
DIGITAL ACCESS TO SCHOLARSHIP AT HARVARD
DASH.HARVARD.EDU


HARVARD LIBRARY
Office for Scholarly Communication

Prosocial Spending and Well-Being: Cross-Cultural Evidence for a Psychological Universal

Citation
Aknin, Lara B., Christopher P. Barrington-Leigh, Elizabeth W. Dunn, John F. Helliwell, Justine Burns, Robert Biswas-Diener, Imelda Kemeza, Paul Nyende, Claire Ashton-James, and Michael I. Norton. "Prosocial Spending and Well-Being: Cross-Cultural Evidence for a Psychological Universal." Journal of Personality and Social Psychology 104, no. 4 (April 2013): 635–652.

Published Version
http://www.apa.org/pubs/journals/releases/psp-104-4-635.pdf

Permanent link
http://nrs.harvard.edu/urn-3:HUL.InstRepos:11320609

Terms of Use
This article was downloaded from Harvard University's DASH repository, and is made available under the terms and conditions applicable to Open Access Policy Articles, as set forth at http://nrs.harvard.edu/urn-3:HUL.InstRepos:dash.current.terms-of-use#OAP

Share Your Story

The Harvard community has made this article openly available.
Please share how this access benefits you. Submit a story .

Accessibility

RUNNING HEAD: Prosocial Spending and Well-being

Prosocial Spending and Well-Being: Cross-Cultural Evidence for a Psychological Universal

Lara B. Aknin

University of British Columbia

Christopher P. Barrington-Leigh

McGill University

Elizabeth W. Dunn and John F. Helliwell

University of British Columbia

Justine Burns

University of Cape Town

Robert Biswas-Diener

Positive Acorn, Milwaukie, Oregon

Imelda Kemeza

Mbarara University of Science and Technology

Paul Nyende

Makerere University

Claire E. Ashton-James

University of Groningen

Michael I. Norton

Harvard University

Abstract

This research provides the first support for a possible psychological universal: human beings around the world derive emotional benefits from using their financial resources to help others (*prosocial spending*). Study 1 utilizes survey data from 136 countries and shows that prosocial spending is associated with greater happiness around the world, in poor and rich countries alike. To test for causality, Studies 2a and 2b use experimental methodology, demonstrating that recalling a past instance of prosocial spending has a causal impact on happiness across countries that differ greatly in terms of wealth (Canada, Uganda, and India). Finally, Study 3 shows that participants in Canada and South Africa randomly assigned to buy items for charity report higher levels of positive affect than participants assigned to buy the same items for themselves, even when this prosocial spending does not provide an opportunity to build or strengthen social ties. Our findings suggest that the reward experienced from helping others may be deeply ingrained in human nature, emerging in diverse cultural and economic contexts.

Keywords: prosocial spending, happiness, psychological universal, prosocial behavior, well-being

Prosocial Spending and Well-Being: Cross-Cultural Evidence for a Psychological Universal

Warren Buffett, one of the richest people in the world, recently pledged to give away 99% of his wealth, saying that he "couldn't be happier with that decision" (Buffet, 2010). Consistent with Buffett's claim, recent research suggests that financial generosity may indeed promote happiness (e.g., Dunn, Aknin, & Norton, 2008). For Buffett, this striking act of generosity necessitated little self-sacrifice; he noted that "my family and I will give up nothing we need or want by fulfilling this 99% pledge," whereas for other people, "the dollars [they] drop into a collection plate or give to United Way mean forgone movies, dinners out, or other personal pleasures" (Buffett, 2010). Of course, in many parts of the world, spending one's limited financial resources on others may mean sacrificing more than just movies and dinners out. Does spending money on others promote happiness even in relatively impoverished areas of the world?

Although this question cannot be easily answered on the basis of existing empirical research—which has been conducted almost exclusively in wealthy countries such as the U.S. and Canada—there are theoretical reasons to expect that financial generosity should promote subjective well-being around the world. In particular, evolutionary theorists have argued that the evolution of altruistic behavior was essential in producing the large-scale social cooperation that allowed early human groups to thrive (Darwin, 1871/1982; Henrich & Henrich, 2006; Tomasello, 2009; Wilson, 1975). If the capacity for generosity favored survival in our evolutionary past, it is possible that engaging in generous behavior might produce consistent, positive feelings across diverse cultural contexts—akin to the pleasurable feelings associated with other adaptive behaviors such as eating and sexual intercourse. Building on this logic, we suggest that using financial resources to help others may yield similar emotional benefits across diverse cultural contexts, such that deriving happiness from *prosocial spending* is a psychological universal.

Prosocial Spending and Happiness

Although generosity can assume many forms, giving to others frequently involves sacrificing money or time (Liu & Aaker, 2008). We focus our investigation specifically on the impact of prosocial spending on happiness, which has been posited to lead to a "warm glow" on the part of givers (Andreoni, 1989; 1990; Harbaugh, 1998). Providing initial evidence for the rewarding property of financial generosity, research conducted with a sample of more than 600 North Americans demonstrated that devoting more money to prosocial spending (on gifts for others and charitable donations) was correlated with greater well-being, even when controlling for income. Importantly, this link is causal: North American students who were randomly assigned to spend a small windfall on others were significantly happier at the end of the day than those assigned to spend money on themselves (Dunn et al., 2008).

But does this relationship between prosocial spending and happiness extend beyond North American samples, emerging in both poor and rich countries? Cross-cultural research has shown that the within-country correlation between how much money individuals make and their happiness varies according to a country's average income (e.g., Deaton, 2008; Diener & Biswas-Diener, 2002). This suggests that the link between how individuals *spend* that money and their happiness might also differ between poor and wealthy countries. In particular, it would be reasonable to expect that the emotional benefits of spending money on others observed in North America might be diminished or even eliminated within very poor countries, where people might be more concerned with satisfying their own basic needs (Martin & Hill, 2011).

We propose, however, that the relationship between prosocial spending and happiness is robust and occurs regardless of differences between countries in wealth or in the specific form that prosocial spending takes. Indirect support for a universal link between prosocial spending and

happiness derives from a range of research traditions. Children as young as two show a variety of prosocial behaviors, such as sharing, helping, and comforting others (Zahn-Waxler, Radke-Yarrow, Wagner, & Chapman, 1992). Both human infants and chimpanzees will provide instrumental help to a stranger even when no reward can be expected for helping (Warneken & Tomasello, 2006), and children as young as two exhibit increased happiness when giving a valued resource away (Aknin, Hamlin, & Dunn, 2012), suggesting that humans and our nearest evolutionary relatives may find helping others inherently rewarding. Similarly, experiences of acute stress increase prosocial behavior in men, supporting the possibility that kind acts offer emotional or recuperative benefits (von Dawans, Fischbacher, Kirschbaum, Fehr & Henrichs, 2012). Among older adults, providing help to others predicts decreased risk of morbidity and mortality (Brown, Consedine, & Magai, 2005; Brown, Nesse, Vinokur, & Smith, 2003). In addition, prosocial behavior has been linked to a set of brain regions implicated in the experience of reward, including the orbital frontal cortex and ventral striatum (Harbaugh, Mayr, & Burghart, 2007; Moll et al., 2006; Tankersley, Stowe, & Huettel, 2007), again suggesting a basic reinforcing property for generosity. Thus, while there is no question that individuals often behave selfishly, previous research provides suggestive evidence that human beings may also have a proclivity to experience emotional benefits from giving to others.

Psychological Universals

Psychological universals are defined as "core mental attributes shared by humans everywhere" (Norenzayan & Heine, 2005, p. 763), and can be classified into several categories, including *accessibility universals*, which appear everywhere with little or no cultural variation, and *functional universals*, which are potentially detectable in all cultures but that may vary in degree of expression according to the cultural context. Norenzayan and Heine (2005) argue that few psychological phenomena are likely to meet the stringent threshold for classification as accessibility

universals (i.e., absence of any meaningful cultural variation). We propose that the positive relationship between prosocial spending and well-being is a functional universal.

To illustrate the concept of a functional universal, Norenzayan & Heine (2005) point to Buss's (1989) cross-cultural survey of gender differences in mate preference. Buss (1989) found that men and women seek distinct characteristics in mates: men seek chaste and attractive women, whereas women seek financially successful men. Although these preferences are detectable in most countries around the world, there is substantial variation across cultures (e.g., gender differences in seeking financial success are twice as large in Nigeria vs. Belgium). Thus, while gender is related to mating cue preferences around the world, the size of the effect varies – reflecting a functional universal. In addition, the specific manifestations of mating cues vary across cultures (e.g., a large herd of cattle may signal financial success in parts of Africa, whereas owning a beachside mansion may provide a parallel signal in North America). Similarly, we anticipated that prosocial spending would be related to happiness across diverse cultures, but that both the size of this relationship and the specific manifestations of prosocial spending would vary across cultures.

Norenzayan and Heine (2005) note that the field of psychology lacks a "a set of agreed upon methodological criteria by which we can consider universals," such that "researchers have largely relied on appeals to their readers' intuitions as to what kind of data would strengthen the case for universality" (p. 766). In response, Norenzayan and Heine (2005) propose that researchers should gather evidence for universals by (i) surveying individuals across a diverse array of the world's countries (which generally necessitates the use of brief questionnaire-based correlational analyses), and (ii) conducting experimental studies within two or three cultures that differ substantially on key dimensions.

In the present research, we apply this "gold standard" strategy of converging evidence to test the hypothesis that prosocial spending is linked to subjective well-being across cultures. Although the countries we studied differ on numerous dimensions, we were primarily interested in the key dimension of national-level income, which has been shown to play a critical moderating role in shaping the relationship between individuals' wealth and well-being within countries, as discussed above; therefore, we examine the emotional benefits of prosocial spending among individuals from countries with various ranges of income, extending previous research by examining the impact of prosocial behavior around the world. We expected that the relationship between prosocial spending and well-being would represent a functional universal, such that spending money on others would be positively associated with happiness in most countries around the world, though this relationship may vary in strength. Indeed, if prosocial spending is manifested differently in diverse cultures – akin to financial success cues described above - but is linked to greater happiness across them, this would provide strong evidence that the warm glow of giving is a robust component of human psychology.

Defining Happiness and Prosocial Spending

Following Diener and colleagues (e.g., Diener, 2000; Diener, Oishi, & Lucas, 2003; Diener & Scollon, 2003), we view subjective well-being as including both affective (e.g., positive emotion) and cognitive (e.g., life satisfaction) components. Diener and Scollon (2003) note that, "Whether emotions or cognitions, all forms of SWB represent the person's evaluation of his or her life, whether at the moment or across time" (p. 4). Because no single measure of SWB captures all facets of this broad construct (Diener, 1984), researchers in this area recommend using multiple measures of SWB in order to investigate whether similar effects emerge (Biswas-Diener, Kashdan & King, 2009; Diener & Biswas-Diener, 2002; Kashdan, Biswas-Diener & King, 2008). We adopt this broad

approach to SWB in the present research – assessing both the affective and cognitive components of SWB with multiple measures across studies – and we use the terms happiness and SWB interchangeably.

Also, following past research (Aknin, Sandstrom, Dunn & Norton, 2011; Aknin, Dunn & Norton, 2011; Dunn et al., 2008), we define *prosocial spending* broadly, as money spent on others. This definition includes donations to charities, gifts for friends and family, as well a wide range of other expenditures, such as buying coffee for an acquaintance. Of course, the behaviors people undertake when engaging in prosocial spending may also trigger additional routes to well-being, such as fostering social relationships (Baumeister & Leary, 1995; Diener & Oishi, 2005; Diener & Seligman, 2002) and acquiring new life experiences (Van Boven & Gilovich, 2003). However, we argue – and later provide experimental evidence to demonstrate – that the emotional benefits of prosocial spending can accrue above and beyond the contribution of these previously-documented sources of well-being. In addition, although we define prosocial spending broadly, we narrow our operationalization in Study 3 to examine the emotional consequences of purchasing material items for unknown recipients in the absence of social praise, design features that decrease the likelihood that the well-being benefits of prosocial spending are entirely due to creating social connections or buying experiences. Note that the definition of prosocial spending is behavioral rather than motivational: while *prosocial behavior* has been defined as an act performed to benefit another person (Penner, Dovidio, Piliavin, & Schroeder, 2005), *altruism* is defined as "a motivational state with the end goal of increasing another's welfare" (Batson & Shaw, 1991, p. 108). Given the difficulties and ambiguities inherent in assessing the underlying reasons for behaviour, we focus our investigation on the emotional benefits of spending money on others, rather than on people's underlying motivations for performing these actions.

The Present Studies

We present four studies that use multiple methods to examine whether humans around the world experience hedonic benefits from generous spending. In Study 1, we conduct correlational analyses to demonstrate a relationship between prosocial spending and well-being across 136 countries that span a wide range of income levels. We then narrow our focus to four of these countries—Canada (Studies 2a and 3), Uganda (Studies 2a), India (Study 2b), and South Africa (Study 3) —that differ on the key dimension of income. In Studies 2a and 2b, we show that recalling a past instance of prosocial spending has a consistent and causal impact on happiness in three economically diverse countries: Canada, Uganda, and India. Finally in Study 3, we show that buying a small gift for charity leads to higher levels of positive affect than buying the same gift for oneself in Canada and South Africa, even when no one else is aware of the generous act and the benefactor has no contact with the beneficiary.

Study 1: Correlational Study

Method

Sample

To examine the correlation between prosocial spending and subjective well-being within a large number of countries, we use data collected from 136 countries between 2006-2008 as part of the Gallup World Poll (GWP; total N = 234,917, M_{age} = 38, SD = 17; 49% male). The sample represents over 95% of the world's adult population (aged 15 and older) and provides an exceptionally large and diverse snapshot. The data are collected using randomly selected, nationally representative samples with a mean size of 1321 individuals per country (SD = 730, range = 141-4437). These samples include residents from cities, towns, and rural areas, thus representing the

population of an entire country. In wealthier regions, respondents are selected through random-digit dialing for a 30-minute interview. In poorer regions, respondents are selected with random geographic sampling for a 1-hour face-to-face interview. All survey materials are presented in the local language; materials are back-translated (e.g., from English to German then German to English) to ensure accuracy.

Measures

Prosocial Spending. The GWP asks respondents whether they have donated money to charity in the past month. We use dichotomous responses (Yes/No) to this question as our index of prosocial spending.

Subjective Well-Being (SWB). Two questions in the GWP measure respondents' subjective assessment of their life overall: First, in most countries and waves of the GWP, respondents are asked to evaluate their lives using the Cantril ladder (Cantril, 1965). Ratings on this scale require respondents to imagine a ladder with eleven steps (0: *worst possible life* to 10: *best possible life*) and report which step best represents their life. Second, in 2007 and 2008, respondents in approximately half of the countries completed a single-item measure of life satisfaction, which asks respondents to rate how satisfied they are with their life as a whole on an eleven point scale (0: *dissatisfied* to 10: *satisfied*). Consistent with recent research (Helliwell, Barrington-Leigh, Harris, & Huang, 2010), we use each individual's response(s) to one or both of these questions – taking the average when both responses are present – as our measure of SWB.

Income and demographics. The GWP records respondents' household income. We use the natural logarithm of household income in our within-country estimates, which do not rely on international exchange rate or purchasing power calculations. Where we do compare incomes at the

international level, we use the average GDP per capita expressed in 2007 U.S.A. dollars, based on Purchasing Power Parity values from the World Bank (see Deaton, 2008 for similar methods and income comparisons, including a discussion of the empirically-preferred logarithmic form of income). As an additional measure of income and material consumption, respondents are asked if there has been a time in the last year when they have had trouble securing food for their family. Respondents also provide demographic information, including gender, age, marital status, and education level.

Results

Within-country equation. We examine the relationship between SWB and prosocial spending while controlling for household income and whether respondents had lacked enough money to buy food in the past twelve months (using Stata software version 10; StataCorp, 2007). We also control for demographic variables (age, gender, marital status, and education level). To begin with the most stringent test of universality, we estimate a regression equation[1] separately for each country, pooled over years 2006-2008. The equation estimated separately for each country is of the form:

$$SWB_i = c_0 + a \log(Income_i) + b\ Donated_i + c\ Food_i + X'_i d + g\ dNoSWL_i + \Sigma yr\ h_{yr} dWave_{yr;i} + \varepsilon_i$$

for individual *i*. The coefficient *b* represents the relationship between individual life evaluation (SWB_i) and donating to charity ($Donated_i$), while controlling for household income ($Income_i$), reported food inadequacy ($Food_i$), an indicator for each wave (year) of the Gallup World Poll, the remaining demographic variables (X_i), and an indicator ($dNoSWL_i$) to account for whether one or two measures of life evaluation were available for the individual. Thus, this equation examines the relationship between prosocial spending and SWB reports at the individual level while controlling

for household income, food inadequacy, age, gender, marital status, and education across various waves of the GWP and measures of well-being.

The relationship between prosocial spending and SWB is positive in 120 out of 136 countries included in the Gallup World Poll, with this relationship reaching traditional levels of significance ($p < .05$) in some 59% of these 120 countries (Figure 1; see also Tables S2 and S3 in the Supporting Online Materials [http://wellbeing.research.mcgill.ca/publications/prosocial-spending-Aknin-et-al-supplement.pdf] for individual country estimates). In a pooled global estimate, the prosocial spending coefficient, b = .27, $p < .03$, exceeds half the coefficient of log income, b = .41, $p < .03$. Thus, in this model, donating to charity has a similar relationship to SWB as a doubling of household income. That is, in order for someone who does not report prosocial spending to have the same predicted SWB as someone who does, their income would need to be twice as high (other things equal).[2] Importantly, although rates of prosocial spending are higher in wealthier countries, $r(134) = 0.54$, $p < .001$, the size of the relationship between prosocial spending and SWB that emerges within countries is unrelated to rates of donation, $r(134) = -.10$, $p = .23$, or to the countries' mean incomes, $r(134) = -.09$, $p = .31$, suggesting that generous financial behavior is linked to well-being in poor and rich countries alike.

Although these findings point to the robustness of the relationship between prosocial spending and SWB in economically and culturally diverse areas of the world, this relationship failed to reach significance in a considerable number of individual countries. Because our ability to detect a significant relationship between prosocial spending and SWB within each country is limited by the sample size at the country level, we conducted a power analysis for this coefficient using Stata software version 10 (StataCorp, 2007); given the median variance explained by the donation variable across countries, a sample of 1900 respondents would be required to produce a significant

($p < .05$) within-country coefficient 80% of the time. Applying this threshold, we find that amongst the subset of 23 countries with samples of at least 1900 respondents, the estimate of prosocial spending is significantly positive in 20 (87%).

Another means of maximizing power while encompassing the full diversity of our sample is to aggregate countries into seven major cultural/geographic regions used by Gallup in designing its World Poll (see Helliwell et al., 2010). When averaged within each region,[3] the estimates for prosocial spending are significant in each: Africa (b = .29, $p < .001$), Asia (b = .20, $p < .001$), Europe (b = .27, $p < .001$), the former Soviet Union and Eastern Europe (b = .33, $p < .001$), Latin America (b = .22, $p < .001$), Persia and the Middle East (b = .18, $p < .05$), as well as the USA, Canada, Australia, and New Zealand (b = .30, $p < .001$).

It is possible that respondents' answers to the donation question may be influenced by factors such as their financial security. Although we control for income, discretionary spending can provide an alternative indicator of wealth (Rutstein & Johnson, 2004). Because charitable donations represent one form of discretionary spending, the relationship between charitable donations and happiness may in part reflect a relationship between wealth and SWB. If this is the case, then controlling for other measures of wealth or material consumption should affect the relationship between charitable donations and SWB. However, when we control for both income and food inadequacy (which provides an additional measure of material consumption) the prosocial spending coefficient (b = .27) is almost identical to the coefficient when these controls are absent (b = .26). These findings cast doubt on the possibility that prosocial spending predicts happiness primarily because it captures individual differences in wealth.[4]

Multi-level modeling. While the above analyses demonstrate that the relationship between prosocial spending and SWB is positive in most individual countries and all major regions of the

world, we do not suggest that it emerges to precisely the same extent everywhere. Rather, we hypothesize that the relationship is robust throughout diverse regions of the world, and more specifically, robust in both poor and rich countries. To examine the role of national-level income more thoroughly in a multi-level framework, we next estimate a global (pooled) model in which the effect of prosocial spending is allowed to vary non-parametrically (i.e. without assuming any particular relationship, such as a linear one) as a function of national-level income, again using Stata software version 10 (StataCorp, 2007).

Equation 2

$$SWB_i = c_0 + a \log(Income_i) + b(GDP)\ Donated_i + c\ Food_i + X'_i d + g\ dNoSWL_i + \Sigma yr\ h_{yr} dWave_{yr;i} + \varepsilon_i$$

In equation (2), the prosocial spending coefficient b may vary across countries as a function of national income (measured as purchasing power per capita). The estimate of equation (2) is carried out as a standard linear regression in which the prosocial spending variable is interacted with indicators for consecutive ranges of the national income variable. This equation allows us to examine whether national income moderates the emotional benefits of prosocial spending across countries. Figure 2 displays the relationship between prosocial spending and SWB across a range of country incomes (measured as mean purchasing power per capita). In this figure, we average responses from multiple countries, thereby increasing the sample size, and find that the estimated prosocial spending coefficient is now uniformly and significantly positive ($p < .001$); indeed, it is remarkably uniform in magnitude along the entire range of incomes. Although the positive relationship between prosocial spending and well-being clearly varies in size when looking at each

country independently (as shown in Figure 1), these results indicate that the size of this relationship is consistent across poor and rich countries overall (Figure 2).

Exploratory analyses. Although we were primarily interested in examining whether the link between prosocial spending and happiness was robust for individuals and nations across the income spectrum, we also explore whether this link remains significant when controlling for other variables related to well-being. Specifically, we selected three variables available in the GWP that were identified in a recent report as leading predictors of well-being around the world (Layard, Clark & Senik, 2012): social support, perceived freedom, and perceived corruption. When all three individual-level variables are entered into Equation 1 simultaneously, the effect of prosocial spending on life satisfaction remains largely unchanged (b = .22, $p < .001$). Next, we explore whether differences between countries in social support, perceived freedom, or perceived corruption explains variability across countries in the relationship between prosocial spending and happiness. To do so, we estimate subjective well-being in the GWP data using a global equation like Equation 2, but replace country-level income with each of these three variables. We conduct separate regressions for each of these three variables and examine the interaction between each variable (e.g., perceived freedom) and prosocial spending. None of the interaction terms are significant (b's range from -.17 to .12, *p*'s > .10) and the prosocial spending coefficient remains at least marginally significant in all analyses (b's range from .18 to .39, *p*'s < .10). Thus, our results demonstrate that country level variations in social support, freedom, and corruption do not explain the differences observed in the emotional rewards of prosocial spending around the world.

Discussion

Examining over 200,000 respondents drawn from 136 countries, we find that prosocial spending is linked to higher subjective well-being around the world. This effect emerges in both

poor and rich nations, although the size and significance of this relationship varies amongst individual countries. The variability we observed between countries suggests that this relationship does not meet the stringent threshold for classification as an accessibility universal, but the fact that this relationship is detectable in diverse regions of the world provides support for the argument that the warm glow of giving is a functional universal (akin to the relationship between gender and mating preferences). Thus, Study 1 provides the first empirical evidence that the warm glow of prosocial spending may be a widespread component of human psychology rather than limited to affluent countries such as the United States and Canada – both characterized by a level of material wealth unimaginable throughout most of human history. The robustness of the observed relationship is particularly notable given that prosocial spending was assessed with a one-item dichotomous measure, suggesting that the effect may prove even more ubiquitous if this construct were to be assessed with more in-depth measures tailored to each country.

Our analyses also demonstrate that the relationship between prosocial spending and SWB remains robust when controlling for demographic variables, as well as other leading predictors of SWB, including social support, perceived freedom, and perceived corruption. The robustness of this relationship notwithstanding, its strength did vary considerably between countries, and this variability was not explained by national-level differences in any of the variables we examined (income, social support, perceived freedom, perceived corruption) Thus, determining why the relationship between prosocial spending and happiness in stronger in some parts of the world than in others represents an important goal for future research.

Because Study 1 relied on correlational analyses, these findings are inevitably subject to alternative explanations, such that establishing the causal impact of prosocial spending on happiness necessitates the use of experimental design. Therefore, we next use experimental methodology and

narrow our focus to two countries, Canada and Uganda. These two counties differ substantially in terms of our key variable of interest, per capita income (with Canada falling in the top 15% and Uganda falling in the bottom 15% of countries surveyed in Study 1), as well as frequency of prosocial spending (66% of respondents reported donating in Canada vs. 13% in Uganda). In addition, moving beyond the narrow measure of prosocial spending used in Study 1—charitable giving—we broaden our operationalization of this construct in Studies 2a and 2b, assessing the different forms that prosocial spending takes in different cultural contexts. This broader construal of prosocial spending includes all types of spending on others, such as taking a friend to lunch, and provides a fuller and more ecologically-valid representation of generous financial behavior. Of course, spending on others versus oneself differs on multiple dimensions; in particular, it is likely that prosocial spending is intended to foster social relationships, an independent predictor of well-being (e.g., Baumeister & Leary, 1995; Diener & Oishi, 2005; Diener & Seligman, 2002). We therefore assessed this construct with coder ratings (Study 2a) and self report (Study 2b) to show that the effect of prosocial spending on happiness emerges even when controlling for intentions to build or improve a social relationship.

Study 2a: Experimental Study in Canada and Uganda

To test the causal impact of prosocial spending on happiness, we randomly assigned participants in Canada and Uganda to write about a time they had spent money on themselves (*personal spending*) or on others (*prosocial spending*). This reminiscence-based methodology has been used successfully in previous research to study the long-term emotional consequences of real world spending experiences (e.g., Van Boven & Gilovich, 2003; Carter & Gilovich, 2010). We assessed participants' happiness following this task and coded their responses for the specific form that their personal and prosocial purchases had taken.

Methods

Participants

A total of 820 individuals participated: 140 students from the University of British Columbia in Vancouver, Canada (M_{age} = 20.0, *SD* = 3.9, 54% females), 105 students from Mbarara University in Mbarara, Uganda (M_{age} = 21.7, *SD* = 2.6, 24% females), 382 students from Makerere University in Kampala, Uganda (M_{age} = 23.0, *SD* = 4.1, 72% females), and 193 adults from the city of Kampala, Uganda (M_{age} = 27.7, *SD* = 7.8, 51% females).

Procedure

Participants were approached on a university campus or in the city of Kampala and randomly assigned to recall a recent purchase in which they spent either ten thousand Ugandan Shillings or twenty Canadian dollars on themselves (personal spending condition) or someone else (prosocial spending condition); these amounts represented approximately equal buying power in Uganda and Canada, respectively. After describing the spending experience in detail using a procedure designed to elicit vivid reminiscence (Strack, Schwarz, & Gschneidinger, 1985), participants were asked to report their happiness on the Subjective Happiness Scale (SHS), a four-item measure of subjective well-being that has been used with samples around the world (α = .70; Lyubomirsky & Lepper, 1999). All study materials were provided in English and edited by local collaborators to ensure that questions would be comprehensible and interpreted consistently in both Canada and Uganda. Despite these methodological precautions, it is well-known that people in different cultural contexts may use differential response sets in rating themselves on subjective Likert-type scales (e.g., Bond, 1988; Heine, Lehman, Peng, & Greenholtz, 2002). Therefore, following procedures recommended to mitigate this problem (Bond, 1988; Heine, 2008; Leung &

Bond, 1989), we z-scored responses on the SHS within each country prior to pooling our data across countries.[5]

Coding. Participants' spending descriptions were coded by undergraduate research assistants (RAs) blind to participants' assigned condition and happiness scores, as well as the goals of the study. All spending experiences were coded by four Canadian RAs,[6] with a subset rated by a Ugandan coder to check for cross-cultural consistency in interpretation; the Ugandan coder's ratings were highly correlated with the ratings of the four Canadian coders, average $r(88) = .65$, $p < .01$. Spending descriptions were rated on three major dimensions (see Table 1): (i) the social contexts of the purchase (e.g., was the spender trying to strengthen a social relationship with this purchase?; coded as *1= yes, 0= no*), (ii) to what extent the spending purchase appeared to be driven by specific spending motives (rated on a scale from 1-7; *1= need* vs. *7= want*, *1= obligation* vs. *7= volition*), and (iii) whether the purchase included certain goods or activities (e.g., food, clothing, transportation, an experience, medical costs or supplies; coded as *1= included, 0= not included*). To achieve an appropriate level of inter-rater reliability, an initial subset of spending descriptions were coded along the dimensions listed above and discussed to resolve inconsistencies.

Results

To investigate whether prosocial (vs. personal) spending increased happiness across cultures, we submitted SHS ratings to a 2 (Spending Type: personal vs. prosocial) X 2 (Country: Uganda vs. Canada) analysis of variance (ANOVA). As predicted, there was a significant main effect of spending type, whereby participants randomly assigned to recall a purchase made for someone else ($M = .09$, SD = 1.00) reported significantly higher happiness than participants assigned to recall a purchase made for themselves ($M = -.09$, SD = 0.99), $F(1, 784) = 8.21$, $p = .004$, $\eta^2 = .01$. The interaction of spending type and country was not significant, $F(1, 784) = 1.88$, $p = .17$, $\eta^2 = .002$.

Thus, participants in Canada and Uganda reported higher levels of happiness when they thought about spending money on others rather than themselves.

The higher levels of happiness reported by participants in the prosocial spending condition were not simply a result of fostering a social relationship. As expected, participants assigned to the prosocial spending condition provided spending descriptions that were rated by coders as more likely to build, $F(1, 766) = 4.03$, $p < .05$, and strengthen social relationships than participants in the personal spending condition $F(1, 766) = 318.32$, $p < .001$. Importantly, however, adding coder ratings of either building new relationships or strengthening old relationships as a covariate to the 2 (Spending Type: personal vs. prosocial) X 2 (Country: Uganda vs. Canada) ANOVA described above leaves the main effect of spending condition significant. Specifically, analyses reveal that prosocial spending memories led to higher levels of happiness even when controlling for coder ratings of strengthening old relationships, $F(1, 736) = 3.72$, $p = .05$, or building new ones $F(1, 736) = 10.95$, $p = .001$, suggesting that prosocial spending does not increase happiness solely by improving relationships.

While the effect of prosocial spending on happiness emerged consistently across participants in Canada and Uganda, we also examined whether these same effects emerged within each country independently. In the Canadian sample, we conducted an ANOVA to compare the happiness of participants randomly assigned to the two spending recall conditions. As expected, participants assigned to recall a previous purchase made for someone else were significantly happier ($M = .20$, $SD = .91$) than participants assigned to recall a previous purchase made for themselves ($M = -.20$, $SD = 1.05$), $F(1, 138) = 5.58$, $p = .02$, $\eta^2 = .04$. In the Ugandan sample, a similar analysis was conducted with an additional variable indicating the sub-sample (student sample in Mbarara, student sample in Kampala, and community sample in Kampala). Analyses revealed that participants

randomly assigned to the prosocial spending recall condition reported higher levels of happiness (M = .07, SD = 1.02) than participants assigned to the personal spending recall condition (M = -.07, SD = .97), $F(1, 642) = 5.19$, $p = .023$, $\eta^2 = .008$ and this main effect was not qualified by an interaction between spending condition and sub-sample, $F(2, 642) = 1.13$, *ns*, $\eta^2 = .004$. The main effect of sub-sample was significant, indicating that there were differences in happiness levels across the three Ugandan samples, $F(2, 642) = 8.27$, $p < .001$, $\eta^2 = .025$.

Although the emotional benefits of prosocial spending emerged in both countries, the specific ways in which participants spent their money (as rated by coders) varied substantially between cultures (see Table 1 for a full breakdown). For example, when recalling a time they spent money on themselves, twice as many participants in Uganda described purchasing a personal necessity, as compared with those in Canada. When recalling a time they spent money on others, almost 15% of participants in Uganda described a purchase that was made in response to a negative event, with fully 9% purchasing medical supplies or services—whereas none of the prosocial spending descriptions provided by the Canadian participants fell into these categories. Given these important national differences in specific spending experiences, it is particularly remarkable that spending money on others produced emotional benefits in both countries. Further supporting the robustness of this pattern, the main effect of spending condition on SWB remained significant when controlling in the ANOVA for the extent to which participants' purchases were motivated by need (vs. want), were obligatory (vs. volitional), represented a response to a negative event, or provided an experience (e.g., going to a movie), all Fs > 8.00, all ps < .005.

Discussion

Providing converging evidence for our central hypothesis, Study 2a demonstrated that people in both Canada and Uganda reported greater happiness after recalling a time when they spent

money on others rather than themselves. By asking people to recall a past spending experience, we were able to examine how people spent their own money in their everyday lives, yielding a rich data set that underscores the very different forms that prosocial spending can assume as a function of the cultural context, akin to the culturally specific mating cues described in the introduction. Given the differences we observed between countries in the specific nature of participants' spending experiences, it is particularly remarkable that prosocial spending produced benefits across both countries.

Building upon these findings, Study 2b had four primary aims. First, although Study 2a demonstrates that people feel happier after reflecting on a time when they spent money on others rather than themselves, the absence of a control condition makes it difficult to ascertain whether the prosocial spending condition made people feel *better* – as our account holds – or the personal spending condition made people feel *worse*. We therefore included a control condition in Study 2b in which participants were not asked to reflect on a past spending experience. Second, we extended our experimental research to a third country, recruiting a sample of Indian adults, a country where per-capita income is low and where the relationship between prosocial spending and happiness was relatively weak (though still significant) in Study 1. Third, in order to further address the possibility that relationship-building drives the impact of prosocial spending on happiness, we asked participants themselves to rate the extent to which purchases served to strengthen or build social relationships – rather than relying on coders as in Study 2a. Finally, we included a broader range of well-being measures in Study 2b. Study 2a included only the SHS, which we selected because it is brief, reliable, and cross-culturally valid. The SHS was originally designed as a global, trait-level measure (Lyubomirsky & Lepper, 1999). Although trait-level measures of well-being are affected by state-like feelings (Schwarz & Clore, 1983), it is likely that our manipulation would be detected

best on a state measure specifically designed to be sensitive to slight changes in mood. Indeed, we suggest that our manipulation led people to *feel* happier, which led them to evaluate their lives as *being* happier. To document this process, we asked participants in Study 2b to complete both a measure of positive affect and the SHS, as well the life satisfaction measure from Study 1.

Study 2b: Experimental Study in India

Participants

A total of 101 individuals from India (M_{age} = 28.4, *SD* = 8.3, range = 19-66, 43% females) completed this study online through Amazon's Mechanical Turk service; this service has been shown to produce samples comparable to other methodologies (Buhrmester, Kwang, & Gosling, 2011).

Procedure

Consistent with Study 2a, participants in the experimental conditions were assigned to recall a recent purchase in which they spent money on themselves (personal spending condition) or someone else (prosocial spending condition); those in the control condition proceeded directly to our happiness measures without recalling a past spending experience.[7] To create a very brief measure of current positive affect for use in India, we selected the three items (excited, alert, active) that were most strongly correlated with overall positive affect scores on the PANAS (Watson, Clark, & Tellegen, 1988) in other research we conducted in Uganda (Aknin, Dunn, Norton, & Nyende, 2012). In addition, we added the key word *happ*y to create a reliable four-item index of positive affect (α = .66). Participants then completed the SHS and the one-item life satisfaction measure from the GWP. Afterward, participants in the personal and prosocial spending conditions reported the extent to which their spending experience was intended to build or strengthen a social

relationship on a single 10-point scale (0: *not at all* to 9: *very much*). Finally, all participants reported their demographic information.

Results and Discussion

A one-way ANOVA revealed significant between-group differences in positive affect, $F(2, 96) = 3.44$, $p < .04$, $\eta^2 = .07$. Using LSD contrasts, we found that positive affect levels reported by participants in the control condition ($M = 3.72$, $SD = .72$) and personal spending condition ($M = 3.64$, $SD = .49$) were not significantly different from each other, $p > .65$; most importantly, participants in the prosocial spending condition reported higher levels of PA ($M = 4.11$, $SD = .54$) than participants in either of the other conditions, p's $< .04$. Unlike coder ratings in Study 2a, self-ratings of building and strengthening social relationships did not differ between the personal and prosocial spending conditions ($p > .35$). Consistent with Study 2a, however, an ANCOVA confirmed that the difference between the personal and prosocial spending condition remained significant when controlling for participants' own ratings of the extent to which their purchases had built or strengthened social relationships ($p < .05$).

Indirect effect of prosocial spending on trait measures of SWB. Our manipulation did not produce significant differences on either of our trait-level measures: SHS, $F(2,97) = .85$, $p = .43$, $\eta^2 = .02$ or life satisfaction, $F(2,98) = .02$, $p = .98$, $\eta^2 = .00$. The effect size of prosocial spending on the SHS in Study 2b ($\eta^2 = .02$) was similar in magnitude to that found in Study 2a ($\eta^2 = .01$), however, suggesting that the results in Study 2b may not be significant due to our relatively smaller sample size. Moreover, there was an indirect effect of condition on trait levels of happiness via positive affect. Using bootstrapping analyses suggested by Preacher and Hayes (2004; 2008), we found that the effect sizes for both the SHS and life satisfaction measure were positive and the indirect mediation model 95% CI did not cross zero: SHS effect size estimate .09, .95CI [.07, .17],

and life satisfaction effect size estimate .25, .95CI [.02, .48]. Thus, participants experienced more positive affect after reflecting on a past prosocial spending experience, which in turn led them to evaluate their overall well-being and their lives in general more positively.

Discussion

Taken together, Studies 2a and 2b provide evidence that prosocial spending has a causal impact on happiness in both poor and rich countries (Uganda, India, and Canada). This effect emerged even when we controlled for the extent to which the spending experiences served to build or strengthen social relationships, as rated by coders (Study 2a) or participants themselves (Study 2b). Thus, while prosocial spending may enhance well-being in part by fostering social relationships, the benefits of prosocial spending are unlikely to be explained entirely by the well-known link between social relationships and SWB. Of course, asking participants to report the extent to which they had built or strengthened a social relationship may not completely rule out this alternative explanation. It is possible, for example, that participants may not remember the goal of a previous purchase or fail to report an intention to foster social relationships to avoid acknowledging alternative motivations for generous spending. More broadly, the present studies are limited by their reliance on participants' retrospective accounts of past generous spending behavior.

To build upon the two recollection experiments, Study 3 was designed to fulfill three main aims. First, in Study 3 we examine the effect of actual financial decision-making on individuals' in-the-moment affective experience within a controlled context that removes the opportunity for relationship building. Study 3 documents the immediate causal impact of prosocial spending by measuring positive affect after participants were randomly assigned to purchase a "goody bag" for either themselves or a sick child at a local hospital. To rule out the possibility of relationship building, participants did not interact with the recipient of their gift, nor did the researchers or the

other participants know whether they had engaged in prosocial or personal spending. As a result, this design allows us to examine the emotional benefits of what might be considered the purest form of prosocial spending – charitable giving – when spenders could not build social relationships or receive social praise. Second, Study 3 was designed to rule out the possibility that prosocial spending is more enjoyable simply because it more frequently involves purchasing experiences (rather than material goods), an independent predictor of happiness from purchasing (Carter & Gilovich, 2010; Van Boven & Gilovich, 2003). Therefore, all participants in Study 3 were given the opportunity to purchase a material item: a goody bag. Finally, in Study 3, we also extended our findings to a fourth country, South Africa, where per-capita income is relatively low and where the relationship between prosocial spending and happiness was positive (though non-significant) in Study 1.

To maximize experimental control, we conducted Study 3 in the laboratory, recruiting a student sample for reasons of feasibility. To confirm that our student samples reflected the broader cultural and economic milieu of their home countries, however, we asked students in Study 3 to complete items from the World Values Survey and Gallup World Poll. We then compared students' responses to the responses provided by nationally representative samples of adults in their home countries.

Study 3

Participants in Canada and South Africa were randomly assigned to buy a goody bag filled with treats for either themselves (*personal spending*) or a sick child at a local children's hospital (*prosocial spending*). We assessed participants' happiness before and after this task to investigate whether prosocial spending led to higher levels of happiness than personal spending, even when spending could not build or foster social ties.

Methods

Participants

A total of 207 students participated: 86 students from the University of British Columbia in Vancouver, Canada (M_{age} = 21.1, *SD* = 4.6, 74% females) and 121 students from the University of Cape Town in Cape Town, South Africa (M_{age} = 20.2, *SD* = 2.1, 54% females). Participants were reimbursed with course credit (in Canada) or prepaid cell phone minutes (in South Africa); remuneration methods were consistent with local norms for encouraging research participation.

Procedure

Participants were recruited through online participant pools for a group data collection sessions. Upon arrival in the lab, participants were instructed to sit by themselves at a desk without talking to any other participants. They completed a questionnaire which assessed their baseline level of happiness on both a state (*"Do you feel happy 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 on these two items were highly correlated, $r(200) = .43$, $p < .001$, so we standardized and averaged participants' responses to these items as our baseline measure of happiness.

Next, participants read that they had been given additional compensation for their participation in the form of a payment voucher for $2.50 in Canada or its equivalent in South Africa, 20 Rand. All participants signed a receipt acknowledging their payment, and then learned that they could buy a goody bag that had an actual retail value of $3.00 (or 25 Rand) for just $2.50 (or 20 Rand); the stated value of the goody bag exceeded the value of the voucher to encourage participants to make the purchase. Participants randomly assigned to the personal spending

condition were informed that they could purchase the goody bag for themselves, whereas participants in the prosocial spending condition were informed that they could purchase the goody bag for a sick child at the nearby Children's Hospital. Participants in both conditions were given the option of selecting a goody bag with either chocolate, juice or both items, and they completed a "purchase card" indicating whether they wished to buy the goody bag and what they wanted inside of it. Participants in both conditions could also opt out from purchasing a goody bag and redeem the voucher for cash for themselves. The opportunity to opt out of buying a goody bag was offered so that participants in the prosocial spending condition would not feel forced to engage in a generous act; recent research has shown that the emotional benefits of giving are eliminated when people feel forced to give (Weinstein & Ryan, 2010). (We subtly discouraged participants in both conditions from choosing cash by telling them that it would not be available for pick-up until approximately two weeks later.)

After noting their choice on the purchase card, participants were directed, one at a time, to a nearby room where they turned in their voucher and purchase card. A second experimenter then directed each participant toward a card labeled with their participant number. The card thanked participants in both conditions and noted that the goody bags would be available for pickup after the study (personal spending) or would be delivered to a sick child at Children's Hospital (prosocial spending). Each participant then returned to the first lab room and completed a questionnaire, which included the PANAS (α = .91; Watson et al., 1988), the Satisfaction with Life Scale (α = .81; SWLS; Diener, Emmons, Larsen, & Griffin, 1985), demographic questions, and several items from the World Values Survey and Gallup World Poll.

Throughout the procedure described above, all information regarding condition assignment was provided in written form and remained unknown to fellow participants and the experimenters.

Furthermore, because participants in the prosocial spending condition were told that their goody bag would be delivered to an anonymous sick child on their behalf, there was no opportunity to develop a social relationship with the beneficiary. As in Study 2a, all study materials were provided in English and edited by local collaborators to ensure that questions would be comprehensible and interpreted consistently in both countries; again, we z-scored responses on the composite baseline measure, the PANAS, and the SWLS within each country prior to pooling the data.

World Values Survey Items. Participants completed 14 items regarding their religious, political, and cultural beliefs from the 2005 World Values Survey. Items were selected by analyzing WVS data from 1981-2005 and identifying dimensions along which Canadian and South African adults differed significantly. For example, participants were asked to rate the justifiability of prostitution, abortion, homosexuality, and euthanasia (*1-never justifiable* to *10- always justifiable* (Table 2).

Gallup World Poll Food Security Item. To compare students' financial situation with adults in their home countries, we asked participants to complete the Gallup World Poll measure of food security utilized in Study 1 (Table 2).

Results

Seven participants (one in Canada and six in South Africa) who were assigned to the prosocial spending condition opted out of purchasing a goody bag for a sick child and instead requested to receive the cash value of the voucher for themselves. Because these participants chose not to engage in prosocial behavior, they were excluded from analyses. In past experimental research (Dunn et al., 2008; Study 3), we excluded a similar percentage of participants who reported not following their spending directions. Excluded participants did not differ from the rest of the

sample on baseline happiness. We retained the 28 participants in the personal spending condition who opted out of purchasing a goody bag because they still chose a personal benefit in the form of cash for themselves. The analyses below are similar if we include all participants.[8]

Baseline levels of happiness did not differ between conditions in either country (Fs < 2.5, ps > .12). Therefore, we submitted post-spending positive affect ratings to a 2 (Spending Type: personal vs. prosocial) X 2 (Country: South Africa vs. Canada) analysis of covariance (ANCOVA) controlling for baseline levels of happiness.[9] As predicted, there was a significant main effect of spending type, whereby participants randomly assigned to purchase a goody bag for a sick child reported higher positive affect (M = .26, SD = 0.98) than participants assigned to buy a goody bag for themselves (M = -.24, SD = 0.96), $F(1, 192) = 10.25$, $p = .002$, $\eta^2 = .05$. The interaction of spending type and country was not significant, $F(1, 192) = 0.01$, $p = .98$, $\eta^2 = .000$. Thus, across cultures, participants reported higher levels of positive affect when they were given the opportunity to buy something for another person rather than themselves. Consistent with the results of Study 2b, there was no direct effect of condition on life satisfaction ratings, $F(1,192) = .86$, $p = .36$. Because positive affect and life satisfaction ratings were only weakly correlated, $r(194) = .17$, $p < .05$, there was also no indirect effect of condition on life satisfaction ratings through positive affect.

We next examined whether the effect of condition on positive affect emerged within Canada and South Africa independently. In the Canadian sample, we conducted an ANCOVA to compare the happiness of participants randomly assigned to the two spending conditions. As expected, participants in the prosocial spending condition reported higher PA (M = .29, SD = 1.06) than participants in the personal spending condition (M = -.27, SD = 0.87), $F(1, 81) = 4.53$, $p = .036$, η^2 = .05. The same was true in South Africa; participants randomly assigned to purchase a goody bag for a sick child reported higher levels of positive affect (M = .23, SD = 0.93) than participants assigned

to the personal spending condition (M = -.21, SD = 1.03), $F(1, 110) = 5.84$, $p = .02$, $\eta^2 = .05$. Thus, both across and within these two different nations, generous spending led to emotional rewards.

As shown in Table 2, participants in the two countries differed from each other in culturally-expected ways; on 13 of the 15 items we included, the student samples differed significantly, and in the same direction as the adult samples in the World Values Survey and Gallup World Poll. For instance, just like adults in the two countries, students in Canada were much more likely than students in South Africa to view homosexuality as justifiable – though students in both samples viewed homosexuality more favorably than did adults in their home countries. Also mirroring results for adults, a significantly higher percentage of South African students reported that they struggled to acquire food for themselves and their family in the past twelve months compared to Canadian students – though again students in both countries were less likely to report food scarcity compared to representative samples of adults. These responses suggest that although student samples differ from nationally representative samples of adults within countries, the students in our samples also reflect important differences between countries.

Discussion

Providing support for our central hypothesis, Study 3 demonstrates that participants in both Canada and South Africa reported higher levels of positive affect after choosing a gift for someone else than after choosing something for themselves. By removing contact with the recipient and ensuring that only the participants knew whether they had engaged in personal or prosocial spending, we address the alternative explanation that prosocial spending increases happiness only by strengthening social relationships. Indeed, even when the recipient was unknown to the spender and there was no way for the spender to meet the recipient, prosocial spending led to emotional rewards. Importantly, the absence of a control condition means that we cannot completely discount

the possibility that participants in the personal spending condition experienced a decrease in well-being. However, in light of the results of Study 2b – where prosocial spending made people happier than both personal spending and a control condition, which did not differ from each other – we suggest that it is more likely that prosocial spending has positive emotional consequences.

General Discussion

Taken together, the present studies provide the first evidence for a possible psychological universal: human beings around the world experience emotional rewards from using their financial resources to benefit others. Within the vast majority of the world's countries, we find a positive relationship between prosocial spending and well-being, whereby individuals who have recently made donations to charity report greater satisfaction with their lives, even controlling for differences in income. Focusing on three of these countries—Canada, Uganda and India—that differ dramatically in national-level income and donation frequency, we find that individuals report significantly higher happiness after reflecting on a time when they spent money on others rather than themselves. Finally, in a controlled lab study conducted in both Canada and South Africa, we find that individuals randomly assigned to buy a gift for someone else report higher levels of happiness than participants assigned to buy a gift for themselves, even when no one else is aware of their kind deed. Thus, although prosocial spending differs in frequency and form in poor versus rich countries, its link to happiness emerges in countries that vary greatly in wealth.

Consistent with past research on important predictors of well-being, including exercise (e.g., Valois, Zullig, Huebner, & Drane, 2009; Reed & Ones, 2006) and social interactions (e.g., McIntyre, Watson, Clark, & Cross, 1991; Mishra, 1992), our research on prosocial spending demonstrates both trait-level effects among people who practice this behavior in daily life and more acute state-level effects among people prompted to engage in this behavior by experimental

manipulations. Perhaps surprisingly, however, we also obtained some mixed evidence that our experimental manipulations influenced trait-level measures of SWB. We would expect transient, state-level measures of SWB to be most responsive to our manipulations of prosocial spending, particularly given that previous research on experiential spending has shown emotional benefits at the state-level (Carter & Gilovich, 2010; Howell & Hill 2009; Millar & Thomas 2009; Nicolao, Irwin, & Goodman 2009; Van Boven & Gilovich 2003). Indeed, prosocial spending had a larger impact on state measures than on trait measures of SWB across our studies (effect size on state-measures: $\eta^2 = .07$ and $\eta^2 = .05$ in Studies 2b and 3, vs. effect sizes on trait-measures ranging from $\eta^2 = .00$ to $\eta^2 = .02$ in Studies 2a, 2b, and 3). The fact that we were able to detect effects of our experimental manipulations on "trait" measures of SWB such as the SHS likely reflects the fact that even trait-like measures are influenced by current levels of happiness (Schwarz & Clore, 1983; Study 2b). Our ability to detect these small effects on trait measures of SWB may have been underpowered in Studies 2b and 3 because both studies involved relatively lower sample sizes than the other studies; indeed, the effect size of prosocial spending on trait measures of SWB was similar in Studies 2a and 2b (e.g., $\eta^2 = .01$ in Study 2a vs. $\eta^2 = .02$ in Study 2b), but only significant in the former, which had the larger sample. The constrained nature of prosocial spending we used in Study 3 – while essential to show that prosocial spending increases happiness even in the absence of social connection or praise – may also have limited its positive impact, making emotional rewards harder to detect on a trait-level measure.

Limitations

The present research should be viewed as a first step in understanding the relationship between generosity and SWB around the world. One limitation of the current investigation is that only Study 1 used nationally representative samples. In Study 2a, three-quarters of our sample

consisted of students. It is worth noting that students in both Canada and Uganda were attending public institutions that attract a diverse student body from both rural and urban areas; in Uganda, a sizeable proportion of students in our sample had their tuition costs covered by the Ugandan government (approximately 25% of our sample), and in Canada, undergraduate education is heavily subsidized by the government. Furthermore, Canadian students reported earning substantially more (an average of $5-$10,000/year) than Ugandan students (approximately $1600 Canadian dollars at 2009 PPP exchange rates), suggesting that income differences between the two countries are manifested even among students. That said, students may differ from community members in a myriad of ways (Sears, 1986), and for this reason, we also recruited a community sub-sample in Study 2a and a community sample in Study 2b. While our community sample in Study 2b may have not been representative of the adult population, this sampling strategy revealed that the causal impact of prosocial spending on happiness was not limited to students. Only Study 3 relied exclusively on students, and therefore the results of this study should be interpreted with particular caution. At the same time, our data suggest that the student samples in Study 3 were reflective of the cultural and economic contexts of their home countries. Moreover, the emotional benefits of prosocial spending were not moderated by individuals' education, age or income in the representative samples included in Study 1, suggesting that the relationship between prosocial spending and well-being is not limited to special demographic groups (e.g., students).

Importance of Diverse Samples

Based on research demonstrating that helping others produces happiness among Western participants (e.g., Dunn et al., 2008; Harris, 1977; Williamson & Clark, 1989), it is tempting to simply infer that the warm glow of generosity is fundamental to humans in all cultures (e.g., Post, 2005; Weiss, Buchanon, Altstatt, & Lombardo, 1971). Such inferences are based on the assumption

that human beings are essentially cut from the same cloth, such that a phenomenon discovered among Western samples will also be manifested in other cultures. A recent comprehensive review of the literature suggests that this assumption is empirically untenable (Henrich, Heine, & Norenzayan, 2010a). Even seemingly basic psychological processes, from social reasoning to spatial and visual cognition, often differ drastically across cultures. For example, the San foragers of the Kalahari do not exhibit the Muller-Lyer visual illusion—a staple of introductory psychology textbooks—whereas American undergraduates emerge as an outlier, exhibiting this illusion to a far greater extent than people from other cultures. Because the vast majority of psychological research is conducted by studying what Henrich et al. (2010a) term "WEIRD" (Western, Educated, Industrialized, Rich, Democratic) people, the current literature often provides a profoundly unrepresentative portrait of human psychology (see also Henrich, Heine, & Norenzayan 2010b).

To examine whether this major limitation applies to the literature on generosity and happiness, we first reviewed the fourteen published studies of which we are aware that have used experimental methodology to document the causal effect of generosity on happiness. Of the five studies that clearly identified the geographic origins of their samples, all reported drawing participants from North America (Dunn et al., 2008; Harbaugh et al., 2007; Harris, 1977; Yuen, Huang, Burik & Smith, 2008), with one additional study conducted with high-school-aged males in Israel (Yinon & Landau, 1987; personal communication). In eight other studies, the geographic origins of the samples were not reported, though the researchers were based at North American institutions (Field, Hernandez-Reif, Quintino, Schanberg, & Kuhn, 1998; Lyubomirsky, Sheldon & Schkade, 2005; Weinstein & Ryan, 2010; Williamson & Clark, 1989); the absence of information regarding geographical origins presumably reflects the common assumption that similar results would emerge across different populations. Thus, our review suggests that, like most research in

social psychology, experimental research on generosity and happiness has disproportionately examined North Americans.

While relatively few studies have used experimental methodology to examine the causal effect of generosity on happiness, many more have examined the association between these variables using other methods. We identified sixty-one studies in this category (see Table 3 for a summary). One notable study used a worldwide survey to examine the correlation between happiness and volunteer work (Oishi, Diener, & Lucas, 2007). In addition, a handful of studies used samples drawn from unspecified populations or countries such as Israel, China, and Taiwan. Yet, the overwhelming majority – approximately eighty percent of the studies – focused exclusively upon samples drawn from North America and Europe. Thus, if scholars wish to draw conclusions about the role of generosity in human nature, it is essential to sample far more widely than standard WEIRD samples. By moving beyond such samples, the present research offers a major advance in demonstrating that the emotional benefits of helping others extend to diverse regions of the world.

The Meaning of Universality

While the relationship between prosocial spending and SWB was positive in economically and culturally diverse areas of the world, it also varied in strength in different cultural contexts, consistent with our hypothesis that this relationship represents a functional (as opposed to an accessibility) universal. Indeed, while we did not find statistically significant differences in the prosocial spending-happiness link between Canada and Uganda (Study 2a) or Canada and South Africa (Study 3), a close examination of the effect sizes suggest that the relationship between prosocial spending and SWB is not perfectly uniform; the prosocial spending effect differed across countries when using the recollection procedure (η^2 = .07 in India, η^2 = .04 in Canada, and η^2 = .01 in Uganda), but not when participants were asked to engage in an act of prosocial spending in the

lab (η^2 = .05 in Canada vs. η^2 = .05 in South Africa). Cultural variability is also visible in Study 1: although the relationship between prosocial spending and SWB was significant in all seven of the world's major regions and emerged in both poor and rich countries, this relationship varied in strength across our sample and failed to reach significance in a non-trivial number of countries.

This complexity highlights a fundamental tension in identifying cultural universals, in that even robust patterns may vary substantially in form or degree of expression across cultures. For example, although recognition of basic emotions is generally considered to be a cultural universal, Ekman and colleagues (1987) reported substantial cross-cultural variation in the extent to which people could accurately identify basic emotional expressions (e.g., fear was recognized with 91 percent accuracy in Estonia but with only 65 percent accuracy in Japan); furthermore, in some samples, a subset of universal emotions was not recognized at statistically significant levels (Ekman, Sorensen & Friesen, 1969). Therefore, even universal phenomena show a range of strength across cultures and may not be detected in every sample.

Whereas anthropologists have traditionally emphasized "exceptions to the rule" by studying cultures that differ from most others, we echo recent psychological perspectives by emphasizing the value of identifying regularities that emerge across widely divergent cultural contexts, rather than focusing on isolated exceptions (Norenzayan & Heine, 2005). That said, it is certainly important to investigate whether the "exceptions to the rule" we observed can be explained by identifying the cultural conditions that might undermine the widespread relationship between financial generosity and well-being. We hope that the data reported here will facilitate such investigations.

Prosocial Behavior and Happiness

Finally, while we investigated the emotional consequences of spending money on others, prosocial spending represents only one form of generous behavior (Liu & Aaker, 2008). It is

therefore possible that other kinds of helpful behaviors – such as volunteering within one's community, caring for the ill, or performing random acts of kindness (e.g., Lyubomirsky et al., 2005; Piliavin & Siegl, 2007; Thoits & Hewitt, 2001) – may also promote well-being around the world. This possibility is supported by the research reviewed earlier demonstrating that the rewarding properties of generosity can be detected at a neural level and that even infants often assist others in need. Because neuroimaging data and studies with infants provide suggestive – but inconclusive – evidence for establishing psychological universals (Norenzayan & Heine, 2005), the time is ripe for directly examining whether human beings around the world experience increased happiness after committing a wide range of kind deeds.

In addition, it is worth noting the present research examined *whether* people spent money on others rather than *how much* they spent. Specifically, participants in Study 1 were simply asked if they had donated to charity in the last month, and participants in the remaining studies were asked either to recall spending a fixed monetary amount (Studies 2a and 2b) or to purchase a standardized goody bag (Study 3), thereby holding spending amount constant. This method allowed us to examine the emotional benefits of similar prosocial spending actions across economically diverse populations, but future research should explore whether there is an ideal ratio of personal income that should be invested in others to produce the largest emotional rewards and whether this ratio varies with personal or national wealth.

Future research should also explore whether the emotional benefits of prosocial spending are greatest when directed toward kin and close others. Evolutionary theory suggests that people should prefer to help relatives and allies (Hamilton, 1963; Trivers, 1971), implying that people might derive greater emotional rewards from helping close others rather than strangers or acquaintances. Initial research conducted in North America supports this hypothesis: the emotional benefits of

prosocial spending are greater when giving to strong (vs. weak) social ties (Aknin et al., 2011). Further cross-cultural investigation of the role of tie strength in the prosocial-happiness link offers yet another important avenue for further research.

Conclusion

From an evolutionary perspective, the emotional rewards that people experience when they help others may serve as a proximate mechanism that evolved to facilitate prosocial behavior, which may have carried short-term costs but long-term benefits for survival over human evolutionary history. The robustness of this mechanism is supported by our finding that people experience emotional benefits from sharing their financial resources with others not only in countries where such resources are plentiful, but also in impoverished countries where scarcity might seem to limit the possibilities to reap the gains from giving to others. Following Norenzayan and Heine's (2005) recommendations for establishing psychological universals, we used a strategy of converging evidence, conducting correlational analyses across a vast array of the world's countries and using experimental methodology within four countries that differ along our key dimension of income. Of course, firmly establishing the universality of a complex psychological phenomenon requires extensive research, ideally conducted by a variety of researchers using diverse methodologies. The studies presented here provide a critical first step. In highlighting the potential universality of emotional benefits stemming from prosocial spending, the present research adds to the chorus of recent interdisciplinary findings documenting the importance of generosity for human well-being.

References

Aknin, L. B., Dunn, E. W., & Norton, M. I. (2011). Happiness runs in a circular motion: Evidence for a positive feedback loop between prosocial spending and happiness. *Journal of Happiness Studies, 13(2),* 347-355.

Aknin, L. B., Dunn, E. W., Norton, M. I., & Nyende, P. (2012). [Positive affect and happiness ratings reported after a dictator game in Canada and Uganda]. Unpublished raw data.

Aknin, L.B., Hamlin, J.K., & Dunn, E.W. (2012). Giving leads to happiness in young children. *PLoS ONE, 7(6),* e39211.

Aknin, L. B., Sandstrom, G. M., Dunn, E. W., & Norton, M. I. (2011). It's the recipient that counts: Spending money on strong social ties leads to greater happiness than spending on weak social ties. *PLoS ONE, 6(2),* e17018.

Andreoni, J. (1989). Giving with impure altruism: Applications to charity and Ricardian equivalence. *The Journal Political Economy, 97,* 1447-1458.

Andreoni, J. (1990). Impure altruism and donations to public goods: A theory of warm-glow giving. *The Economic Journal, 100,* 464-477.

Batson, C. D., & Shaw, L. L. (1991). Evidence for altruism: Toward a pluralism of prosocial motives. *Psychological Inquiry, 2,* 107-122.

Baumeister, R.F., & Leary, M.R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117,* 497-529.

Biswas-Diener, R., Kashdan, T.B., & King, L.A. (2009). Two traditions of happiness research, not two distinct types of happiness. *Journal of Positive Psychology, 4,* 208-211.

Bond, M. H. (1988). Finding universal dimensions of individual variation in multicultural studies of values: The Rokeach and Chinese value surveys. *Journal of Personality and Social Psychology, 55,* 1009-1015.

Borgonovi, F. (2008). Doing well by doing good. The relationship between formal volunteering and self-reported health and happiness. *Social Sciences & Medicine, 66,* 2321-2334.

Brown, S.L., Brown, R.M., House, J.S., & Smith, D.M.(2008). Coping with spousal loss: Potential buffering effects of self-reported helping behavior. *Personality and Social Psychology Bulletin, 34,* 849-861.

Brown, D. R., Gary, L., Green, A., & Milburn, N. (1992). Patterns of social affiliation as predictors of depressive symptoms among urban blacks. *Journal of Health and Social Behavior, 33,* 242-253.

Brown, S.L., Nesse, R.M., Vinokur, A.M., Smith, D.M. (2003). Providing social support may be more beneficial than receiving it: Results from a prospective study of mortality. *Psychological Science, 14,* 320-327.

Brown, W.M., Consedine, N.S., Magai, C. (2005). Altruism relates to health in an ethnically diverse sample of older adults. *Journal of Gerontology: Psychological Sciences, 60B,* P143-P152.

Buffet, W. (2010, June 16). My philanthropic pledge. Retrieved June 3, 2011 from http://money.cnn.com/2010/06/15/news/newsmakers/Warren_Buffett_Pledge_Letter.fortune/index.htm

Buhrmester, M. D., Kwang, T., & Gosling, S. D. (2011). Amazon's mechanical turk: A new source of inexpensive, yet high-quality data? *Perspectives on Psychological Science, 6,* 3-5.

Buss, D. M. (1989). Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences,12,* 1–49.

Calabrese, R. L., & Schumer,H. (1986). The effects of service activities on adolescent alienation. *Adolescence, 21*, 675-687.

Cantril, H. (1965). *The patterns of human concern*. New Brunswick, NJ: Rutgers University Press.

Carter, T., & Gilovich, T. (2010). The relative relativity of experiential and material purchases. *Journal of Personality and Social Psychology, 98,* 146-159.

Cutler, S.J. (1976). Membership in different types of voluntary associations and psychological well-being. *The Gerontologist, 16*, 335-339.

Darwin, C. (1871/1982). *The descent of man, and selection in relation to sex.* Princeton, NJ: Princeton University Press.

Deaton, A. (2008). Income, health, wellbeing around the world: Evidence from the Gallup World Poll. *The Journal of Economic Perspectives, 22*, 53-72.

Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, *95*, 542-575.

Diener, E. (2000). Subjective well-being: The science of happiness, and a proposal for a national index. *American Psychologist*, *55*, 34-43.

Diener, E., & Biswas-Diener, R. (2002). Will money increase subjective well-being? *Social Indicators Research, 57,* 119-169.

Diener, E., Emmons, R. A., Larson, R. J., Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment, 49,* 71-75.

Diener, E., Ng, W., Harter, J. & Arora, R. (2010). Wealth and happiness across the world: Material prosperity predicts life evaluation, whereas psychological prosperity predicts positive feeling. *Journal of Personality and Social Psychology, 99*, 52-61.

Diener, E., & Oishi, S. (2005). The nonobvious social psychology of happiness. *Psychological Inquiry*, *16*, 162-167.

Diener, E., Oishi, S., & Lucas, R. E. (2003). Personality, culture, and subjective well-being: Emotional and cognitive evaluations of life. *Annual Review of Psychology, 54*, 403-425.

Diener, E. & Scollon, C. (2003, October). *Subjective well-being is desirable, but not the summum bonum.* Paper presented at the University of Minnesota Interdisciplinary Workshop on Well-being, Minneapolis, MN.

Diener, E., & Seligman, M.E.P. (2002). Very happy people. *Psychological Science, 13*, 81

Dulin, P., & Hill, R. (2003). Relationships between altruistic activity and positive and negative affect among low-income older adult service providers. *Aging & Mental Health, 7*, 294-299.

Duncan, D.F., & Whitney, R.J. (1990). Work and the mental well-being of the elderly. *Psychological Reports, 66*, 882.

Dunn, E.W., Aknin, L.B., Norton, M.I. (2008). Spending money on others promotes happiness. *Science, 319*, 1687-1688.

Ekman, P., Friesen, W. V., O'Sullivan, M., Chan, A., Diacoyanni-Tarlatzis, I., Heider, K., Krause, R., LeCompte, W. A., Pitcairn, T., Ricci-Bitti, P.E., Scherer, K., Tomita, M., & Tzavaras, A. (1987). Universal and cultural differences in the judgments of facial expressions of emotion. *Journal of Personality and Social Psychology, 53*, 712-717.

Ekman, P. Sorenson, E. R., & Friesen, W. V. (1969). Pan-cultural elements in facial displays of emotion. *Science, 164*, 86-88.

Ferrer-i-Carbonell, A., & Frijters, P. (2004). How important is methodology for the estimates of the determinants of happiness? *The Economic Journal, 114*, 641-659.

Field, T. M., Hernandez-Reif, M., Quintino, O., Schanberg, S., & Kuhn, C. (1998). Elder retired volunteers benefit from giving massage therapy to infants. *Journal of Applied Gerontology, 17*, 229-239.

Froh, J.J., Bono, G., & Emmons, R. (2010). Being grateful is beyond good manners: Gratitude and motivation to contribute to society among early adolescents. *Motivation and Emotion, 34*, 144-157.

Froh, J.J., Yurkewicz, C., & Kashdan, T.B. (2009). Gratitude and subjective well-being in early adolescence: Examining gender differences. *Journal of Adolescence, 32*, 633-650.

Greenfield, E.A., & Marks, N.F. (2004). Formal volunteering as a protective factor for older adults' psychological well-being. *Journal of Gerontology – Social Sciences, 59B,* S258-S264.

Hainsworth, J. & Barlow, J. (2001). Self-management lay leaders: "It's almost as if I've stopped aging and started to get younger!", *Arthritis Care and Research, 45*, 378-383.

Hamilton, W.D. (1963). The evolution of altruistic behavior. *American Naturalist, 97*, 354-356.

Hao, Y. (2008). Productive activities and psychological well-being among older adults. *Journal of Gerontology- Social Sciences, 63B*, 564-572.

Harbaugh, W.T. (1998). What do donations buy? A model of philanthropy based on prestige and warm glow. *Journal of Public Economics, 67*, 269-284.

Harbaugh, W.T., Mayr, U., Burghart, D. R. (2007). Neural responses to taxation and voluntary giving reveal motives for charitable donations. *Science, 316*, 1622-1625.

Harris, M.B. (1977). Effects of altruism on mood. *Journal of Social Psychology, 102*, 97-108.

Haski-Leventhal, D. (2009). Elderly volunteering and well-being: A cross-European comparison based on SHARE data. *Voluntas, 20*, 388-404.

Hawley, P.H., Little, T.D., & Pasupathi, M. (2002). Winning friends and influencing peers: Strategies of peer influence in late childhood. *International Journal of Behavioral Development, 26*, 466-474.

Hecht, T.D., & Boies, K. (2009). Structure and correlates of spillover from nonwork to work: An examination of nonwork activities, well-being, and work outcomes. *Journal of Occupational Health Psychology, 14*, 414-426.

Heine, S. J. (2008). *Cultural Psychology*. New York: Norton.

Heine, S. J., Lehman, D. R., Peng, K., & Greenholtz, J. (2002). What's wrong with cross-cultural comparisons of subjective Likert scales: The reference-group problem. *Journal of Personality and Social Psychology*, *82*, 903-918.

Helliwell, J.F., Barrington-Leigh, C.P., Harris, A., Huang, H. (2010). In E.Diener, J.F. Helliwell, & D. Kahneman (Eds.), *International Differences in Well-Being* (pp. 291-327). New York: Oxford University Press.

Henrich, J., Heine, S.J., & Norenzayan, A. (2010a). The weirdest people in the world? *Behavioral and Brain Sciences*, 1-75.

Henrich, J., Heine, S., & Norenzayan, A. (2010b). Most people are not WEIRD. *Nature, 466*, 29.

Henrich, J., & Henrich, N. (2006). Culture, evolution and the puzzle of human cooperation. *Cognitive Systems Research, 7*, 221-245.

Howell, R. T., & Hill, G. (2009). The mediators of experiential purchases: Determining the impact of psychological needs satisfaction and social comparison. *Journal of Positive Psychology, 4*, 511-522.

Hunter, K. I., & Linn, M.W. (1980–1981). Psychosocial differences between elderly volunteers and non-volunteers. *International Journal of Aging and Human Development, 12,* 205–213.

Jirovec, R. L., & Hyduk, C. A., (1998). Type of volunteer experience and health among older adult volunteers. *Journal of Gerontological Social Work, 30*, (3/4), 29-42.

Kao, Y. (2009). Burnout in college student volunteers: A cross-level study. *College Student Journal, 43,* 872-878.

Kashdan, T. B., Biswas-Diener, R., & King, L. A. (2008). Reconsidering happiness: The costs of distinguishing between hedonics and eudaimonia. *Journal of Positive Psychology, 3,* 219-233.

Konow, J., & Earley, J. (2008). The hedonistic paradox: Is homo economicus happier? *Journal of Public Economics, 92,* 1-33.

Krueger, R.F., Hicks, B.M., & McGue, M. (2001). Altruism and antisocial behavior: Independent tendencies, unique personality correlates, distinct etiologies. *Psychological Science, 12,* 397-402.

Law, B.M.F., Shek, D.T.L., & Ma, C.M.S. (2011). Exploration of the factorial structure of the revised personal functions of the volunteerism scale for Chinese adolescents. *Social Indicators Research, 100,* 517-537.

Layard, R., Clark, A., & Senik, C. (2012). The causes of happiness and misery. In J. Helliwell, R. Layard, & J. Sachs (Eds.), *World Happiness Report* (pp.58-89). United Nations.

Leung, K., & Bond, M. H. (1989). On the empirical identification of dimensions for cross-cultural comparisons. *Journal of Cross-Cultural Psychology, 20,* 133-152.

Li,Y. (2007). Recovering from spousal bereavement in later life: Does volunteer participation play a role. *Journal of Gerontology- Social Sciences, 62B,* S257-S266.

Liang, J., Krause, N. M., & Bennett, J. M. (2001). Social exchange and well-being: Is giving better than receiving? *Psychology & Aging, 16,* 511–523.

Liu, W., & Aaker. J. (2008). The happiness of giving: The time-ask effect. *Journal of Consumer Research, 35,* 543-557.

Luks, A. (1988). Doing good: Helper's high. *Psychology Today, 22,* 39-42.

Lyubomirsky, S., & Lepper, H.S. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. *Social Indicators Research, 46,* 137-155.

Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology, 9,* 111–131.

Magen, Z. (1996). Commitment beyond self and adolescence: The issue of happiness. *Social Indicators Research, 37,* 235-267.

Magen, Z. & Aharoni, R. (1991). Adolescents' contributing toward others: Relationship to positive experiences and transpersonal commitment. *Journal of Humanistic Psychology, 31*, 126-143.

Martin, K.D., & Hill, R.P. (2011). Life satisfaction, self-determination, and consumption adequacy at the bottom of the pyramid. *Journal of Consumer Research, 38,* 1155-1168.

McCullough, M.E., Emmons, R.A., & Tsang, J. (2002). The grateful disposition: A conceptual and empirical topography. *Journal of Personality and Social Psychology*, *82*, 112-127.

McIntyre, C. W., Watson, D., Clark, L. A., & Cross, S. A. (1991). The effect of induced social interaction on positive and negative affect. *Bulletin of the Psychonomic Society, 29(1),* 67–70.

McMunn, A., Nazroo, J., Wahrendorf, M., Breeze, E., & Zaninotto, P. (2009). Participation in socially-productive activities, reciprocity and wellbeing in later life: Baseline results in England. *Aging and Society, 29,* 765-782.

Meier, S., & Stutzer, A. (2008). Is volunteering rewarding in itself? *Economica, 75*, 39-59.

Melia, S.P. (2000). Generativity in the lives of older catholic women religious. *Advances in Life Course Research, 5*, 119-141.

Mellor, D., Hayashi, Y., Firth, L., Stokes, M., Chambers, S., & Cummins, R. (2008). Volunteering and well-being: Do self-esteem, optimism, and perceived control mediate the relationship? *Journal of Social Service Research, 34*, 61-70.

Midlarsky, E. (1991). Helping as coping. *Prosocial Behavior: Review of Personality and Social Psychology, 12,* 238–264.

Midlarsky, E., & Kahana, E. (1994). *Altruism in later life.* Thousand Oaks, CA: Sage.

Millar, M., & Thomas, R. (2009). Discretionary activity and happiness: The role of materialism. *Journal of Research in Personality, 43,* 699-702.

Mishra, S. (1992). Leisure activities and life satisfaction in old age: A case study of retired government employees living in urban areas. *Activities, Adaptation and Aging, 16,* 7–26.

Moll. J., Krueger, F., Zahn, R., Pardini, M., de Oliveira-Souza, R., & Grafman, J. (2006). Human fronto-mesolimbic networks guide decisions about charitable donation. *Proceedings of the National Academy of Sciences, 103,* 15623-15628.

Morrow-Howell, N., Hinterlong, J., Rozario, P. A., & Tang, F. (2003). Effects of volunteering on the well-being of older adults. *Journals of Gerontology Series B-Psychological Sciences Social Sciences, 58*(3), S137–145.

Morrow-Howell, N., Kinnevy, S., & Mann, M. (1999). The perceived benefits of participating in volunteer and educational activities. *Journal of Gerontological Science Work, 32,* 65-80.

Musick , M. A., Herzog , A. R., & House, J. S. (1999). Volunteering and mortality among older adults: Findings from a national sample. *The Journals of Gerontology: Psychological sciences and social sciences, 54B,* S173-S180.

Musick, M.A., & Wilson, J. (1999). The effects of volunteering on the volunteer. *Law and Contemporary Problems, 62,* 141-168.

Musick, M.A., & Wilson, J. (2003). Volunteering and depression: The role of psychological and social resources in different age groups. *Social Sciences and Medicine, 56,* 259-269.

Newman, S., Vasudev, J., & Onawola, R. (1985). Older volunteers' perceptions of impacts of volunteering on their psychological well-being. *Journal of Applied Gerontology, 4*, 123-127.

Nicola, L., Irwin, J. R., & Goodman, J. K. (2009). Happiness for sale: Do experiential purchases make consumers happier than material purchases? *Journal of Consumer Research, 36*, 188-198.

Norenzayan, A., & Heine, S.J. (2005). Psychological universals: What are they and how can we know? *Psychological Bulletin, 131*, 763-784.

Oishi, S., Diener, E., & Lucas, R.E. (2007). The optimal level of well-being: Can people be too happy? *Perspectives on Psychological Science, 2*, 346-360.

Osterweil, Z.O., & Feingold, H. (1981). A student volunteer program for elementary school children. *School Psychology International, 2*, 30-33.

Penner, L. A., Dovidio, J. F., Piliavin, J.A., & Schroeder, D. A. (2005). Prosocial behavior: Multilevel perspectives. *Annual Review of Psychology, 56*, 365-392.

Piliavin, J.A., & Siegl, E. (2007). Health benefits of volunteering in the Wisconsin longitudinal study. *Journal of Health and Social Behavior, 48*, 450-464.

Pillemer, K., Fuller-Rowell, T.E., Reid, M.C., & Wells, N.M. (2010). Environmental volunteering and health outcomes over a 20-year period. *The Gerontologist, 50*, 594-602.

Plagnol, A.C., & Huppert, F.A. (2010). Happy to help? Exploring the factors associated with variations in rates of volunteering across Europe. *Social Indicators Research, 97*, 157-176.

Post, S.G. (2005). Altruism, happiness, and health: It's good to be good. *International Journal of Behavioral Medicine, 12*, 66-77.

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, and Computers, 36,* 717-731.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40,* 879-891.

Reed, J., & Ones, D. S. (2006). The effect of acute aerobic exercise on positive activated affect: A meta-analysis. *Psychology of Sport and Exercise, 7,* 477-517.

Reitschlin, J. (1998). Voluntary association membership and psychological distress. *Journal of Health and Social Behavior, 39,* 348-355.

Rutstein, S. O. & Johnson, K. (2004). The DHS Wealth Index. *DHS Comparative Reports,* 6. Calverton, Maryland: ORC Macro.

Schnall, S., Ropper, J., & Fessler, D.M.T. (2010). Elevation leads to altruistic behavior. *Psychological Science, 21,* 315-320.

Schwartz, C., Meisenhelder, J. B., Ma, Y., & Reed, G. (2003). Altruistic social interest behaviors are associated with better mental health. *Psychosomatic Medicine, 65,* 778–785.

Schwartz, C. E., & Sendor, M. (1999). Helping others helps oneself: Response shift effects in peer support. *Social Science & Medicine, 48,* 1563-1575.

Schwarz, N., & Clore, G.L. (1983). Mood, misattribution, and judgments of well-being: Informative and directive functions of affective states. *Journal of Personality and Social Psychology, 45,* 513-523.

Sears, D. O. (1986). College sophomores in the laboratory: Influences of a narrow data base on social psychology's view of human nature. *Journal of Personality and Social Psychology, 51,* 515–530.

StataCorp. 2007. *Stata Statistical Software: Release 10*. College Station, TX: StataCorp LP.

Strack, F., Schwarz, N., & Gschneidinger, E. (1985). Happiness and reminiscing: The role of time perspective, affect and mode of thinking. *Journal of Personality and Social Psychology, 49,* 1460-1469.

Tang, F., Choi, E., & Morrow-Howell, N. (2010). Organizational support and volunteering benefits for older adults. *The Gerontologist, 50,* 603-612.

Tankersley, D., Stowe C.J., & Huettel, S.A. (2007). Altruism is associated with an increased neural response to agency. *Nature Neuroscience, 10,*150-151.

Taylor, T. & Pancer, S.M. (2007). Community service experiences and commitment to volunteering. *Journal of Applied Social Psychology, 37,* 320-345.

Thoits, P. A., & Hewitt, L. N. (2001). Volunteer work and well-being. *Journal of Health and Social Behavior, 42,* 115–131.

Tomasello, M. (2009). In B. Galef, & K. Laland (Eds.), *The Question of Animal Culture* (pp. 198-221). USA: Academic Press.

Trivers, R.L. (1971). The evolution of reciprocal altruism. *The Quarterly Review of Biology, 46,* 35-37.

Valois, R. F., Zullig, K. J., Huebner, E. S., & Drane, J. W. (2009). Physical activity behaviors and perceived life satisfaction among public high school adolescents. *Journal of School Health, 74,* 59-65.

Van Boven, L., & Gilovich, T. (2003). To do or to have? That is the question. *Journal of Personality and Social Psychology, 85,* 1193-1202.

Van Willigen, M., (2000). Differential benefits of volunteering across the life course. *Journal of Gerontology – Social Sciences,55B,* S308-S318.

von Dawans, B., Fischbacher, U. Kirschbaum, C., Fehr, E., & Henrichs, M. (2012). The social dimension of stress reactivity: Acute stress increases prosocial behavior in humans. *Psychological Science, 23(6),* 651-660.

Waddell, E.L., & Jacobs-Lawson, J.M. (2010). Predicting positive well-being in older men and women. *International Journal of Aging and Human Development, 70,* 181-197.

Wahrendorf, M., Knesebeck, O.V.D., Siegrist, J. (2006). Social productivity and well-being of older people: Baseline results from the SHARE study. *European Journal of Ageing, 3,* 67-73.

Wallace, C. & Pichler, F. (2009). More participation, happier society? A comparative study of civil society and quality of life. *Social Indicators Research, 93,* 255-274.

Warneken, F., & Tomasello, M. (2006). Altruistic helping in human infants and young chimpanzees. *Science, 311,* 1301-1303.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54,* 1063-1070.

Weinstein, N., Ryan, R. M. (2010). When Helping Helps: Autonomous Motivation for Prosocial Behavior and Its Influence on Well-Being for the Helper and Recipient. *Journal of Personality and Social Psychology, 98,* 222-244.

Weiss, R.F., Buchanan, W., Alstatt, L., & Lombardo, J.P. (1971). Altruism is rewarding. *Science, 171,* 1262-1263.

Williamson, G.M., & Clark, M.S. (1989). Providing help and desired relationship type as determinants of changes in moods and self-evaluations. *Journal of Personality and Social Psychology, 56,* 722-734.

Wilson, D.S. (1975). A theory of group selection. *Proceedings of the National Academy of Sciences, 72,* 143-146.

Windsor, T.D., Anstey, K.J., Rodgers, B. (2008). Volunteering and psychological well-being among young-old adults: How much is too much? *The Gerontologist, 48*, 59-70.

Wu, A.M.S., Tang, C.S.K, & Yan, E.C.W.(2005). Post-retirement voluntary work and psychological functioning among older Chinese in Hong Kong. *Journal of Cross-Cultural Gerontology, 20,* 27-45.

Yuen, H.K., Huang, P., Burik, J.K., & Smith, T.G. (2008) Impact of participating in long-term care facilities. *American Journal of Occupational Therapy*, 62, 71-76.

Yinon, Y. & Landau, M.O. (1987). On the reinforcing value of helping behavior in a positive mood. *Motivation and Emotion, 11,* 83-93.

Zahn-Waxler, C., Radke-Yarrow, M., Wagner, E., & Chapman, M. (1992). Development of concern for others. *Developmental Psychology, 28,* 126-136.

Acknowledgments

The authors thank Benjamin Bluman, Michael Gill, Anthony Harris, Steve Heine, Joe Henrich, Ara Norenzayan, Jason Riis, and Gerry Tellis for their help. The authors are also grateful to the Gallup Corporation for providing access to the Gallup World Poll data.

Footnotes

[1] Consistent with other recent research analyzing SWB data in the Gallup World Poll (Deaton, 2008; Diener, Ng, Harter, & Arora, 2010), we chose to utilize ordinary least squares regression analyses. This analytic strategy has been validated against a number of other methods for analyzing the determinants of happiness (Ferrer-i-Carbonell & Frijters, 2004). In a later section, we extend our ordinary least squares estimates to achieve a multi-level model allowing for variation in the main effect across countries in accordance with a national-level variable. That is, we use a set of interaction terms between individual Donations and several indicator variables denoting whether a given national variable (e.g., GDP/capita) is in a given range.

[2] Although the raw coefficient of log income is higher than that of prosocial spending, the logarithmic form of income means that large multiplicative changes in income are required to have a large effect on predicted SWB. Quantitatively, in order to increase SWB by as much as the predicted effect of prosocial spending, log income would need to increase by the ratio of coefficients, .27/.41 = .66. Therefore, income would need to increase by a factor of exp(.27/.41) = 1.93.

[3] These means are calculated using confidence weights from the country-level estimates, and are shown in Table S2 in the supporting online materials. We also carry out pooled estimates directly at the region level and find highly similar results, again significant in each region (Table S5 in supporting online materials http://wellbeing.research.mcgill.ca/publications/prosocial-spending-Aknin-et-al-supplement.pdf).

[4] The relationship between prosocial spending and SWB also remains significant if we estimate a simpler equation that lacks demographic information as well (see Table S4 in the supporting online materials).

[5] In both Studies 2a and 3, the effect of prosocial spending on happiness was substantively the same using raw happiness scores rather than standardized scores. Because the use of raw scores can produce spurious results when the effect of one variable on another is examined across cultures (for a discussion of this issue, see Bond, 1988), we report results using standardized scores.

[6] Because the Ugandan community sample data were collected after the three student samples, these data were coded by a separate team of 4 Canadian RAs (also blind to participants' assigned condition, happiness scores, and goals of the study). This second group of coders applied the same coding scheme to the Ugandan community sample data; to ensure that the second coding team applied the coding scheme similarly to the first team, a total of 50 spending memories drawn from the Mbaraba, Kampala and UBC student samples were coded by the second group of coders. The two coding teams showed high levels of agreement across all items, average $r(48) = .83$, $p < .01$.

[7] Due to the limits of our online survey administration tool, we used quasi-random assignment, based on the day of the month (1st-10th, 11^{th} -20^{th}, 21^{st} -31^{st}) that participants were born; unfortunately, this resulted in uneven cell sizes. Despite uneven cells, the data did not violate the assumption of homogeneity of variance, making our statistical tests robust to Type I error inflation.

[8] When we included participants in the prosocial spending condition who chose to receive cash for themselves, the main effect of spending condition remained significant, $p = .002$, and neither the main effect of country nor the Condition X Country interaction approached significance (Fs < .02, ps < .7). When we excluded all participants in both conditions who chose to receive cash, the main effect of condition was again significant, $p = .04$, and neither the main effect of country nor the Condition X Country interaction reached significance, ps >.73.

[9] Analyses controlling for each individual measure of baseline happiness separately are substantively the same. The main effect of spending condition is significant Fs > 9.5, ps < .005, and

neither the main effect of country or the Condition X Country interaction term approach significance Fs < 1.0, ps > .75.

Table 1

Coder reliabilities and frequency ratings by recall condition and home country.

Coding Dimension (alpha)	Type of Spending Recalled	
	Prosocial	*Personal*
Purchase Context		
Purchase made to strengthen an old relationship (.81)		
Uganda	58.7% [a]	14.4% [b]
Canada	64.2% [a]	12.9% [b]
Purchase made to build a new relationship (.63)		
Uganda	3.3% [a]	1.2%,[b]
Canada	3.0% [a,b]	1.1% [a,b]
Purchase made in relation to negative event (.91)		
Uganda	14.6% [a]	1.8% [b]
Canada	0.0% [b]	0.4% [b]
Purchase Motivation		
Need vs. Want (.84) *1=need,7=want*		
Uganda	4.58 [a]	4.65 [a]
Canada	6.19 [c]	5.17 [b]
Obligation vs. Volition (.70) *1=obligation,7=volition*		
Uganda	5.46 [a]	5.32 [a]
Canada	6.36 [c]	5.88 [b]
Purchase Content		
Personal necessities (.74)		
Uganda	6.8% [a]	21.1% [b]
Canada	7.1% [a]	10.2% [a]
Food (.95)		
Uganda	33.7% [a]	48.7% [b]
Canada	47.0% [b]	46.2% [b]
Transportation (.97)		
Uganda	14.8% [a]	18.2% [a]
Canada	1.5% [b]	1.5% [b]
Medical items or related costs (.94)		
Uganda	9.4% [a]	2.2% [b]
Canada	0.0% [b]	0.4% [b]
Clothing (.92)		
Uganda	15.9% [a]	27.0% [b]
Canada	19.0% [a,b]	21.2% [a,b]
Experience (.78)		
Uganda	17.0% [a]	21.6% [a]
Canada	15.7% [a]	14.8% [a]

Note: Superscript text denotes significant mean differences. Means with the same superscript are not significantly different from one another at the $p = .05$ level.

Table 2

Religious, cultural, and political beliefs reported by Canadian and South African students (Study 3) and nationally representative samples (from the World Values Survey, 1981-2005).

		Our Data			World Values Survey		
		Canada (Mean, SD)	South Africa (Mean, SD)	Group Difference	Canada (Mean, SD)	South Africa (Mean, SD)	Group Difference
Religion	How important would you say religion is in your life? (*1-very important; 4-not at all important*)	3.06 (.98)	1.92 (.99)	$p < .001$	2.15 (1.02)	1.43 (.75)	$p < .001$
	Apart from weddings and funerals, how often do you attend religious services these days? (*1-more than once a week; 7-never, practically never*)	5.38 (1.85)	3.38 (1.90)	$p < .001$	4.92 (2.54)	3.34 (2.34)	$p < .001$
	Do you find that you get comfort and strength from religion? (*Dichotomous: yes/no)*	65% yes	71% yes	$p = .28$	67% yes	91% yes	$p < .001$
	How much confidence do you have in the churches? *(1-a great deal; 4-none at all)*	2.98 (.71)	2.48 (.88)	$p < .001$	2.26 (.91)	1.70 (.89)	$p < .001$
	Do you think that the churches in Canada (South Africa) give adequate answers to the moral problems and needs of the individual? (*Dichotomous:*	40% yes	40% yes	$p = .48$	49% yes	72% yes	$p < .001$

	yes/no)						
	Do you think that the churches in Canada (South Africa) give adequate answers to the problems of family life? (*Dichotomous: yes/no)*	32% yes	56% yes	$p < .001$	47% yes	75% yes	$p < .001$
Culture	One of my main goals in life has been to make my parents proud (*1-strongly agree; 4-strongly disagree*)	1.96 (.78)	1.55 (.74)	$p < .001$	1.98 (.71)	1.55 (.66)	$p < .001$
	Justifiable *(1-never justifiable; 4-always justifiable*)						
	Divorce	6.93 (1.82)	6.33 (2.29)	$p < .05$	6.07 (2.65)	3.89 (2.79)	$p < .001$
	Prostitution	4.47 (2.58)	3.72 (2.48)	$p < .04$	3.28 (2.58)	2.26 (2.25)	$p < .001$
	Abortion	6.39 (2.64)	4.89 (3.00)	$p < .001$	4.55 (2.94)	2.75 (2.56)	$p < .001$
	Homosexuality	7.93 (2.70)	4.82 (3.46)	$p < .001$	5.62 (3.32)	2.68 (2.51)	$p < .001$
	Euthanasia	5.32 (2.66)	4.32 (3.13)	$p < .02$	5.46 (3.12)	3.56 (2.94)	$p < .001$
Politics	Politicians who do not believe in God are unfit for public office (*1-strongly agree; 5-strongly disagree*)	4.33 (.96)	3.70 (1.28)	$p < .001$	3.55 (1.17)	2.57 (1.26)	$p < .001$
	It would be better for Canada (South Africa) if more people with strong religious beliefs held public office (*1-strongly agree; 5-strongly disagree*)	4.11 (1.11)	3.26 (1.33)	$p < .001$	3.36 (1.14)	2.29 (1.04)	$p < .001$

GWP	Have there been times in the past 12 months that you did not have enough money to buy food that you or your family needed? *Dichotomous: yes/no*	3.6% yes	21.9 % yes	$p < .001$	8.8%	54.4%	$p < .001$

Table 3

Non-experimental examinations of the association between generosity and happiness.

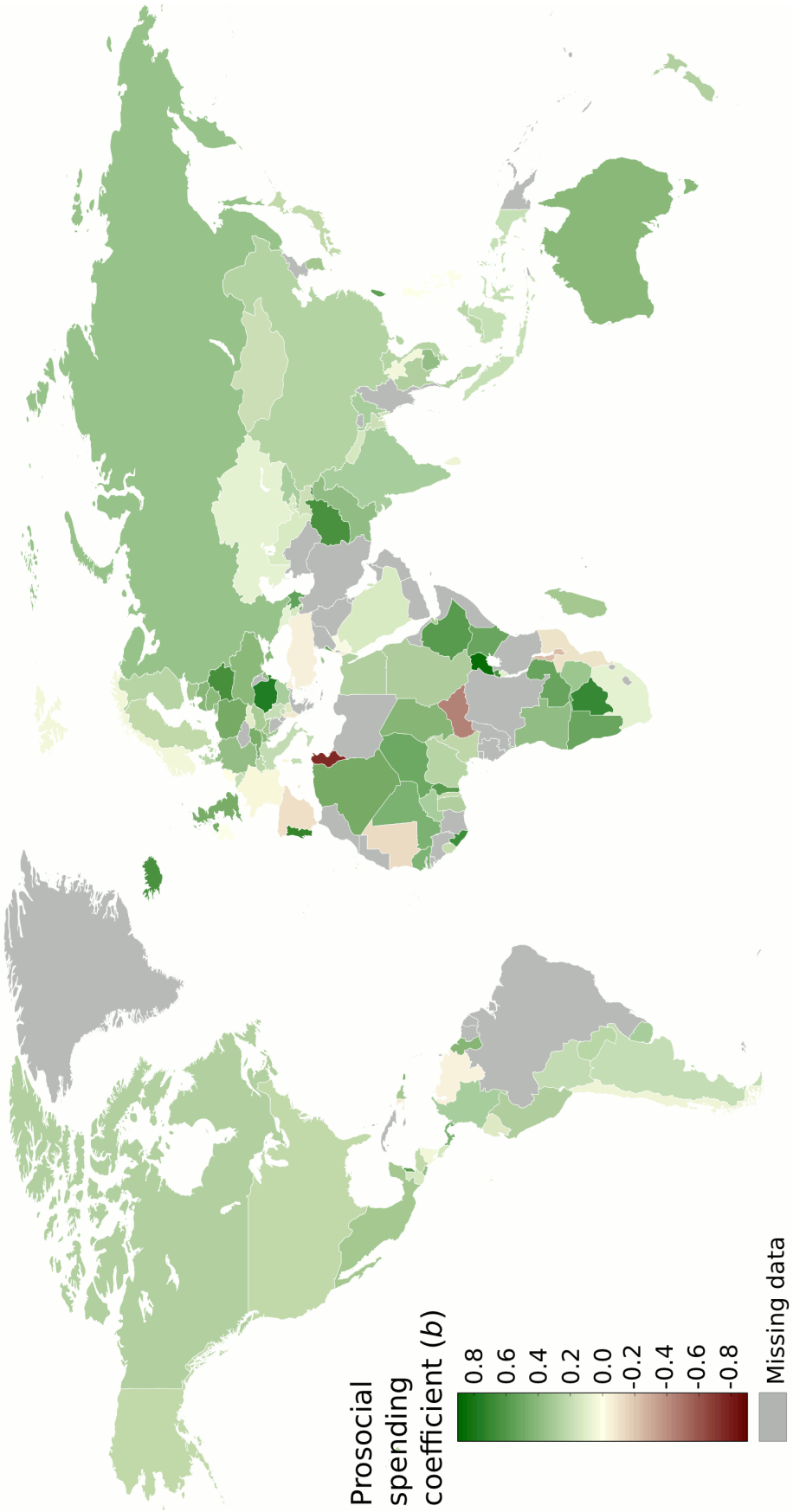
Sample	
International	Oishi, Diener & Lucas, 2007
Unspecified	Konow & Early, 2008; McCullough, Emmons, Tsang, 2002; Melia, 2000; Tang, Choi, & Morrow-Howell, 2010
Other	
China	Law, Shek, & Ma, 2011; Wu, Tang, & Yan, 2005
Israel	Magen, 1996; Magen & Aharoni, 1991; Osterweil & Feingold, 1981
Taiwan	Kao, 2009
North America and Europe	Borgonovi, 2008; Brown, Brown, House & Smith, 2008; Brown, Gary, Green & Milburn, 1992; Calabrese & Schumer, 1986; Cutler, 1976; Dulin & Hill, 2003; Duncan & Whitney, 1990; Froh, Bono, & Emmons, 2010; Froh, Yurkewicz & Kashdan, 2009; Greenfield & Marks, 2004; Hainsworth & Barlow, 2001; Hao, 2008; Haski-Leventhal, 2009; Hawley, Little, & Pasupathi, 2002; Hecht & Boies, 2009; Hunter & Linn, 1980-1981; Jirovec & Hyduk, 1998; Krueger, Hicks & McGue, 2001; Li, 2007; Liang, Krause & Bennett, 2001; Luks, 1988; McMunn, Nazroo, Wahrendorf, Breeze, & Zaninotto, 2009; Meier & Stuatzer, 2008; Mellor et al., 2008; Midlarsky, 1991; Midlarsky & Kahana, 1994; Morrow-Howell, Hinterlong, Rozario & Tang, 2003; Morrow-Howell, Kinnevy & Mann, 1999; Musick, Herzog & House, 1999; Musick & Wilson, 1999, 2003; Newman, Vasudev, & Onawola, 1985; Piliavin & Siegal, 2007;

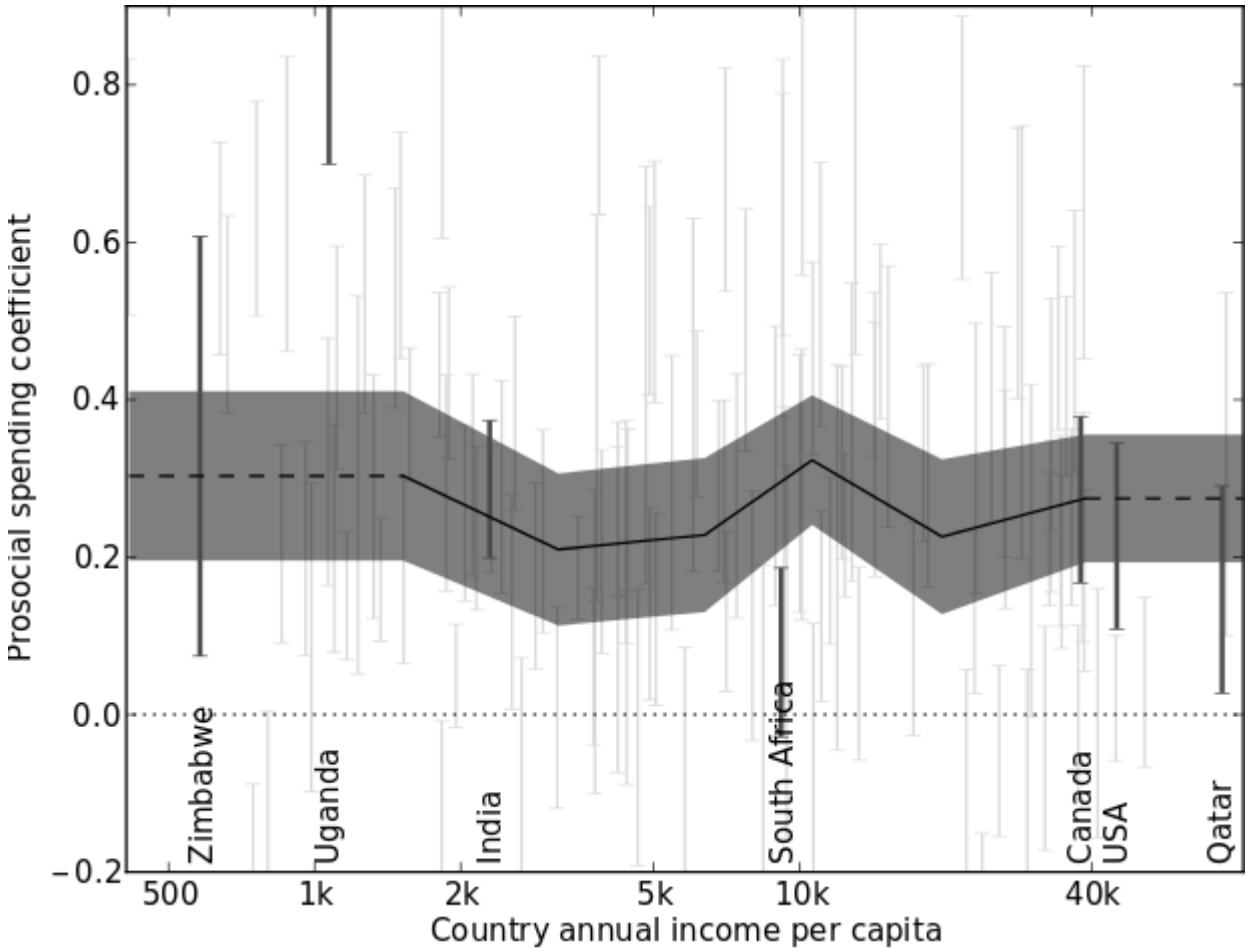
Pillemer, Fuller-Rowell, Reid, & Wells, 2010; Plagnol & Huppert, 2010; Reitschlin, 1998; Schnall, Roper, & Fessler, 2010; Schwartz, Meisenhelder, Ma & Reed, 2003; Schwartz & Sendor, 1999; Taylor & Pancer, 2007; Thoits & Hewitt, 2001; Van Willigen, 2000; Waddell & Jacobs-Lawson, 2010; Wahrendorf et al, 2006; Wallace & Pichler, 2009; Windsor, Anstey & Rodgers, 2008

Figure Legend

Figure 1. World map display of prosocial spending coefficients.

Figure 2. Each vertical line represents the 95% confidence interval for the prosocial spending coefficient within an individual country (from Equation 1); countries of particular interest are in bold. These lines are graphed in order of country income (in 2007 PPP US$), from low to high. The shaded area shows the 95% confidence interval for the prosocial spending coefficients in each range of national income. The dashed lines show the extension of the range of the smallest and largest income groups estimated.


Prosocial spending coefficient (b)
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
-0.6
-0.8
Missing data


Prosocial spending coefficient
0.8
0.6
0.4
0.2
0.0
−0.2
Zimbabwe
Uganda
India
South Africa
Canada
USA
Qatar
500
1k
2k
5k
10k
40k
Country annual income per capita