

THE WELL-BEING OF YOUNG CANADIAN CHILDREN IN INTERNATIONAL PERSPECTIVE: A FUNCTIONINGS APPROACH

BY SHELLEY PHIPPS*

Dalhousie University, Halifax, Nova Scotia

The goal of this paper is to compare the well-being of young children in Canada, Norway and the United States using Sen's (1992) "functionings" perspective. We compare children cross-nationally in terms of ten "functionings" (low birth-weight; asthma; accidents; activity limitation; trouble concentrating; disobedience at school; bullying; anxiety; lying; hyperactivity). If we compare young children in Canada and the U.S. in terms of their functionings, there is not a clear ranking overall. Canadian children are better off for four of nine comparable outcomes; U.S. children are better off for two outcomes; Canadian and U.S. children are statistically indistinguishable for three outcomes. If we compare child functionings in Canada or the U.S. with those experienced in Norway, it is clear that Norwegian children fare better. There is not a single case in which children in either Canada or the U.S. have better outcomes than Norwegian children.

1. INTRODUCTION

Measures of economic well-being typically leave out children, while they are children. That is, many economic models of children's well-being or children's attainment (e.g. Becker and Tomes, 1986) adopt an investment perspective — they are interested in the *eventual* well-being of children, once the children become adults. Examples of the sorts of questions often asked by economists include: what is the role of parent's income and education for the child's eventual education/income level; what is the effect of parental divorce on child's own eventual childbearing experiences (see Haveman and Wolfe, 1995 for a survey). These issues are obviously extremely important, but children are people *now*, too. They are not simply "human becomings" (Qvortrup, 1990, p. 8) and their current well-being should count in any assessment of "social welfare" — children, after all, constitute nearly 25 percent of the Canadian population.

The goal of this paper is to establish benchmark comparisons of the current well-being of children living in Canada, Norway and the United States. The perspective taken is that the well-being of children *today* matters. There is already a large and excellent literature which compares current family incomes for children

Note: I would like to thank Lynn Lethbridge for her invaluable research assistance, and Peter Burton, Lori Curtis, Tess Cyrus, John Micklewright, Lars Osberg and two anonymous reviewers for very helpful comments. This paper was originally part of a larger study titled "The Best Mix of Policies for Canada's Children?: An International Comparison of Policies and Outcomes for Young Children" prepared for and funded by the Canadian Policy Research Network and Human Resources Development Canada. I would like to thank Suzanne Peters and Allan Zeesman for their support in launching this project. Subsequent work on the paper was funded by the Social Sciences and Humanities Research Council of Canada.

*Correspondence to: Shelley Phipps, Department of Economics, Dalhousie University, Halifax, Nova Scotia, Canada B3H 3J5 (Shelley.Phipps@dal.ca).

living in different countries.¹ From this literature, we know that rates of child poverty are much higher in Canada and particularly in the U.S. than in most other affluent industrialized countries (see, for example, Rainwater and Smeeding, 1995; Bradbury and Jantti, 2001). Microdata from the Luxembourg Income Study indicate that in 1994, 17.9 percent of young children (i.e. aged 0 to 11 years) living with two parents were poor in the U.S. versus 4.6 percent in Norway, for example. Canada was on “middle ground” with 12.6 percent poor. Rates of poverty for young children living with lone mothers are much higher everywhere, but particularly in Canada (42.5 percent poor) and the U.S. (60.7 percent poor). This contrasts with the Norwegian experience where 15.7 percent of young children living with lone mothers were poor.²

While income may be an extremely important input to the well-being of children,³ in itself it is surely not the best measure of children’s well-being. First, as a growing literature on the distribution of well-being within families points out, family income is not the best measure of the well-being of any individual family member. Since young children, in particular, have so little direct access to income of their own, they may not always share equally in the benefits associated with family income (e.g. see Phipps and Burton, 1995). Second, household production activities (reading stories, playing games, cooking a healthy dinner) seem especially important for the well-being of young children whose lives are often very centered around home, yet household production is missing from a simple income proxy.

Sen’s (1992) “functionings” approach is useful for measuring the current well-being of children. Examples of basic functionings are: “being adequately nourished”; “being in good health”; “avoiding escapable morbidity/premature mortality;” “having a good education.” While adults control income, which they may or may not use to the benefit of their children, children themselves directly experience outcomes such as “health,” etc.⁴

Yet, we have relatively little comparative evidence about outcomes for children other than income. For example, are outcomes such as physical and emotional health better or worse for Canadian children than for children living in other countries? Until very recently, a lack of suitable microdata has limited

¹Much of this literature makes use of the Luxembourg Income Study—a set of internationally comparable microdata sets housed in Luxembourg but available to remote users via the internet. Consult the LIS website for details: <http://lissy.ceps.lu>. Notice that the “equal-sharing” assumption is made in all of these studies of child poverty. See Jenkins (1991) for a discussion of the issue and Phipps and Burton (1995) for simulations of the consequences of relaxing the equal sharing assumption using Canadian data.

²A child is designated as poor if he or she lives in a household with income less than 50 percent of median equivalent after-tax income. OECD equivalence scales are employed. See Table 1a. Observed *patterns* of child poverty are the same as those reported in the LIS Key Figures at <http://www.lisproject.org/keyfigures/childpovrates.html>, but exact numbers differ (they are generally slightly higher—e.g. 10 percent of Canadian children in two-parent households are poor in the LIS tables versus the 12.6 percent reported in Table 1a). The difference is due to the fact that children studied in this paper are aged 0 to 11 years and an OECD equivalence scale rather than a LIS “square root of family size” scale is employed.

³See Ross, Scott, and Kelly (1996) and Dooley *et al.* (1998) for examples of Canadian evidence of important associations between family income and child physical and emotional well-being. See Duncan and Brooks-Gunn (1997) for U.S. evidence.

⁴See Phipps (1999a) for a more complete discussion of how we might think about the economic well-being of children.

our ability to ask such a question. The goal of this paper is thus simply to try to establish some benchmark international comparisons of young children's "functionings."⁵

Canadian outcomes are compared with those experienced in the U.S. and in Norway. Why these two countries? The U.S. is an obvious choice for comparison with Canada, given the proximity and similarities between the two. Norway is chosen as an example of a country with policies and a child-poverty record which is very different from Canada. (Of course, a necessary condition was also that both countries have accessible microdata on child outcomes, which was in practice a very limiting condition.)

While the focus of this paper is not on policy, it is important to note at the beginning that there are important differences in the policies available for children in Canada and the U.S. (e.g. universal health care is available in Canada but not in the U.S.; paid maternity leaves are available in Canada but not the U.S.; child benefits are paid to all middle to lower-income families in Canada but such a benefit does not exist in the U.S.⁶). There are even larger policy differences between Canada and Norway (e.g. all Norwegian children receive family allowances which are extremely generous by Canadian standards; maternity/parental leaves are very extensive and well-paid; very generous programs are available to assist single mothers).⁷ Differences in policy setting add to the interest of the microdata comparisons. While conclusions cannot necessarily be drawn about the link between policy and outcomes for children based on the work presented here, if better outcomes for children are observed in countries with more generous programs, further research is certainly suggested.

The remainder of the paper is divided into four sections. Section 2 provides more detail on the data used. To set the context for the discussion of outcomes which follows, Section 3 discusses relative and absolute income differences for children in the three countries studied. Section 4 presents differences in ten physical and emotional dimensions of child well-being. Section 5 concludes.

2. DATA

Canadian estimates are based on the National Longitudinal Survey of Children and Youth (NLSCY). The Statistics Norway Health Survey and the National Survey of Children for the U.S. are reasonably comparable microdata sets obtained to conduct cross-national comparisons.⁸ In each case, the survey was conducted during a visit to the respondent's home.

⁵For other examples of benchmarks of children's outcomes, see the UNICEF web page at <http://www.childinfo.org> which provides information about child survival/health, child nutrition and education or for outcomes for European children (see Micklewright and Stewart, 2000).

⁶While the U.S. does not offer a "child benefit" the Earned Income Tax Credit is available for "working poor" families with children. Over 18 million families received this benefit in 1994 (Kamerman and Kahn, 1997).

⁷See Phipps (1999b) which discusses these program differences in detail.

⁸In each case, the survey involves a multistage probability sample. Appropriate sample weights reflecting survey design are employed for all estimates reported here, though we do not adjust for stratification and clustering.

In locating data sets for the non-Canadian countries, a key condition was that the surveys contain reasonably similar information to that available in the NLSCY. For the U.S., this was not a problem, since content is extremely similar. The content of the Norwegian survey is more limited in focus to health-related issues, since the child-related questions which we use were a subset of the 1995 Statistics Norway Health Survey. Unlike the Canadian and U.S. studies, there were no questions about problem behaviors at school, for example.

One difference across the surveys is whether or not the population of children in the country was the primary focus of the study. In Canada, children aged 0 to 11 years were the principal focus. The main component of the survey consists of children living in households who had recently been part of the Labour Force Survey (thus households living in the North, on Indian Reserves or in institutions are excluded). In Norway, the survey was designed with the population of principal interest being adults who, if they had children, were asked a limited set of questions about the health and happiness of their children. In this case, there was no restriction on the age of the child, though, of course, for comparability we restrict our attention to 0 to 11 year old children.

For the U.S., the parents were also the original focus of the survey, with the questions about the respondent's children added at a later stage. The child data we use for the U.S. are based on questions asked of the original NLSY respondents about their children. The survey was not designed to obtain a nationally representative sample of children, as was true for the Canadian data. Fortunately for the sake of making the international comparisons proposed for this paper, the key limitation of the survey is that given the current ages of the parents, the child sample is most representative of *younger* children (mothers in the U.S. were between the ages of 30 and 38 in 1995). Estimates for the U.S. are considered fully representative of the national population of children for younger children, but not for teens or young adults.

Since the first wave of the Canadian NLSCY only contains information about children aged 0 to 11 years, and thus we only compare outcomes for children in this age range, the relative youthfulness of the U.S. parents should not be a serious problem for this analysis. While the range of parental ages is greater for Canada and Norway than for the U.S., the mean ratio of child's age to mother's age is 0.16 for both Canada and Norway and 0.17 for the U.S. We choose to focus on the full samples for Canada and Norway since this gives the best information about child outcomes in these countries.⁹

In the Canadian survey, the person answering the questions is the "person most knowledgeable about the child" (PMK)—the mother in 97.7 percent of cases for the Child Questionnaire. For the U.S. survey, only female respondents with children were asked about their children. Thus, the child sample consists of all children born to NLSY female respondents who were living in their mother's household at the survey date (several surveys have been carried out—we use the 1995 survey). In Norway, the respondent to the health survey would answer the child-related questions, regardless of the sex of the respondent.

⁹Also, we have performed sensitivity tests involving restricting the age of mothers in the Canadian sample to match the U.S. sample. Estimates in no case changed by more than 1 percentage point.

For each data set, a small number of individuals did not answer particular questions about children’s well-being. These observations are excluded as appropriate for the reporting of levels of child outcomes. Sample size is much the largest for Canadian children, with 21,045 observations for children aged 0 to 11. In contrast, we have only 3,961 observations for the U.S. and 1,644 observations for Norway. And, in fact, we most often analyze even fewer observations since many questions were only relevant for sub-sets of the population (e.g. only children of school age can be “disobedient at school”).

3. COMPARISON OF FAMILY INCOMES FOR CHILDREN IN CANADA, NORWAY AND THE U.S.

To put the discussion of physical and emotional outcomes which follows in context, this section outlines differences/similarities in incomes received by families with young children in the three countries. First, as mentioned in the introduction, we already know that child poverty is higher in the U.S. and in Canada than in Norway. Since negative outcomes for children are associated with living in poverty (e.g. Ross, Scott, and Kelly, 1996; Dooley *et al.*, 1998), we might thus expect to see, for example, children with poorer physical and emotional health, on average, in Canada and especially the U.S. than in Norway. But, while 20 percent is a very high rate of child poverty, this obviously still means that 80 percent of children in the U.S. are *not* poor.¹⁰ Even if poor children have very bad outcomes, average numbers for the population as a whole will also reflect children who are affluent and may have very good outcomes. As Table 1a demonstrates, while 20 percent of children in the U.S. are poor, 20 percent of children are also “rich” (versus 10 percent in Canada and 6.5 percent in Norway).¹¹

TABLE 1a
RELATIVE INCOME COMPARISONS

| | Canada | Norway | United States |
|---------------------------------------|--------|--------|---------------|
| <i>Percentage poor</i> | | | |
| Children 0–11 in two-parent families | 12.6 | 4.6 | 17.9 |
| Children 0–11 in lone mother families | 42.5 | 15.7 | 60.7 |
| <i>Percentage rich</i> | | | |
| Children 0–11 in two-parent families | 10.2 | 6.5 | 19.0 |
| Children 0–11 in lone mother families | 1.3 | 0.3 | 3.5 |

Note: For these calculations, it is assumed that the child shares equally the parents’ standard of living. “Poor” means family equivalent income is less than 50 percent of the median country equivalent income; “Rich” means family income is greater than or equal to 1.5 times the country equivalent income. “Equivalent Income” adjusts for family size using the OECD equivalence scale.

The comparisons provided in Table 1a are relative comparisons. For the purpose of understanding differences in child outcomes, it is also interesting to compare absolute standards of living across the countries, though this is a harder

¹⁰All of the income comparisons reported here are carried out using the Luxembourg Income Study. We use LIS rather than the child outcomes microdata since income information is more complete in LIS.

¹¹“Rich” means that the children live in families with gross equivalent income greater than 1.5 times the median.

task. Following Hanratty and Blank (1992), we convert all currencies to 1994 Canadian dollars, using the 1990 OECD estimate of purchasing power parity (PPP) for individual consumption by households (OECD, 1990, Table 1.5, pp. 30–1, line 1). We extrapolate PPP to the appropriate year using country-specific deflators for private final consumption (OECD, 1996, pp. 102, 104, 123). This is, arguably, the best procedure available to us, but there are limitations which should be noted. First, it would have been preferable to have had the PPPs for the year of our conversion. Second, even if we did not have to extrapolate the PPPs, there will always be differences across the countries in what is included in final consumption (e.g. medical and health care must be privately purchased in the U.S.). Third, families with young children will likely consume a different bundle of goods than the average household (e.g. relative prices of children’s clothing, minivans and daycare will be more important).

With these caveats in mind, Table 1b attempts some absolute comparisons of incomes for families with young children in Canada, Norway and the U.S. A first important point to note is that average incomes for all families with young children are very similar across the three countries (Wolfson and Murphy, 1998, Table 5 also notes that median after-tax family income is slightly higher in Canada than the U.S.). However, it should again be emphasized that there are differences across the countries in what families must purchase with these incomes (e.g. more private health care in the U.S.; less private daycare in Norway).

The most significant differences in absolute incomes occur at the bottom and top of the income distributions. For example, in the U.S., median gross¹² income for families in the bottom quintile is only 50 percent of that received by families with young children in the bottom quintile of the Norwegian income distribution. On the other hand, median income for families with young children in the top quintile of the Norwegian income distribution is only 75 percent of the U.S. equivalent. It is better to be poor in Norway, but to be rich in the U.S. (from a purely self-interested point of view). Canada is again on “middle ground” with respect to the absolute income received by the rich or the poor.

On the basis of these comparisons, it is not, *a priori*, clear what we should expect in terms of average outcomes for children. The “absolute income hypothesis” (Preston, 1975) argues that health status improves with the *level* of personal income, though at a decreasing rate. Others have argued that it is only deprivation which matters for health. Finally, a variety of authors have argued that inequality of income in a population, regardless of level is “bad for health.”¹³

4. COMPARISONS OF YOUNG CHILDREN’S WELL-BEING FOR CANADA, NORWAY AND THE U.S.

While economists often conceive of individual well-being as a subjective function of income, $U(Y)$, in practice they are more likely to proxy well-being using personal income. This approach seems particularly inappropriate for a study of

¹²We focus here on gross income figures, not because this seems more desirable, but because this matches what is possible with the child outcomes microdata.

¹³See excellent reviews by Deaton (2001), Judge and Paterson (2001), Lynch *et al.* (2000) and Mullahy *et al.* (2001).

TABLE 1b
ABSOLUTE INCOME COMPARISONS FOR CHILDREN 0–11, INCOMES IN 1994 CANADIAN
DOLLARS*

| | Canada | Norway | United States |
|------------------------------------------------------------------------|---------|--------|---------------|
| <i>All children 0–11 years of age</i> | | | |
| Gross family income | | | |
| Mean | 56,351 | 52,530 | 58,152 |
| Median | 50,600 | 49,848 | 45,651 |
| Equivalent gross family income | | | |
| Mean | 18,601 | 18,079 | 18,978 |
| Median | 16,562 | 17,027 | 14,368 |
| <i>All children 0–11 years of age with lone mothers</i> | | | |
| Gross family income | | | |
| Mean | 27,682 | 29,304 | 27,443 |
| Median | 21,261 | 23,844 | 19,897 |
| Equivalent gross family income | | | |
| Mean | 11,173 | 13,717 | 9,390 |
| Median | 9,097 | 10,679 | 6,753 |
| <i>All children 0–11 in the bottom 20% of the income distribution†</i> | | | |
| Gross family income | | | |
| Mean | 21,239 | 26,821 | 14,933 |
| Median | 20,316 | 28,382 | 14,319 |
| Equivalent gross family income | | | |
| Mean | 6,686 | 8,800 | 4,310 |
| Median | 6,904 | 9,461 | 4,604 |
| <i>All children in the top 20% of the income distribution†</i> | | | |
| Gross family income | | | |
| Mean | 103,338 | 85,608 | 130,022 |
| Median | 90,599 | 75,624 | 109,140 |
| Equivalent gross family income | | | |
| Mean | 35,866 | 30,929 | 44,950 |
| Median | 31,535 | 26,692 | 37,346 |
| <i>All children 0–11 years of age</i> | | | |
| After tax family income | | | |
| Mean | 45,216 | 39,956 | 46,474 |
| Median | 41,689 | 38,280 | 39,374 |
| <i>Ratio of mean all children to mean of the bottom 20%</i> | | | |
| Gross equivalent income | 2.78 | 2.05 | 4.40 |

*Incomes for Norway and United States were converted using the purchasing power parity rate for household consumption as calculated by OECD.

†Obtained using the Luxembourg Income Study data, kids files. Incomes were ordered by equivalent gross income to obtain the bottom and top 20 percent. Equivalent income adjusts for family size using the OECD equivalence scale.

the well-being of young children. As argued in the introduction, income is presumably a key input, but it is surely an insufficient proxy for children's well-being. Thus, the approach adopted in this paper is to study child well-being in terms of child "functionings" (Sen, 1992).

Unfortunately, data comparability/availability issues have constrained the functionings which we can examine, so what follows is far from ideal or complete. In particular, it is worth noting that we have restricted our attention to outcomes for which the surveys have basically asked *exactly the same question*. We do this because in earlier versions of this work, some Canadian readers were extremely

sensitive to results showing Canadian children to have worse outcomes than, in particular, children in the U.S. People, frankly, did not believe this could be true, and so looked for reasons to explain away the findings. For example, Phipps (1999b) reports that 19 percent of Canadian children “destroy things belonging to self or another” while only 12.9 percent of U.S. children are reported to be destructive. However, in the U.S. question, the word “deliberately” is inserted (i.e. “how often does your child *deliberately* (emphasis added) destroy things belonging to self or another”). This, of course, somewhat alters the meaning of the question, particularly with respect to younger children (e.g. those aged 4 to 11), who are prone to break things without having planned to do so. Another example of the subtleties of question wording can be found in the question used to assess “worrying” behavior. In Canada, 48.8 percent of children were reported to “worry” while only 35.8 percent of children in the U.S. “worry too much.” Obviously, the questions on worrying or destructive behavior are not exactly comparable. Thus, for this paper, great care has been taken to find survey questions worded in the same way. Exact question wordings are included in Tables 2 to 11 for readers to judge whether or not this is so. Summary comparisons, including standard errors, are presented in Tables 12 and 13 and an overall summary of rankings in Table 14.

Of course, there will always remain the problem that the Norwegian survey was conducted in Norwegian, and we are working with a translation. Moreover, of course, many Canadians would have been asked the question in French, while presumably some U.S. respondents worked in Spanish.

“Physical health” is a first key functioning studied. We consider four dimensions of physical health for which we have directly comparable information: low birth-weight; experience of accidents/injuries; activity limitation; and asthma. First, low birth-weight is an important predictor of future health and social problems. Table 2 records the incidence of low-weight births for Canada and the U.S. (Since this question was only asked of parents with children aged 0 to 3 in Canada, we similarly restrict the U.S. sample. The Norwegian microdata do not record birth weights.) In Canada, 5.2 percent of all children were born weighing less than 5.5 pounds; in the U.S., 7.0 percent had low birth-weight, and this is a statistically significant difference.¹⁴

In both Canada and the U.S., the incidence of low-weight births is higher for less affluent families, with the difference between bottom and average being greatest in the U.S. Table 2 reports that 6.3 percent of Canadian children in the bottom quintile of the income distribution¹⁵ had low birth-weight; 11.2 percent of children in the bottom quintile of the U.S. income distribution had low birth-weight. This difference is statistically significant at the 95 percent level.

The Norwegian microdata do not report the incidence of low-weight births, but OECD estimates indicate that Norwegian children are less likely to be born

¹⁴Statistically significant differences are calculated using standard tests of differences in population proportions (see Chou, 1975 for example). Since restricting the U.S. sample to children aged 0 to 3 reduces sample size to about 300 observations, Table A1 presents OECD estimates of the incidence of low-weight births for the U.S. In 1989, the most recent year for which we could find this information, the OECD reports 7.05 percent of U.S. children weighed less than 5.5 pounds at birth.

¹⁵Children are ordered according to gross equivalent family income. Equivalent income is calculated using the OECD equivalence scale.

TABLE 2
LOW BIRTH WEIGHT*

| Actual Question Asked | Response Frequency (percent), All Children | Response Frequency (percent), Bottom Quintile | Ratio of the Bottom Quintile to the Average |
|------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------------------------------------------|---------------------------------------------|
| <i>Canada 1994–95</i> | | | |
| What was his/her birth weight in kilograms and grams or pounds and ounces? <i>Note: Ages 0 to 3 inclusive</i> | 5.2 | 6.4 | 1.23 |
| Observations | 7807 | 1815 | |
| <i>United States 1994</i> | | | |
| Weight of child at birth in ounces <i>Note: Ages 0 to 11 inclusive</i> | 6.3 | 9.2 | 1.46 |
| Observations | 3641 | 991 | |
| <i>United States 1994</i> | | | |
| Weight of child at birth in ounces <i>Note: Ages 0 to 3 inclusive</i> | 7.0 | 11.2 | 1.60 |
| Observations | 954 | 213 | |

*Babies born less than 5.5 pounds.

with low birth-weight than Canadian children (5.5 percent for Canada versus 4.6 percent for Norway—see Appendix, Table A1). (Standard errors are not reported with these OECD estimates.)

Table 3 focuses on the incidence of accidents or injuries requiring medical attention¹⁶ for all children (0 to 11 years) in Canada, Norway and the U.S. The experience of accidents might be regarded as an indicator of unsafe physical environment or lack of attention; it could on the other hand be due to increased participation in organized sports, which is more likely for reasonably affluent families (Offord, Lipman and Duku, 1998). In the past 12 months, 10.6 percent of children in the U.S. have experienced an accident; 10.2 percent of Canadian children have had an accident or been injured; only 7.9 percent of Norwegian children have had an accident/injury. The accident rates for young children in Canada and the U.S. are not statistically different; Norwegian children are significantly less likely to have had accidents than children in Canada. Less affluent children (i.e. those in the bottom quintile of the country income distribution) have very comparable accident rates to the country average in all cases.

Table 4 reports the incidence of asthma, a partially stress-related problem, for children aged 4 to 11 in Norway and Canada. Note that in this case there is a slight difference in the wording of the question asked of parents. In Canada, parents are asked whether their child ever had asthma “that was diagnosed by a health professional.” Norwegian parents are simply asked if their child has “ever been bothered by asthma.” If it is true that some individuals experience minor

¹⁶For the U.S. and Canada, the parent is asked whether the accident was serious enough to “require” medical attention. For Norway, the parent was asked about accidents or injuries for which the child “received” medical attention. While this is an important distinction, we hope that universal medical coverage in Norway means that there is a very close correspondence between needing and receiving medical attention.

TABLE 3
ACCIDENT/INJURIES INDICATORS

| Actual Question Asked | Response Frequency (percent), All Children | Response Frequency (percent), Bottom Quintile | Ratio of the Bottom Quintile to the Average |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------------------------------------------|---------------------------------------------|
| <i>Canada 1994-95</i> | | | |
| The following questions refer to injuries, such as a broken bone, bad cut or burn, head injury, poisoning or sprained ankle, which occurred in the past 12 months, and were serious enough to require medical attention by a doctor, nurse, or dentist. Was the child injured in the past 12 months? | 10.1 | 10.2 | 1.01 |
| <i>Note:</i> Ages 0 to 11 inclusive | | | |
| Observations | 21,130 | 4881 | |
| <i>Norway 1995</i> | | | |
| (Has your child had medical attention) due to treatment for an injury or accident that occurred during the past 12 months? | 7.9 | 6.5 | 0.82 |
| <i>Note:</i> Ages 0 to 11 inclusive | | | |
| Observations | 1644 | 297 | |
| <i>United States 1994</i> | | | |
| During the past 12 months, has your child had any accidents or injuries that required medical attention? | 10.7 | 11.0 | 1.03 |
| <i>Note:</i> Ages 0 to 11 inclusive | | | |
| Observations | 3911 | 1080 | |

asthma without consulting a health professional about it, then this wording difference should result in *more* reporting of asthma in Norway than in Canada. On the other hand, it is possible that some individuals with appropriately managed asthma do not regard themselves as “bothered” by the condition, in which case there may be less reported asthma for Norway. However, simply taking reporting incidence as given in the two surveys, we find that children in Norway are significantly less likely to have asthma (8.2 percent) than children in Canada (13.2 percent). It is interesting that the incidence of asthma is actually slightly lower in both countries for children in the bottom quintile compared to children overall.

The final measure of physical well-being considered is whether the child has any long-term condition/health problem which limits his/her ability to participate at school, at play or in other activities normal for a child of the same age. Full detail on the wording of the question is provided for each country in Table 5. In the U.S. case, results from three separate questions were aggregated to obtain a comparable measure (i.e. limited in ability to attend school, to do regular schoolwork, to do usual childhood games, play, sports). Norwegian point estimates for activity limitation are lower than the Canadian estimates (3.6 percent in Norway versus 4.7 percent in Canada), but the difference is not statistically significant. Similarly, Canada has a lower point estimate for activity limitation than the U.S., but the difference is not statistically significant (3.6 percent of children have

TABLE 4
ASTHMA

| Actual Question Asked | Response Frequency (percent), All Children | Response Frequency (percent), Bottom Quintile | Ratio of the Bottom Quintile to the Average |
|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------------------------------------------|---------------------------------------------|
| <i>Canada 1994-95</i> | | | |
| Has (your child) ever had asthma that was diagnosed by a health professional? <i>Note: Ages 4 to 11 inclusive</i> | 13.3 | 12.7 | 0.95 |
| Observations | 13,125 | 3000 | |
| <i>Norway 1994</i> | | | |
| Is he/she, or has he/she ever been bothered by asthma? <i>Note: Ages 4 to 11 inclusive</i> | 8.2 | 6.6 | 0.8 |
| Observations | 1099 | 198 | |

TABLE 5
LIMITED IN ACTIVITY

| Actual Question Asked | Response Frequency (percent), All Children | Response Frequency (percent), Bottom Quintile | Ratio of the Bottom Quintile to the Average |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------------------------------------------|---------------------------------------------|
| <i>Canada 1994-95</i> | | | |
| Does (your child) have any long-term conditions or health problems which prevent or limit his/her participation in school, at play, or in any other activity for a child of his/her age? <i>Note: Ages 6 to 11 inclusive</i> | 4.7 | 5.3 | 1.13 |
| Observations | 9688 | 2149 | |
| <i>Norway 1995</i> | | | |
| Does he/she suffer from any illness or disorder of a more long-term nature, and congenital disease or the effect of an injury [which cause] difficulties getting through the day (school/ homework) or taking part in games and activities? <i>Note: Ages 6 to 11 inclusive</i> | 3.6 | 3.7 | 1.03 |
| Observations | 802 | 148 | |
| <i>United States 1994</i> | | | |
| Does (your child) have any physical, emotional or mental difficulties that limit his/her ability to: (a) attend school on a regular basis? (b) do regular schoolwork? (c) do usual childhood activities such as play, or sport or games? <i>Note: Ages 6 to 11 inclusive</i> | 5.2 | 8.7 | 1.67 |
| Observations | 2157 | 688 | |

Note: For the United States, there were three separate questions asked (a, b, c). If the response was yes for any of the three questions then the child was considered to be limited in activity.

activity limitation versus 4.7 percent in Canada and 5.2 percent in the U.S.). For Canada and the U.S., activity limitation increases for children in the bottom quintile of the income distribution (to 5.4 percent and 8.7 percent, respectively). This difference is statistically significant. That is, children at the bottom end of the income distribution are more likely to have activity limitations in the U.S. than in Canada. This is not true for Norway, though since this is a low-incidence problem and the Norwegian data set is not large, we may have a small sample problem in this case.

TABLE 6
TROUBLE CONCENTRATING

| Actual Question Asked | Possible Responses | Response Frequency (percent), All Children | Response Frequency (percent), Bottom Quintile | Ratio of the Bottom Quintile to the Average |
|--------------------------------------------------------------------------------------------|--------------------------------|--------------------------------------------|-----------------------------------------------|---------------------------------------------|
| <i>Canada 1994-95</i> | | | | |
| How often would you say that (your child) can't concentrate, can't pay attention for long? | 1. Never or not true. | 60.2 | 54.6 | 0.91 |
| | 2. Sometimes or somewhat true. | 32.1 | 33.6 | 1.05 |
| | 3. Often or very true. | 7.7 | 11.7 | 1.52 |
| <i>Note: Ages 6 to 11 inclusive</i> | | | | |
| Observations | | 9666 | 2139 | |
| <i>United States 1994</i> | | | | |
| He/she has difficulty concentrating, cannot pay attention for long. | 1. Not true. | 60.6 | 52.2 | 0.86 |
| | 2. Sometimes true. | 30.7 | 34.9 | 1.14 |
| | 3. Often true. | 8.7 | 12.9 | 1.48 |
| <i>Note: Ages 6 to 11 inclusive</i> | | | | |
| Observations | | 2107 | 671 | |

Tables 6 through 11 focus on selected problem behaviors which may signal lower levels of emotional well-being for children. Unfortunately, in order to focus on questions worded in the same way, we have been left with more "acting out" than "withdrawing" sorts of behaviors: being disobedient at school; being cruel or a bully; being restless or overly active; lying/cheating versus having trouble concentrating and being anxious or frightened.

For each of the above behaviors, attention is restricted to children for whom these behaviors seem more relevant (generally, 4 to 11 year olds; 6 to 11 year olds if the question relates to being in school). With the exception of fear/anxiety, this information is only available for children living in Canada or the U.S. We chose to study individual behaviors rather than aggregating to some index of problem behaviors in order that we could point out subtle differences across the countries which might otherwise become buried.

The first two behaviors studied are potentially relevant for school performance: trouble concentrating and disobedience at school. With respect to trouble concentrating, children in the U.S. and Canada are very similar (there is no statistically significant difference). In Canada, 39.8 percent of all children (aged 6 to 11) sometimes or often have trouble concentrating; in the U.S., 39.4 percent have

TABLE 7
DISOBEDIENT AT SCHOOL

| Actual Question Asked | Possible Responses | Response Frequency (percent), All Children | Response Frequency (percent), Bottom Quintile | Ratio of the Bottom Quintile to the Average |
|------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------------------|-----------------------------------------------|---------------------------------------------|
| <i>Canada 1994–95</i> | | | | |
| How often would you say that (your child) is disobedient at school? <i>Note: Ages 6 to 11 inclusive</i> | 1. Never or not true. | 82.3 | 78.7 | 0.96 |
| | 2. Sometimes or somewhat true. | 16.2 | 18.8 | 1.16 |
| | 3. Often or very true. | 1.3 | 2.5 | 1.92 |
| | 4. Always | 0.2 | 0.0 | — |
| Observations | | 9666 | 2137 | |
| <i>United States 1994</i> | | | | |
| He/she is disobedient at school. <i>Note: Ages 6 to 11 inclusive</i> | 1. Not true. | 79.4 | 72.7 | 0.92 |
| | 2. Sometimes true. | 18.5 | 24.3 | 1.31 |
| | 3. Often true. | 2.1 | 3.0 | 1.43 |
| Observations | | 2061 | 649 | |

TABLE 8
ANXIOUS/FRIGHTENED INDICATORS*

| Actual Question Asked | Possible Responses | Response Frequency (percent), All Children | Response Frequency (percent), Bottom Quintile | Ratio of the Bottom Quintile to the Average |
|-------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------------------|-----------------------------------------------|---------------------------------------------|
| <i>Canada 1994–95</i> | | | | |
| How often would you say that (your child) is too fearful or anxious? <i>Note: Ages 4 to 11 inclusive</i> | 1. Never or not true. | 64.1 | 58.4 | 0.91 |
| | 2. Sometimes or somewhat true. | 31.5 | 35.3 | 1.12 |
| | 3. Often or very true. | 4.3 | 6.3 | 1.47 |
| Observations | | 13,093 | 2986 | |
| <i>Norway 1995</i> | | | | |
| Has he/she been constantly frightened or anxious? <i>Note: Ages 4 to 11 inclusive</i> | 1. Not at all. | 88.8 | 83.2 | 0.94 |
| | 2. A little troubled. | 9.5 | 14.8 | 1.56 |
| | 3. Quite troubled. | 1.5 | 2.0 | 1.33 |
| | 4. Extremely troubled. | 0.3 | 0.0 | — |
| Observations | | 1099 | 198 | |
| <i>United States 1994</i> | | | | |
| He/she is too fearful/anxious. <i>Note: Ages 4 to 11 inclusive</i> | 1. Not true. | 68.2 | 65.0 | 0.95 |
| | 2. Sometimes true. | 29.1 | 31.1 | 1.07 |
| | 3. Often true | 2.6 | 3.9 | 1.5 |
| Observations | | 2779 | 822 | |

this problem. In both countries, children living in families in the bottom quintile of the income distribution are more likely to have trouble concentrating, however, the Canadian and U.S. estimates are again statistically indistinguishable (45.3 and 47.8 percent, respectively).

TABLE 9
LIES OR CHEATS

| Actual Question Asked | Possible Responses | Response Frequency (percent), All Children | Response Frequency (percent), Bottom Quintile | Ratio of the Bottom Quintile to the Average |
|--------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------------------|-----------------------------------------------|---------------------------------------------|
| <i>Canada 1994-95</i> | | | | |
| How often would you say that (your child) tells lies or cheats? <i>Note: Ages 4 to 11 inclusive</i> | 1. Never or not true. | 63.0 | 58.9 | 0.94 |
| | 2. Sometimes or somewhat true. | 34.8 | 37.3 | 1.07 |
| | 3. Often or very true. | 2.2 | 3.8 | 1.73 |
| Observations | | 13,093 | 2988 | |
| <i>United States 1994</i> | | | | |
| He/she cheats or tells lies. <i>Note: Ages 4 to 11 inclusive</i> | 1. Not true. | 59.0 | 49.0 | 0.83 |
| | 2. Sometimes true. | 38.7 | 47.1 | 1.22 |
| | 3. Often true. | 2.3 | 3.9 | 1.70 |
| Observations | | 2776 | 820 | |

TABLE 10
CRUEL/BULLIES INDICATORS

| Actual Question Asked | Possible Responses | Response Frequency (percent), All Children | Response Frequency (percent), Bottom Quintile | Ratio of the Bottom Quintile to the Average |
|--------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------------------|-----------------------------------------------|---------------------------------------------|
| <i>Canada 1994-95</i> | | | | |
| How often would you say that (your child) is cruel, bullies or is mean to others? <i>Note: Ages 4 to 11 inclusive</i> | 1. Never or not true. | 89.1 | 83.7 | 0.94 |
| | 2. Sometimes or somewhat true. | 10.2 | 15.1 | 1.48 |
| | 3. Often or very true. | 0.7 | 1.2 | 1.71 |
| Observations | | 13,089 | 2987 | |
| <i>United States 1994</i> | | | | |
| He/she bullies or is cruel to others. <i>Note: Ages 4 to 11 inclusive</i> | 1. Not true. | 73.7 | 70.5 | 0.96 |
| | 2. Sometimes true. | 24.8 | 25.9 | 1.04 |
| | 3. Often true. | 1.6 | 3.6 | 2.25 |
| Observations | | 2782 | 824 | |

In Canada, 17.8 percent of children are reported by their parents to be sometimes/often/always disobedient at school; in the U.S., 20.6 percent are sometimes/often disobedient (at school). While this difference is not very large in percentage terms (15.7 percent), it is statistically significant. In both countries, but especially in the U.S., the reported incidence of disobedience at school increases for children living in families in the bottom quintile of the income distribution. Canadian children are again significantly less likely to be disobedient than children living in the U.S. (21.3 percent versus 27.3 percent).

TABLE 11
RESTLESS/OVERLY ACTIVE INDICATORS

| Actual Question Asked | Possible Responses | Response Frequency (percent), All Children | Response Frequency (percent), Bottom Quintile | Ratio of the Bottom Quintile to the Average |
|-----------------------------------------------------------------------------------------|--------------------------------|--------------------------------------------|-----------------------------------------------|---------------------------------------------|
| <i>Canada 1994-95</i> | | | | |
| How often would you say that (your child) can't sit still, is restless, or hyperactive? | 1. Never or not true. | 42.4 | 37.9 | 0.89 |
| | 2. Sometimes or somewhat true. | 38.0 | 39.3 | 1.03 |
| | 3. Often or very true. | 19.6 | 22.8 | 1.16 |
| <i>Note: Ages 4 to 11 inclusive</i> | | | | |
| Observations | | 13,105 | 2991 | |
| <i>United States 1994</i> | | | | |
| He/she is restless or overly active, cannot sit still. | 1. Not true. | 59.0 | 49.8 | 0.84 |
| | 2. Sometimes true. | 32.9 | 36.7 | 1.12 |
| | 3. Often true. | 8.1 | 13.5 | 1.67 |
| <i>Note: Ages 4 to 11 inclusive</i> | | | | |
| Observations | | 2791 | 821 | |

Tables 8 through 11 study other potential indicators of emotional “ill-health.” First, Table 8 reports that Norwegian children are much less likely to be anxious/frightened than are children in the other countries under study. Of 4 to 11 year old children, 35.8 percent are “sometimes or often” “too anxious/frightened” in Canada; 31.8 percent are “sometimes/often” “too anxious frightened” in the U.S.; but only 11.3 percent are “a little/quite/extremely troubled” by “constant anxiety or fear” in Norway. These results are all significantly different. Thus, reported levels of anxiety are significantly higher for young Canadian children than for young children living in the U.S., or, especially, in Norway.

However, note that this is a case where we continue to analyze a category in which there is a slight difference in wording. While the Canadian and U.S. questions are exactly the same, the Norwegian question differs. Nonetheless, since we have few “emotional well-being” indicators available for comparison with Norway, we retain the question and caution readers about the wording difference.

For the remaining categories, we can only compare Canada and the U.S. First, Table 9 reports the incidence of “lying or cheating,” a behavior which is significantly less likely in Canada than the U.S., though the percentage difference between the two is not large for all young children (37.0 percent in Canada versus 40.0 percent in the U.S.). The reported incidence of lying and cheating increases for children in the bottom quintile of the income distribution: to 41.1 percent in Canada and to 51.0 percent in the U.S.

Table 10 reports that children (aged 4 to 11) in the U.S. are *much* more likely to be cruel or to bully others than are children in Canada (10.9 percent in Canada versus 26.4 percent in the U.S.). In both countries, the reported incidence of bullying/cruel behavior increases for children in the bottom quintile (to 16.3 percent and 29.5 percent, respectively). The large difference between Canadian and U.S. children persists.

On the other hand, children (aged 4 to 11) in Canada are *much* more likely to be restless/overly active than those in the U.S. (see Table 11). In Canada, 57.6 percent of children are sometimes or often overly active; in the U.S., the equivalent figure is only 41 percent. There are particularly large gaps for the “often” category—nearly 20 percent of Canadian children are reported to be overly active “often” while this is true for only 8 percent of children in the U.S. Again, in both countries, the incidence of this behavior is higher for children in lower-income families.

In thinking about these results, a general point to make is that when answering questions which contain a subjective element, parental responses will inevitably be mediated by social norms. While we have tried to select questions which minimize this problem, it remains, for example, in parental assessment of whether the child is “too fearful or anxious.” What is “too” fearful? Each parent will have to make this assessment, and each will presumably respond relative to what they know—that is, relative to standards of their community. Table A1 reports some crime statistics for the three countries studied. It is clear, for example, that intentional homicides are much higher in the U.S. than in Canada or Norway. Drug crimes are also more common, though the difference is not so great in this case. The point to be made is that a parent may not respond that her child is “too fearful/anxious” if everyone else is “fearful/anxious” and, indeed, this is a rational response given the environment. Of course, the criminal activity statistics reported are national statistics. There are likely to be large differences between, say, south-side Chicago and a small farming community in Idaho—and this is also true for comparisons within Canada.

But, even for less subjective responses, parents will answer questions given what they know. For example, “how often is your child a bully?” or “how often is your child overly active?”¹⁷ The parent is left to define for herself what exactly constitutes “bullying” or “overly active” behavior. Thus, her response will be conditioned by standards of the community in which she lives. Such problems are inherent to international comparisons of the type attempted in this paper.

To help summarize the results presented thus far, Tables 12a, 12b and 12c report the incidence of each of the ten problem outcomes studied, as available, for young children overall in Canada relative to the U.S., for Canada relative to Norway, and for Norway relative to the U.S., respectively. First, how do young Canadian children fare relative to their counterparts in the U.S.? As Table 12a indicates, the answer to this question is not entirely clear-cut, which is perhaps not surprising when we begin to consider many different dimensions of well-being. First, if we consider the components of physical health for which we are able to make microdata comparisons (low birth weight, accidents/injuries, activity limitation), point estimates are better for Canada, though only significantly different for low birth weight.

Since “having/receiving a good education” is a key functioning for any child, we also compare “trouble concentrating” and “disobedience at school,” outcomes

¹⁷Phipps (1998) presents evidence that parents with other children are less likely to state that the child in question is “overly active,” perhaps because they have adjusted their expectations of young children.

TABLE 12a
POINT ESTIMATES AND STANDARD ERRORS OF CHILD
OUTCOMES, CANADA AND THE UNITED STATES

| Outcome | Canada | United States |
|------------------------|-----------------|-----------------|
| Low birth weight* | 5.2 (0.251) | 7.0 (0.826) |
| Accidents/injuries | 10.1 (0.207) | 10.7 (0.494) |
| Limited in activity | 4.7 (0.215) | 5.2 (0.478) |
| Trouble concentrating | 39.8 (0.497) | 39.4 (1.065) |
| Disobedient at school* | 17.7 (0.387) | 20.6 (0.891) |
| Anxious/frightened* | 35.8 (0.418) | 31.7 (0.883) |
| Cruel/bullies* | 10.9 (0.272) | 26.4 (0.836) |
| Restless* | 57.6 (0.431) | 41.0 (0.931) |
| Lies* | 37.0 (0.421) | 41.0 (0.934) |

*Indicates significant difference with 95% confidence.

†Statistically different if t -score > 1.96.

$$t\text{-score} = (p_1 - p_2) / \sqrt{(n_1 + n_2)p(1-p)/n_1n_2}$$

where:

$$p = ((n_1 - 1)p_1 + (n_2 - 1)p_2) / (n_1 + n_2 - 2)$$

n = sample size, p = sample proportion

TABLE 12b
POINT ESTIMATES AND STANDARD ERRORS† OF CHILD
OUTCOMES, CANADA AND NORWAY

| Outcome | Canada | Norway |
|---------------------|-----------------|-----------------|
| Accidents/injuries* | 10.1 (0.207) | 7.9 (0.665) |
| Asthma* | 13.3 (0.296) | 8.2 (0.827) |
| Limited in activity | 4.7 (0.215) | 3.6 (0.657) |
| Anxious/frightened* | 35.8 (0.418) | 11.3 (0.954) |

*Indicates significant difference with 95% confidence.

†Statistically different if t -score > 1.96.

$$t\text{-score} = (p_1 - p_2) / \sqrt{(n_1 + n_2)p(1-p)/n_1n_2}$$

where:

$$p = ((n_1 - 1)p_1 + (n_2 - 1)p_2) / (n_1 + n_2 - 2)$$

n = sample size, p = sample proportion

which might lead to problems at school. There is no statistically significant difference between the two countries in having “trouble concentrating.” However, young Canadian children are slightly less likely to be disobedient at school (17.7 percent versus 20.6 percent, a statistically significant, though small difference).

TABLE 12c
POINT ESTIMATES AND STANDARD ERRORS† OF CHILD
OUTCOMES, THE UNITED STATES AND NORWAY

| Outcome | United States | Norway |
|---------------------|-----------------|-----------------|
| Accidents/injuries* | 10.7 (0.494) | 7.9 (0.665) |
| Limited in activity | 5.2 (0.478) | 3.6 (0.657) |
| Anxious/frightened* | 31.7 (0.883) | 11.3 (0.954) |

*Indicates significant difference with 95% confidence.

†Statistically different if t -score > 1.96 .

$$t\text{-score} = (p_1 - p_2) / \sqrt{(n_1 + n_2)p(1-p)/n_1n_2}$$

where:

$$p = ((n_1 - 1)p_1 + (n_2 - 1)p_2) / (n_1 + n_2 - 2)$$

n = sample size, p = sample proportion

The final set of functionings concern dimensions of what might be labelled “emotional well-being.” Here, it isn’t clear whether children in Canada are better or worse off than children living in the U.S. Canadian children are more likely to be anxious/frightened than children in the U.S. and are much more likely to be hyperactive. On the other hand, they are less likely to lie or cheat and much less likely to be bullies.

However, average disposable incomes for families with young children are nearly identical for Canada and the U.S., so perhaps it is not surprising that average outcomes are basically not that different. On the other hand, as Table 1 demonstrated, not only are rates of child poverty higher in the U.S. than in Canada, but if we compare mean incomes of the poorest 20 percent of families (with young children) across the countries, it is clear that the poorest Canadians are better-off (mean income = \$21,239) than the poorest Americans (\$14,933), presumably at least partially a result of somewhat more extensive social programs. Perhaps, then, we should look for greater differences in outcomes for children in the bottom quintiles of the income distribution.

Table 13a summarizes outcomes for the poorest 20 percent of children in each country. A first point to notice is that for both countries and almost all outcomes, poorer children are worse off (accidents and asthma are two exceptions). However, the extent of the deterioration is nearly always greater for the U.S. That is, there is a bigger difference between the outcomes experienced by the average child and the outcomes experienced by poorer children in the U.S. than in Canada. If we compare physical health outcomes for children in the bottom quintiles of the two populations, poor Canadian children are significantly better off for two of the three outcomes studied: (1) they are less likely to have been low birth-weight babies; and (2) they are less likely to be limited in their ability to engage in activities normal for a child of the same age.¹⁸ With respect

¹⁸It is also worth noting that according to OECD published reports, both the incidence of low-weight births and infant mortality rates are lower in Canada than the U.S. (No standard errors are provided to allow for tests of statistical difference.)

TABLE 13a
POINT ESTIMATES AND STANDARD ERRORS† OF CHILD
OUTCOMES, CANADA AND THE UNITED STATES,
BOTTOM QUINTILE

| Outcome | Canada | United States |
|------------------------|-----------------|-----------------|
| Low birth weight* | 6.4 (0.573) | 11.2 (2.166) |
| Accidents/injuries | 10.2 (0.432) | 11.0 (0.952) |
| Limited in activity* | 5.3 (0.482) | 8.7 (1.075) |
| Trouble concentrating | 45.3 (1.074) | 47.8 (1.929) |
| Disobedient at school* | 21.3 (0.884) | 27.3 (1.750) |
| Anxious/frightened* | 41.6 (0.900) | 35.0 (1.664) |
| Cruel/bullies* | 16.3 (0.674) | 29.5 (1.593) |
| Restless* | 62.1 (0.885) | 50.2 (1.746) |
| Lies* | 41.1 (0.898) | 51.0 (1.747) |

*Indicates significant difference with 95% confidence.

†Statistically different if t -score > 1.96.

$$t\text{-score} = (p_1 - p_2) / \sqrt{(n_1 + n_2)p(1-p)/n_1n_2}$$

where:

$$p = ((n_1 - 1)p_1 + (n_2 - 1)p_2) / (n_1 + n_2 - 2)$$

n = sample size, p = sample proportion

TABLE 13b
POINT ESTIMATES AND STANDARD ERRORS† OF CHILD
OUTCOMES, CANADA AND NORWAY, BOTTOM QUINTILE

| Outcome | Canada | Norway |
|---------------------|-----------------|-----------------|
| Accidents/injuries* | 10.2 (0.432) | 6.5 (1.431) |
| Asthma* | 12.7 (0.607) | 6.6 (1.767) |
| Limited in activity | 5.3 (0.482) | 3.7 (1.555) |
| Anxious/frightened* | 41.6 (0.900) | 16.8 (2.660) |

*Indicates significant difference with 95% confidence.

†Statistically different if t -score > 1.96.

$$t\text{-score} = (p_1 - p_2) / \sqrt{(n_1 + n_2)p(1-p)/n_1n_2}$$

where:

$$p = ((n_1 - 1)p_1 + (n_2 - 1)p_2) / (n_1 + n_2 - 2)$$

n = sample size, p = sample proportion

to emotional well-being, the same patterns hold for poorer children as for all young children.

If we compare Canada and Norway, it is clear that children are better off in Norway (see Tables 12b and 13b). Using the microdata estimates, children are

TABLE 13c
POINT ESTIMATES AND STANDARD ERRORS† OF CHILD
OUTCOMES, CANADA AND NORWAY, BOTTOM QUINTILE

| Outcome | United States | Norway |
|----------------------|-----------------|-----------------|
| Accidents/injuries* | 11.0 (0.952) | 6.5 (1.431) |
| Limited in activity* | 8.7 (1.075) | 3.7 (1.555) |
| Anxious/frightened* | 35.0 (1.664) | 16.8 (2.660) |

*Indicates significant difference with 95% confidence.

†Statistically different if t -score > 1.96 .

$$t\text{-score} = (p_1 - p_2) / \sqrt{(n_1 + n_2)p(1-p)/n_1n_2}$$

where:

$$p = ((n_1 - 1)p_1 + (n_2 - 1)p_2) / (n_1 + n_2 - 2)$$

n = sample size, p = sample proportion

less likely to have accidents, to have asthma, or to be fearful/anxious. There is no statistically significant difference between the two countries in activity limitation, though the point estimate is smaller for Norway. The conclusion that outcomes for children are better in Norway than in Canada is supported by aggregate data from the OECD—the incidence of low-weight births is lower in Norway and infant mortality rates are lower (see Table A1).

Finally, Tables 12c and 13c compare outcomes for children living in Norway and the U.S. (for all children and low-income children, respectively). Again, it is clear that child outcomes are better in Norway. The only exception is the case of activity limitations for all children — while the point estimate is lower for Norway (3.6 versus 5.2 percent), the difference is not statistically significant. For low-income children, however, activity limitations are significantly more likely in the U.S. (8.7 versus 3.7 percent).

Notice that the superiority of outcomes for young children in Norway relative to Canada or the U.S. is despite the fact that mean incomes (before or after tax) are slightly higher in the North American countries. However, rates of poverty are much lower in Norway, and those at the bottom of the income distribution have noticeably higher absolute standards of living in Norway.

5. CONCLUSIONS

This paper provides benchmark comparisons of the economic well-being of children in Canada, Norway and the United States, arguing that the well-being of young children, today, while they are young children, is an important component of social well-being. Since income is an important input to child well-being, evidence is presented of both relative and absolute income differences across the three countries studied, using microdata from the Luxembourg Income Study. Evidence indicates that while average income levels for all children are similar across the countries, there are very large differences in the extent of economic deprivation. First, relative poverty rates are much lower in Norway than in Canada or, especially, the U.S. Second, despite very similar average incomes, there

are very large differences in the absolute incomes received by the poorest 20 percent of children in the three countries. For example, children in the bottom quintile of the Norwegian income distribution receive *double* the income of children in the bottom quintile of the U.S. income distribution.

However, while income is a vital input to well-being, it has been argued here that income, alone, is not the best *measure* of children's well-being. Instead, this paper follows Sen (1992) in describing well-being in terms of a set of "functionings." If we compare young children in Canada and the U.S. in terms of their functionings, there is not a clear ranking overall (see Table 14 which summarizes rankings). Canadian children are better off for four of nine comparable outcomes; U.S. children are better off for two outcomes; Canadian and U.S. children are statistically indistinguishable for three outcomes.¹⁹

TABLE 14
SUMMARY OF OVERALL RANKINGS

| | All | | | Low Income | | |
|-----------------------|--------|--------|------|------------|--------|------|
| | Canada | Norway | U.S. | Canada | Norway | U.S. |
| Low birth weight | 1 | N/A | 2 | 1 | N/A | 2 |
| Accidents/injuries | 2 | 1 | 2 | 2 | 1 | 2 |
| Limited in activity | 1 | 1 | 1 | 1 | 1 | 2 |
| Asthma | 2 | 1 | N/A | 2 | 1 | N/A |
| Trouble concentrating | 1 | N/A | 1 | 1 | N/A | 1 |
| Disobedient at school | 1 | N/A | 2 | 1 | N/A | 2 |
| Anxious/frightened | 3 | 1 | 2 | 3 | 1 | 2 |
| Cruel/bullies | 1 | N/A | 2 | 1 | N/A | 2 |
| Restless | 2 | N/A | 1 | 2 | N/A | 1 |
| Lies | 1 | N/A | 2 | 1 | N/A | 2 |

Note: "1" means the country has the lowest proportion of children with the problem, of the countries where data are available. If countries are assigned the same rank, they are not statistically different.

If we compare child functionings in Canada or the U.S. with those experienced in Norway, it is clear that Norwegian children fare better (again, see Table 14 for a summary). There is not a single case in which children in either Canada or the U.S. have better outcomes than Norwegian children. This finding accords with the idea that it is deprivation rather than average living standards which are most important for child well-being. Finally, given that outcomes for children are better in Norway, where programs for families with children are very extensive by Canadian or U.S. standards, we should consider the role played by policy, both as policy affects income (e.g. through taxes/transfers) and as policy shapes social institutions (e.g. education systems, health care systems, daycare programs, parenting leave programs).

¹⁹We could, of course, choose a multidimensional index, with weights associated with various functionings. This would provide us with a single summary statistic. However, it is not obvious how to choose appropriate weights, and it could well be that people in the different countries would choose different weights for different aspects of child well-being.

APPENDIX 1

TABLE A1
CRIMINAL ACTIVITY, INFANT MORTALITY AND LOW BIRTH WEIGHT

| | Canada | Norway | United States |
|----------------------------------------------------------------------------|--------|--------|---------------|
| Intentional homicides by men (per 100,000 people, 1985–90) | 2.7 | 1.6 | 12.4 |
| Drug crimes (per 100,000 people, 1980–86) | 225 | 116 | 234 |
| Infant mortality rate, 1994 (as a percent of live births) | 0.68 | 0.51 | 0.85 |
| Low birth weight, 1989 (percent of neonates weighing less than 5.5 pounds) | 5.5 | 4.6 | 7.1 |

Source:

UNDP, *Human Development Report 1997*.

Organisation for Economic Co-operation and Development (1993) *OECD Health Systems: Facts and Trends 1960–1991, Volume 1*.

REFERENCES

- Becker, Gary S. and Nigel Tomes, "Human Capital and the Rise and Fall of Families," *Journal of Labour Economics*, 4(3), S1–S39, 1986.
- Bradbury, Bruce and Marcus Jantti, "Child Poverty Across the Industrialised World: Evidence from the Luxembourg Income Study," in Koen Vleminckx and Timothy M. Smeeding (eds), *Child Well-Being, Child Poverty and Child Policy in Modern Nations: What do we know?* The Policy Press, Bristol, 11–32, 2001.
- Chou, Ya-lun, *Statistical Analysis with Business and Economic Applications*, 2nd ed., Holt, Rinehard and Winston, New York, 1975.
- Deaton, Angus, "Health, Inequality, and Economic Development," Paper prepared for the Working Group 1 of the WHO Commission on Macroeconomics and Health, 2001.
- Dooley, Martin D., Lori Curtis, Ellen L. Lipman, and David H. Feeny, "Child Psychiatric Disorders, Poor School Performance and Social Problems: The Roles of Family Structure and Low Income in Cycle One of the National Longitudinal Survey of Children and Youth," Chapter 7 in Miles Corak (ed.), *Labour Markets, Social Institutions, and the Future of Canada's Children*, Statistics Canada, Catalogue Number 89-553-XPB, 1998.
- Duncan, Greg J. and Jeanne Brooks-Gunn, *Consequences of Growing Up Poor*. Russell Sage Foundation, New York, 1997.
- Hanratty, Maria and Rebecca Blank, "Down and Out in North America: Recent Trends in Poverty Rates in the United States and Canada," *Quarterly Journal of Economics*, 233–53, 1992.
- Haveman, Robert and Barbara Wolfe, "The Determinants of Children's Attainments: A Review of Methods and Findings," *The Journal of Economic Literature*, 33, 1829–78, 1995.
- Jenkins, Stephen, "Poverty Measurement and the Within-household Distribution: Agenda for Action," *Journal of Social Policy*, 20, 457–83, 1991.
- Judge, Ken and Iain Paterson, "Poverty, Income Inequality and Health," New Zealand Treasury Working Paper 01/29, 2001.
- Kamerman, Sheila and Alfred Kahn, *Family Change and Family Policies in Great Britain, Canada, New Zealand and The United States*. Clarendon Press, Oxford, 1997.
- Lynch, John W., George Davey Smith, George A. Kaplan, and James House, "Income Inequality and Mortality: Importance to Health of Individual Income Psychosocial Environment, or Material Conditions," *British Medical Journal*, 320, 1200–4, 2000.
- Micklewright, John and Kitty Stewart, *The Welfare of Europe's Children: Are EU Member States Converging?* Unicef Innocenti Research Centre, Florence, 2000.
- Mullahy, John, Stephanie Robert, and Barbara Wolfe, "Health, Income and Inequality: Review and Redirection for the Wisconsin Russell Sage Working Group," 2000.
- OECD, *Purchasing Power Parities and Real Expenditures. EKS Results. Volume 1*, 1990.
- , *Health Systems: Facts and Trends 1960–1991. Volume 1*, 1993.
- , *National Accounts. Main Aggregates. Volume 1. 1960–1996*, 1998.
- Offord, David R., Ellen Lipman, and Eric K. Duku, "Which Children Don't Participate in Sports, the Arts, and Community Programs?," Human Resources Development, Applied Research Branch, Strategic Policy, Working Paper No. W-98-18Es, 1998.

- Phipps, Shelley A., "Outcomes for Children in Canada, Norway and the US: A Microdata Comparison," Paper presented at the Canadian International Labour Network conference "Labour Market Institutions and Labour Market Outcomes," Burlington, Ontario, September 28, 1998.
- , "Economics and the Well-being of Canadian Children," The Innis Lecture, *Canadian Journal of Economics*, 32(5), 1135–63, 1999a.
- , *What is the Best Mix of Policies for Canada Children? An International Comparison of Policies and Outcomes for Young Children*. Canadian Policy Research Network, Study No. F05, Renouf Publishing, Ottawa, 1999b.
- Phipps, Shelley A. and Peter Burton, "Sharing Within Families: Implications for the Measurement of Poverty Among Individuals in Canada," *The Canadian Journal of Economics*, 28(1), 177–204, 1995.
- Preston, Samuel, "The Changing Relation between Mortality and Level of Economic Development," *Population Studies*, 29, 231–48, 1975.
- Qvortrup, Jens, *Childhood as a Social Phenomenon — An Introduction to a Series of National Reports*, Delacourt Press, New York, 1990.
- Rainwater, Lee and Timothy M. Smeeding, "Doing Poorly: The Real Income of American Children in a Comparative Perspective," Luxembourg Income Study, Working Paper No. 127, 1995.
- Ross, David P., Katherine Scott, and Mark Kelly, "Child Poverty: What are the Consequences?" Centre for International Statistics, Canadian Council on Social Development, 1996.
- Sen, Amartya, *Inequality Re-examined*, Harvard University Press, Cambridge, 1992.
- United Nations Development Program. *Human Development Report*, 1997.
- Wolfson, Michael C. and Brian B. Murphy, "New Views on Inequality Trends in Canada and the United States," Statistics Canada, Discussion Paper 11F0019MPE, No. 124, 1998.