPAWS service Dogs, 2011). Should the hedonic benefits of generous action be detectable among antisocial and criminal populations, this finding would add to the growing body of literature supporting the notion that the emotional rewards of giving may represent a psychological universal.

1.3. Current Research

The primary focus of the present work was to explore whether the emotional rewards of giving are detectable among individuals whose behavioural tendencies and criminal histories suggest a proclivity for antisocial action and dampened concern for the well-being of others. To explore this possibility, I recruited high-risk youth, juvenile offenders, and adult ex-offender populations. Across three experiments, I explored whether high-risk youth and adult ex-offenders derived emotional benefit from a common form of generous action—prosocial spending. Using both a real purchasing task (Experiments 1 and 3) and a recollection paradigm (Experiment 2) validated in past work, I assessed the immediate and delayed emotional consequences of engaging in

prosocial spending. In doing so, I sought to test the robustness of a previously observed effect along a new dimension of universality.

1.4. Defining Happiness and Subjective Well-being (SWB)

Following Diener and colleagues (Diener, 2000; Diener & Emmons, 1984; Diener, Oishi, & Lucas, 2003), in the present studies I adopted a broad approach to defining subjective well-being (SWB) and assess both the cognitive and affective dimensions of this construct using multiple measures. In the psychological literature, the affective and cognitive dimensions of well-being are related but separable constructs, and the experience of subjective happiness is a product of both (Deiner, 2000; Watson, Clark, & Tellegen; 1988; Deiner, et. al.1985). The affective dimension refers to current emotional states (e.g. excitement, irritation, enthusiasm, guilt), which can be positive or negative and are susceptible to change (Diener & Emmons, 1984; Diener, Smith, & Fujita, 1995). The cognitive dimension of well-being on the other hand, is more reflective, less mutable, and captures subjective judgments of one's satisfaction with life (Deiner, et. al., 1985; Diener, Inglehart, & Tay, 2012). The research presented here utilizes measures that capture both the cognitive and affective dimensions of well-being.

Chapter 2. Experiment 1

A field study was conducted to determine whether the hedonic benefits of prosocial spending are detectable in juvenile offenders and high-risk youth. To do so, I adopted a previously used paradigm in which participants were randomly assigned to purchase a goody-bag filled with edible treats for either themselves or a sick child at a local children's hospital (Aknin, et. al., 2013). Afterward, all participants reported their well-being. I predicted that youth who purchased a goody-bag for a sick child would report higher levels of positive affect than those assigned to purchase the treats for themselves. Participants also completed several measures of psychopathic personality allowing me to address a potential boundary condition of the predicted effect. Here I assessed whether the emotional rewards of prosocial spending might be moderated by psychopathic traits and callous/unemotional (CU) tendencies, such that participants reporting lower levels of care for others and higher levels of callousness may not experience the warm-glow of giving.

2.1. Participants

Seventy-six high-risk youth between the ages of 13 and 18 ($M_{age} = 15.72$ $SD = 1.34$; 35 female) participated in this experiment in exchange for gift cards to local restaurants, coffee shops, and shopping centers. Individuals identified as Indigenous (23.1%), Caucasian (21.2%), and South-Asian (9.6%). Forty-four percent of the sample did not report their ethnic identity. Four of these youth met inclusion criteria for participation in Experiment 1 but were excluded from analyses for the following reasons: two participants were excluded due to English language barriers which forced research assistants to terminate the study early, and two participants were excluded for extensive missing data (> 75%). Further, one youth included in the sample did not provide risk data; this youth was recruited during an earlier phase of data collection. Results do not change if individual is excluded from analyses.

To find youth with a history of offending or those who were at risk of offending, I recruited participants at three outreach centers in the Greater Vancouver Regional District that provide services for at-risk teens and adolescent offenders (e.g., justice services, alternative education for those who have dropped out of school, drug and

alcohol services).¹ However, given that not all youth who attend these centers have a criminal history or possess risk factors for offending, participants were also screened for offending and arrest history, as well as history of delinquent peer group association and substance abuse—well-validated risk factors for future offending (Battin-Pearson, Thornberry, Hawkins, & Krohn, 1998; Lipsey & Derzon, 1998; Loeber, 1990). Participant eligibility was determined post-data collection, and individuals who did not meet minimum criteria were simply excluded from analyses. Youth remained unaware of risk criteria requirements in order to protect against dishonest responding that may stem from a desire to participate in the study for incentives (study payment). A sample size of at least 60 at-risk youth was identified before data collection because it reflected the smallest number of participants required to detect a medium to large effect as observed in past work (Aknin, et. al., 2013).

2.1.1. Inclusion Criteria

To qualify for participation, youth must have self-reported either (a) engagement in one or more of 21 possible criminal behaviours within the past six months, (b) use of one or more illegal substances in the previous 30 days, or (c) having 1 or more friends engaging in criminal behaviour within the past 6 months (Table 2.1). Criteria were assessed with validated instruments described below. Inclusion criteria were intentionally broad – though still designed to identify youth at risk of criminality based on well-supported risk factors – to obtain as large a sample as possible. Most participants exceeded the minimum inclusion criteria, with 79.7% of participants indicating personal engagement in criminal activity within the past six months and 52.2% reporting two or more types of criminal behaviour.

¹ Data collection took place over a 3-year period, with minor differences in data collection procedures over this time. Importantly, the goody bag protocol remained unchanged across all waves and several 2(Condition) X 3(data collection wave) ANOVAs revealed no interaction between data collection wave and the manipulation in predicting post-spending well-being (all p s > .30). These findings suggest that the manipulation did not differ across data wave.

Table 2-1. Risk characteristics of final sample of at-risk youth in Experiment 1 (n=64)

Characteristic	% (n)
Arrest	
Yes	50.9% (27)
No	49.1% (26)
Mean age of first arrest (<i>SD</i>)	13.6 (2.50)
Incarceration	
Yes	12.0% (6)
No	78.0% (39)
Do not know	10.0% (5)
Personal criminal activity	
Yes	79.7% (51)
No	20.3% (13)
Violent Crime	
Yes	58.7% (55)
No	41.3% (26)
Substance use	
Yes	71.9% (46)
No	28.1 (18)
Delinquent Peer	
Yes	90.5% (57)
No	9.5% (6)

Note. Some individuals did not provide responses to select questionnaire items. In the event that the reported n do not sum to 64, there were missing responses on this item in this sample.

2.2. Procedure

Youth were approached in public spaces at three outreach centers and invited to participate in a study about resiliency and everyday life experiences. If a youth expressed interest, a researcher collected his/her parent or legal guardian’s contact information and gave the youth an informational packet to take home. Packets contained a broad description of the study as an initiative to understand resilience factors among at-risk youth. Parents/guardians were contacted via phone numbers or email addresses provided to obtain parental consent. Once obtained, a researcher set up a one-on-one meeting for data collection at a local resource center. At the start of this meeting, youth were asked to provide assent.

The experiment began when participants were given a questionnaire package assessing their baseline happiness using a two-item state (“Do you feel happy right now?” “Do you feel alert right now?” 1-*not at all*, to 5-*extremely*) and trait measure (“In general, I consider myself...” 1- *not a very happy person*, to 7 - *a very happy person*;

Lyubomirsky & Lepper, 1999). Scores were positively correlated, $r_s = >.20$, $p_s < .001$, and were therefore combined to create a single measure of baseline well-being. Filler items assessing current levels of hunger and fatigue were also included so that the focus on positive emotions was not transparent. Participants then reported their arrest and incarceration history (*yes/no*), as well as their demographics.

2.2.1. Goody-Bag Paradigm

In the same questionnaire package, participants were informed that they had earned an additional \$2.50 for their participation. These funds were represented in the form of a paper voucher stating, “This voucher is worth two dollars and fifty cents (\$2.50). It is an additional payment for participating in this study.” Participants were asked to sign a receipt acknowledging that they received the voucher and to encourage a sense of ownership over the funds. The questionnaire packages then invited participants to use these additional funds to purchase a goody-bag (valued at \$3.00 retail) filled with their choice of chocolate, juice, or both. Critically, youth were randomly assigned to either a *personal* or *prosocial* spending condition. In the *personal spending* condition, participants were told the goody-bag they purchased would be for them and available for pickup at the conclusion of the experiment. In the *prosocial spending* condition, participants were told that the goody-bag they purchased would be donated to a sick child at a local children’s hospital (see Appendix A).

Participants in both conditions were also given the opportunity to opt-out of purchasing a goody-bag and take the cash value (\$2.50) for themselves. This option was included to ensure that participants in the prosocial spending condition felt as though they had chosen to give a charitable gift and were not forced to do so; previous research has shown that givers must experience a sense of volition to reap the emotional rewards of generous behaviour (Weinstein & Ryan, 2010). Participants were subtly discouraged from taking the cash by telling them the value would be mailed to them 90 days after study completion. Several individuals (eight participants in the prosocial spending condition and nine participants in the personal spending condition) opted out of purchasing a goody-bag, choosing to take the cash for themselves. Participants in the prosocial condition who opted out of buying a goody-bag were excluded from analyses because they did not engage in a prosocial action (see Aknin et al., 2013 for similar procedures). While this opt-out rate is slightly higher than what has

observed in previous research (e.g., Aknin et al., 2013), individuals assigned to the prosocial spending condition but choosing to take the cash voucher for themselves did not differ in baseline happiness from the rest of the sample $t(70) = 1.02, p > .30$, nor from those in the prosocial condition alone, $t(37) = 1.06, p > .20$. These individuals also did not differ from the rest of the sample in terms of risk criteria (all $F_s < .50$; all $p_s > .45$) or psychopathic tendencies (all $F_s < .75$; all $p_s > .35$). Further, when these individuals are retained in analyses, the key main effect on post spending positive affect remains significant. The nine participants who opted to take the cash for themselves in the personal spending condition were retained because these individuals chose a personal benefit in the form of cash for themselves (see Aknin et al., 2013 for similar procedures); results do not change if these nine individuals are excluded (see results section).

Participants noted their spending selection on a purchase card and handed it, along with their \$2.50 voucher, to the researcher. If the participant purchased a goody-bag, the researcher packaged their selected items immediately to show the participant that their goody-bag was real. In both the personal and prosocial conditions, the goody-bag was set to the side of the table until the conclusion of the experiment and participants were given a pre-prepared note thanking them for their purchase. If the participant elected to take the cash for him/herself, participants were asked to provide their mailing information for later delivery of funds.

Importantly, all information indicating a participant's randomly assigned condition was unknown to the researcher, precluding differential treatment that could bias a participant's self-reported emotion. Several precautions were taken to keep researchers blind to condition. First, study materials were organized weeks in advance of the experimental sessions by the author who did not run experimental sessions. Second, protocol required that materials were contained in a sealed envelope until the experimental session began so that the researcher could not accidentally view condition assignment information. Third, all study materials (questionnaire booklets, goody-bag items, post-spending thank you notes) and protocols that involved the researcher were identical for both conditions until the dependent variables were completed. As such, the researcher learned of condition assignment at the end of the experiment to give participants in the personal spending condition their goody-bag to take home. Goody-bags purchased in the prosocial spending condition were donated to a local children's charity.

2.2.2. Well-being

Immediately after their purchase decision, participants reported their current positive affect on the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). In line with recent research, the items “happy” and “sad” were added to the measure because both emotions were of particular interest (see Aknin, Dunn, Whillans, Grant & Norton, 2013).² The eleven positive affect items (10 original items from the PANAS and happy) showed high reliability ($\alpha = .84$), as did negative affect items ($\alpha = .90$). Participants also reported their life satisfaction on the Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985; $\alpha = .86$). Although it was unlikely that a single purchase would alter life satisfaction, the SWLS was included to investigate the possibility of an indirect effect, whereby generous spending increases current positive affect, which, in turn, could boost life satisfaction (as witnessed in Aknin et al., 2013).

2.2.3. Risk Criteria and Delinquent Behaviour

To gauge the risk status of participants and confirm eligibility, each participant was asked to complete several youth risk assessment scales. In particular, the Youth Self-report of Offending (Huzinga, Esbensen, & Weiher, 1991) was used to determine whether the participant had engaged in aggressive offenses (e.g., “Have you ever beaten up or physically attacked somebody so badly that they probably needed a doctor?”), income related offenses (e.g., “Have you ever stolen something from a store (shoplifted)?”), and public order offenses (e.g., “Have you ever driven while intoxicated?”). I summed the number of “yes” scores across all offending categories to create a total delinquency score ($\alpha = .91$). In addition, youth were asked to complete the Teen Conflict Survey (Bosworth & Espelage, 1995; $\alpha = .84$) and Delinquent Peers Scale (Thornberry, Lizotte, Krohn, Farnworth, & Jang, 1994; $\alpha = .94$) to assess self-reported

² Although these experiments were conducted to examine the impact of prosocial spending on positive affect as has been done in past research (see Aknin et al., 2012, 2013, 2015; Dunn, Aknin & Norton, 2008), reports of negative affect may be of particular interest in antisocial populations. Interestingly, I did not detect differences between personal and prosocial conditions in negative affect in any experiment ($t_s < 1.5$, $p_s > .12$).

substance abuse within the past 30 days and the proportion of a youth's friend group involved in criminal or delinquent behaviours (e.g. theft, assault), respectively.

2.2.4. Psychopathic Personality and Callous-Unemotional Traits

Two questionnaires assessed psychopathic personality features and callousness/unemotionality, precursors of a psychopathic personality in youth under the age of 18. First, participants completed the Antisocial Process Screening Device – Self Report (APSD-SR; Frick & Hare, 2001), an 18-item scale measuring three sub-dimensions of psychopathic features: Callousness/unemotionality ($\alpha = .47$)³, narcissism ($\alpha = .64$), and impulsivity ($\alpha = .68$). Participants also completed the Inventory of Callous-Unemotional Traits (ICU; Frick, 2004; overall $\alpha = .78$), a second and more detailed assessment of the CU construct, because I was particularly interested in whether this dimension of psychopathic personality features (capturing a lack of concern for others and callousness) would moderate the emotional rewards of giving.

2.3. Results

2.3.1. Delinquency, Antisocial Behaviour, and Psychopathic Tendencies

Information regarding the final sample's ($N = 64$) level of delinquency and antisocial behaviour is shown in Table 2.1. The majority of the sample (79.7%) reported recently engaging in criminal activity, and over half of the youth (58.7%) reported engaging in violent criminal behaviour, such as assault or gun violence. In addition, over half of the sample (50.9%) reported being arrested at least once and a full 12% had been incarcerated. Youth also reported high-risk substance use and delinquent peers. Nearly three-quarters of youth reported substance use (alcohol, street drugs, cocaine, meth, etc.) within the past 30 days (71.9%) and the overwhelming majority reported

³ The low alpha level for the CU subscale for the APSD observed in Experiment 1 is consistent with the literature. As demonstrated by Polythress and colleagues (2006), the internal consistency of this subscale is regularly poor across studies. This finding served as the impetus for the development of the ICU (also included in Experiment 1) in order to get a more reliable measure of the Callous-unemotional aspect of psychopathic features in youth.

being part of a delinquent peer group (90.5 %). In sum, youth in this experiment reported several forms of at-risk behaviours or tendencies.

I expected that the youth included in the present sample would not only display antisocial behaviours, such as criminal offending and substance use, but would also display elevated antisocial and psychopathic tendencies as measured by the ICU and APSD-SR. Although clinically diagnostic cut-off criteria are not available for these self-report measures, I reviewed the literature to determine how the present sample compared to other youth offender populations. The search revealed two separate samples of justice-involved youth (from Dillard, Salekin, Barker, & Grimes, 2012 and Kimonis, Kennealy, & Goulter, 2016). I used one sample *t*-tests to compare APSD-SR and ICU total scores displayed in the present sample ($M_{APSD} = 13.10$, $SD = 5.31$; $M_{ICU} = 26.14$, $SD = 8.47$) to those observed in previous work (Dillard et al., 2012: $M_{APSD} = 13.82$, $SD = 5.14$, Kimonis et al., 2016: $M_{ICU} = 24.54$, $SD = 9.23$). Analyses revealed that the present sample did not differ from past samples (all t s < 1.60, all p s > .10, see Table 2.2), providing further support that I was able to recruit a sample of youth whose conduct histories and trait tendencies suggest antisocial and criminal inclinations.

Table 2-2. APSD and ICU scores of youth in Experiment 1 compared with those observed in previous justice involved youth samples.

Variable	Present sample: <i>M (SD)</i>	Comparison Sample: <i>M (SD)</i>	Test Statistic
APSD Total	13.10 (5.31)	13.82 (5.14)	$t(55) = -1.04, p = .30$
ICU Total	26.14 (8.47)	24.54 (9.23)	$t(58) = 1.42, p = .16$

Note: The comparison data for the APSD total score was taken from a sample of 451 adolescent offenders. Representative crimes for the sample included theft, armed robbery, battery, assault, and other violent offenses (Dillard, et. al., 2012.). The comparison data for the ICU total score was taken from a sample of 227 male juvenile offenders housed in secure confinement facilities in the Southeastern United States (Kimonis et. al., 2016).

2.3.2. Happiness and Well-being

Independent samples *t*-tests revealed no differences in baseline well-being between participants in the personal and prosocial spending conditions, $t(62) = -.67, p > .50$. To investigate the emotional rewards of prosocial spending in juvenile offenders and high-risk antisocial youth, I conducted an independent samples *t*-test comparing average levels of post-spending positive affect reported by participants in the prosocial and personal spending conditions. Results indicated that youth randomly assigned to a purchase goody-bag for a sick child reported higher levels of positive affect ($M = 3.16$,

$SD = .65$) than those assigned to purchase a goody-bag for themselves ($M = 2.75$, $SD = .71$), $t(62) = 2.41$, $p = .02$, $d = .60$ (see Figure 2-1). Results remain unchanged when an ANCOVA was conducted adding baseline happiness as a covariate, $F(1, 61) = 5.51$, $p = .02$, $\eta^2 = .08$. Similarly, when prosocial opt-outs are included analyses remain unchanged, $t(70) = 12.59$, $p = .012$. The same is true when personal opt-outs are excluded, $t(55) = -2.12$, $p = .04$.

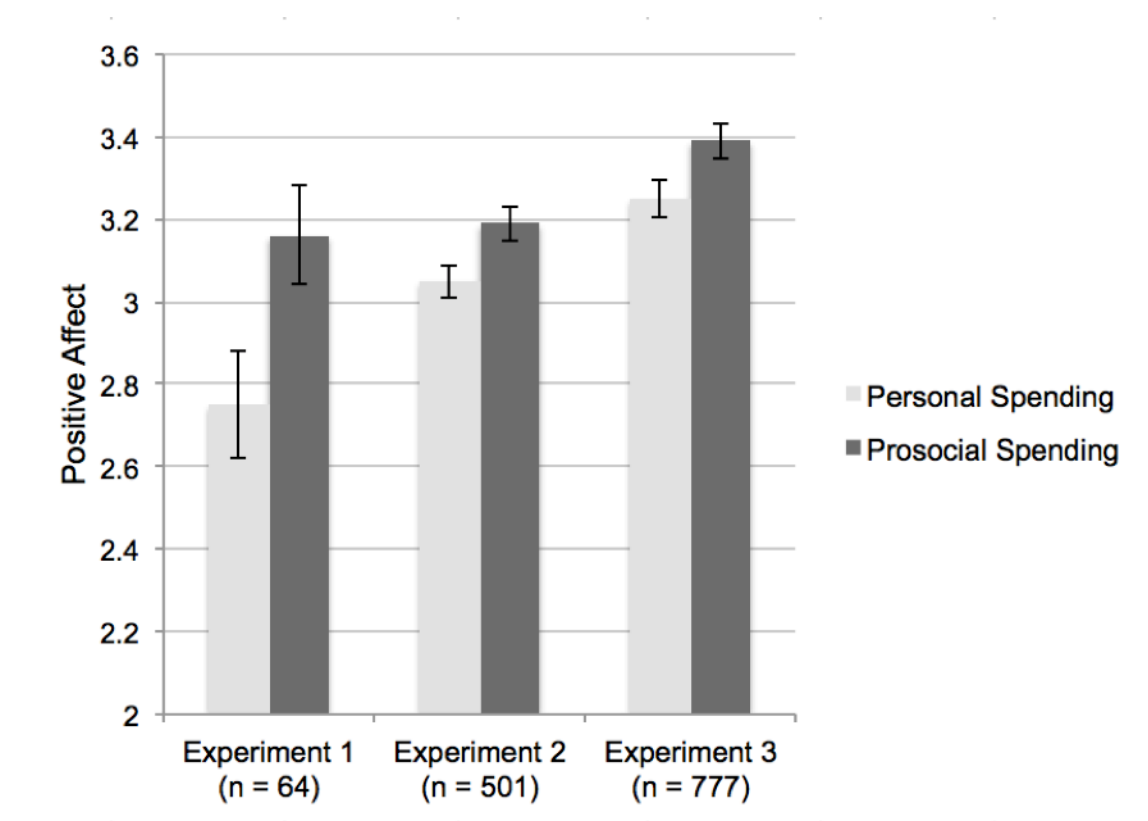


Figure 2-1. Positive affect reported by participants after the spending or recall tasks in Experiments 1-3.

As predicted and consistent with past research (Aknin et al., 2013), engaging in a single act of prosocial spending did not lead to higher levels of life satisfaction ($M = 4.17$, $SD = 1.4$) than engaging in a single act of personal spending ($M = 3.90$, $SD = 1.40$), $t(61) = -.78$, $p = .44$. This is likely because life satisfaction is a trait level variable that is generally stable, often requiring significant life events, such as childbirth or widowhood, to change (Diener, Inglehart & Tay, 2012). That said, bootstrap estimation with 1000 samples using the PROCESS macro (Hayes, 2012) did provide evidence of a significant indirect effect through current feelings of positive affect, unstandardized indirect effect = .17, 95% CI [.06, .36]. As noted above, participants randomly assigned to the prosocial

spending condition (vs. personal spending condition) reported higher levels of positive affect and positive affect, which in turn, predicted life satisfaction ($\beta = .86, p < .01$).

2.3.3. Moderation by Psychopathic Features

I examined whether the emotional rewards of prosocial (vs. personal) spending were moderated by psychopathic tendencies. To do so, I conducted three separate regression analyses in which condition assignment (contrast coded: -1 = personal spending, 1 = prosocial spending), measure of psychopathic features (APSD total score, APSD-CU score, or ICU total score; centered to mean of zero), and the interaction between the two were entered as predictors in a linear regression predicting post-spending positive affect. In all analyses, psychopathic features negatively predicted post-spending positive affect ($\beta > -.20, p < .06$), meaning that youth high in psychopathic features reported lower levels of positive affect. More importantly, in all regressions the interaction term was non-significant ($\beta s < .04, p > .80$) and the main effect of condition assignment remained significant (APSD-total score: $\beta = .31, p = .02$; ASPD-CU: $\beta = .30, p = .02$), or weakened only slightly (ICU total score: $\beta = .20, p = .10$), indicating that the emotional rewards of prosocial spending were not greatly influenced by callousness/unemotionality or psychopathic tendencies in the present sample (see Table 2.3 for regression results).

Table 2-3. Regression table for interaction analyses in Experiment 1 (n=64).

	B	Standard Error	Beta	<i>p</i>
<i>APSD Total</i>				
Condition	.22	.09	.31	.02
APSD	-.03	.02	-.22	.09
Interaction	<.01	.02	-.01	.95
<i>APSD CU</i>				
Condition	.21	.09	.30	.02
APSD CU	-.03	.06	-.08	.61
Interaction	.02	.06	.03	.83
<i>ICU Total</i>				
Condition	.16	.09	.22	.10
ICU	-.01	.01	-.17	.25
Interaction	<-.01	.01	-.02	.87

2.4. Discussion

Results from Experiment 1 reveal that the hedonic benefits of generous spending are detectable in youth whose behavioural tendencies, criminal histories, and antisocial traits indicate a tendency towards selfishness and a decreased concern for others. These findings emerged after participants engaged in an actual instance of prosocial spending and then reported their positive affect. As predicted, prosocial spending did not boost life satisfaction reports, but I did detect evidence of a significant indirect effect whereby prosocial spending led to greater positive affect than personal spending, which, in turn, was associated with higher life satisfaction. Critically, participants in the prosocial spending condition did not provide the goody-bag directly to the recipient, thereby precluding the possibility that gratitude or expectation of reciprocal exchange may be responsible for higher positive affect. Moreover, experimenters were unaware of condition assignment information to avoid the possibility of differential treatment or praise for those engaging in prosocial action. Thus, these findings replicate the emotional rewards of prosocial spending with a tightly controlled experimental paradigm in an at-risk youth sample.

Experiment 2 was conducted to further examine whether the hedonic benefits of prosocial spending are detectable in antisocial populations. To reach a larger sample, I used Amazon's mTurk and recruited individuals who reported being arrested or engaging in felony level criminal activity within the last 5 years. Adapting another previously used experimental paradigm (Aknin, Dunn, & Norton, 2011; Aknin et al., 2013), participants were randomly assigned to either recall a time they spent money on

themselves or someone else. Afterward, all participants reported their current positive affect. I predicted that participants asked to recall an instance of generous spending would report greater happiness than those asked to recall an instance of self-directed spending.

The design of Experiment 2 provided several key benefits. In using a recollection paradigm I was able to gain insight into how acts of prosocial spending might manifest in the real world among antisocial actors by capturing and later coding descriptions of behaviour, and was also able to investigate whether the emotional rewards of generous spending are detectable upon delay via cognitive reflection. Further, because Experiment 1 utilized a youth sample, the adult population recruited for Experiment 2 allowed me to explore whether findings would generalize across age groups. For example, a significant body of work has demonstrated that adolescence is a period of intense developmental change, which is known to affect temperament and behaviour (Compas, Hinden, & Gerhardt, 1995; Susman et. al., 1987). In this way, the use of an adolescent sample allowed for a conservative test of my primary question due to the fact that during teenage years antisocial behaviour has been shown to peak while prosocial behaviour decreases (Carlo, Crockett, Randall, & Roesch, 2007; Masten, Cloich, & Dapretto, 2013). However, because many youth outgrow the antisocial tendencies displayed during adolescence, targeting an adult population for Experiment 2 allowed me to determine whether the findings of Experiment 1 would replicate in a mature population whose behaviours and trait based tendencies are likely to be more entrenched and stable facets of personality (e.g. Hampson & Goldberg, 2006). As such, Experiment 2 not only extends the generalizability of Experiment 1, but also provides a conservative test of the primary hypothesis by looking at recollections of past events as opposed to their immediate emotional consequences.

Chapter 3. Experiment 2

3.1. Participants

Five-hundred and fourteen individuals with a self-reported history of serious criminal activity were recruited through Amazon's Mechanical Turk in exchange for a monetary payment ($M_{age}=31.24$ $SD=8.06$; 67.2% male); 13 of these participants were excluded from analyses (explanation below) resulting in a final sample of 501 participants ($M_{age} = 31.21$, $SD = 8.08$, 67.3% male). The majority of the sample was Caucasian (67%), however individuals of Asian (11.4%), Black/African American (9.6%), Hispanic/Latino (9.0%), and Indigenous (1.6%) descent were also represented. Sample size was determined by an a priori power analysis indicating that a sample of at least 500 would allow detection of a small to medium effect ($d = .25$) with an alpha of .05 and a desired minimum power of .80.

3.1.1. Inclusion Criteria

Potential participants were told that they must have engaged in prior criminal activity to take part in the survey. Specifically, to qualify participants must have reported engagement in one of the following events within the past 5 years: (1) having engaged in *extensive* criminal/illegal activity, or (2) having committed a felony level offense.

I relied on participants' self-reports of previous offenses for inclusion criteria because I did not have access to federal or state incarceration records; this strategy is commonly used within forensic psychology and criminology (Thornberry & Krohn, 2000) and seen as advantageous for several reasons. First, the reliability and validity of self-report measures of criminal activity compares favorably to other self-report measures employed by social scientists (Huzinga & Elliot, 1983; Jolliffe et. al., 2003). For example, validated self-report measures of criminal behaviour tend to display comparable internal consistency (.8 and above) to standards for social psychological measures (Hindelang, Hirschi, & Weis, 1981). Additionally, self-reports of criminal behaviour display consistently high predictive validity (self-admitted acts significantly predict future convictions; Farrington, 1973, 2003), and test-retest reliability tends to be high as demonstrated across several studies employing various scoring schemes, number of items, and temporal periods (Huzinga & Elliot, 1986). Further, a long-standing body of work has

demonstrated that self-report data of criminal behaviour is more inclusive than federal or state records which only capture crimes known to the police and therefore significantly underestimate actual offense rates (Dunford & Elliot, 1984). Indeed, estimates of the so-called “dark figure” of crime indicate that actual rates of crime and violence are roughly five to ten times higher than officially detected crime or violence (Coleman & Moynihan, 1996). In sum, considerable evidence from criminology indicates that self-nomination is a valid method of detecting and measuring criminal involvement, violent behaviour, and even gang-related activity (Decker, Pyrooz, Sweeten, & Moule, 2014; Sweeten, 2012). Thus, given my goal to recruit individuals with a history of serious criminal offending (not only those who have been charged for their crimes), I used self-reported engagement in criminal action to select an appropriate sample.

Recognizing, however, that a reliance on self-report data may raise concerns of false responding, I required participants to report their criminal activity at both the beginning and end of the survey. Given that the experimental procedure was quite long (100+ questions taking most participants approximately 30 minutes or more to complete), I reasoned that participants who may have lied about their criminal history at the start of the survey would not be able to accurately report the same activity at the end. Therefore, I compared criminal activities listed at both time points to confirm matched reports. Participant responses must have been identical at both time points for inclusion in data analyses. Responses from thirteen individuals ($M_{age} = 31.2$, $SD = 8.1$, 68% male) did not match, therefore these individuals and were excluded.

3.2. Procedure

Participants were first asked to report their recent criminal behaviour by indicating any and all criminal activities they had engaged in within the past 5 years from a list of 16 common felonies (Table 3.1). Participants who selected at least one criminal action were allowed to continue the study, while those who did not were informed they did not qualify.

Table 3-1. Reported criminal activity of adults in Experiment 2 (n=501).

Offense Type	% (n)
Drug Offense (distribution, trafficking)	33.9% (170)
Assault	23.4% (117)
Illegal weapon	14% (70)
Theft over \$5,000	13.6% (68)
Fraud	11.4% (57)
Robbery	10.4% (52)
Vandalism	9.2 % (46)
Domestic Violence	8.0% (40)
Motor Vehicle Theft	4.8% (24)
Sex Offense	2.8% (14)
Murder	1.6% (8)
Rape	1.4% (7)
Child abuse/neglect	1.0% (0)
Manslaughter	0.8% (4)
Kidnapping	0.4% (2)
Human Trafficking	0.2% (1)

Note: Some individuals in this sample reported committing more than one type of offense. In the event that n sums to greater than 501, this is due to participants reporting more than one offense type in the past 5 years.

After completing the qualification criteria, participants reported their baseline level of well-being using the same items from Experiment 1. Scores were again positively correlated, $r_s > .21$, $ps < .001$, and therefore combined to create a single measure of baseline well-being. Participants were then randomly assigned to recall and describe in as much detail as possible either (a) a time when they spent approximately \$20 dollars on themselves (*personal spending*) or (b) a time when they spent approximately \$20 on someone else (*prosocial spending*). Afterward, all participants reported their well-being using the PANAS plus the additional items “happy” and “sad” (PA: $\alpha = .92$; NA: $\alpha = .94$) and SWLS ($\alpha = .92$), the same measures from Experiment 1. Participants were also asked to complete the Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999, $\alpha = .86$), a 4-item scale measure assessing trait level happiness, in between.

Participants then completed several adult measures of psychopathic personality and callousness/unemotionality. Specifically, participants completed the Triarchic Psychopathy Measure (TriPM; Patrick, 2010, total score $\alpha = .91$), which captures three major components of psychopathy according to Patrick (2010): Meanness ($\alpha = .93$), Disinhibition ($\alpha = .90$), and Boldness ($\alpha = .75$).⁴ Items were summed to obtain scores for

⁴ It should be noted that the boldness dimension of the TriPM has been the subject of considerable controversy regarding its relevance to the construct of psychopathy. Central concerns relate to its

each sub-dimension and the overall scale (see Patrick, Fowles, & Krueger, 2009 for review). Next, participants completed the Comprehensive Assessment of Psychopathic Personality (CAPP; Cooke, Hart, Logan, & Michie, 2004; overall $\alpha = .95$), a measure designed to assess the full domain of psychopathic symptomology (six domains: Emotional, dominance, cognitive, behavioural, self, attachment) in which participants rate how characteristic 33 prototypically psychopathic traits are of them on a scale ranging from 0 (*not at all characteristic of me*) to 4 (*very characteristic of me*). Responses were summed for each dimension and a total score. Of primary relevance to the present project were the dimensions of *attachment* ($\alpha = .80$; reflecting difficulties in interpersonal affiliation and emotional bonds), *dominance* ($\alpha = .83$; excessive status seeking, assertiveness, power/control), *emotional* ($\alpha = .76$, shallow, labile emotions, difficulties with affective response), and *self* ($\alpha = .73$, self-centered, self-aggrandizing); as well as the CAPP total score assessing overall psychopathic symptomology.

Although criminal behaviour, especially violent and aggressive action, is argued to reflect selfish concern and dampened care for others (Baumeister et al., 1996; Hastings et al., 2000; Jolliffe & Farrington, 2007), it would be presumptive to assume that criminal offending and selfishness are synonymous. It is possible, for instance, that someone may engage in criminal behaviour for other reasons, such as unfortunate life circumstances. To address this possibility, I asked participants to complete the Psychological Entitlement Scale (PES; Campbell, et. al., 2004; $\alpha = .85$), which captures the belief that one deserves more than others. Responses to this scale allowed me to examine whether criminal activity was associated with a sense of entitlement and selfishness in the present sample. Participants also completed the Balanced Inventory of Desirable Responding (BID-R; Paulhus, 1984; self-deceptive enhancement $\alpha = .73$; impression management $\alpha = .81$) to address the potential concern that individuals alter responding due to impression management concerns or because of a tendency towards ego-enhancement. Finally, participants reported their demographics (age, gender, ethnicity, income) and were once again asked to report their criminal activity within the past 5 years.

lack of association with several of the established markers of maladaptivity typical of psychopathy (see Gatner, Douglas, & Hart, 2016).

3.2.1. Coding

To gain insight into participants' spending behaviour, each recollection was rated by four independent coders along six dimensions of interest for: (i) target (who was the target of spending? e.g. self, friend, romantic partner, etc.; each target coded as 1 = yes, or 0 = no), and (ii) content (what was purchased? food, clothing, an experience, etc.; each item coded as 1 = present, or 0 = absent). In addition, each coder noted (iii) whether the spending experience appeared to make participants feel a particular emotion, as evidenced by spontaneous mention of happiness, general positivity, anger, etc. (each emotion coded as 1 = yes, or 0 = no). Finally, each coder rated the extent to which the purchase appeared to be motivated by (iv) need vs. want (*1 – need, 7 – want*), (v) obligation vs. volition (*1 – obligation, 7 – volition*), and (vi) selfishness vs. generosity (*1 – selfishness, 7 – generosity*). All four coders rated each recollection along each coding dimension; I summed all coder ratings and divided by four to create an average coder score (see Table 3-2 for all coding dimensions and ICCs). When coding dimensions i-iii, coders were instructed to err on the side of caution, only coding something as present if there was clear and explicit evidence. For example if a participant said they took someone out for dinner, but did not specify whom, coders would not assume the relationship of the target as a friend, family member, etc. Coders were blind to condition, well-being reports, and the goals of the study (see Appendix B for coding scheme).

Table 3-2. Coder Reliabilities and Frequency Ratings by Recall Condition for Experiment 2

Coding Dimension (ICC)	Recall Condition	
	Prosocial	Personal
Purchase content		
Personal Necessity (.76)	5.5%	3.0%
Food (.90)	10.3%	17.6%
Transport (.84)	1.3%	1% >
Experience (.95)**	30.2%	13.5%
Illegal (.67)	<1%	<1%
Medical (.93)	1.3%	<1%
Clothing (.97)*	10.8%	24.4%
School (.86)*	1.3%	<1%
Purchase beneficiary		
Self (.97)**	7.7%	97.5%
Friend (.97)**	25%	<1%
Family (.99)**	37.4%	<1%
Partner (.98)**	26.3%	1.2
Charity (.87)*	3.9%	1.0% >
Emotion		
Happiness (.95)*	11.9%	8%
Positivity (.88)	27.4%	29.3%
Negativity (.85)	2.0%	3.9%
Purchase Motivation <i>M</i> (<i>SD</i>)		
Need vs. want (.83)*	5.3 (1.20)	5.0 (1.50)
Obligation vs. volition (.72)*	5.7 (.90)	5.5 (1.1)
Selfishness vs. generosity (.89)**	5.6 (.78)	2.9 (.85)

Note. If coders disagreed, an item was only coded as present if 3 of 4 coders agreed. Coders were instructed to look for spontaneous mention of other emotions (e.g., pride, anger, and hostility), but these emotions were not mentioned. * indicates mean differences between personal and prosocial spending were significant at the .05 level. ** indicates significant differences at the .01 level.

3.3. Results

3.3.1. Criminality, Selfishness, and Psychopathic Tendencies

One of the primary goals of Experiment 2 was to reach an antisocial sample consisting of individuals whose actions indicated dampened concern for others and/or selfish tendencies. Analyses concerning the scope and criminal severity of the sample suggest that I was successful in reaching this population. For instance, nearly half of participants (43.9%) reported committing a serious violent offense (e.g. assault, domestic violence, etc.) within the past 5 years and several individuals had committed

crimes of the highest severity such as murder ($n = 8$), rape ($n = 7$), and sexual assault ($n = 14$); refer to Table 3-1.

One additional piece of data further supports the possibility that I was able to recruit an antisocial ex-offender population. Given that psychopathic tendencies tend to be elevated among criminal populations (Hare, 1998), I expected that scores on psychopathy measures would be elevated within this sample as compared to community samples. Although, clinical cut-off scores are not available for the self-report measures of psychopathy included in the present study, however, I conducted a literature review to determine how the recruited sample compared to other relevant populations. Results of one-sample t -tests revealed that TriPM total scores as well as dimensional meanness and disinhibition scores in this sample ($M_{total} = 133.30$, $SD = 22.99$; $M_{Meanness} = 38.30$, $SD = 11.89$; $M_{Disinhibition} = 45.85$, $SD = 12.16$) were significantly higher than those witnessed in a non-offending community sample (Drislane, Patrick, & Aarsal, 2014: $M_{total} = 120.10$, $SD = 15.67$, $M_{Meanness} = 32.19$, $SD = 7.87$, $M_{Disinhibition} = 35.13$, $SD = 7.44$; all t s > 11 , all p s $< .01$, see Table 3-3). These findings suggest that the ex-offenders included in this sample display elevated levels of callousness and dimensions of psychopathy than those witnessed in the general population.

Table 3-3. TriPM scores reported by participants in Experiment 2 compared with those observed in a non offending community sample.

Variable	Exp. 2: M (SD)	Comparison Sample: M (SD)	Test Stat
TriPM Total	133.30 (22.99)	120.10 (15.67)	$t(500) = 12.87$, $p < .001$
Meanness	38.30 (11.89)	32.19 (7.87)	$t(500) = 11.46$, $p < .001$
Disinhibition	45.85 (12.16)	35.13 (7.44)	$t(500) = 19.73$, $p < .001$

Note: The cited non-offending community sample consisted of 618 undergraduate psychology students recruited from a large public university in the Southeastern region of the United States (Drislane, Patrick, & Aarsal, 2014).

Given that individuals commit crimes for a number of reasons, I examined whether criminal offending was related to selfish tendencies in the present sample. To do so I correlated reports of sense of entitlement captured on the PES with two indices of criminality: the number of violent crimes committed (the sum of self-endorsed violent categories of offending, e.g., assault, rape, etc.) and criminal versatility (the sum of self-endorsed categories of criminal offending). Analyses revealed that both violent crime ($r = .12$, $p = .008$) and criminal versatility ($r = .11$, $p = .01$) were significantly and positively associated with selfishness. These correlations, although small, are consistent with logic

suggesting that criminal offending was associated with elevated levels of self-importance and entitlement in the present sample.

3.3.2. Happiness and Well-being

As with Experiment 1, no differences were detected for baseline well-being between participants in the personal and prosocial spending conditions, $t(499) = .03$, $p = .98$. My key question, however, was whether recalling a previous instance of generous spending led to greater positive affect among ex-offenders than recalling a previous instance of self-directed spending. To find out, I compared post-recollection positive affect reports with an independent samples t-test. Results revealed a marginal difference between conditions, such that participants in the prosocial spending recall condition reported slightly higher levels of positive affect ($M = 3.20$, $SD = .91$) than participants in the personal spending condition ($M = 3.05$, $SD = .91$), $t(498) = -1.71$, $p = .088$, $d = .16$ (see Figure 2-1, p. 14).

To control for individual differences in baseline positive affect that may dilute the predicted effect, I conducted an Analysis of Covariance in which condition assignment was entered as the independent variable, post-recall positive affect was entered as the dependent variable, and baseline positive affect was entered as a covariate. As predicted, when controlling for baseline differences in well-being, participants who were randomly assigned to recall an instance of prosocial spending reported higher levels of positive affect ($M = 3.20$, $SD = 0.91$) than those randomly assigned to recall an instance of personal spending ($M = 3.05$, $SD = 0.91$), $F(1, 497) = 5.78$, $p = .017$, $\eta^2 = .01$.

Importantly, the main effect of condition assignment remained significant when controlling for impression management and self-deceptive enhancement as measured by the BID-R, $F(1, 493) = 5.20$, $p = .023$, suggesting that positive impression and ego enhancement were unlikely to account for the observed effect.

Consistent with predictions and the results of Experiment 1, participants randomly assigned to recall an instance of prosocial spending condition did not report higher levels of trait happiness, $t(498) = .07$, $p = .94$, or life satisfaction, $t(499) = .36$, $p = .72$, than participants who recalled an instance of self-directed spending. However, bootstrap analyses supported an indirect effect of condition via positive affect on trait happiness

(unstandardized indirect effect=.03, 95% CI [.01, .05]) and life satisfaction (unstandardized indirect effect=.03, 95% CI [.01, .06]) when controlling for individual differences in baseline happiness. This finding suggests a mediating effect of positive affect on trait happiness and overall satisfaction with life ($ps < .001$).

3.3.3. Coding

Average coder ratings can be seen in Table 3-2. Independent samples t-tests comparing ratings for each dimension reveal several expected differences. For instance, participants randomly assigned to recall an instance of prosocial spending were more likely to indicate that the beneficiary of their purchase was a friend, family member, romantic partner or charity, than participants asked to recall an instance of personal spending. Similarly, participants in the personal spending condition were more likely to indicate that they were the beneficiary of their purchase.

The content of purchases was similar across recall conditions with the exception of experiences, which were more likely to be mentioned in the prosocial spending condition. In light of past research demonstrating that experiential purchases lead to greater happiness than material purchases (e.g., Van Boven & Gilovich, 2003; Carter & Gilovich, 2010), I examined whether the higher frequency of experiential purchases in the prosocial spending condition accounted for the witnessed effect. Importantly, adding coder ratings of experiences to the ANCOVA described earlier left the main effect of spending condition on post-recall positive affect significant, $F(1, 457) = 6.78, p = .01$.

Coder ratings also provided additional evidence for the robustness of the key finding. First, coder ratings of participants' unprompted emotion labels revealed that individuals in the prosocial spending condition were significantly more likely to spontaneously report being "happy" in their recollections than those in the personal condition, $F(1, 460) = 5.43, p = .02$. Second, although coder ratings did reveal differences in the perceived need vs. want and obligation vs. volition motives of personal and prosocial spending memories, these differences did not account for the observed results. The main effect of recall condition on post-spending positive affect remained significant when controlling for volition (vs. obligation) and want (vs. need) in separate ANCOVA analyses, $Fs \geq 5.50, ps < .02$.

3.3.4. Moderation by Psychopathic Tendency

As in Experiment 1, I examined whether callousness and psychopathic tendencies moderated the emotional rewards of prosocial behaviour. To do so, I conducted separate linear regressions in which baseline happiness, condition (contrast coded: -1 = personal spending, 1 = prosocial spending), antisocial measure (TriPM total score or CAPP total score centered to a mean of zero), and the appropriate interaction term were used to predict post-recall positive affect. While TriPM total score did not significantly predict post recall positive affect ($\beta < .07$, $p > .05$), the relationship between the CAPP and post-recall PA was both significant and positive ($\beta = .09$, $p < .01$). Although this anomaly with the CAPP is somewhat unexpected, the low beta weight associated with this association ($\beta = .09$) suggests this is a somewhat negligible result. More importantly, in both regressions the interaction terms were non-significant ($\beta s < -.005$, $ps > .95$) and the main effect of condition remained significant ($\beta s > .07$, $ps < .02$; see Table 3-4 for full breakdown).

Table 3-4. Regression table for interaction analyses in Experiment 2 (n=501)

	B	Standard Error	Beta	<i>p</i>
TriPM Total				
Baseline happiness	.71	.03	.70	<.01
Condition	.07	.03	.08	.01
TriPM	<.01	<.01	.06	.05
Interaction	<.01	<.01	<.01	.99
CAPP Total				
Baseline happiness	.72	.03	.70	<.01
Condition	.07	.03	.08	.02
CAPP	<.01	<.01	.09	<.01
Interaction	<.01	<.01	<-.01	.96
TriPM Disinhibition				
Baseline happiness	.70	.03	.69	<.01
Condition	.07	.03	.08	.02
TriPMDisinhibition	<-.01	<.01	-.03	.34
Interaction	<.01	<.01	-.01	.88
TriPM Meanness				
Baseline happiness	.72	.03	.70	<.01
Condition	.07	.03	.08	.02
TriPM Meanness	<.01	<.01	.04	.20
Interaction	<-.01	<.01	-.01	.67

	B	Standard Error	Beta	<i>p</i>
TriPM Boldness				
Baseline happiness	.65	.03	.63	<.01
Condition	.07	.03	.08	.01
TriPM Meanness				
Baseline happiness	.02	<.01	.20	<.01
Interaction	<.01	<.01	.02	.52
CAPP Self				
Baseline happiness	.71	.03	.70	<.01
Condition	.07	.03	.08	.01
CAPP Attachment				
Baseline happiness	.03	.01	.14	<.01
Interaction	.01	.01	.03	.43
CAPP Emotional				
Baseline happiness	.73	.03	.71	<.01
Condition	.07	.03	.08	.02
CAPP Dominance				
Baseline happiness	.03	.10	.08	.01
Interaction	<-.01	.01	-.01	.664
CAPP Boldness				
Baseline happiness	.72	.03	.70	<.01
Condition	.07	.30	.08	.02
CAPP Meanness				
Baseline happiness	.02	.01	.07	.04
Interaction	<.01	.01	.01	.87
CAPP Dominance				
Baseline happiness	.72	.03	.70	<.01
Condition	.07	.03	.08	.02
CAPP Meanness				
Baseline happiness	.03	.01	.12	<.01
Interaction	<-.01	.01	-.02	.620

Three additional regressions examined whether any sub-dimension of psychopathy captured on the TriPM (meanness, disinhibition, and boldness) moderated the relationship between spending condition and well-being. In most cases antisocial measure score (total and dimensional) did not significantly predict well-being (β s < .07, all p s > .05.⁵ Critically, however, results indicated that the impact of spending condition on positive affect was not moderated by any sub-dimension of psychopathy in the present sample (β s < .02, all p s > .50) and the main effect of spending remained significant in all three regressions (β s > .07, p s < .02). This pattern of findings is particularly striking for the sub-dimension of meanness, which captures a lack of emotion and insensitivity towards others.

⁵ The one exception was boldness, which significantly predicted post-recall positive affect ($\beta = .20$, $p < .001$). This finding is not unexpected given the current controversy surrounding the boldness domain in Patrick's model, and is consistent with recent findings in the literature (Gatner, Douglas, & Hart, 2016).

To explore the relevant CAPP sub-domains, four final regressions were conducted to assess moderation by attachment, emotional, self, or dominance sub-dimension. Results indicated that across all CAPP sub-domain scores significantly positively predicted well being (all $ps < .04$; $\beta s < .15$) however subsequent bivariate correlations revealed that only the self domain was significantly associated with post-recall PA ($r = .11$; $p = .05$). Once again, results indicated that the impact of spending condition on positive affect was not moderated by any sub-dimension of psychopathy in the present sample ($\beta s < .03$, all $ps > .4$) and the main effect of spending remained significant in all three regressions ($\beta s > .07$, $ps < .02$; see Table 3-4).

3.4. Discussion

The results of Experiment 2 suggest that ex-criminal offenders experience the emotional rewards of prosocial spending. Controlling for baseline levels of happiness, ex-offenders randomly assigned to recall a time they spent money on others reported greater positive affect afterward than those assigned to recall a time they spent money on themselves. Findings remain when alternative explanations, such as social desirability and various purchasing motives, are controlled for statistically. Given that the recollection manipulation employed here was brief and subtle, these findings provide a conservative test of the potential emotional benefits of prosocial spending in an antisocial sample.

Although the recollection paradigm used in Experiment 2 afforded the opportunity to assess the emotional impact of prosocial action over an extended timeframe (e.g. memories of prosocial events), a design of this nature precluded my ability to assess the emotional consequences of instances of immediate generous behaviour. As such, in Experiment 3 I was interested in harnessing the reality of the manipulation strategy employed in Experiment 1, while maintaining the advantage of large sample recruitment afforded by the mTurk platform. To do so, I utilized the same recruitment and screening strategy adopted in Experiment 2 and adapted the goody-bag experimental paradigm from Experiment 1 to make it appropriate for use online. Here, all participants earned a small extra sum for study participation (in addition to their base pay) and were randomly assigned to use the funds to purchase a small item for either themselves (*personal spending*) or a children's charity through the non-profit organization DonorsChoose.org (*prosocial spending*). Afterward participants reported their current positive affect, and

completed a measure of beneficence satisfaction (or satisfaction derived from feeling as though one has had a positive impact on others). The rationale for including this scale was to shed light on the causal pathway that might underlie increases in positive affect subsequent to prosocial spending.

While the tightly controlled design of Experiments 1 and 2 allowed me to rule out several alternative explanations for self-reported increased positive affect in the prosocial spending conditions (e.g. expectation of gratitude, expectation of reciprocal exchange, public positive self-presentation), I did not assess the underlying mechanism. Indeed, there are several reasons that individuals may experience emotional rewards after engaging in prosocial action. For example, it is possible that the boost in positive affect stems from the opportunity for positive self-reflection afforded by generous behaviour or from the motivation to engage in behaviours that might bolster social reputation (e.g. Bénabou & Tirole, 2006). However it is also possible that individuals derive happiness from these actions for purely intrinsic reasons, such as satisfaction resulting from helping others (Martela & Ryan, 2015). As such the inclusion of the Beneficence Satisfaction Scale (Martela & Ryan, 2015) allowed me to explore whether beneficence satisfaction would mediate the relationship between prosocial spending and positive affect.

Participants also filled out the same risk criteria measures included in Experiment 2, and completed demographics items. I predicted a replication of the main findings of Experiment 1 and 2 in that ex-offenders who engaged in prosocial action would report higher levels of positive affect than those who spent on themselves. Additionally, I predicted that beneficence satisfaction would mediate the relationship between prosocial spending and positive affect. Finally, in line with results of Experiments 1 and 2, I anticipated that scores on psychopathy measures would not moderate the relationship between spending condition and positive affect.

Chapter 4. Experiment 3

4.1. Participants

Eight hundred and forty-eight adults with a self-reported history of serious criminal activity were recruited through Amazon's Mechanical Turk in exchange for a monetary payment. Consistent with Experiment 2, I relied on self-reported history of criminal offending and employed the same criminal activity check utilized above to ensure a match between self-reported criminal activity at time 1 (initial inclusion criteria) and time 2 (at the very end of the 200+ question survey). Self-report of criminal history was found to be consistent across T1 and T2 for all participant responses, meaning that no participants were excluded from the data for this reason. Of the final sample of 848 participants ($M_{age} = 31.72$, $SD = 16.77$, 68% male), the majority of participants identified as Caucasian (55.7%), however Asian (25.0%), Black/African American (9.0%), Hispanic/Latino (5.0%) and Indigenous (3.3%) ethnicities were also represented. Sample size was once again predetermined through an a priori power analysis indicating that a sample size of at least 800 would allow for the detection of a small effect ($d = .20$) with an alpha of .05 and a minimum power of .80.

4.1.1. Inclusion Criteria

As in Experiment 2, participants were told that they must have engaged in prior criminal activity to take part in the survey. Specifically, to qualify participants must have reported engagement in one of the following events within the past 5 years: (1) having been arrested for a major felony offense one or more times, or having committed a felony level offense, or (2) engaging in *extensive* criminal/illegal activity.

4.2. Procedure

Participants were first asked to report their recent criminal behaviour. Here I adopted a slightly revised method of assessing criminal history and the extent of criminal activity than used in Experiment 2. Specifically, participants completed Le Blanc and Fréchette's (1989) crime seriousness scaling method. This scale allowed me to create an indicator of offending which accounts for frequency and seriousness of offending. The

scaling technique allows more weight to be attributed to more serious crimes (e.g. homicide =31.1 vs. common theft = 5.7) and less to more trivial offenses allowing for the computation of offending gravity scores (Kazemian & Le Blanc, 2007). Individuals were once again asked to indicate any and all criminal activities they had engaged in within the past 5 years from the list of 11 criminal offenses provided in the scale, including: Homicide, fraud, sex offenses (rape, sexual assault), drug offenses (trafficking, distribution), aggravated theft, personal attack (assault, domestic violence, offensive weapon), motor vehicle theft, personal larceny, burglary, common theft, and vandalism. Participants were then also asked to indicate frequency of engagement in the criminal activities they specified. Participants who selected at least one criminal action and whose frequency counts for this action were greater than zero were allowed to continue the study, while those who did not meet this restriction were informed they did not qualify.

After completing the qualification criteria, participants reported their baseline levels of well-being using the same items from Experiments 1 and 2 with the addition of the item “proud.” Scores on these items were positively correlated, $r_s > .10$, $p_s < .001$, and combined to create a single measure of baseline well-being. All participants then completed a version of the goody-bag paradigm used in Experiment 1 adapted for online implementation.

4.2.1. Goody-Bag Paradigm

After completing baseline well being, participants were informed that they had earned an additional \$0.10 for their participation in the study. As with Experiment 1, these funds were represented in the form of a voucher and participants were asked to sign and take ownership of the funds using their mTurk worker IDs. Participants were then directed to a survey page and were given the option to make a purchase with their additional funds. Critically, individuals randomly assigned to the *prosocial spending* condition were given the option use their funds to make a donation to one of two charity projects listed online through the non-profit organization DonorsChoose.org—a charitable crowdsourcing platform that allows individuals to donate directly to public school classroom projects. Specifically, participants were given the choice to donate either (a) healthy snacks, or (b) writing supplies to a high poverty classroom in the United States. Individuals randomly assigned to *personal spending* condition on the

other hand, were given the option to purchase similar items, such as healthy-snacks (Nature Valley Granola Bars) or writing supplies (pens, pencils, markers) for themselves.

As with Experiment 1, participants in both conditions were also given the opportunity to opt-out of purchasing snack or writing items for themselves or a classroom and keep the cash-value of the voucher (\$.10) for themselves. Given the impersonal nature of an online platform, and the dampened immediacy of reading about purchase options as opposed to viewing the tangible objects of purchase (as in Experiment 1) I was concerned I may witness a high opt-out rate. To mitigate this concern, I adopted a two-fold strategy to discourage participants from opting out of the manipulation: First, all participants were informed that the research team would multiply their spending power by 10 should they choose to buy items for themselves or a classroom (\$1.00 value). Second, all participants were told that those who elected to keep the \$.10 for themselves would need to call study coordinators (lab-phone number provided), at a later date 6 months in the future to have the funds credited to their account.

Despite these conditions, 168 individuals (N=71 *prosocial* spending; N=97 *personal* spending) opted out of purchasing snacks or writing supplies and choose to take the cash value for themselves. Although this opt-out rate is slightly higher than observed in earlier work (Aknin et al., 2013), proportionately speaking, this percentage is lower than the opt-out rate observed in Experiment 1 (19% vs. 26.5%). Further, individuals in the prosocial condition who choose to take the cash voucher for themselves did not differ from the rest of the sample in terms of criminal behaviour, $t(75.46) = -1.32, p = .19$, violent activity, $t(20.98) = -1.82, p = .08$, or self-reported boldness, $t(97.56) = -.06, p = .95$, and disinhibition, $t(90.85) = -.99, p = .32$.⁶ Prosocial opt-outs did, however, report higher levels of antisociality on the overall TriPM, meanness sub-dimension of the TriPM, and CAPP ($ts > -2.20, ps < .02$). However, even when prosocial opt-outs are excluded from the data set, the remaining sample still reports significantly higher levels of psychopathic traits and antisocial tendencies than those witnessed in community samples (all $ts > 16.60$, all $ps < .01$; see Table 4-1). Most importantly, results of the primary analyses hold when controlling for impression management and socially

⁶ Levene's test for equality of variances was found to be violated for these analyses ($ts > .90, ps < .03$), owing to these violated assumptions t statistics not assuming homogeneity of variances were computed and reported.

desirable responding if prosocial opt-outs are included in analyses $F(1,848) = 4.109, p = .04$.⁷

Table 4-1. TriPM scores reported by participants in Experiment 3 compared with those observed in a non-offending community sample.

Variable	Exp. 3: <i>M (SD)</i>	Comparison Sample: <i>M (SD)</i>	Test Stat
TriPM Total	139.82 (22.12)	120.10 (15.67)	$t(500) = 25.93, p < .001$
Meanness	38.65 (10.85)	32.19 (7.87)	$t(500) = 16.60, p < .001$
Disinhibition	49.04 (11.57)	35.13 (7.44)	$t(500) = 40.60, p < .001$

Note: The cited non-offending community sample consisted of 618 undergraduate psychology students recruited from a large public university in the Southeastern region of the United States (Drislane, Patrick, & Arsal, 2014).

Consistent with Experiment 1 and past work (Aknin et al., 2013) participants in the prosocial condition who opted out of buying a goody-bag were excluded from analyses because they did not engage in a prosocial action, and those who opted out of the personal condition were retained in analyses because these individuals engaged in a personally beneficial action (results do not change if these individuals are excluded).

After making their purchase choice participants were directed to a survey page displaying a purchase specific thank you card: Those in the prosocial condition were informed that their donation of healthy snacks or writing supplies to a high needs classroom had been processed, and those in the personal condition were told that they would receive further information about the delivery of their item at the end of the survey.⁸

⁷ When SDE and IM are left out of the model the main effect of condition weakens slightly $t(846) = -1.87, p = .06$.

⁸ In order to avoid collecting any personally identifying information such as email addresses, those in the personal spending condition received the \$1.00 value of the item they had elected to purchase as a bonus to their mTurk within 10 days of study close. Similarly, those who opted out of either condition received a their \$.10 in the same fashion and timeframe. In order to protect against data contamination as a result of information being shared by mTurk workers in online message forums I employed a delayed debriefing protocol, wherein all individuals were sent debriefing forms and bonus payments after all data had been collected (within 10 days of study close).

4.3. Measures

Immediately after making their purchase decision all participants again reported their well-being using the PANAS plus the additional items “happy” and “sad” (PA: $\alpha = .92$; NA: $\alpha = .96$). The trait level measures of happiness included in Experiments 1 and 2 (SWLS; SHS) were dropped from Experiment 3 for the sake of brevity. Participants instead completed the Beneficence Satisfaction Scale ($\alpha = .92$, Martela & Ryan, 2016), a short, 4-item scale that measures satisfaction derived from the feeling of having a positive impact on others.

Participants then completed the same measures of psychopathic personality and callousness/unemotionality included in Experiment 2: TriPM, (total score: $\alpha = .90$, meanness: $\alpha = .91$, boldness: $\alpha = .80$, disinhibition: $\alpha = .90$); CAPP (Total score: $\alpha = .96$), along with the Psychological Entitlement Scale ($\alpha = .91$).

Finally, participants completed the BID-R to capture impression management and self-deceptive enhancement to address the potential concern that individuals may alter responding due to social desirability concerns, or because of a tendency towards ego-enhancement (self-deceptive enhancement: $\alpha = .91$; ego-enhancement $\alpha = .78$) and reported their demographics (age, gender, ethnicity, etc.). Finally, participants reported their criminal activity within the past 5 years once again.

4.4. Results

4.4.1. Criminality, Selfishness, and Psychopathic Tendencies

As in Experiment 2, a primary aim of Experiment 3 was to reach a sample of individuals with antisocial and/or psychopathic trait tendencies and an extensive criminal history. Analyses indicate that I was successful in reaching this population. As in Experiment 2 independent samples *t*-tests revealed that observed means on key antisocial measures in Experiment 3 were significantly higher than those commonly witnessed in community samples; see Table 4-1 for means and *t*-test results. These findings suggest that the ex-offenders included in this sample display elevated levels of callousness and dimensions of psychopathy than those witnessed in the general population.

Analyses also revealed that I was able to successfully recruit an ex-offender sample. For example, a relatively high number of participants in Experiment 3 endorsed severe criminal offenses such as homicide (3.2% of sample) and sexual violence (10.1%); see Table 4-2 for full breakdown. Further, a substantial portion of the sample (~36%, n= 276) reporting engaging in two or more offending categories, suggesting I was also able to successfully recruit a large number of criminally versatile individuals for this study.

Table 4-2. Reported criminal activity in Experiment 3 (n=777).

Offense Type	Experiment 3 % (n)
Drug Offense (distribution, trafficking)	36.6% (285)
Fraud	24.9% (194)
Personal Attack (Assault, domestic violence, offensive weapon)	22% (171)
Common Theft	17.5% (136)
Vandalism	13.2% (103)
Motor Vehicle Theft	10.4% (81)
Sex Offense (rape, sexual assault)	10 % (78)
Burglary	8.9% (69)
Personal Larceny	8.6% (67)
Aggravated Theft (robbery)	6.7% (52)
Homicide	3.5% (27)
Arrest:	
Yes	72.6% (564)
No	27.4% (213)

Note: Some individuals in this sample reported committing more than one type of offense. In the event that *n* sums to greater than 777, this is due to participants reporting more than one offense type in the past 5 years.

In examining the association between criminal offending and selfish tendencies/compassion for others, I correlated sense of entitlement as measured by the PES with a dichotomous violent offending variable (violent offense *yes/no*) and breadth of criminality (sum of self endorsed offending categories). Results of bivariate analyses revealed that both indices of criminality were significantly and positively associated with sense of entitlement (violent offending: $r(775) = .10, p = .01$; criminal versatility: $r(775) = .11, p < .01$), findings which are consistent with the notion that criminal behaviour was associated with selfish tendencies in the present sample.

4.4.2. Happiness and Well-being

As with Experiments 1 and 2, no differences were detected in baseline well-being between participants in the personal and prosocial spending conditions, $t(775) = 1.51, p$

= .13. The key analysis however, was to explore whether ex-offenders who donated an item to a children's charity would experience higher positive affect than those who purchased the same items for themselves. Results of an independent samples t-test revealed support for my prediction in that ex-offenders in the prosocial spending condition reported significantly higher post-spending positive affect ($M = 3.44$, $SD = .91$) than did those in the personal spending condition ($M = 3.25$, $SD = .91$; $t(775) = -2.06$, $p = .04$, $d = .15$; see Figure 2-1, p. 14). Importantly, when controlling for socially desirable responding and self-deceptive enhancement as measured by the BID-R in a one way ANCOVA, the main effect of condition not only remains significant, but strengthens slightly, $F(1, 773) = 5.10$, $p = .02$, $\eta^2 = .01$. Similarly, findings strengthen slightly when controlling for individual differences in baseline positive affect, $F(1, 774) = 16.78$, $p < .01$, $\eta^2 = .02$.

Finally, in seeking to explore the mechanism by which spending condition influenced positive affect I employed regression analysis to determine whether beneficence satisfaction mediated the effect of condition on post-purchase positive affect. Evidence for mediation was confirmed in testing the indirect effect using a bootstrap estimation approach indicating that the indirect coefficient was significant (unstandardized indirect effect = .42, 95% CI [.34, .51]).

4.4.3. Moderation by Psychopathic Tendency and Criminal Severity

Consistent with Experiments 1 and 2, I explored whether callousness and psychopathic trait tendencies moderate the emotional rewards of prosocial behaviour. Here I adopted the same method of analysis employed in Experiment 2 wherein contrast coded condition, centered measure score, and the appropriate interaction term were all entered as predictors into a linear regression predicting post-spending positive affect. A total of eleven linear regressions were conducted to determine whether total or dimensional psychopathy scores moderated the relationship between spending condition and positive affect. Overall, results of analyses indicated a positive and significant association between several of the psychopathy measure scores and positive affect (CAPP total = .12, self = .24, dominance = .13, TriPM total = .13, TriPM Boldness = .30).⁹

⁹ The attachment dimension of the CAPP and the disinhibition dimension of the TriPM did not significantly predict positive affect, (β s < .07, p s > .06)

However, as with Experiment 2 the beta weights associated with significance values were fairly low (β s < .14, ps > .01),¹⁰ and follow-up bivariate correlations revealed small (all r^2 < .13) significant associations only for TriPM and CAPP total scores and the dominance dimension of the CAPP. Larger associations with positive affect were detected at the correlational and regression level for the boldness dimension of the TriPM (r^2 = .30, p < .01; β = .30, p < .01) and the self domain in the CAPP (r^2 = .24, p < .01; β = .24, p < .01), suggesting a non-negligible pattern of relation between the boldness and self domains and positive affect in the present sample.¹¹ More importantly, across all nine regressions the interaction terms were non-significant (β s < .07, ps > .10), and the main effect of condition remained significant (β s > .06, ps < .04; see Table 4-3 for regression results).

¹⁰ Although I cannot fully explain the unanticipated positive association between positive affect and the total scores on the CAPP and TriPM, past research has demonstrated a non-significant pattern of relationship between the narcissism domain of psychopathic traits and well being (see Egan, Chan, & Shorter, 2014) and selfishness has been found to positively associate with positive mood (see footnote below). Given the prominence of narcissistic character traits in both measures, this could help to explain these findings.

¹¹ Given the controversy surrounding the boldness domain and its association with adaptive functioning, this result is not unexpected and is consistent with recent findings in the literature (Gatner, Douglas, & Hart, 2016; Miller & Lynam, 2012). Although this finding may be somewhat less expected for the self domain of the CAPP, a closer look at the domain and its response items provides some insight as to why this association may be observed. The majority of response items in the CAPP self-domain relate most clearly to narcissistic tendencies (e.g. self-centered, self-aggrandizing, sense of uniqueness, self-justifying), which from a logical perspective may not necessarily be associated with decreased positive affect. Indeed, in the present sample sense of entitlement is also positively associated with positive affect (r = .27, p < .01). These findings also fit with literature on narcissism and selfishness, which suggests that narcissistic individuals experience greater positive and negative mood variability and mood intensity than do less narcissistic individuals (e.g. Rhodewalt, Madrian, & Cheney, 1998).

Table 4-3. Regression table for interaction analyses in Experiment 3 (n=777)

	B	Standard Error	Beta	P
TriPM Total				
Condition	.07	.03	.08	.02
TriPM	<.01	<.01	.13	<.01
Interaction	<.01	<.01	.04	.30
CAPP Total				
Condition	.07	.03	.08	.02
CAPP	.01	<.01	.12	<.01
Interaction	<.01	<.01	.04	.30
TriPM Disinhibition				
Condition	.07	.03	.08	.02
TriPMDisinhibition	<-.01	<.01	-.03	.34
Interaction	.01	<.01	.06	.10
TriPM Meanness				
Condition	.07	.03	.08	.03
TriPM Meanness	<.01	<.01	.05	.17
Interaction	<-.01	<.01	.03	.48
TriPM Boldness				
Condition	.07	.03	.07	.03
TriPM Boldness	.04	<.01	.30	<.01
Interaction	<.01	<.01	.02	.51
CAPP Self				
Condition	.08	.03	.09	.0
CAPP Self	.05	.01	.24	<.01
Interaction	.01	.01	.04	.23
CAPP Attachment				
Condition	.07	.08	.07	.04
CAPP Attachment	<.01	.01	.01	.72
Interaction	.01	.01	.02	.50
CAPP Emotional				
Condition	.07	.03	.08	.03
CAPP Emotional	.02	.01	.06	.11
Interaction	<.01	.01	.01	.79
CAPP Dominance				
Condition	.08	.03	.09	.02
CAPP Dominance	.03	.01	.14	<.01
Interaction	.01	.01	.04	.23

In order to build on the findings of Experiments 1 and 2 and broaden my exploration of moderation by psychopathic traits to also include criminal severity, I created an offense-gravity variable using Le Blanc and Fréchette's (1989) method of scaling criminal gravity (see also Kazemian & Le Blanc, 2007). Here I assigned a

weighted seriousness score to each offending category included in the participant screening process (homicide = 31.1, fraud = 6, sex offenses = 14.3, drug trafficking and distribution = 17.2, aggravated theft = 11.54, personal attack = 13.21, motor vehicle theft = 6.7, personal larceny = 7.1, burglary 6.43, common theft = 5.07, vandalism = 1.8) and multiplied seriousness scores by self-reported frequencies. These scores were then summed across all endorsed offenses creating a total offense gravity score for each participant. Using this score I sought to determine whether criminal severity moderates the relationship between condition and post-spending affect. To do so I again conducted a linear regression where contrast coded condition, criminal severity score centered to a mean of zero, and the interaction term were entered as criterion variables into a model predicting positive affect, and SDE and IM were entered as covariates. Unsurprisingly, results of this analysis indicated that criminal severity negatively predicted positive affect ($\beta = -.10, p < .01$). More importantly however, I did not detect evidence of moderation by criminal severity ($\beta = .06, p = .10$), and the main effect of condition remained significant ($\beta = .10, p = .03$). These findings suggest that the emotional benefits of prosocial spending are detectable across the scope of criminal offending severity witnessed in this sample.

4.5. Discussion

Taken together, these findings suggest that adult ex-offenders experience emotional benefit from prosocial action. Here I strengthened the generalizability of the results of Experiment 2 by demonstrating that ex-offenders who engage in a real instance of prosocial action through the donation of earned funds report higher levels of positive affect than those who use the funds to purchase items for themselves. Importantly, these findings hold when statistically controlling for impression management and socially desirable responding as well self-deceptive positivity or ego enhancement. Further, there was no evidence of a dampening or reversal of the emotional benefits of prosocial action within the most criminally severe or antisocial portions of the sample, therefore providing further support that these rewards may be accessible to populations of this nature.

Chapter 5. General Discussion

The present research is the first to examine whether the emotional rewards of generous behaviour are observable among individuals with criminal histories and antisocial inclinations. In Experiment 1, high-risk youth and juvenile delinquents with antisocial tendencies reported greater happiness after purchasing a goody-bag for a sick child at a local hospital than after purchasing a similar item for themselves. This result emerged even though participants did not give the goody-bag directly to the recipient and no one was aware of their kind deed, suggesting that the emotional benefits of generosity are not simply the result of anticipated reciprocity or social praise. In Experiment 2, controlling for baseline differences in well-being, adult ex-offenders who recalled spending \$20 on someone else reported higher positive affect than those who recalled spending the same amount on themselves. These findings suggest that the emotional benefits of giving are accessible when remembering past instances of prosocial behaviour, supporting the notion that the hedonic rewards of generous behaviour are a robust phenomenon. In Experiment 3, I was able to detect the emotional benefits of prosocial action among ex-offenders who completed a real prosocial purchasing task. Here individuals randomly assigned to use earned funds to donate items to a children's charity reported higher levels of positive affect than those who spent earned funds on themselves, therefore extending the generalizability of the findings of Experiment 2 to include actual instances of prosocial behaviour in addition to recollections of past generous action.

These findings are consistent with and extend upon arguments for the universal emotional benefits of prosocial behaviour. Converging evidence from three tightly controlled experimental studies employing different methods among diverse samples suggest that prosocial spending has emotional rewards that are detectable among high-risk, selfish, and antisocial populations. As such, these findings replicate the emotional benefits of generous action in a new and theoretically relevant sample. Although detecting the warm-glow of giving in ex-offender and high-risk populations does not independently provide conclusive evidence for a psychological universal, these findings add to the growing body of work indicating that the emotional benefits of prosocial action are not only detectable across the globe (Aknin et al., 2013; 2015) and at various ages (Aknin et al., 2012; 2015), but across a range of actors as well.

Several steps were taken to recruit antisocial samples for a stringent and face-valid test of my hypothesis. For example, all participants in Experiment 1 were recruited through programs designed for at-risk and delinquent youth struggling with conduct and behavioural issues and only those surpassing the minimum inclusion criteria were included. Similarly, in Experiments 2 and 3, extensive efforts were made to recruit large antisocial samples with a history of criminal behaviour. Although I could only obtain participants' self-reported criminal history (a common practice in the field of forensic psychology), I excluded participants who did not indicate the same criminal history at the start and end of the survey to remove those who may have lied about their past. In addition to targeted recruitment and inclusion criteria, samples across all three experiments reported elevated levels of antisocial and psychopathic tendencies in comparison to community samples, suggesting that I was successful in recruiting antisocial individuals in the community and online. That said, in none of the three experiments conducted here was I able to reach a population containing the most extreme or extraordinary antisocial actors, such as those currently incarcerated for extensive criminal careers, or acts of extreme criminality. Future research could try to gain access to these individuals to test for potential boundary conditions at extremely high levels of antisocial responding.

It is worth noting that individuals who exhibit high levels of psychopathic tendencies may have trouble distinguishing and reporting on both their own and others emotions, which raises some potential concerns about the emotional self-report data collected here. The emotional deficits associated with psychopathy have been shown to result in decreased physiological responses to both negative (Patrick & Bradley, 1993; Patrick, Cuthbert & Lang, 1994) as well as positive (Herpetz, et. al., 2001) emotional stimuli. However this emotional hyporesponsiveness is often not mimicked in self-report of emotional response (Patrick & Bradley, 1993; Herpetz et. al., 2001), suggesting dissociation between physiological response and self-reported emotion. Supporting this notion, recent work has demonstrated that psychopathic individuals may exhibit somatic aphasia (or an inability to accurately identify ones own somatic states; Gao, Raine, & Schug, 2012), and semantic aphasia (or the mislabeling of affective experience) has been consistently theorized to be present within individuals with psychopathic traits (see Lilienfed, Fowler, & Patrick, 2006). However, despite the potential difficulties surrounding the identification and self-report of emotion for individuals with psychopathic traits, from

a logical perspective this particular feature of psychopathic tendency would likely make results harder (as opposed to easier) to detect—suggesting this concern may be of limited relevance in interpreting the present findings.

A related, and more relevant concern relates to the tendency towards deception and impression management in individuals with psychopathic traits, and the way this tendency might affect self-report responding (see Lilienfeld, 1994; Lilienfeld, Fowler, & Patrick, 2006). From a clinical perspective, one of the cardinal features of psychopathic personality is dishonesty (Cleckley, 1941), and as noted by many scholars, the nature of this dishonesty varies according to situational demands—such as when placed in a situation where crafting a positive impression is desirable, or when given the opportunity to reflect upon oneself as a principled and respectable character (see Lilienfeld, et. al. 2006). Although I did not have the means with my data to directly address all potential motivations behind the self-reported increase in positive affect subsequent to giving witnessed in the ex-offender sample included in this study, I recognize that various motives could be at play and recommend that future research more thoroughly explore these possibilities. In particular, future research could explore more thoroughly the underlying causal mechanism behind increases in self-reported positive affect through exploration of multiple mediators—paying special attention to mediator interactions.

This being said, the data *do* provide the grounds for ruling out several proximal alternative explanations. For example, Experiments 1, 2, and 3 precluded direct contact with others during the manipulation (e.g. a beneficiary, research assistants, peers, etc.) therefore ruling out immediate praise or opportunity for public positive self-presentation as explanations for increased self-reported positive affect subsequent to giving. Further, participants were unaware that another condition existed (i.e. personal vs. prosocial spending) therefore lessening social desirability concerns because participants were unable to anchor responses to relative comparisons between selfish vs. other directed spending. Finally, in line with past findings (e.g. Hare, 1982; Lilienfeld & Andrews, 1996) the measures of psychopathic traits employed in the present study were significantly *negatively* correlated with social desirability and positive impression management as measured by the BID-R. Further, in both Experiment 1 and Experiment 2 the significant effect of prosocial action on positive affect held, even when statistically controlling for both other-oriented (impression management and social approval), as well as self-oriented (ego enhancement) deception. Taken together, these findings and the

particulars of study design across all experiments suggest that genuine increases in positive affect subsequent to helping others could be the driver of the results witnessed here.

While this is the first work that I am aware of to rigorously examine the emotional rewards of prosocial spending in antisocial populations, this research is not without limitations. First, although the sample size in Experiment 1 is low (Simmons, Nelson, & Simonsohn, 2011), I included all eligible youth for whom I was able to obtain parental consent and who provided interpretable data (i.e. without language barriers or excessive missing content). I worked with my advisor to set a pre-determined data collection stopping rule, precluding me from restricting or inflating the recruited sample to obtain favorable results. While a larger sample would have certainly been desirable, I argue that findings from Experiment 1 are valuable for several reasons. First, I was able to look at real spending decisions and their immediate emotional consequences in a tightly controlled experimental paradigm. Second, as has been noted elsewhere (e.g. Norenzayan & Heine, 2005), the relative time, expense, and logistical difficulty required to reach unique and/or protected populations may necessitate moderation of some research standards, including sample size requirements, to increase the generalizability of findings to humans more broadly.

Another limitation of the presented work concerns the somewhat smaller effect size ($d=.15$) observed in Experiment 2. However, although effect size is certainly an easily recognizable and popular measure of the importance of an effect, it is not the only way to demonstrate that an effect is important. As noted by Prentice and Miller (1992) importance can also be recognized through study design as a function of the subtlety of the manipulation of the independent variable. Here the strength of an effect can be conceptualized not simply as proportion of variance, but instead from the fact that slight manipulations of the independent variable account for any variation at all. In line with this reasoning, the manipulation employed in the second experiment was much less powerful and precise (past purchase recall) than that which was employed in the first (immediate purchasing task), therefore making the observance of a smaller effect in line with apriori predictions regarding the relationship and consistent with effect sizes reported in past work utilizing the same paradigm (Aknin, et. al., 2011; Aknin et al., 2013).

Finally, in Experiment 3 the individuals who opted out of the prosocial spending condition (N=71) and were excluded from analyses did report elevated levels of antisociality on several domains as compared to the rest of the sample—which is somewhat unsurprising given that opting-out of the prosocial spending condition is by nature a selfish act. However, even when these individuals are excluded from the dataset, the mean levels of psychopathic tendency observed in the remaining sample are significantly higher than those witnessed in community samples. Further, results of key analyses remain unchanged when these individuals are included in the data in that individuals in the prosocial spending condition still report significantly higher positive affect than those in the personal spending condition, even when controlling for impression management and self-deceptive enhancement. In sum, these findings suggest that the exclusion of individuals who opted out of the manipulation and did not engage in prosocial spending does not compromise the validity of reported findings.

A final possible limitation is that all studies focused on prosocial spending as specific form of generous behaviour. While using money to benefit others is a common way to assist others (Liu & Aaker, 2008; Nelson, et. al., 2016), other options, such as donating one's time or skill, exist as well. As such, future research could examine the emotional benefits of other displays of prosocial behaviour in high-risk populations. For example, volunteering for organizations of personal interest or mentoring other youth on early paths to antisocial behaviour may also promote well-being for ex-offenders. Indeed, it is possible that repurposing a criminal past as a source of change for oneself and others could provide a variety of benefits (Lebel, Richie, & Maruna, 2015).

Finally, the present work offers important practical implications for forensic psychology and the criminal justice system. Converging evidence from three studies spanning both adult and juvenile populations suggests that ex-offenders and individuals with criminal, antisocial, and selfish tendencies experience emotional benefits from helping others. These findings may humanize ex-offenders who are often viewed as irredeemable (Gaubatz, 1995; Lebel, 2008, Pager, 2003) and could offer guidance for re-evaluating how criminal and high-risk populations are treated. Indeed, the present evidence suggests that altruistic based intervention strategies may provide effective routes for treatment. This possibility aligns with emerging offender rehabilitation theories that advocate for strength-based approaches to inmate or offender reintegration and rehabilitation, endorsing the notion that happiness and individual well-being may serve

as a buffer for repeat offending (Barnao, Ward, & Robertson, 2015; Gredecki & Turner, 2009; Lebel, et. al, 2015; Ward, Mann, & Gannon, 2007; Ward & Stewart, 2003). As such, interventions designed to increase prosocial behaviour may be especially well suited to encourage desistance from criminal lifestyles.

Although the insights provided by the present data suggest that prosocially focused interventions may provide additional benefits for offender intervention programs, it should be noted that a large and well-validated body of literature has established that treatment and intervention strategies for offenders must pay due attention to key criminogenic needs—personality and situational characteristics which directly relate to an individual’s likelihood of reoffending (e.g. antisocial attitudes and peers, family dysfunction, school difficulties, etc; see Andrews et. al., 1990; Andrews & Bonta, 2010; Andrews, Bonta & Hodge, 1990). Given the well established nature of these findings, it would be my recommendation that attempts to form treatments and offender rehabilitations strategies heavily focused on altruistic and prosocial action also maintain an equal focus on identifying and addressing these needs and explore how prosocial action may supplement and strengthen an intervention program.

5.1. Conclusion

Past research has found that prosocial behaviour leads to emotional benefits for children and adults in various countries around the globe (Aknin, et. al., 2012; Aknin, et. al., 2013; Dunn, et. al., 2008; Nelson, et. al., 2016), supporting the possibility that the emotional rewards of giving represent a psychological universal (Aknin, et. al., 2013). The present findings extend this possibility in a novel way by demonstrating that the “warm-glow” of giving is even detectable among antisocial actors. Data from both at-risk youth and adult ex-offenders demonstrates that prosocial spending leads to higher well-being than self-directed spending in antisocial populations. By extending the investigation to high-risk, antisocial, and criminal populations I provide a strong test for the emotional rewards of generosity, and demonstrate that these benefits are detectable—even in some of the most unlikely of places.

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Appendix A.

Personal and Prosocial Goody-Bag Condition Materials Used in Experiment 1

We invite you to use this two dollar and fifty cent voucher to purchase a goody bag of candies and/or juice (available to you at a discounted price) for yourself.



Should you choose to purchase a goody bag of candies and/or juice for yourself, please:

1. Find your two dollar and fifty cent voucher attached to the questionnaire.
2. Select which items you would like to purchase by circling the appropriate option on the purchase card on the next page.
3. Bring the two dollar and fifty cent voucher and purchase card to the research assistant.

You may also choose to keep the two dollars and fifty cents for yourself and not purchase these items. If this is your decision, please circle "OPTION 4" on the purchase card on the next page. Then, bring the two dollar and fifty cent voucher and purchase card to the research assistant. Funds will be mailed within 90 business days.

- PLEASE DETACH THIS PAGE FROM YOUR QUESTIONNAIRE -

PURCHASE CARD

Circle your purchase preference:

OPTION 1: Purchase one goody bag with 2 boxes/bags of candy

(approx. retail value \$3.00)

OPTION 2: Purchase one goody bag with 2 packages of juice boxes

(approx. retail value \$3.00)

OPTION 3: Purchase one goody bag with 1 box/bag of candy and 1 juice box

(approx. retail value \$3.00)

OPTION 4: I do not want to purchase these items. I would like to have the funds mailed to me in 90 days.

(Retail value \$2.50)

Participant Number: _____

PLEASE TAKE THIS PURCHASE CARD
AND THE \$2.50 VOUCHER TO THE
RESEARCH ASSISTANT NOW.

We invite you to use this two dollar and fifty cent voucher to purchase a goody bag of candies and/or juice (available to you at a discounted price) for a sick child at Children's Hospital.



Should you choose to purchase a goody bag of candies and/or juice for a sick child at Children's Hospital, please:

1. Find your two dollar and fifty cent voucher attached to the questionnaire.
2. Select which items you would like to purchase by circling the appropriate option on the purchase card on the next page.
3. Bring the two dollar and fifty cent voucher and purchase card to the research assistant.

You may also choose to keep the two dollars and fifty cents for yourself and not purchase these items. If this is your decision, please circle "OPTION 4" on the purchase card on the next page. Then, bring the two dollar and fifty cent voucher and purchase card to the research assistant. Funds will be mailed within 90 business days .

- PLEASE DETACH THIS PAGE FROM YOUR QUESTIONNAIRE -

PURCHASE CARD

Circle your purchase preference:

OPTION 1: Purchase one goody bag with 2 boxes/bags of candy
(approx. retail value \$3.00)

OPTION 2: Purchase one goody bag with 2 packages of juice
boxes (approx. retail value \$3.00)

OPTION 3: Purchase one goody bag with 1 box/bag of candy and
1 juice box (approx. retail value \$3.00)

OPTION 4: I do not want to purchase these items. I would like to
have the funds mailed to me in 90 days.

(Retail value \$2.50)

Participant Number: _____

PLEASE TAKE THIS PURCHASE CARD
AND THE \$2.50 VOUCHER TO THE
RESEARCH ASSISTANT NOW.

Appendix B.

Coding Scheme Used in Experiment 2

1. Recollection does not mention spending. If the recollection description does not make any mention of spending **please place a 1 in this column.**

2. Was _____ the target of spending? (check all that apply; 1=yes, 0=no)

- a) Oneself
- b) A friend
- c) A family member
- d) A romantic partner
- e) Charity

3. To what extent was this purchase a need or want?

1	2	3	4	5	6	7
Very much a need						Very much a want

4. To what extent was this purchase made out of obligation (obligatory) or made by choice (volitional)?

1	2	3	4	5	6	7
Very much obligatory						Very much volitional

5. Did this purchase include _____? (check all that apply; 1=yes, 0=no)

- a) Personal necessities (e.g., soap)
- b) Food
- c) Transportation
- d) An experience (e.g., going to a movie)
- e) Drugs or Illegal items
- f) Medical/health related items or costs
- g) Clothing
- h) School supplies

6. Were any emotions spontaneously labeled in the description? _____ (check all that apply; 1= yes, 0=no)

- a) Happiness
- b) Pride
- c) General positivity
- d) Anger
- e) Hostility towards others
- f) General Negativity

7. How generous/selfless does the purchase appear to be?

1	2	3	4	5	6	7
Not at all generous						Very much generous