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TRUST AND WELL-BEING

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ABSTRACT

This paper presents new evidence linking trust and subjective well-being, based primarily on data from the Gallup World Poll and cycle 17 of the Canadian General Social Survey (GSS17). Because several of the general explanations for subjective well-being examined here show large and significant linkages to both household income and various measures of trust, it is possible to estimate income-equivalent compensating differentials for different types of trust. Measures of trust studied include general social trust, trust in co-workers, trust in neighbours, and trust in police. In addition, some Canadian surveys and the Gallup World Poll ask respondents to estimate the chances that a lost wallet would be returned to them if found by different individuals, including neighbours, police and strangers.

Our results reveal sufficiently strong linkages between trust and well-being to support much more study of how trust can be built and maintained, or repaired where it has been damaged. We therefore use data from the Canadian GSS17 to analyze personal and neighbourhood characteristics, including education, migration history, and mobility, that help explain differences in trust levels among individuals. New experimental data from Canada show that wallets are far more likely to be returned, even by strangers in large cities, than people expect.

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1. Introduction

Humans are social beings, and trust is widely seen as an essential element in any social setting. Without trust, people are loath to reach out, and to make the social connections that underpin any collaborative action. For sustainable success, trust needs to be matched by trustworthiness. Many recent studies of the causes and consequences of trust have been linked to the parallel study of social capital, since trust has been seen sometimes as a proxy measure of social capital, or alternatively as a consequence or correlate of high levels of social capital. Like social capital, trust can be narrow or encompassing, identified by type and purpose, be affected by geographic, social and cultural distance, and to take more time to build than to destroy.

Most studies of the possible benefits of trust have focussed on the economic effects (Algan and Cahuc 2009, Knack and Keefer 1997, Knack 2001, Zak and Knack 2001), with some attention paid also to health (Kawachi *et al*. 1997, Kawachi *et al*. 2007, Yip *et al*. 2007). In this paper we take a broader focus by looking at the effect of trust on subjective well-being. We use various measures of subjective well-being as though they were measures of utility, and then search for the consequences of trust as they might flow indirectly through economic success and physical health, as well as more directly to individual evaluations of the quality of life. The empirical determinants of well-being, such as income, age, and social factors, have received much attention in recent studies (Alesina *et al.* 2004, Blanchflower 2009, Deaton 2008, Easterlin 2001, Ferrer-i-Carbonell 2005, Helliwell and Putnam 2004). This paper continues that avenue of research by focusing on the relatively unexplored links between trust and well-being (Helliwell 2003, Helliwell and Putnam 2004, Chang 2009, Yip *et al.* 2007).

In this paper we describe a variety of results, based on individual-level survey data from many countries, showing that several different dimensions and types of trust provide strong supports for well-being above and beyond their more frequently noted contributions to economic efficiency. Our main measures of well-being relate to overall

life satisfaction or other similarly broad life evaluations[1]. We also consider some evidence about the influence of trust on other well-being outcomes, including suicide and traffic fatalities.

We also analyze the factors supporting different types of trust. We find, using the rich social context detail of the Canadian GSS17, that the quality of social connections matter a lot to the maintenance of trust. In ways that validate the trust measures and theories of trust formation, general factors matter most for the determination of social trust, while neighbourhood characteristics matter most for neighbourhood trust. For example, the effects of individual-level and census-tract-level measures of education are strongly supportive of social trust, as are the respondent's memberships in social organizations, and the level of social trust in the country where the respondent was born.

2. Measuring Trust

The measures of trust we consider include individual assessments about whether other people can generally be trusted (the 'social trust' question), individual assessments of the trustworthiness of their neighbours, co-workers and managers, and responses to very specific questions about whether a lost wallet is judged likely to be returned if found by a variety of different individuals, including neighbours, police and strangers. We shall start by presenting our new results for the well-being consequences of dropped-wallet responses from the Gallup World Poll, followed by life satisfaction equations based on the Canadian GSS17, which has a number of different trust measures. These new results will then be compared, in summary form, with some previous estimates of the linkages between trust and well-being.

Morrone *et al*. (2009) provide a helpful survey of alternative ways of measuring trust, and of various debates about the meaning of such measures. They argue that there

[1] The major alternative we consider is in the case of the Gallup World Poll, where we use data for Cantril's self-anchoring striving scale, usually referred to as the Cantril ladder. This is necessary because the Gallup World Poll does not yet have a sample of country surveys asking both about life satisfaction and some measure of interpersonal trust.

might be some preference for the wallet questions, since their meaning is very clear, thereby reducing the possibilities for disagreement about what the respondents are evaluating. The introduction of wallet questions into surveys was spurred by experiments conducted by *Reader's Digest* Europe, and reported in that magazine in April 1996 (and subsequently discussed in the *Economist*, June 22, 1996). These experiments involved dropping 10 cash-bearing wallets in each of 20 cities in 14 western European countries, and in each of a dozen US cities. The data on the frequency of wallet returns were later used by Knack (2001) to provide some behavioural validation for the use of answers to the frequently-asked question of inter-personal trust: "In general, do you think that most people can be trusted, or, alternatively, that you can't be too careful in dealing with people". Knack (2001) found that at the national level the actual frequency of return of the experimentally dropped wallet was correlated at the 0.65 ($p<0.01$) level with national average responses to the general social or interpersonal trust question, as measured in the World Values Survey[2]. While this provides strong validation for the meaningfulness of international differences in survey responses to general trust questions, it also suggests a way of adding more specific trust questions to surveys.

Hence when the Canadian Equality, Security and Community (ESC) survey was being designed in 2000, we included not just the standard questions on interpersonal and institutional trust, but also some specific hypothetical questions about the likelihood of the respondent's lost wallet (containing identification and $200) being returned if found by, alternatively, a neighbour, a clerk in a nearby store, a police officer, or a stranger. Some of the same wallet return questions were subsequently also included in the larger Statistics Canada GSS17 in 2003 and in more than 80 country surveys of the Gallup World Poll in 2006. Soroka *et al*. (2006) compare the wallet and general trust data from the ESC survey, and we shall report later in this paper some similar comparisons based on the GSS17 data. We shall also combine the GSS17 wallet answers with some recent

[2] Knack notes that this high correlation "cannot be explained away by attributing high-trust attitudes and wallet-returning behaviour to higher per-capita incomes: the partial correlation between trust and returned wallets, controlling for per capita income, is even higher than the simple correlation (Knack 2001, p. 184).

dropped-wallet experiments in Toronto to provide a first-ever level comparison between trust and trust-worthiness. For the Gallup World Poll, it is not possible to compare the wallet and general trust answers from the same respondents, as the wallet questions were asked only in 2006, and the general trust questions were first asked in the 2009 wave.

Where direct comparisons are possible, they generally serve to validate the use of both specific and general trust measures. The measures that relate to specific geographic areas tend to respond to the characteristics of that neighbourhood. The high correlation between actual wallet returns and the answers to the social trust questions when averaged on a national basis (Knack 2001) suggests that answers to general interpersonal trust questions are based on experience within the respondent's own nation. We shall show later that when people migrate from one country to another there is a carry-over of social trust answers from country of emigration to country of immigration, with even some evidence of carry-forward into the next generation. But this footprint is much less where the questions are more closely related to specific events in the country of immigration, such as whether wallets would be returned if found by neighbours or police.

3. Trust Makes Lives Better

In this section we present some new evidence about the apparent effects of trust on well-being[3]. We start with results based on data from the Gallup World Poll, explaining the links between subjective well-being and the expected frequency of wallet returns if found, alternatively, by neighbours, by police, and by strangers. We then consider evidence from the GSS17, which asked the general interpersonal and neighbourhood trust questions, a question about the level of trust among workplace colleagues, and also about the likelihood of wallets being returned if found by police, neighbours, strangers, and by a clerk in a nearby store. This range of trust assessments will help us to see more clearly how the specific and general questions are related to each other. Finally, we shall relate

[3] The range of relevant measures of subjective well-being, their validity, and their policy relevance are discussed in detail in Diener *et al*. (2009).

this new evidence to earlier results about the well-being effects of different sorts of specific and general trust.

The 2006 wave of the Gallup World Poll included wallet trust questions in 86 national surveys. For 79 countries we have wallet data and full slates of the other data used in estimating the general life evaluation model used in Helliwell *et al*. (2010). There are interesting international differences in the patterns of answers to the wallet return data. In the OECD countries, the expectation of wallet return if found by police is even higher than if found by neighbours, 91% vs. 89%. In the rest of the global sample, the situation is reversed, with 51% expecting wallets to be returned by police, compared to 61% by neighbours. As already suggested by these figures, trust or distrust in police is more shared among citizens of the same country than is trust in neighbours or trust in strangers. Thus, as we show in Figure 1, the international share of the variance of the global sample of individual answers to the police question is almost twice as high as for the likelihood of lost wallets being returned by neighbours, and is more than twice as high as for strangers.

It should be noted at the outset that return of a lost wallet requires more than just honesty or absence of corruption, and much more than simply the assurance that people will do what they say they will do. It requires the wallet finder to reach out and perform a deliberate act of other-regarding kindness, one that can be foreseen to take time and trouble in order to reduce the loss of another. There is little chance of any personal gain for the finder, beyond the possible gratitude of the wallet owner and the pleasure received from being kind to others. Yet in both Copenhagen and Olso, all ten of the *Reader's Digest* dropped wallets were returned to their owners, and the average across all the western European cities was about two-thirds. In the Gallup data, which are based on nationally representative rather than purely urban samples in mainly non-OECD countries, the numbers of respondents expecting return of their wallets if found by police, neighbours and strangers are 56%, 64% and 17%, respectively[4].

[4] In the whole sample of more than 79,000 responses to the Gallup wallet question, the expected average rate of return was about 0.08 lower for respondents living in cities rather than rural areas, with town dwellers in between. The Gallup sample of countries asked the wallet question unfortunately has

Each of the four panels of Table 1 contains six alternative equations explaining the individual responses to a specific wallet question. The first panel refers to neighbours, the second to police, the third to strangers, and the fourth to each individual's average answer to the three different wallet questions. Moving across the columns in each part of the Table, equation (1) is the basic equation, including the individual-level determinants also used in Helliwell *et al*. (2010) with the addition of answers to the question relating to whether or not a wallet was thought likely to be returned if found by a neighbour. The coefficient on the wallet-neighbour variables is 0.179, implying a 0.179 higher individual life evaluation, on a 0 to 10 scale, if a lost wallet is thought likely to be returned if found by a neighbour. Equation (2) includes the same wallet question, but adds the individual's assessment of the generality of corruption in business and government in his or her country. Since there is interdependence between these two assessments[5], the addition of the more general corruption evaluation slightly lowers the coefficient on the wallet variable, to 0.157. Adding regional fixed effects in equation (3) tightens the fit of the equation slightly, and makes another small reduction in the wallet coefficient, reflecting the fact that there are systematic regional differences in the assessed likelihood of wallet return. Equation (4) to (6) repeat equations (1) to (3), but in each case adds a measure of net affect, to provide some idea of how robust the wallet responses are to the inclusion of a variable likely to capture both personality differences among individuals and short-term factors that might affect both mood and life evaluations. As found earlier in Helliwell (2008, Table 4), adding separate measures of individual-level positive and negative affect significantly increases the explanatory power of the equation (with positive affect having

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only 9 OECD countries, with only four countries appearing in the Gallup data and the Reader's Digest experiments. The simple correlation between the two measures of wallet return (Gallup expected and Reader's Digest actual) is as high as that found by Knack for the WVS trust data, but the sample is too small for the correlation to be statistically significant.

[5] For the global sample of individual-level responses, the simple correlation between the overall measure of wallet return (the average of the neighbour, police and stranger responses) and the assessment of corruption (the average of each individual's zero or one answers as to the prevalence of corruption of business and of government in their country is -0.25).

a larger impact than does the absence of negative affect[6]), but has fairly small effects on the size and significance of other variables. This is because life circumstances, including such variables as family income and the climate of trust in which people live, have much greater impacts on life evaluations than on moods, making life evaluations a preferred vehicle for assessing the relative importance of various life circumstances.

The other panels of Table 1 repeat the same equations, but use different wallet variables. The second panel uses wallet-police, the third uses wallet-stranger, and the fourth uses the average of the other three assessments. There is a fairly uniform pattern apparent when moving from panel to panel, and this pattern applies to each of the six alternative equations. The well-being effects of expected wallet return are slightly larger and more significant for police than for neighbours, and for either than for strangers. However, the most striking change happens when we move to the fourth panel, where the three measures are averaged. The coefficient on the average is much larger and more securely estimated than on any of the three component measures. The coefficients on the three component variables range from 0.159 for stranger to 0.218 for police (from equation (1) in each of the first three panels of Table 1). By contrast, the coefficient is 0.359 for the average variable. That the coefficient should be larger for the combined variable is eminently reasonable, since there is no telling who might be the finder of a lost wallet, and one's sense of security is surely higher when the likelihood of return is high regardless of who the finder might be. The individual measures no doubt have other links to subjective well-being. For example, whether a wallet would be returned by a neighbour has implications about the likely helpfulness of neighbours in other circumstances, with the same being true for police and strangers. Thus when we turn, as we now do, to consider the income-equivalence of belief in the likelihood of wallet return, we should be thinking not just of how much a wallet is worth to us, in either material or psychological terms, but of a whole range of occasions when neighbours, police and strangers might be able and willing to be of assistance.

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[6] This is consistent with the experimental results of Cohen and Pressman (2006) showing that the links between moods and resistance to the common cold are larger and more significant for positive than for negative affect.

To get an idea of the income-equivalent value of living in a society where wallets are expected to be returned, we can simply divide the wallet-trust coefficient by that on household income. Using the combined wallet measure from equation (1) in the fourth panel of Table 1, the compensating differential is 0.628 (=0.359/0.571). This is a large effect, especially if we compare countries with very different climates of trust. For example, to live in a country like Norway (mean expected wallet return is 0.80, actual *Reader's Digest* experimental return in Oslo 100%) rather than one like Tanzania (mean expected wallet return is 0.27) implies a life evaluation higher by 0.19 points on the ten-point scale, equivalent to an increase of 0.33 in the log of household income, in turn equivalent to an increase of almost 40% in the level of household income.

In Table 2 we present our estimates of the life satisfaction effects of several different measures of trust using the GSS17 data. The first equation includes three separate measures of trust, each of which takes a large and highly significant coefficient. This is so despite the inclusion of a large number of other individual and contextual effects, including several measures of social capital that might be expected to positively affect both trust and well-being. The GSS17 data contain a number of measures of the size and quality of each respondent's own social connections, as well as a number of census-based contextual variables.

Table 2 shows that French-speaking respondents have a significantly higher life satisfaction for given trust level, but not if the trust variables are removed. This reflects much lower measured trust among francophones, with the implied negative effects of this lower average being offset by the coefficient shown in the table. Relative to unmarried respondents living alone, those who are married or living as married are significantly happier, by about one-third of a point, while those who are separated, divorced or widowed are significantly less happy, by about one-quarter of a point. Age effects are, as often found in well-being studies (Blanchflower & Oswald 2008), represented by very significant negative effects on age and positive effects on age-squared, with an implied low point of the U-shape in life satisfaction at about age 50. The gender effect, for given levels of the economic and social variables, favours females by about 0.13 of a point, although this effect becomes smaller when the model is expanded, as shown in the right-

hand side of Table 2, to include measures of belonging in one's community, province and nation.

The GSS17 asks about each respondent's typical labour force status over the previous 12 months. Those who answer 'unemployed' have systematically lower life satisfaction above and beyond those flowing through the implied changes in household income. Being unemployed is associated with life satisfaction being lower by two-thirds of a point on a ten-point scale, far more than the effects of moving from the bottom to the top decile of the income distribution, although not as large as the combined effects of the various trust measures.

The education variables have scant direct linkages to subjective well-being, except for a negative effect of the highest level in the base equation. As we shall see later, this is because there is a strong positive linkage from tertiary education to trust measures, and especially for the social trust variable. The equations also control for income, which is positively related to the level of education. These results suggest that the well-being effects of education are largely mediated by income and trust.

All equations in the table include two variables that tap into basic elements of personality, as captured by the respondent's feeling of control and capacity to implement change. These variables are both strongly and positively related to life satisfaction, and should serve to reduce the likelihood of a positive bias on trust effects flowing from individual-level personality traits influencing both trust assessments and life satisfaction.

Respondents are asked to estimate the number of close friends and relatives they have, and each of the response categories is shown separately for friends and family. There is a strong dose-response relation in both cases. Moving from each friends category to the next higher one adds about 0.1 to life satisfaction, with the size of the family effect being about 50% larger. There is some evidence of diminishing returns as circles of family and friends grow in size, since the number of additional friends or relatives involved grows with each move from one category to the next. Other tests not shown in the table show that the extra life satisfaction, measured in points, from having more friends and relatives is constant for an equal proportionate increase in the number of friends and family, with some evidence of diminishing and even negative marginal

effects for very large families. The significant positive coefficients on the see-friends and see-relatives variables show that the frequency of visits with family and friends, especially the latter, adds significantly to life satisfaction, above and beyond the benefits of having these support networks in place.

Membership measures of social capital have no direct effects on life satisfaction, beyond a positive effect of religious memberships in the basic equation. This is in an equation that already controls for the respondent's friendships and trust assessments. We shall show later that both religious and non-religious memberships have strong positive effects on trust, suggesting that the well-being benefits of social networks, insofar as they are represented by memberships, are mediated by trust.

There follow seven census-tract measures of the social context. None have significant effects on life satisfaction, so they will be described when we present our trust equations, as several of the census contextual variables come strongly into play at that time.

The second and third equations add an increasing number of measures of identity, as represented by each respondent's feelings of belonging to their local community, their province, and to Canada as a whole. Each of these identities matters significantly, with no evidence that having one identity detracts from the life satisfaction benefits of the others[7].

The fourth equation adds two additional trust measures: trust in co-workers and confidence in police. Both are highly significant, with trust in co-workers being the single most significant of all of the trust measures[8]. The fifth and final equation in Table 2 adds a second GSS measure of trust in neighbours. Because this final equation now includes

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[7] To check for interactions, we prepared a variable that takes the value of 1.0 for respondents who are very attached to their community, their province, and to Canada as a whole. The variable takes an insignificant positive coefficient, implying that one can add additional nested or encompassing identities without reducing the life satisfaction benefits of other identities. Thus there is no sense in which local, provincial and national attachments compete with one another in terms of what they contribute to life satisfaction.

[8] A variety of workplace trust results, from both Canada and the United States, are analyzed in more detail in Helliwell and Huang (2008, 2010) and Helliwell *et al*. (2009).

two measures of neighbourhood trust, we can see that the more general of the two neighbourhood trust questions appears to subsume the answers to the wallet-found-by-neighbour measure, since the latter variable is no longer significant. Finally, we note that when we include all of our directional trust measures (for co-workers, neighbours and police) the general social trust variable drops out. We think that this validates both types of measure. The social trust measure, which is very important on its own, is an umbrella supported by equally significant and collectively more informative evaluations about trust in different domains of life.

To summarize our key results on the value of trust, and to facilitate their comparison with results from earlier studies, Table 3 shows estimates of income-equivalent values (often referred to as compensating differentials, as in Helliwell and Huang 2010) for a number of trust measures. These include the results from the wallet-return measures of the Gallup World Poll, several measures of trust used in the fifth equation of Table 2, and from other samples of Canadian and United States data. In all cases the values of trust are seen to be very large, as we discuss further in the concluding section.

4. Trust Saves Lives

Although life evaluations provide a critically important way to assess the importance of trust, they cannot provide the whole story. Beyond life evaluations lies life itself, and a range of studies have shown several channels through which trust improves health and saves lives. The mortality studies dovetail with and reinforce the evidence based of life evaluations. The dovetailing is obvious, since the life evaluations measure only the well-being of survivors, picking up mortality effects indirectly, via the loss of loved ones and expectations about what the future may hold in store. The direct mortality estimates thus fill in an important gap.

The reinforcement comes about because many who may initially be doubtful about the value and meaning of subjective life evaluations may be convinced if the same variables that explain subjective life evaluations have consistent consequences for fatalities. For example, those who are willing to make inferences about utility only from what people do (the 'revealed preference' methodology), and not from what they say,

cannot fail to accept suicide as evidence of individual choices with real consequences, even though of the most final and unfortunate sort. Indeed, our studies of the links between social capital and suicide were undertaken to help answer the inevitable sceptical question from almost any audience, especially one of economists, asking how the high measures of subjective well-being in, e.g., Sweden, could be reconciled with what were presumed to be very high suicide rates there. The answer, as reported in Helliwell (2007), was obtained by using cross-national data to fit exactly comparable models for national averages for life satisfaction and for suicide rates. These models fit the cross-national data for global samples very well, with the same small set of variables explaining 60% and 81% of the cross-national variance of suicide and life satisfaction, respectively (Helliwell 2007, p. 485). Although the same variables appear in both equations, the coefficients differ, in just the way that theory and previous studies would suggest, with religion, social connections and divorce all having larger coefficients in the suicide equation, and the quality of government being more important for subjective well-being. Interpersonal trust, as measured by the national average response to the social trust question, had equally large effects in both equations. Sweden, which is explained very well by both equations, is nearer to top of the well-being ranking than near the bottom of the suicide rankings because of its relatively high divorce rates, relatively low importance of religion, and relatively high quality of government.

These parallel results for suicide and subjective well-being are buttressed by large prospective studies in Finland showing that males near the bottom of the life satisfaction scale were 25 times more likely to commit suicide over the following ten years than were other males of the same age (Koivumaa-Honkanen *et al*. 2001).

The suicide results can be used to assess the life-saving potential for social trust, since international differences in the average answers to the social trust question play an important role in explaining international differences in suicide rates. Among the countries covered by the three World Values Survey waves used for the suicide study, the average suicide rate is about 16.4 per 100,000 of population. The basic suicide equation in Helliwell (2007, Table 1) explains 58% of the variance of 117 average suicide rates drawn from different years in 50 countries around the world using only four key variables: social trust, membership in community organizations, strength of religious

belief, and the divorce rate. The first three variables act to reduce suicide, while higher divorce rates are associated with higher suicide rates. The effects of social trust are large and statistically significant. Moving 10% of the population from generally untrusting to generally trusting, a shift of 0.1 on the 0 to 1.0 scale for the social trust variable, or less than one standard deviation for the sample data, would be predicted to lead to a 2.3 (=0.1*23) drop in the suicide rate, more than 10% of its average value. In Russia, with a population of roughly 150 million, this would translate into 3,600 lives saved each year.

The idea that traffic fatalities, which are about as frequent as suicides, could be linked to social capital, and to trust in particular, occurred to Helliwell when reading an article in Le Monde by A. Grebjine. The article appeared during the course of an OECD meeting of social capital experts, and attributed the much greater traffic fatality rates in France than in Norway (about twice as high) to a greater Norwegian adherence to a broader social contract. Since the proportion of Norwegians who think that others can be trusted is two to three times higher than in France, this raises the possibility that there might be a broader systematic relation between social trust and traffic fatalities. The test was done using the same equation and sample as was used for suicide, and both trust and memberships had highly significant roles in explaining international differences in traffic fatality rates (Helliwell 2007, Table VI). When the traffic fatality equation was extended to include some traditional determinants, including incomes and vehicle use, and the time trend toward safer cars and safer roads, the trust effect rose slightly, to almost exactly the same value as in the suicide equation. This was not simply due to the special circumstances of Norway and France, as the model was essentially the same if these countries were removed.

Since traffic fatality and suicide rates are roughly equal, as are the trust effects in the two equations, then changes in social trust have the same potential for saving lives in both cases. In particular, if social trust in France were as high as in Norway, the French traffic fatality rate, according to the equation, would be reduced by more than half, taking it down to the Norwegian level[9]. These are big effects, whether seen nationally or

[9] Nagler (2009) also finds that a parallel result applies when he explains interstate differences in traffic fatalities within the United States.

globally, where suicide and traffic fatalities are roughly tied as the tenth leading cause of death.

5. Building and Maintaining Trust

Since trust has been shown to be closely linked to well-being, it is a natural next step to investigate how trust might be built and maintained. Although we do not have data sufficient to support study of the dynamics of trust, the cross-sectional surveys can at least give some idea of the circumstances that accompany high and low levels of trust, even if the direction and strength of the causal linkages remain to be unpacked. The Canadian GSS17 data are more useful for this purpose than the Gallup World Poll, since the GSS17 includes many more individual-level measures of social capital and social connections, and its geo-coding permits us to include many census-based measures of the social context in which the respondents live.

Table 4 shows equations for the individual-level responses to six different trust questions asked in the GSS17. The first column is for the general interpersonal social trust question, column 2 models trust in co-workers. Columns 3 and 4 model the answers to the GSS general questions about trust in neighbours and strangers, respectively. Columns 5 and 6 show equations examining answers about the likelihood of a lost wallet containing $200 to be returned if found by a neighbour or a stranger, respectively.

We use the same independent variables in all equations, but we have strong expectations about their likely relative importance in different equations. For example, we would expect variables measuring the strength and length of an individual's attachment to his or her neighbourhood to have much stronger effects in the equations explaining trust in neighbours. This is indeed the case, as the variables measuring number of years in the neighbourhood, census-tract average mobility, and census tract population density all have much greater effects in columns 3 and 5, which refer specifically to trust in neighbours.

The first variable in each equation (imported trust) tests for an effect found earlier by Rice and Feldman (1997) using US GSS data, and by Soroka *et al*. (2006) using Canadian ESC data. The variable measures the average level of social trust in the

respondent's country of birth (using data from the World Values Survey) less the average Canadian value for the same World Values Survey trust measure. The coefficient on the variable thus measures the footprint of the trust level in the respondent's country of birth. If the coefficient were 1.0, then immigrants would implicitly be answering the GSS trust question based on their experiences in their country of birth. The GSS results show a first-generation footprint of almost two-thirds in the social trust equation, with much smaller values for the more directional trust measures, and no effect at all for the wallet questions. Milroy (2009) finds some evidence of this footprint decaying with years since immigration. She also tested the corresponding second-generation variable for those who were born in Canada with one or more immigrant parents. This effect was smaller and less significant in all cases, thus supporting the presumption that the social trust question is taken to refer to the surroundings one knows, with the imprinted effects from one's earlier environment fading with the number of years one lives in Canada[10]. Similarly, the effect is less where the question is very specific, and closely related to everyday life in Canada, such as when the respondent is asked about what would happen if they lost their wallet in their Canadian neighbourhood.

The level of social trust among French-speakers is significantly lower than for other respondents, by almost one-quarter. The effect is very much smaller for all of the more specific trust measures than for general trust. Longpré (2009) finds that the lower social trust is concentrated among those francophones living in census tracts with a high proportion of Catholics, and among Quebec-resident francophones who identify strongly with Canada. She suggests that the former result might be a footprint of the long church domination of Quebec society. The latter effect could reflect a situation where the emergence of secessionist views in Quebec poses especial identity risks, and diminished social trust, among those Quebec francophones who feel the greatest sense of belonging to Canada, since the possibility of secession poses for them the greatest problems. But, as Longpré argues, these results need more unpacking.

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[10] In her GSS17 equation for social trust, she finds a coefficient of 0.736 ($p<0.001$) on imported trust, compared to 0.320 ($p<0.05$) for parental trust. This confirms the declining-effects pattern first documented in Soroka *et al*. (2006).

Turning to demography, the married are significantly more trusting than the rest of the population, with no significant differences among the remaining groups. All trust measures appear to increase with age, while the wallet returned by a neighbour is not statistically significant. Workplace trust and trust in strangers appear to decrease with age-squared, which implies an inverted U-shape for these two trust measures. Women are significantly less trusting of co-workers, strangers, and wallet return by a neighbour. They are also less likely to give positive answers to the compound social trust question. The lower female answers to the compound social trust question have been shown in Helliwell and Putnam (2007) to be especially due to the compound nature of the question. An earlier US GSS split the two part of the question, and it was found that women were more trusting than men when asked merely if other people can be trusted, but were also more likely to be cautious, and agreeing that 'you can't be too careful when dealing with people'.

The differences among different types of trust become even more apparent when mobility is assessed. The individual-level mobility variable measures the number of years that the individual has lived in the same neighbourhood, measured as a fraction of five years, since 'five or more' is at the top of the response scale. Staying rooted in the same neighbourhood for a longer period, at least up to five years, is associated with higher assessed values of all types of trust. As expected, the effects are three times larger for neighbourhood trust than they are for trust in other domains.

The links between social trust and education, especially tertiary education, are positive and large at both the individual and census tract levels. This appears to be an almost universal finding in trust equations (Helliwell and Putnam 2007), providing one of the strongest pieces of evidence for positive external effects of increasing education levels.

The next two variables measure each respondent's memberships in religious and non-religious groups. Religious memberships have significant positive effects ($p<0.001$) for all sorts of trust, and other memberships have equally significant effects for all but trust in neighbours and co-workers. The effects of both types of memberships are largest

in the social trust equation[11], where they are significantly greater for other memberships. We found in the GSS life satisfaction equations that there were strong effects from several different sorts of trust, but no direct effects of memberships. The combination of the life satisfaction and trust equations suggest a strong effect from memberships to life satisfaction, apparently entirely mediated by several types of trust.

The final two individual-level variables are intended to control for aspects of each individual's personality and circumstances. They are strongly significant, and are intended to limit the risks that other variables should be picking up individual-level personality differences that might otherwise bias the effects being measured elsewhere in the equation. Household income does not appear in the trust equations, since it was found to have no significant effects.

We turn now to consider community-level effects. The level of trust, and especially of neighbourhood trust, depends not only on the characteristics and life circumstances of each individual, but also on those of people living around them. To separate these two sorts of effect requires the sort of two-level modelling that we show in Table 3, with separate accounting of individual-level and community-level variables, and with errors clustered at the level of the census tract, which is our primary measure of the local community context. Putnam (2007) uses precisely the same analytical structure to show that several community-level variables[12] have important effects on neighbourhood trust. We have a number of the same variables, and find strong contextual effects especially for

[11] Stolle (1998), using German and Swedish data, finds a similar positive relation between association memberships and social trust, plus evidence that there is a positive feedback loop, with those who are initially more trusting being more likely to join groups, while those who have been in a group for a few years have significantly higher trust than new members, with some fall-off indicated also for long-time members.

[12] Ranked in order of their importance, in terms of standardized Beta coefficients, the top community contextual variables he found, in the explanation of trust in neighbours, were: census tract poverty rate, county level non-violent crimes rate, census tract Herfindahl index of ethnic homogeneity, census tract level of population density, census tract population mobility, census tract percent renters and census tract percent with a bachelor's degree or more. (Putnam 2007, p. 152)

neighbourhood trust. For general social trust, we find strong contextual effects only for education (echoing the earlier results of Helliwell and Putnam 2007, and others[13]), and for the census tract's population share of visible minorities. For neighbourhood trust, as would be expected, the range of significant contextual variables is larger. The results confirm theoretical expectations that trust takes time to build and maintain, with this process being more difficult in communities with fast rates of turnover. For example, both census-tract population density and population mobility strongly reduce the level of neighbourhood trust. The census tract share of visible minorities has a negative effect for all the trust measures[14].

[13] The implied community-level linkage running from education to trust (obtained by summing the individual-level and contextual effects) may be less securely established across nations, as argued by Bjørnskov (2006). Our two-level results using data from a single country are less open to the risks of reverse causation than are studies based on national average data, although it is still natural to expect that societies or communities marked by high mutual trust are more likely to be inclined to provide public goods and services, including especially health and education.

[14] There were no effects found for the immigrant share in the census tract, beyond whatever effect that migration would have on census tract levels of mobility and diversity. Our results for income diversity match those of Putnam, while those for ethnic diversity match those of Kazemipur (2006) rather than those of Putnam. However, it is likely that the percent of the population who are visible minorities (many of whom are recent migrants, and come from many different cultures) is representing the same effect that Putnam found with his ethnic diversity measure. Milroy's analysis of social trust in GSS17 shows no negative effect from visible minority share, but does not include the Herfindahl diversity index, and thus what we find as offsetting effects from diversity and visible minority share are shown implicitly by her equation as an insignificant net effect. More detailed analysis of these effects is perhaps better done with the Canadian Ethnic Diversity Survey, which has a larger sample and more details about each respondent's own migration and ethnic background.

6. Trust and Trustworthiness

The *Toronto Star* (Zlomislic 2009) recently replicated the *Readers' Digest* dropped-wallet experiments that inspired the subsequent Canadian GSS and Gallup World Poll survey questions. This makes possible a direct comparison between trustworthiness, as measured by the actual frequency of wallet return, with trust, as measured by survey responses about the likelihood of a lost wallet being returned. Respondents are thus being asked about the expected trustworthiness of different hypothetical wallet-finders. As we have shown earlier in the paper, there are large differences among countries, and among cities, in survey responses about the likelihood of a lost wallet being returned. The forecasts also depend on who is stipulated to find the wallet. More likely wallet return was shown to be tightly linked with subjective well-being. We argued at the beginning of the paper that these SWB-supporting feelings of trust will be sustainable in the longer term only if they are in turn based on credible evidence of trustworthy behaviour (see also Putnam 2000, 135-6). Trust eventually crumbles in the face of untrustworthy behaviour, and has been shown to be hard to rebuild. On the other hand, a climate of unsubstantiated distrust is needlessly destructive of well-being, leading people to draw back and 'hunker down' (as emphasized by Putnam 2007), thereby losing opportunities for well-being-enhancing social interactions.

Thus it is valuable to be able to see if experience supports trust judgments. Such evidence is hard to come by, since it is almost impossible to find matching data on trust and trustworthiness. Fortunately, the recent wallet experiments in Toronto enabled an accurate matching, and hence permit a direct comparison of the actual frequency of returned wallets to the estimates made by GSS respondents living in the same community. All of the returned wallets were found by strangers (since the identical dropped wallets, containing money, bank cards, a personal letter and an emergency telephone number, all belonged to the same fictitious individual), so their frequency of return can be compared directly with the GSS survey responses of the likelihood of a lost wallet being returned if found by a stranger. As shown in Figure 2, Torontonians are far more altruistic than they think they are. The forecast frequency for return of a lost wallet

found by a stranger in Toronto was 25%, while in fact 16 of the 20 wallets were returned, for an 80% return rate. There were many survey respondents, and a small number of wallets dropped, so the 95% confidence region shown by the vertical bar is much tighter for the survey than for the actual number of wallets returned[15]. Nonetheless, a *t*-test of the difference in means has a value of 8.0, suggesting that there is less than one chance in a hundred billion that the two means are the same. The difference is large as well as significant- more than three times as many wallets were returned than was forecast by the survey respondents[16]. This significant underestimation of the likelihood of pro-social behaviour by others has some parallels in crime statistics. For example, comparable criminal victimization surveys take place in many countries, wherein, among many other questions, respondents are asked whether they have been victims of attempted or actual burglary in the previous year, and also how likely they think themselves to be burglarized in the next year. The average among 30 countries for attempted or completed actual burglaries was 3.5% (about half of which were attempts; van Dijk *et al*. 2007, p. 69). By contrast, the average fraction of respondents who thought they were likely or very likely to be burglarized over the following year was 29% (van Dijk *et al*. 2007, p. 128).

What are the likely causes and consequences of these large and widespread divergences between trustworthiness and trust? It is plausible that media and other reports of bad events lead to over-estimation of their likely frequency. We are not studying here the widely noted distinction between risk of crime and fear of crime (e.g. Rountree and

[15] The asymmetry of the error bar for the experimental data is a consequence of the underlying binomial distribution.

[16] There are some practical complications with the experiments that might qualify these conclusions slightly. On the one hand, wallets were apparently returned by second finders in two cases. One previous finder tried unsuccessfully to use the bank card, but left the cash intact before dropping the wallet again beside the unco-operating bank machine. The other first finder apparently took the cash and returned the wallet to the ground. The four unreturned wallets may have never been found by anyone. If we adjust the data to treat the two first finders as untrustworthy, and assume that all four of the never-returned wallets were found but not returned, then we have the most conservative way of treating the data, as 16 returned wallets out of 22. But the difference of means still is still very significant (t=7.27), with less than one chance in a billion of the two means being the same.

Land 1996), but between perceived and actual incidence of crime, or, in our lost-wallet case, between the perceived and actual likelihood of altruistic behaviour. What are the likely well-being consequences of such a gap? First, it is important to know whether it is the perceived or actual likelihood of behaviour that influences well-being. We have already shown that the perceived likelihood of wallet return is strongly linked to subjective well-being. But we do not know whether trustworthiness affects subjective well-being only through trust perceptions, or by some other channels. We do not have enough wallet data to assess this possibility, but we can ask, using the international victimization survey data, whether actual or perceived rates of incidence for burglaries are correlated with international differences in subjective well-being. We find, for the 28 countries that have World Values Survey life satisfaction data and both estimates of burglary frequency, that the simple cross-country correlation between life satisfaction and burglaries is zero for the sum of actual and attempted burglaries and -0.37 (p=0.05) between life satisfaction and the average perception of future burglary risk[17]. Thus it would appear that it is trust rather than trustworthiness that is directly linked to subjective well-being. If this is confirmed more broadly, it suggests that substantial, and essentially costless, increases in subjective well-being could be obtained if people were better informed, and hence more optimistic, about the trustworthiness of others. There may also be a virtuous circle, whereby greater confidence in the norms of wallet return and other altruistic acts would encourage people to engage more freely with others, and to raise the standards for their own behaviour, because such norms are heavily dependent on the expected behaviour of others.

7. Conclusions

We have confirmed that trust and well-being are tightly linked. Our new results show that those who feel themselves to be living in a trustworthy environment have much higher levels of subjective well-being. Worldwide, using the data from the Gallup World

[17] We also find that the link between perceived risk of burglaries and SWL is entirely mediated by social trust, as the partial correlation between burglary risk and SWL is zero once social trust is taken into account.

Poll, those who think their lost wallet would be returned if found by a neighbour or the police values their lives are more than 7% higher than those do not think their wallets would be returned.[18] This is about the same increase in subjective well-being that would be associated with an increase of household income of about two-thirds.

In the Canadian data, which include a larger number of trust questions, the well-being effects of living in a high-trust environment are even greater. Having high trust in co-workers, which we find to be the largest of all the specific directional trust measures, is associated with 7.6% higher life satisfaction. This is followed trust in neighbours (5%), confidence in police (3%), and a belief that a stranger would return your lost wallet (2.5%). Since these effects are all estimated at the same time (as shown in equation 5 of Table 2, and converted to percentage form in relation to sample-average satisfaction with life), we can calculate how much higher life satisfaction is for those who have high levels of trust in all these life domains. The answer is more than 18%. Even these large combined effects may not be the whole story, since the equations used for these calculations also include several key measures of belonging, some of which are clearly based on, and are contributing to, levels of trust within the community. For example, someone who feels a strong sense of belonging to their community is estimated to be 11% more satisfied with his or her life. As shown in the various panels of Table 3, these effects are all very large when measured in terms of the income changes that would produce the same consequences for life satisfaction.

Since trust is so directly and strongly linked to subjective well-being, in addition to supporting many other economic and social activities that also affect well-being directly, it is important to consider what contributes to building and maintaining trust. Survey data and experiments alike suggest that trust is built on a base of shared positive experience, and is nurtured by continued connections. We find, using the rich social context detail of the Canadian GSS17, that the quality of social connections matters a lot to the maintenance of trust. In ways that validate the trust measures and theories of trust

[18] The percentage is based on the coefficient on the combined wallet response in equation (1) of Table 3-d, divided by the global average value of the responses to the Cantril ladder, then converted to percentage form.

formation, general factors matter most for the determination of social trust, while neighbourhood characteristics matter most for neighbourhood trust. For example, the effects of individual-level and census-tract-level measures of education are strongly supportive of social trust, as are the respondent's memberships in social organizations, and the level of social trust in the country where the respondent was born.

For neighbourhood trust, by contrast, what matters most is how long the respondent has lived in his or her neighbourhood, and how easy it is to meet and interact with neighbours in friendly ways. Thus respondents who live in census tracts where the population is dense and highly mobile are less likely to trust their neighbours, or to judge that neighbours would be likely to return each other's lost wallets. Similarly, a feeling of belonging to one's community is more strongly associated with neighbourhood trust, while a sense of belonging to Canada is more strongly associated with general social trust. Community-level and national belonging are significantly related to all types of trust, with the effect sizes varying in the theoretically expected ways.

Overall, our results reveal sufficiently strong linkages between trust and well-being to support much more study of how trust can be built and maintained, or repaired where it has been damaged. Our more tentative analysis of the factors supporting different types of trust suggests that more attention be paid to creating the time and spaces for social connections to flower. Since more and more people are living in large urban areas with mobile and sometimes rootless populations, it is ever more important to design and manage urban areas in ways that foster levels of engagement that support mutual trust and hence well-being. Finally, our comparison of the actual and expected frequencies of wallet return suggests that people are unrealistically pessimistic about the trustworthiness of others. This presumably remediable pessimism is likely to lead to lower subjective well-being, and to stand in the way of the expanded social interactions that are so important in building and maintaining a trustworthy social fabric.

References

Algan, Y. and P. Cahuc (2009) 'Inherited Trust and Growth', mimeo Sciences Po Paris, forthcoming *American Economic Review, 2010*.

Alesina, A., R. Di Tella and R. McCulloch (2004), 'Inequality and Happiness: Are Americans and Europeans Different?' *Journal of Public Economics* **88**: 2009-42.

Bjørnskov, C. (2006) 'Determinants of Generalized Trust: A Cross-Country Comparison' *Public Choice* **130**: 1-21.

Blanchflower, D. G. (2009) 'International Evidence on Well-Being', In A.B. Krueger, ed. *Measuring the Subjective Well-Being of Nations: National Accounts of Time Use and Well-Being* Chicago: University of Chicago Press.

Blanchflower, D. G. and A. J. Oswald (2008) 'Is well-being U-shaped over the life cycle?' *Social Science and Medicine* **66**: 1733-49.

Chang, W. (2009) 'Social Capital and Subjective Happiness in Taiwan', *International Journal of Social Economics*, 36: 844-68.

Cohen, S. and S. D. Pressman (2006) 'Positive Affect and Health' *Current Directions in Psychological Science* **15** (2): 122-25.

Deaton, A. (2008) 'Income, Aging, Health and Wellbeing Around the World: Evidence from the Gallup World Poll', *Journal of Economic Perspectives* **22**(2): 53-72.

Diener, E., R. Lucas, U. Schimmack & J. F. Helliwell (2009) *Well-Being for Public Policy.* (New York: Oxford University Press).

Diener, E., J. F. Helliwell, and D. Kahneman, eds. (2010) *International Differences in Well-Being*. (New York: Oxford University Press).

Easterlin, R. A. (2001) 'Income and Happiness: Towards a Unified Theory' *Economic Journal* **111**: 465-84.

Ferrer-i-Carbonell, A. (2005) 'Income and Wellbeing:An Empirical Analysis of the Comparison Income Effect' *Journal of Public Economics* **89**: 997-1019.

Helliwell, J. F. (2003) 'How's Life? Combining Individual and National Variables to Explain Subjective Well-Being' *Economic Modelling* **20**: 331-60.

—— (2007) 'Well-Being and Social Capital: Does Suicide Pose a Puzzle?' *Social Indicators Research* **81**: 455-96.

—— (2008) 'Life Satisfaction and Quality of Development' *NBER Working Paper* 14507 (Cambridge: National Bureau of Economic Research).

Helliwell, J. F., C. Barrington-Leigh, A. Harris and H. Huang (2010) 'International Differences in the Social Context of Well-Being' In E. Diener, D. Kahneman and J. F. Helliwell, eds. *International Differences in Well-Being*. (London: Oxford University Press, 2010, 291-324).

Helliwell, J. F. and H. Huang (2008) 'Well-Being and Trust in the Workplace' *NBER Working Paper* 14589 (Cambridge: National Bureau of Economic Research).

Helliwell, J. F. and H. Huang (2010) 'How's the Job? Well-Being and Social Capital in the Workplace' *Industrial and Labor Relations Review* **63**: 205-27.

Helliwell, J. F., H. Huang and R. D. Putnam (2009) 'How's the Job? Are Trust and Social Capital Neglected Workplace Investments?' In V. Bartkus and J. Davis, eds. *Social Capital: Reaching Out, Reaching In*. (Cheltenham, UK: Edward Elgar, 87-144).

Helliwell, J. F. and R. D. Putnam (2004) 'The Social Context of Well-Being' *Phil Trans R. Soc Lon. B 359*: 1435-46. Reprinted in F. A. Huppert, B. Keverne and N. Baylis, eds., *The Science of Well-Being*. (London: Oxford University Press, 2005, 435-59).

—— (2007) 'Education and Social Capital' *Eastern Economic Journal* **63**(1): 1-19.

Kawachi, I., B. P. Kennedy, K. Lochner and D. Prothrow-Stith (1997) 'Social Capital, Income Inequality and Mortality' *American Journal of Public Health* **87**(9): 1491-8.

Kawachi, I., S. V. Subramanian and D. Kim, eds. (2007) *Social Capital and Health*. (New York: Springer).

Kazemipur, A. (2006) 'Social Trust, Ethnic Diversity and Immigrants: The Case of Canada' http://pcerii.metropolis.net/WorkingPapers/WP06-05.pdf

Knack, S. (2001) 'Trust, Associational Life and Economic Performance' In J. F. Helliwell and A. Bonikowska, eds. *The Contribution of Human and Social Capital to Sustained Economic Growth and Well-Being* (Ottawa and Paris: Human Resources Development Canada and OECD, 172-202).

Knack, S. and P. Keefer (1997) 'Does Social Capital Have an Economic Payoff? A Cross-Country Investigation' *Quarterly Journal of Economics* **112**: 1251-88.

Koivumaa-Honkanen, H., R. Hokanen, H. H. Viinamäki, K. Heikkilä, J. Caprio and N. Koskenvuo (2001) 'Life Satisfaction and Suicide: A 20-year Follow-Up Study' *American Journal of Psychiatry* **158**: 433-39.

Longpré, M. (2009) 'Determinants of Trust among French-Canadians: Endeavouring to Disentangle the Cultural and Contextual Effects' (UBC Department of Economics MA Essay).

Milroy, R. S. (2009) 'How Deep are Your Roots? Imported Trust and Its Consequences for Canadian Social Trust' (UBC Department of Economics MA Essay).

Morrone, A., G. Ranuzzi and N. Tontoranelli (2009) 'How Good is Trust? Measuring Trust and Its Role for the Progress of Societies', *OECD Working Papers* (Paris: OECD).

Nagler, M. G. (2009) 'Traffic Fatalities and Social Capital' (City College of New York Working Paper).

Putnam, R. D. (2000) *Bowling Alone: The Collapse and Revival of American Community* (New York: Simon & Schuster).

Putnam, R. D. (2007) 'E Pluribus Unum: Diversity and Community in the Twenty-First Century the Johan Skytte Prize Lecture' *Scandinavian Political Studies* **30**: 137-74.

Rice, T. & J. Feldman (1997) 'Civic Culture and Democracy from Europe to America', *Journal of Politics*, **59**, 1143-72.

Rountree, P. W. and K. C. Land (1996) 'Perceived Risk Versus Fear of Crime: Empirical Evidence of Conceptually Distinct Reactions in Survey Data' *Social Forces* **74**: 1353-76.

Soroka, S., J. F. Helliwell and R. Johnston (2006) 'Measuring and Modeling Interpersonal Trust', in F. Kay and R. Johnston, eds. *Diversity, Social Capital, and the Welfare State* (Vancouver: UBC Press, 95-132).

Stolle, D. (1998) 'Bowling Together, Bowling Alone: The Development of Generalized Trust in Voluntary Associations' *Political Psychology* **19** (3): 497-525.

Yip, W., S. V. Subramanian, A. D. Mitchell, D. T. Lee, J. Wang and I. Kawachi (2007) 'Does social Capital Enhance Health and Well-Being? Evidence from Rural China' *Social Science & Medicine* **64**: 35-49.

Van Dijk, D., J. V. Kesteren and P. Smit (2007) *Criminal Victimization in International Perspective: Key Findings from the 2004-2005 ICVS and EU ICS.* (www.nicis.nl/kenniscentrum/binaries/nicis/bulk/onderzoek/2008/2/3/icvs2004_05report.pdf)

Zak, P. J. and S. Knack (2001) 'Trust and Growth' *Economic Journal* **111**: *295-321.*

Zlomislic, D. (2009) 'We Dropped 20 Wallets around the GTA. Good News. Most Came Back' *Toronto Star* April 25: A1.

Table 1-a: Well-Being Equations, Gallup World Poll 2006

	Dependent Variables: Cantril Ladder					
	(1)	(2)	(3)	(4)	(5)	(6)
lnincomeh	0.578***	0.575***	0.469***	0.559***	0.557***	0.442***
	(0.0360)	(0.0363)	(0.0362)	(0.0353)	(0.0358)	(0.0351)
wallet_neighbour	0.179**	0.157**	0.150**	0.152**	0.127*	0.117*
	(0.0575)	(0.0533)	(0.0479)	(0.0538)	(0.0498)	(0.0448)
male	-0.0890**	-0.104**	-0.0999**	-0.110***	-0.121***	-0.116***
	(0.0278)	(0.0307)	(0.0297)	(0.0289)	(0.0319)	(0.0315)
marrasmarr	0.0545	0.0427	0.107**	0.0317	0.0276	0.0810*
	(0.0407)	(0.0410)	(0.0377)	(0.0403)	(0.0407)	(0.0366)
Sepdivwid	-0.0307	-0.0140	-0.0330	-0.0263	-0.0136	-0.0422
	(0.0631)	(0.0673)	(0.0655)	(0.0651)	(0.0694)	(0.0675)
age	-0.0272***	-0.0275***	-0.0319***	-0.0215**	-0.0229***	-0.0269***
	(0.00640)	(0.00678)	(0.00679)	(0.00632)	(0.00667)	(0.00668)
agesq100	0.0251***	0.0257***	0.0276***	0.0206**	0.0222**	0.0235***
	(0.00654)	(0.00688)	(0.00682)	(0.00646)	(0.00673)	(0.00671)
Freedom	0.443***	0.418***	0.354***	0.393***	0.374***	0.310***
	(0.0556)	(0.0523)	(0.0456)	(0.0554)	(0.0537)	(0.0472)
countOnFriends	0.531***	0.556***	0.494***	0.447***	0.478***	0.412***
	(0.0508)	(0.0525)	(0.0454)	(0.0487)	(0.0504)	(0.0428)
cannotAffordFood_net	-0.705***	-0.673***	-0.642***	-0.607***	-0.586***	-0.546***
	(0.0484)	(0.0510)	(0.0472)	(0.0464)	(0.0487)	(0.0428)
donatedMoney	0.332***	0.307***	0.218***	0.290***	0.277***	0.188***
	(0.0588)	(0.0539)	(0.0442)	(0.0563)	(0.0521)	(0.0428)
donatedTime	0.0652	0.0418	0.0519	0.0452	0.0266	0.0347
	(0.0429)	(0.0452)	(0.0407)	(0.0407)	(0.0433)	(0.0397)
helpedStranger	0.142**	0.148**	0.130**	0.138**	0.147**	0.137**
	(0.0435)	(0.0440)	(0.0405)	(0.0434)	(0.0441)	(0.0418)
godImportance	-0.0702	-0.0578	-0.0368	-0.109	-0.0960	-0.0610
	(0.0863)	(0.0809)	(0.0645)	(0.0845)	(0.0791)	(0.0627)
godPracticed	-0.0154	-0.0122	0.0192	-0.0373	-0.0322	0.00819
	(0.0532)	(0.0542)	(0.0513)	(0.0490)	(0.0505)	(0.0482)
corrupt		-0.392***	-0.283***		-0.344**	-0.238**
		(0.105)	(0.0732)		(0.105)	(0.0699)
Affectnet				0.570***	0.551***	0.552***
				(0.0447)	(0.0482)	(0.0453)
_cons	5.879***	6.192***	7.162***	5.672***	5.963***	6.878***
	(0.200)	(0.236)	(0.171)	(0.198)	(0.234)	(0.170)
Region dummies	No	No	Yes	No	No	Yes
N	57042	48597	48597	53563	46018	46018
R-squared	0.262	0.268	0.292	0.277	0.281	0.305

Standard errors in brackets ; + p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 1-b: Well-Being Equations, Gallup World Poll 2006

	Dependent Variables: Cantril Ladder					
	(1)	(2)	(3)	(4)	(5)	(6)
lnincomeh	0.570***	0.569***	0.460***	0.551***	0.552***	0.434***
	(0.0365)	(0.0369)	(0.0365)	(0.0358)	(0.0365)	(0.0353)
wallet_police	0.218**	0.177**	0.163**	0.196**	0.156**	0.138**
	(0.0649)	(0.0595)	(0.0492)	(0.0625)	(0.0579)	(0.0478)
Male	-0.0801**	-0.0962**	-0.0914**	-0.0986***	-0.112***	-0.106**
	(0.0276)	(0.0305)	(0.0299)	(0.0285)	(0.0318)	(0.0315)
Marrasmarr	0.0519	0.0445	0.108**	0.0275	0.0275	0.0817*
	(0.0409)	(0.0414)	(0.0380)	(0.0410)	(0.0413)	(0.0366)
Sepdivwid	-0.0165	0.00534	-0.0265	-0.0125	0.00662	-0.0350
	(0.0632)	(0.0682)	(0.0651)	(0.0662)	(0.0711)	(0.0677)
Age	-0.0259***	-0.0262***	-0.0304***	-0.0200**	-0.0216**	-0.0255***
	(0.00687)	(0.00727)	(0.00725)	(0.00682)	(0.00720)	(0.00717)
agesq100	0.0235**	0.0239**	0.0254***	0.0186**	0.0205**	0.0214**
	(0.00696)	(0.00732)	(0.00729)	(0.00691)	(0.00722)	(0.00722)
Freedom	0.426***	0.405***	0.340***	0.383***	0.366***	0.302***
	(0.0559)	(0.0546)	(0.0486)	(0.0564)	(0.0562)	(0.0503)
countOnFriends	0.556***	0.578***	0.514***	0.471***	0.496***	0.428***
	(0.0536)	(0.0557)	(0.0481)	(0.0503)	(0.0525)	(0.0445)
cannotAffordFood_net	-0.713***	-0.692***	-0.657***	-0.607***	-0.596***	-0.554***
	(0.0518)	(0.0541)	(0.0519)	(0.0492)	(0.0512)	(0.0469)
donatedMoney	0.323***	0.297***	0.207***	0.281***	0.268***	0.179***
	(0.0587)	(0.0549)	(0.0464)	(0.0564)	(0.0530)	(0.0454)
donatedTime	0.0683	0.0482	0.0584	0.0538	0.0382	0.0454
	(0.0446)	(0.0467)	(0.0425)	(0.0415)	(0.0441)	(0.0410)
helpedStranger	0.125**	0.138**	0.123**	0.119**	0.134**	0.125**
	(0.0450)	(0.0454)	(0.0424)	(0.0449)	(0.0455)	(0.0438)
godImportance	-0.0803	-0.0756	-0.0519	-0.119	-0.113	-0.0773
	(0.0844)	(0.0805)	(0.0669)	(0.0822)	(0.0779)	(0.0640)
godPracticed	-0.0114	-0.00527	0.0335	-0.0328	-0.0256	0.0218
	(0.0522)	(0.0548)	(0.0516)	(0.0491)	(0.0520)	(0.0491)
Corrupt		-0.365***	-0.266**		-0.315**	-0.221**
		(0.105)	(0.0783)		(0.104)	(0.0753)
Affectnet				0.565***	0.547***	0.551***
				(0.0471)	(0.0505)	(0.0481)
_cons	5.853***	6.160***	7.116***	5.632***	5.921***	6.824***
	(0.201)	(0.240)	(0.176)	(0.200)	(0.240)	(0.177)
Region dummies	No	No	Yes	No	No	Yes
N	53431	45806	45806	50228	43393	43393
R-squared	0.265	0.272	0.295	0.279	0.284	0.308

Standard errors in brackets ; + p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 1-c: Well-Being Equations, Gallup World Poll 2006

	Dependent Variables: Cantril Ladder					
	(1)	(2)	(3)	(4)	(5)	(6)
lnincomeh	0.579***	0.577***	0.473***	0.562***	0.561***	0.447***
	(0.0363)	(0.0364)	(0.0368)	(0.0355)	(0.0358)	(0.0353)
wallet_stranger	0.159*	0.110+	0.0836	0.144*	0.0944	0.0735
	(0.0700)	(0.0650)	(0.0502)	(0.0675)	(0.0632)	(0.0502)
male	-0.0978**	-0.113***	-0.110***	-0.116***	-0.129***	-0.124***
	(0.0290)	(0.0315)	(0.0310)	(0.0301)	(0.0329)	(0.0325)
marrasmarr	0.0357	0.0266	0.0913*	0.0168	0.0151	0.0684+
	(0.0408)	(0.0407)	(0.0385)	(0.0408)	(0.0406)	(0.0374)
sepdivwid	-0.00670	0.0108	-0.00830	0.00206	0.0116	-0.0185
	(0.0685)	(0.0725)	(0.0682)	(0.0709)	(0.0753)	(0.0710)
age	-0.0251***	-0.0259***	-0.0307***	-0.0198**	-0.0220**	-0.0263***
	(0.00696)	(0.00719)	(0.00720)	(0.00693)	(0.00712)	(0.00713)
agesq100	0.0226**	0.0233**	0.0258***	0.0184*	0.0205**	0.0223**
	(0.00707)	(0.00730)	(0.00730)	(0.00704)	(0.00722)	(0.00725)
freedom	0.448***	0.430***	0.362***	0.394***	0.380***	0.311***
	(0.0544)	(0.0521)	(0.0454)	(0.0555)	(0.0543)	(0.0476)
countOnFriends	0.557***	0.576***	0.510***	0.466***	0.485***	0.416***
	(0.0532)	(0.0546)	(0.0464)	(0.0510)	(0.0526)	(0.0439)
cannotAffordFood_net	-0.696***	-0.668***	-0.635***	-0.593***	-0.575***	-0.534***
	(0.0487)	(0.0502)	(0.0465)	(0.0453)	(0.0472)	(0.0416)
donatedMoney	0.321***	0.294***	0.206***	0.280***	0.265***	0.175***
	(0.0582)	(0.0547)	(0.0443)	(0.0556)	(0.0527)	(0.0423)
donatedTime	0.0484	0.0363	0.0466	0.0301	0.0242	0.0327
	(0.0412)	(0.0444)	(0.0402)	(0.0392)	(0.0421)	(0.0386)
helpedStranger	0.143**	0.151**	0.131**	0.135**	0.147**	0.134**
	(0.0441)	(0.0445)	(0.0413)	(0.0440)	(0.0446)	(0.0426)
godImportance	-0.0849	-0.0712	-0.0507	-0.119	-0.106	-0.0724
	(0.0871)	(0.0819)	(0.0649)	(0.0857)	(0.0806)	(0.0629)
godPracticed	-0.00619	-0.0107	0.0216	-0.0265	-0.0282	0.0133
	(0.0514)	(0.0529)	(0.0508)	(0.0481)	(0.0500)	(0.0479)
corrupt		-0.403***	-0.291***		-0.354***	-0.245***
		(0.101)	(0.0686)		(0.100)	(0.0646)
affectnet				0.563***	0.547***	0.549***
				(0.0465)	(0.0504)	(0.0479)
_cons	5.934***	6.269***	7.294***	5.725***	6.046***	7.017***
	(0.205)	(0.236)	(0.164)	(0.204)	(0.235)	(0.164)
Region dummies	No	No	Yes	No	No	Yes
N	50813	44048	44048	48002	41875	41875
R-squared	0.256	0.264	0.288	0.271	0.277	0.301

Standard errors in brackets ; + p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 1-d: Well-Being Equations, Gallup World Poll 2006

	Dependent Variables: Cantril Ladder					
	(1)	(2)	(3)	(4)	(5)	(6)
lnincomeh	0.571***	0.570***	0.458***	0.554***	0.555***	0.434***
	(0.0375)	(0.0380)	(0.0377)	(0.0367)	(0.0375)	(0.0364)
wallet_mean	0.359**	0.292**	0.258***	0.320**	0.251**	0.215**
	(0.106)	(0.0923)	(0.0724)	(0.101)	(0.0890)	(0.0696)
male	-0.0850**	-0.102**	-0.0961**	-0.101**	-0.116***	-0.110**
	(0.0294)	(0.0319)	(0.0311)	(0.0307)	(0.0334)	(0.0329)
marrasmarr	0.0407	0.0340	0.0924*	0.0239	0.0230	0.0722+
	(0.0409)	(0.0407)	(0.0384)	(0.0415)	(0.0413)	(0.0379)
sepdivwid	0.00210	0.0312	0.00246	0.0118	0.0336	-0.00456
	(0.0699)	(0.0740)	(0.0708)	(0.0732)	(0.0774)	(0.0742)
age	-0.0243**	-0.0246**	-0.0295***	-0.0187*	-0.0201**	-0.0247**
	(0.00744)	(0.00773)	(0.00771)	(0.00736)	(0.00759)	(0.00756)
agesq100	0.0221**	0.0221**	0.0245**	0.0174*	0.0186*	0.0205**
	(0.00752)	(0.00785)	(0.00781)	(0.00743)	(0.00767)	(0.00765)
freedom	0.425***	0.407***	0.339***	0.378***	0.364***	0.296***
	(0.0585)	(0.0574)	(0.0511)	(0.0592)	(0.0590)	(0.0529)
countOnFriends	0.542***	0.561***	0.492***	0.466***	0.486***	0.414***
	(0.0550)	(0.0564)	(0.0477)	(0.0529)	(0.0545)	(0.0459)
cannotAffordFood_net	-0.696***	-0.672***	-0.634***	-0.596***	-0.582***	-0.538***
	(0.0516)	(0.0523)	(0.0505)	(0.0486)	(0.0497)	(0.0458)
donatedMoney	0.300***	0.281***	0.186***	0.259***	0.250***	0.155***
	(0.0578)	(0.0551)	(0.0436)	(0.0559)	(0.0536)	(0.0421)
donatedTime	0.0497	0.0386	0.0463	0.0384	0.0341	0.0383
	(0.0428)	(0.0461)	(0.0421)	(0.0409)	(0.0440)	(0.0410)
helpedStranger	0.121*	0.130**	0.114*	0.115*	0.126**	0.118*
	(0.0460)	(0.0464)	(0.0437)	(0.0464)	(0.0469)	(0.0453)
godImportance	-0.0797	-0.0765	-0.0463	-0.115	-0.112	-0.0693
	(0.0853)	(0.0807)	(0.0658)	(0.0831)	(0.0782)	(0.0627)
godPracticed	-0.0111	-0.00844	0.0311	-0.0273	-0.0236	0.0241
	(0.0527)	(0.0548)	(0.0523)	(0.0495)	(0.0517)	(0.0495)
corrupt		-0.359***	-0.251***		-0.320**	-0.215**
		(0.101)	(0.0695)		(0.101)	(0.0672)
affectnet				0.539***	0.527***	0.531***
				(0.0473)	(0.0511)	(0.0488)
_cons	5.818***	6.133***	7.157***	5.607***	5.910***	6.892***
	(0.220)	(0.252)	(0.185)	(0.217)	(0.250)	(0.184)
Region dummies	No	No	Yes	No	No	Yes
N	45630	39980	39980	43336	38168	38168
R-squared	0.266	0.272	0.298	0.279	0.284	0.309

Standard errors in brackets ; + p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 2: Life Satisfaction Equations, Canadian GSS17

	Dependent Variables: Life Satisfaction				
	(1)	(2)	(3)	(4)	(5)
lninch	0.174***	0.178***	0.179***	0.170***	0.166***
	(0.021)	(0.022)	(0.021)	(0.022)	(0.022)
wallet_neighbour	0.285***	0.185***	0.172***	0.104*	0.043
	(0.045)	(0.044)	(0.045)	(0.046)	(0.050)
wallet_stranger	0.268***	0.237***	0.237***	0.206***	0.203***
	(0.047)	(0.049)	(0.050)	(0.051)	(0.050)
trust_gen	0.100***	0.075**	0.067*	-0.035	-0.063*
	(0.029)	(0.028)	(0.028)	(0.028)	(0.029)
french	0.283***	0.222***	0.301***	0.267***	0.274***
	(0.040)	(0.040)	(0.039)	(0.038)	(0.038)
marr	0.344***	0.305***	0.305***	0.298***	0.295***
	(0.037)	(0.036)	(0.035)	(0.035)	(0.035)
sepdivwid	-0.246***	-0.252***	-0.259***	-0.269***	-0.276***
	(0.056)	(0.057)	(0.056)	(0.056)	(0.058)
age	-0.070***	-0.069***	-0.070***	-0.076***	-0.075***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
agesq100	0.070***	0.067***	0.068***	0.075***	0.074***
	(0.005)	(0.006)	(0.005)	(0.006)	(0.006)
female	0.125***	0.113***	0.115***	0.107***	0.110***
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
unemployed	-0.647***	-0.619***	-0.613***	-0.572***	-0.567***
	(0.099)	(0.101)	(0.101)	(0.101)	(0.103)
educ1	-0.025	-0.004	0.002	-0.003	-0.002
	(0.052)	(0.050)	(0.050)	(0.049)	(0.050)
educ2	-0.099*	-0.051	-0.045	-0.049	-0.048
	(0.043)	(0.043)	(0.042)	(0.040)	(0.040)
educ3	-0.189***	-0.127**	-0.124**	-0.134**	-0.134**
	(0.046)	(0.045)	(0.045)	(0.045)	(0.045)
mem_rel	0.091**	0.039	0.044	0.041	0.045
	(0.034)	(0.034)	(0.034)	(0.033)	(0.033)
mem_oth	0.010	-0.019	-0.018	-0.019	-0.018
	(0.029)	(0.028)	(0.028)	(0.028)	(0.028)
tenureNeighbour	0.137**	0.054	0.062	0.044	0.023
	(0.045)	(0.045)	(0.045)	(0.044)	(0.045)
control	0.271***	0.265***	0.265***	0.255***	0.250***
	(0.049)	(0.048)	(0.048)	(0.048)	(0.048)
change_things	0.709***	0.700***	0.687***	0.656***	0.660***
	(0.072)	(0.075)	(0.075)	(0.074)	(0.074)
friends2	0.110	0.110	0.117	0.109	0.110
	(0.083)	(0.084)	(0.083)	(0.082)	(0.082)
friends3	0.241**	0.219*	0.224**	0.199*	0.190*

	(0.087)	(0.087)	(0.086)	(0.081)	(0.082)
friends4	0.329***	0.269**	0.273**	0.238**	0.226**
	(0.092)	(0.094)	(0.092)	(0.085)	(0.087)
friends5	0.382***	0.301**	0.303**	0.263**	0.254**
	(0.103)	(0.103)	(0.100)	(0.093)	(0.094)
friends6	0.432**	0.282*	0.295*	0.235+	0.218
	(0.148)	(0.141)	(0.138)	(0.132)	(0.133)
seeFrds	0.161***	0.108***	0.110***	0.096***	0.097***
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
relatives2	0.381***	0.332***	0.335***	0.316***	0.323***
	(0.081)	(0.082)	(0.082)	(0.082)	(0.083)
relatives3	0.526***	0.460***	0.459***	0.427***	0.436***
	(0.076)	(0.078)	(0.078)	(0.078)	(0.079)
relatives4	0.618***	0.524***	0.520***	0.481***	0.489***
	(0.079)	(0.080)	(0.080)	(0.080)	(0.081)
relatives5	0.700***	0.603***	0.596***	0.547***	0.555***
	(0.091)	(0.088)	(0.088)	(0.088)	(0.089)
relatives6	0.658***	0.524***	0.521***	0.495***	0.499***
	(0.112)	(0.108)	(0.108)	(0.107)	(0.108)
seeRels	0.096***	0.066*	0.068**	0.069**	0.074**
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
c_density	-0.473	-0.526	-0.520	-0.514	-0.495
	(0.345)	(0.342)	(0.341)	(0.334)	(0.333)
c_educ	-0.010	0.117	0.114	0.110	0.095
	(0.150)	(0.162)	(0.158)	(0.158)	(0.166)
c_mob	-0.026	-0.078	-0.099	-0.142	-0.103
	(0.128)	(0.126)	(0.126)	(0.125)	(0.126)
c_inc_med	-0.001	-0.002	-0.006	-0.010	-0.018
	(0.016)	(0.016)	(0.016)	(0.018)	(0.019)
c_inc_div	-0.197	-0.214	-0.211	-0.184	-0.169
	(0.161)	(0.163)	(0.162)	(0.161)	(0.164)
c_herf_vismin	0.068	0.034	0.046	0.040	0.034
	(0.062)	(0.055)	(0.057)	(0.056)	(0.056)
c_vm	0.063	0.042	0.033	0.050	0.080
	(0.098)	(0.096)	(0.096)	(0.096)	(0.096)
belong_comm		0.872***	0.850***	0.815***	0.781***
		(0.057)	(0.057)	(0.055)	(0.056)
belong_prov		0.484***	0.316***	0.269***	0.274***
		(0.054)	(0.058)	(0.058)	(0.058)
belong_can			0.423***	0.377***	0.366***
			(0.065)	(0.069)	(0.070)
na_co				0.407***	0.329***
				(0.072)	(0.075)
trust_coworker				0.784***	0.683***
				(0.077)	(0.076)

confi_police				0.389***	0.361***
				(0.057)	(0.058)
trust_neighbour					0.336***
					(0.071)
Constant	5.449***	4.887***	4.717***	4.412***	4.405***
	(0.265)	(0.261)	(0.259)	(0.271)	(0.272)
R-squared	0.129	0.167	0.171	0.187	0.188
N	15505	15235	15190	15114	14896

Standard errors in brackets ; + p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 3-a: Compensating Differentials of Trust in GWP 2006 [a]

	Trust in Neighbours	Trust in Police	Trust in Strangers	Average Trust
Coefficient of the log of household income	0.58*** (0.036)	0.57*** (0.037)	0.58*** (0.036)	0.57*** (0.038)
Coefficient of trust	0.18** (0.058)	0.22*** (0.065)	0.16* (0.070)	0.36*** (0.106)
Compensating differentials	0.31** (0.10)	0.38** (0.12)	0.28* (0.12)	0.63** (0.19)
95% confidence intervals	[0.10, 0.51]	[0.15, 0.62]	[0.04, 0.51]	[0.25, 1.00]

Standard errors in brackets ; + p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 3-b: Compensating Differentials of Trust in GSS17 [b]

	Trust in Neighbours	Trust in Neighbours1	Trust in Strangers	Trust in Co-workers	Trust in Police
Coefficient of the log of household income	0.17*** (0.022)	0.17*** (0.022)	0.17*** (0.022)	0.17*** (0.022)	0.17*** (0.022)
Coefficient of trust	0.10*** (0.046)	0.34*** (0.071)	0.20*** (0.050)	0.68*** (0.076)	0.36*** (0.058)
Compensating differentials	0.61*** (0.30)	2.03*** (0.47)	1.22*** (0.30)	4.12*** (0.47)	2.18*** (0.47)
95% confidence intervals	[0.028, 1.20]	[1.11, 2.94]	[0.63, 1.82]	[3.21, 5.03]	[1.27, 3.09]

Standard errors in brackets ; + p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 3-c: Compensating Differentials of Trust in ESC2 2003 and USBS 2000/01 [c]

	Trust in Neighbours		Trust in Workplace		Trust in Police	
	ESC2, 2003	USBS, 2000/01	ESC2, 2003	USBS, 2000/01	ESC2, 2003	USBS, 2000/01
Coefficient of the log of household income	0.19*** (0.039)	0.096*** (0.022)	0.19*** (0.039)	0.096*** (0.022)	0.19*** (0.039)	0.096*** (0.022)
Coefficient of trust	0.23*** (0.063)	0.25*** (0.048)	0.19*** (0.025)	0.093*** (0.011)	0.16+ (0.098)	0.35*** (0.040)
Compensating differentials	1.21*** (0.34)	2.60*** (0.30)	0.97*** (0.24)	0.97*** (0.26)	0.84 (0.64)	3.64*** (0.26)
95% confidence intervals	[0.54, 1.88]	[2.01, 3.09]	[0.50, 1.44]	[0.46, 1.48]	[-0.41, 2.09]	[3.13, 4.14]

Standard errors in brackets ; + p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Notes for Table 3:

a. The results are generated from the data Gallup World Poll 2006 using the Cantril self-anchoring striving scale on a 0 to 10 scale. Trust in neighbours, trust in strangers, and trust in police are binary measures, with 1.0 reflecting confidence that the lost wallet would be returned with valuables intact in it if it was found by neighbours, strangers, and police respectively, with 0 as the alternative. Average trust is the simple average of the three trust measures. Compensating differentials of trust are calculated based on model (1) in Table 1.

b. The results are generated from Canadian GSS17 using life satisfaction on a 0 to 10 scale. trust in co-worker which is originally on 1-5 point scale is standardized with zero mean and a standard deviation of one; trust in neighbours and trust in strangers which are originally on 1-3 point scale are converted to 0 to 1.0 range; trust in police which is originally on 1-4 point scale is also converted to 0 to 1.0 range. Trust in neighbours and trust in strangers mean the confidence that the lost wallet will be returned with the money in it if it was found by neighbours and strangers. Trust in Neighbours1 is the answer to the question “how much do you trust people in your neighbourhood. It is originally on 1-5 point scale is converted to 0 to 1.0 range. Trust in police is the confidence on police. Compensating differentials of trust in neighbours, trust in strangers,

trust in co-workers, and confidence in police are calculated based on model (4) in Table 2. Compensating differentials of trust in neighbours are calculated based on model (5) in Table 2.

c1. Results in Table 3-c are drawn from Helliwell *et al*. (2010).

c2. The regressions only use data on working population. Self-employed is excluded in the Canadian ESC surveys. US benchmark survey does not provide information on self-employment status. Therefore the sample may include the self-employed. The coefficients of correlation between trust and income are assumed to be zero to simplify the calculation.

c3. The subjective well-being and trust variables are defined as follows:

Canadian ESC2: Life satisfaction is on 1-10 point scale; trust in management which is originally on 1-10 point scale is standardized with zero mean and a standard deviation of one; trust in neighbours and trust in police have a 3 point scale, converted to lie on the 0 to 1.0 range for estimation. A value of 1.0 for the latter means that wallet return is thought very likely.

US Benchmark Survey: Happiness is on 1-4 point scale; trust in co-workers which is originally on 1-4 point scale is standardized with zero mean and a standard deviation of one. Trust in neighbours and trust in police are both on 0-1 point scale.

Table 4: Trust Equations, Canadian GSS17

	Trust general	Trust coworker	Trust neighbour	Trust stranger	Wallet neighbour	Wallet stranger
imp_trust	0.743***	0.002	0.169**	0.183***	-0.081	-0.032
	(0.106)	(0.065)	(0.055)	(0.054)	(0.077)	(0.071)
imgrant	0.074***	-0.014	0.012	-0.007	-0.009	0.003
	(0.015)	(0.010)	(0.007)	(0.008)	(0.013)	(0.010)
french	-0.192***	-0.020**	-0.043***	-0.056***	-0.036***	-0.098***
	(0.011)	(0.008)	(0.006)	(0.007)	(0.008)	(0.007)
marr	0.027*	-0.007	0.039***	-0.003	0.072***	0.018*
	(0.012)	(0.007)	(0.007)	(0.006)	(0.009)	(0.007)
sepdivwid	-0.013	0.006	0.003	-0.020**	0.008	-0.001
	(0.015)	(0.009)	(0.007)	(0.007)	(0.010)	(0.009)
age	0.003*	0.017***	0.002*	0.006***	0.001	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
agesq100	-0.001	-0.028***	0.001+	-0.003***	0.002+	-0.001+
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
female	-0.020*	-0.060***	0.003	-0.026***	-0.015**	0.008
	(0.009)	(0.008)	(0.004)	(0.004)	(0.006)	(0.005)
educ1	0.038**	0.017+	0.008	0.042***	0.019+	0.028***
	(0.014)	(0.010)	(0.007)	(0.007)	(0.011)	(0.008)
educ2	0.079***	0.044***	0.014*	0.072***	0.041***	0.043***
	(0.015)	(0.009)	(0.006)	(0.006)	(0.008)	(0.007)
educ3	0.155***	0.081***	0.036***	0.124***	0.078***	0.078***
	(0.015)	(0.009)	(0.007)	(0.007)	(0.009)	(0.009)
mem_rel	0.031**	0.004	0.006	0.023***	0.024***	0.025***
	(0.012)	(0.008)	(0.005)	(0.006)	(0.007)	(0.007)
mem_oth	0.043***	0.032***	0.004	0.020***	0.018**	0.016**
	(0.008)	(0.005)	(0.004)	(0.005)	(0.006)	(0.005)
tenureNeighbour	0.030*	0.051***	0.091***	0.017*	0.135***	0.003
	(0.014)	(0.009)	(0.007)	(0.007)	(0.010)	(0.009)
control	0.080***	0.034***	0.017*	0.047***	0.037**	0.049***
	(0.014)	(0.010)	(0.007)	(0.008)	(0.013)	(0.009)
change_things	0.112***	0.075***	0.029**	0.074***	0.030+	0.030*
	(0.019)	(0.012)	(0.010)	(0.012)	(0.018)	(0.012)
friends2	0.039	0.015	0.048***	0.018	0.011	0.006
	(0.028)	(0.019)	(0.013)	(0.012)	(0.017)	(0.014)
friends3	0.113***	0.060**	0.071***	0.042***	0.044**	0.021+
	(0.026)	(0.022)	(0.012)	(0.012)	(0.015)	(0.012)
friends4	0.164***	0.070***	0.086***	0.063***	0.051**	0.029*
	(0.025)	(0.021)	(0.013)	(0.013)	(0.016)	(0.013)
friends5	0.173***	0.088***	0.099***	0.074***	0.066***	0.037*
	(0.028)	(0.023)	(0.014)	(0.015)	(0.020)	(0.017)
friends6	0.173***	0.118***	0.118***	0.055**	0.071**	0.021

	(0.035)	(0.025)	(0.018)	(0.020)	(0.024)	(0.025)
seeFrds	0.002	0.017**	0.004	0.005	-0.006	-0.005
	(0.008)	(0.005)	(0.004)	(0.004)	(0.006)	(0.005)
relatives2	0.024	0.028*	0.010	0.003	0.008	0.004
	(0.019)	(0.012)	(0.011)	(0.011)	(0.014)	(0.014)
relatives3	0.061**	0.058***	0.038***	0.029**	0.039**	0.021
	(0.019)	(0.012)	(0.010)	(0.010)	(0.014)	(0.015)
relatives4	0.074***	0.054***	0.043***	0.036***	0.039*	0.030*
	(0.020)	(0.012)	(0.012)	(0.010)	(0.017)	(0.014)
relatives5	0.083***	0.085***	0.043***	0.040***	0.051**	0.035*
	(0.023)	(0.015)	(0.012)	(0.012)	(0.017)	(0.017)
relatives6	0.055*	0.047*	0.034+	0.015	0.032	0.018
	(0.028)	(0.018)	(0.018)	(0.015)	(0.023)	(0.021)
seeRels	-0.002	-0.018***	-0.001	-0.009*	0.013*	0.011*
	(0.008)	(0.005)	(0.004)	(0.004)	(0.006)	(0.005)
c_density	-0.069	0.011	-0.342***	-0.048	-0.736***	-0.150+
	(0.130)	(0.080)	(0.082)	(0.076)	(0.130)	(0.082)
c_educ	0.288***	0.024	0.141***	0.146***	0.231***	0.112***
	(0.045)	(0.029)	(0.024)	(0.025)	(0.033)	(0.027)
c_mob	-0.033	0.025	-0.128***	-0.016	-0.247***	-0.045*
	(0.043)	(0.025)	(0.019)	(0.019)	(0.030)	(0.023)
c_inc_med	-0.006	0.000	0.005*	0.002	0.002	0.001
	(0.005)	(0.002)	(0.003)	(0.003)	(0.006)	(0.004)
c_inc_div	-0.094+	0.047	0.040	-0.080**	0.096**	-0.011
	(0.054)	(0.033)	(0.026)	(0.027)	(0.037)	(0.033)
c_herf_vismin	-0.019	-0.002	0.004	0.003	0.011	-0.022
	(0.015)	(0.012)	(0.008)	(0.008)	(0.016)	(0.015)
c_vm	-0.092**	-0.078***	-0.139***	-0.086***	-0.225***	-0.080***
	(0.032)	(0.021)	(0.016)	(0.017)	(0.024)	(0.021)
belong_comm	0.077***	0.052*	0.133***	0.041***	0.138***	0.034***
	(0.016)	(0.021)	(0.011)	(0.009)	(0.012)	(0.010)
belong_prov	0.027	0.036**	0.023*	0.013	0.015	0.025*
	(0.018)	(0.011)	(0.011)	(0.009)	(0.013)	(0.012)
belong_can	0.076***	0.013	0.049***	0.030**	0.046**	0.042***
	(0.019)	(0.014)	(0.009)	(0.009)	(0.015)	(0.011)
CTuid_dummy	0.059***	0.014**	0.045***	0.038***	0.085***	0.044***
	(0.007)	(0.005)	(0.004)	(0.004)	(0.006)	(0.005)
Constant	-0.423***	0.079+	0.124***	-0.232***	0.152**	-0.092*
	(0.064)	(0.041)	(0.034)	(0.034)	(0.047)	(0.041)
R-squared	0.129	0.294	0.207	0.135	0.187	0.086
N	17174	17404	17007	16997	16987	16641

Standard errors in brackets ; + p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Figure 1: International shares of variance
Gallup World Poll 2006

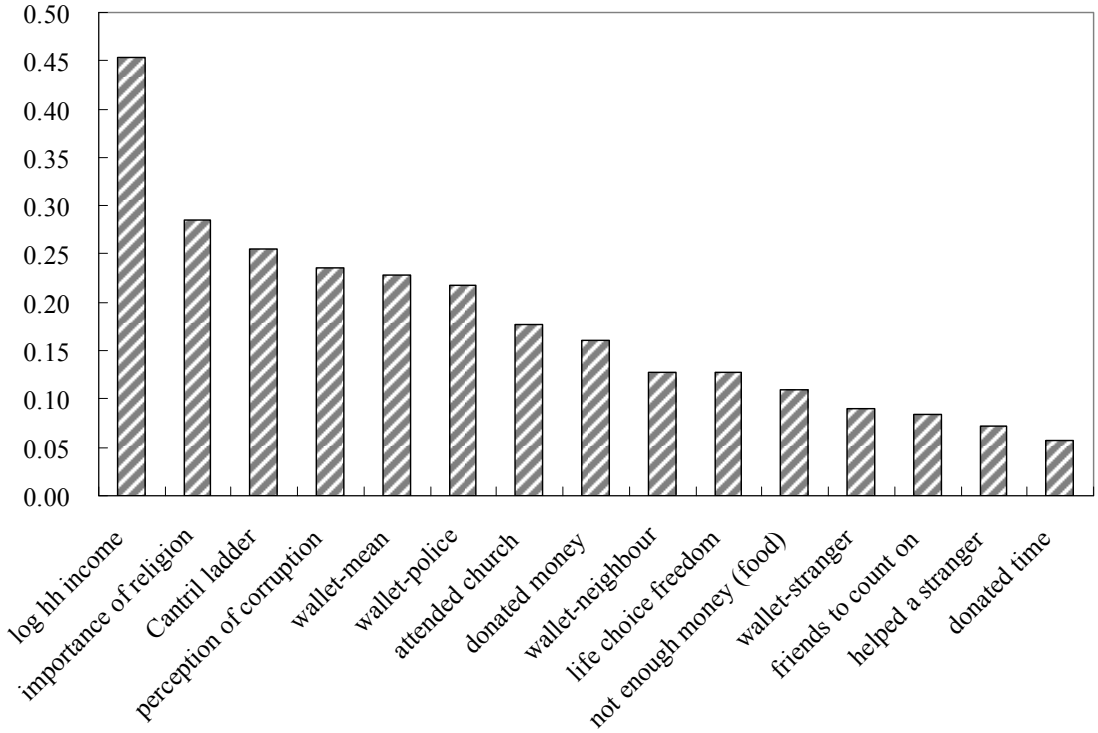
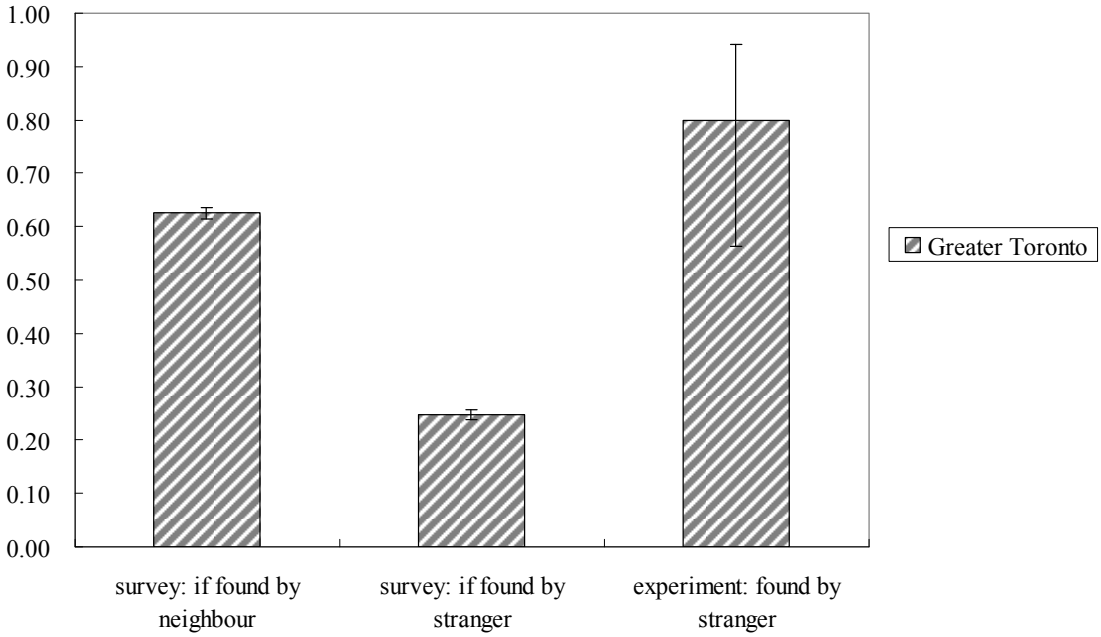


Figure 2: Likelihood of lost wallet being returned



APPENDIX

Appendix Table 1-a: Summary Statistics, Gallup World Poll 2006

Variable	Number of Observations	Mean	Standard Deviation
lifeToday	136955	5.358	2.237
walletNeighbour	81065	0.644	0.479
walletPolice	74903	0.566	0.496
walletStranger	71164	0.166	0.372
walletMean	62306	0.431	0.347
lnincomeh	99584	-2.045	1.944
marr	138666	0.515	0.5
sepdivwid	138666	0.049	0.216
age	138060	38.783	17.03
agesq100	138060	17.941	15.288
female	138640	0.511	0.5
freedom	123789	0.73	0.444
countOnFriends	132858	0.84	0.367
cannotAffordFood_net	97918	0	0.443
donatedMoney	97198	0.283	0.45
donatedTime	98116	0.224	0.417
helpedStranger	97479	0.432	0.495
godImportance	129087	0.707	0.455
godPracticed	130658	0.452	0.498
corrupt	102095	0.761	0.383
affectnet	114626	0.400	0.490

Appendix Table 1-b: Descriptions of Variables, Gallup World Poll 2006

Variable	Descriptions
Cantril Ladder	Please imagine a ladder with steps numbered from zero at the bottom to ten at the top. Suppose we say that the top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible. If the top step is 10 and the bottom step is 0, on which step of the ladder do you feel you personally stand at the present time?
wallet_neighbour	In the city or area where you live, imagine that you lost your wallet or something holding your identification or address and it was found by someone else. Do you think your wallet (or your valuables) would be returned to you if it were found by neighbours?
wallet_police	In the city or area where you live, imagine that you lost your wallet or something holding your identification or address and it was found by someone else. Do you think your wallet (or your valuables) would be

	returned to you if it were found by the police?
wallet_stranger	In the city or area where you live, imagine that you lost your wallet or something holding your identification or address and it was found by someone else. Do you think your wallet (or your valuables) would be returned to you if it were found by strangers?
wallet_mean	Average of the three wallet trust measures
lnincomeh	Log of household income
marr	Dummy variable equals to 1 if respondent is married or as married
sepdivwid	Dummy variable equals to 1 if respondent is separated, divorced, or widowed
age	Age
agesq100	Square of age/100
female	Dummy variable equals to 1 if respondent is female
freedom	In (county of interview), are you satisfied or dissatisfied with your freedom to choose what you do with your life?
countOnFriends	If you were in trouble, do you have relatives or friends you can count on to help you whenever you need them, or not?
cannotAffordFood	Have there been times in the past twelve months when you did not have enough money to buy food that you or your family needed?
cannotAffordFood_net	Residual of regressing *cannotAffordFood* on the log of household income
donateMoney	Have you in the past month donated money to a charity?
donateTime	Have you in the past month volunteered your time to an organization?
helpedStranger	Have you in the past month helped a stranger or someone you did not know who needed help?
godImportance	Is religion an important part of your daily life?
godPracticed	Have you attended a place of worship or religious service within the last seven days?
corrupt	Average of the following two responses: 1) Is corruption widespread within businesses located in (county of interview), or not? 2) Is corruption widespread throughout the government in (county of interview), or not?
affectnet	Affectpos-affectneg. Affectpos is the average of Gallup wp63-67, and affectneg the average of wp70, and wp72-75. Questions- Did you smile or laugh a lot yesterday? (wp63) Were you proud of something you did yesterday? (wp64) Did you learn or do something interesting yesterday? (wp65) Did you have good tasting food to eat yesterday? (wp66) Did you experience the following feelings during a lot of the day yesterday? enjoyment (wp67), worry (wp69), sadness (wp70), boredom (wp72), depression (wp73), anger (wp74), shame (wp75).

Appendix Table 2-a: Summary Statistics, Canadian GSS17

Variable	Number of Observations	Mean	Standard Deviation
SWL	24452	7.903	1.642
trust_gen	23861	0.553	0.497
wallet_neighbour	23348	0.651	0.361
wallet_stranger	22641	0.228	0.299
trust_neighbour	23387	0.682	0.266
trust_stranger	23323	0.308	0.265
trust_coworker	17103	0.711	0.243
confi_police	23804	0.734	0.242
imp_trust	22798	0.377	0.052
immigrant	24568	0.218	0.413
french	24931	0.216	0.412
age	24951	43.942	17.940
agesq100	24951	22.527	17.353
female	24951	0.508	0.500
yr_ngh	24547	3.915	1.625
educ1	24517	0.142	0.349
educ2	24517	0.416	0.493
educ3	24517	0.212	0.409
control	23409	0.603	0.292
change_things	23318	0.682	0.244
friends1-2	24721	0.235	0.424
friends3-5	24721	0.400	0.490
friends6-10	24721	0.214	0.410
friends11-20	24721	0.067	0.250
friends20plus	24721	0.022	0.145
relatives1-2	24673	0.238	0.426
relatives3-5	24673	0.354	0.478
relatives6-10	24673	0.221	0.415
relatives11-20	24673	0.087	0.282
relatives20plus	24673	0.034	0.182
seeFrds	23415	0.590	0.492
seeRels	24867	0.382	0.486
mem_rel	24728	0.168	0.374
mem_oth	24738	0.578	0.494
c_density	24368	0.024	0.036
c_educ	24940	0.588	0.130
c_mob	24474	0.412	0.131
c_inc_med	24951	0.437	1.022
c_inc_div	24368	0.271	0.102
c_herf_vismin	23001	0.339	0.242
c_vm	24407	0.131	0.182
belong_comm	24417	0.601	0.283

belong_prov	24313	0.695	0.272
belong_can	24570	0.784	0.269

Appendix Table 2-b: Descriptions of Variables, Canadian GSS17

Variable	Descriptions
SWL	Please rate your feelings about certain areas of your life, using a scale of 1 to 10 where 1 means "Very dissatisfied" and 10 means "Very satisfied". How do you feel about your life as a whole right now?
trust_gen	Generally speaking, would you say that most people can be trusted or that you cannot be too careful in dealing with people? yes=1, no=0
wallet_neighbour	If you lost a wallet or purse that contained two hundred dollars, how likely is it to be returned with the money in it if it was found by someone who lives close by? Scaled max=1.0
wallet_stranger	If you lost a wallet or purse that contained two hundred dollars, how likely is it to be returned with the money in it if it was found by a complete stranger?
trust_coworker	Using a scale of 1 to 5 where 1 means "Cannot be trusted at all" and 5 means "Can be trusted a lot", how much do you trust people you work with or go to school with? Scaled max=1.0 in regressions
na_co	Dummy variable equals to 1 if respondents do not answer the questions on trust in co-workers
trust_neighbour	Using a scale of 1 to 5 where 1 means "Cannot be trusted at all" and 5 means "Can be trusted a lot", how much do you trust people in your neighbourhood? Scaled max=1.0 in regressions
trust_stranger	Using a scale of 1 to 5 where 1 means "Cannot be trusted at all" and 5 means "Can be trusted a lot", how much do you trust strangers? Scaled max=1.0 in regressions.
confi_police	How much confidence do you have in the police? (max=1.0)
lnincomeh	Log of household income
imp_trust	Imported Trust (average level of trust in immigrant's country of origin minus corresponding Canadian value)
immigrant	Dummy variable equals to 1 if respondent is an immigrant
french	Dummy variable equals to 1 if the first language of respondent is French
marr	Dummy variable equals to 1 if respondent is married or as married
sepdivwid	Dummy variable equals to 1 if respondent is separated, divorced, or widowed
age	Age
agesq100	Square of age/100
female	Dummy variable equals to 1 if respondent is female

unemployed	Dummy variable equals to 1 if respondent is unemployed
yr_ngh	Years living in the neighbourhood
educ1	High school education
educ2	Started college or university
educ3	University degree
control	Sense of control over things happening to respondent
change_things	Ability to change things in respondent's life
friends1-2	Number of close friends: 1 or 2
friends3-5	Number of close friends: 3 to 5
friends6-10	Number of close friends: 6 to 10
friends11-20	Number of close friends: 11 to 20
friends20plus	Number of close friends: more than 20
relatives1-2	Number of close relatives: 1 or 2
relatives3-5	Number of close relatives: 3 to 5
relatives6-10	Number of close relatives: 6 to 10
relatives11-20	Number of close relatives: 11 to 20
relatives20plus	Number of close relatives: more than 20
seeFrds	The frequency of seeing close friends in the last month
seeRels	The frequency of seeing close relatives in the last month
mem_rel	Dummy variable equals to 1 if respondent belongs to a religious group
mem_oth	Dummy variable equals to 1 if respondent belongs to a non-religious or non-ethnic group
c_density	Population density at the census tract level
c_educ	Proportion of people with a high school degree at census tract level
c_mob	Proportion of people who moved in last five years at census tract level
c_inc_med	Median income at census tract level
c_inc_div	Income diversity at census tract level
c_herf_vismin	Herfindahl Index for ethnic diversity at census tract level
c_vm	Proportion of visible minorities at census tract level
belong_comm	Sense of belonging to the community. Scaled max=1.0 in regressions
belong_prov	Sense of belonging to the province. Scaled max=1.0 in regressions
belong_can	Sense of belonging to Canada. Scaled max=1.0 in regressions