DISCUSSION PAPER SERIES

DP13658

ACCULTURATION, EDUCATION, AND GENDER ROLES: EVIDENCE FROM CANADA

Anke Kessler and Kevin Milligan

LABOUR ECONOMICS

ISSN 0265-8003

ACCULTURATION, EDUCATION, AND GENDER ROLES: EVIDENCE FROM CANADA

Anke Kessler and Kevin Milligan

Discussion Paper DP13658
Published 08 April 2019
Submitted 07 April 2019

Centre for Economic Policy Research
33 Great Sutton Street, London EC1V 0DX, UK
Tel: +44 (0)20 7183 8801
www.cepr.org

ACCULTURATION, EDUCATION, AND GENDER ROLES: EVIDENCE FROM CANADA

Abstract

This paper studies the influence of cultural norms on economic outcomes. We combine detailed information on second-generation female immigrants with historical data from their an- cestral source countries to see how the cultural endowment affects current decisions on work and fertility. We show that results using the standard approach are sensitive to context and specifi- cation. We then extend to reveal an education gradient for cultural assimilation: lower-educated women exhibit a strong influence of cultural variables while higher-educated women show no in- fluence at all. We gather and present evidence on several potential mechanisms for the education gradient.

JEL Classification: J16, J22, J61

Keywords: Culture, Immigration, Assimilation, Labor Supply, Fertility, Human Capital

Anke Kessler - akessler@sfu.ca
Simon Fraser Unviersity and CEPR

Kevin Milligan - kevin.milligan@ubc.ca
University of British Columbia

Acknowledgements
We wish to thank Weili Ding, Joe Henrich as well as various participants of the European Association Meetings and the Canadian Economic Association Meetings for useful comments. We also thank Christoph Eder for his research assistance. Financial support from the Canadian Institute for Advanced Research is gratefully acknowledged. Funding was also received from the Social Science and Humanities Research Council of Canada, Grant Number 435-2015-1661 SSHRC-Insight Grants. We thank the British Columbia Interuniversity Research Data Centre for facilitating our access to the data. The research and analysis are based on data from Statistics Canada and the opinions expressed do not represent the views of Statistics Canada. Remaining errors are our own.

Acculturation, Education, and Gender Roles: Evidence from Canada*

Anke S. Kessler† Kevin Milligan‡

January 2019

Abstract. This paper studies the influence of cultural norms on economic outcomes. We combine detailed information on second-generation female immigrants with historical data from their ancestral source countries to see how the cultural endowment affects current decisions on work and fertility. We show that results using the standard approach are sensitive to context and specification. We then extend to reveal an education gradient for cultural assimilation: lower-educated women exhibit a strong influence of cultural variables while higher-educated women show no influence at all. We gather and present evidence on several potential mechanisms for the education gradient.

Keywords: Culture, Gender, Immigration, Assimilation, Labor Supply, Fertility, Human Capital, *JEL No.* J16, J22, J61

*We wish to thank Weili Ding, Joe Henrich as well as various participants of the European Association Meetings and the Canadian Economic Association Meetings for useful comments. We also thank Christoph Eder for his research assistance. Financial support from the Canadian Institute for Advanced Research is gratefully acknowledged. Funding was also received from the Social Science and Humanities Research Council of Canada, Grant Number 435-2015-1661 SSHRC-Insight Grants. We thank the British Columbia Interuniversity Research Data Centre for facilitating our access to the data. The research and analysis are based on data from Statistics Canada and the opinions expressed do not represent the views of Statistics Canada. Remaining errors are our own.

†Simon Fraser University and CEPR. Address of Correspondence: Simon Fraser University, Department of Economics, 8888 University Drive, Burnaby, B.C. V5A 1S6, Canada. Phone: +1 (778) 782-3443. E-mail: akessler@sfu.ca. ORCID: 0000-0001-7104-4586

‡Vancouver School of Economics, University of British Columbia, 6000 Iona Drive, Vancouver B.C. V6T 1L4. Phone: +1 (604) 822-6747. E-mail: kevin.milligan@ubc.ca. ORCID: 0000-0002-0998-0581

1 Introduction

Immigration has shaped the population of North America since the first newcomers arrived over 400 years ago. In 2014, there were over 42 million foreign-born residents in the United States. At 13.2 percent, their share of the total population has now returned to a level not seen since the late 1800's and early 1900's. For Canada, the corresponding figure in 2016 is 7.5 million immigrants, who represented 21.0 percent of the total population, the highest proportion among the G8 countries. Canada has accepted over 200,000 immigrants (0.6 to 0.9 percent of the population) in twenty-three of the last twenty-five years; and together, first and second generation immigrants to Canada make up almost 40 percent of the population. The source regions for immigrants have shifted from the largely European origins prior to the 1970s to predominantly Latin American (U.S.) or Asian (Canada and U.S.) origins today.[1]The resulting change in the composition of the population from areas with different cultures and traditions has sparked vigorous debate in both countries about issues of culture and assimilation, and how to weight the effects immigrants have on changing cultural values, communities and economic circumstances.

The two graphs in Figure 1 help to illustrate the issue for Canada. The graphs plot the fertility and labor market participation of all Canadian women versus a counterfactual line for immigrant women in Canada, had they made the same choices as the (average) woman in their home country. We see that the differences in both fertility choices and labor market participation are quite large, and have grown over time; largely as a result of the shift in source country composition. This suggests the possibility that a cultural gap could explain differences between natives and newly arriving (unassimilated) immigrants in Canada.[2]

Recently, economists have started to pay increasing attention to 'culture', which can broadly be defined as a body of shared knowledge, beliefs, and practice. Economic research has joined other social sciences in investigating whether culture plays an important role in explaining differences in economic outcomes. This research seeks to better understand the relationship between cultural attitudes and observed behavior, both empirically and theoretically. The empirical strand of this

[1]In 1970, 70.4 percent of the foreign born came from Europe or North America; by 2010, 78.1 percent were from Asia and Latin America and the Caribbean Region. Sources for Canadian data: Citizenship and Immigration Canada (2015) and Statistics Canada (2017). Sources for American data: Gibson and Lennon (1999) and Pew Research Center (2016).

[2]In a recent survey of the Environics Institute (2015), over 65% of Canadians expressed concern that immigrants were not adopting Canadian values. At the same time, the majority of respondents did not think that there was too much immigration into Canada. This attitude is not shared by voters in the U.S. or many parts of Europe, where immigration has become a dominant election issue.

literature has produced strong evidence in a variety of contexts that culture actually matters, from historical case studies [Greif (1994)] and laboratory experiments [Henrich et al. (2001)] to work relating variation in the economic outcomes of individuals to differences in their attitudes [Antecol (2000), Blau et al. (2011, 2013),Fernandez and Fogli (2009), among others]. The main challenge has been how to separate differences in beliefs and preferences from differences in environments (such as institutions) or individual endowments (such as ability). Most of this latter literature therefore studies the intergenerational transmission of values and the persistence of behavioral patterns among immigrants, making use of the fact that culture is far more portable than the institutional and economic environment when people migrate.[3] Since gender roles are particularly salient for rates of female labor force participation, marriage and divorce, and fertility [Fortin (2015)], a primary focus of this research is how the traditional attitudes toward gender in immigrants' source countries are reflected in observed variation in their behavior in the host country.[4] The findings, surveyed in more detail below, lend some credence to concerns that the persistence of cultural attitudes in the immigrant population may have substantial lasting effects on labor supply and fertility behavior.

But what are the driving forces behind cultural assimilation on the one hand, and intergenerational persistence of norms and values on the other hand? Here, the evidence from econometric studies to date is still relatively sparse. Clearly, foreign-born parents pass on not just their own characteristics and behavioral traits but also their cultural norms and beliefs to their children. Moreover, second-generation immigrants are exposed to their parents' cultures through other members of the diaspora, e.g. through endogamy or geographic clustering. At the same time, it seems plausible that the extent of exposure to the host-country culture accelerates the speed of acculturation, moderating the influence of family members and their culture of origin.

In this paper, we use rich data on second-generation immigrants to provide new evidence on the cultural transmission of attitudes from a woman's country of ancestry into her labor supply and fertility decisions in Canada. We begin by replicating the results for a seminal paper in this literature by Fernandez and Fogli (2009) and examining whether the results hold in a different country with richer and more recent data. We then extend to an investigation of the effect of education on cultural transmission, and finally an exploration of potential channels for differences

[3]Notable exceptions are Fernández et al. (2004) and Alesina and Fuchs-Schündeln (2007) who make use of natural experiments (World War II, and German separation, respectively).

[4]Almond et al. (2013) study second-generation Asian immigrants to Canada, and show that son preference (sex birth ratios) can be partly explained through countries of origin.

across education groups.

We study second-generation immigrants to avoid a set of issues related to first-generation immigrants; a common choice in this literature.[5] The advantage of examining second-generation women is that, having been born in Canada, they likely face similar economic and institutional conditions to other Canadians, while still holding potentially different cultural values, which are transmitted through their foreign-born parents. The disadvantage, of course, is that these second-generation individuals have already had time to assimilate, which will presumably diminish the measured effect of culture on their economic choices. We restrict the sample to married women, for whom norms relating to gender are expected to be more salient.

The cultural proxy we use is the corresponding outcome variable (female labor force participation and total fertility rates) in the woman's source country of ancestry recorded at a time where her parents likely still resided in the original source country of ancestry. Naturally, this outcome variable at the aggregate level will depend on the distribution of preferences and beliefs within each country, and will generally vary across countries, reflecting variation in culture. A correlation of this variable to outcomes of second-generation Canadian women can thus, after controlling for their individual socio-economic attributes, indicate that their cultural background matters for their decisions today.

We have substantial findings that advance the literature along three main dimensions. We find mixed evidence on the robustness of the Fernandez and Fogli (2009) result in our richer 2001 Canadian data. By including extra controls and information about the immigrant origins of all family members, our results raise questions about the general relevance of the Fernandez and Fogli (2009) from the limited data in the 1970 U.S. census. We also advance the literature by looking at education: we find evidence of a strong and robust association between the level of education and cultural assimilation. Our results indicate a smooth and steady decline in the estimated effect of culture on women's outcomes as educational attainment increases, moving from a high-school dropout to a woman who has completed university. Indeed, for women with a university degree, our results show that the (precisely measured) effect of culture is approximately nil, whereas it is four to eight times as high for high-school drop outs than for a women with an average (some post-

[5]For example, first-generation immigrants may be differentially affected by immigration shocks pertaining to language difficulties, lack of employment opportunities, or loss of their social network. Second, there may be selection (positive or negative) in the composition of the foreign-born population as individuals or families who resolve to leave their home country in pursuit of a better life may be fundamentally different from their counterparts who stay behind.

secondary) education. Finally, we provide evidence on several possible channels through which education may matter, including human capital effects, peer effects, and displacement of cultural beliefs.

Relationship to the Literature

This paper contributes to several strands of the literature on culture, assimilation, and economic outcomes. First, as mentioned above, there exists by now a fairly substantial literature in economics demonstrating the fact that "culture matters."[6] In particular, our analysis builds on a number of contributions studying the relationship between the impact of cultural factors on important economic decisions such as savings rates, labor supply, and fertility. A seminal paper in this body of work is Carroll et al. (1994), who examine saving rates among Canadian first-generation immigrants but find no significant effect of ancestry on observed behavior. Subsequent studies that focused primarily on labor market participation or fertility of immigrant women in the United States did consistently find evidence in support of a linkage between cultural heritage and contemporary choices. Using data from the 1990 census, Antecol (2000) for instance documents that source-country female labor supply can explain the work hours of first generation immigrant women. Similarly, studies investigating the labor supply and fertility behavior of daughters to foreign-born fathers have found that both female labor force participation and fertility rates in the parents' country of origin [Fernandez and Fogli (2009)] and the participation and fertility patterns of U.S. first-generation immigrants from those source countries [Blau et al. (2013)] had significant explanatory power.

In our work, we borrow the empirical approach from Fernandez and Fogli (2009), making use of variation in second-generation immigrant behavior to isolate the effects of cultural heritage on economic choices. Our analysis checks on and extends the previous findings in that we employ newer and richer data from Canada, a country with a comparable approach to immigration as the U.S. Our basic specification is identical to that of Fernandez et al. (2006) and Fernandez and Fogli (2009), and thus allows for direct comparison of the patterns found in Canada to those in the United States.[7] We then enrich our empirical approach using information in our data available

[6] See Fernandez (2007) for a review of the larger literature.

[7] Eylem Gevrek et al. (2013) also look at the impact on second-generation immigrants of origin-country labor supply and fertility using Canadian data, but their focus is on how the effect varies across same-ethnic and intermarried families.Frank and Hou (2015) find that gender roles from the origin country have predictive power for the division of labor within Canadian immigrant households.

to us that was not available, such as controls for the spouse and country of birth for the whole family, not just the father. This allows us to assess how sensitive the influential Fernandez and Fogli (2009) results are to a different context.

Our second contribution is to extend previous work to examine the impact of education on cultural assimilation. In this regard, our paper is closely related to Blau et al. (2011) who use U.S. Census data from 1980 – 2000 to compare the labor market behavior of different cohorts of first-generation immigrants. While their main objective is to relate the gap between immigrant labor supply and native labor supply to the time elapsed since the immigrant arrived in the U.S., they also look at how those assimilation paths differ by the level of schooling. Their finding suggests that for both men and women, the immigrant-native gap in work hours at arrival is greater, the higher the level of education, and over time closes more quickly for those that are more highly educated.[8] Newly-arrived immigrants without a high-school diploma, for instance, will work less than than their native counterparts; but for new immigrants with a university college degree, this shortfall is significantly higher. Over time, however, those with a university degree will catch up more quickly to the natives than those without a degree. This observation is consistent with the results in our model, namely that better-educated individuals assimilate more quickly. However, the analysis in Blau et al. (2011) does not allow them to distinguish between cultural assimilation on the one hand, and patterns that one would expect to emerge as part of a normal adjustment to a new labor market on the other hand. The fact that the immigrant-native gap in labor supply is decreasing in years since arrival may simply be indicative of the fact that it takes time for newly arrived immigrants to find regular full-time work. Moreover, as the authors themselves note, highly-educated individuals are likely to face a more specialized labor market, and they may therefore suffer longer initials spells of unemployment or may have to invest in additional training (such as accreditation) to locate suitable jobs. These factors, rather than an effect of education on cultural assimilation, could explain the higher-educated immigrants' lower relative work hours upon arrival and the steeper slope of adjustment thereafter in their work; while our results focus directly on cultural assimilation.

Of course, the causal nature of the association between education and cultural assimilation may be questioned as we do not have exogenous assignment of education to immigrant families. While we

[8]See also Adserà and Ferrer (2014) for similar evidence from Canada. Riphahn (2003) studies the education achievement of German immigrants, investigating the nature of the immigrant-native education gap. Adserà and Ferrer (2016) document differences in labor market assimilation for immigrant Canadian women with different education backgrounds. Those with higher education are found to have skills that assimilate to the native born more quickly, while lower-educated women can get stuck in low-status jobs.

acknowledge this shortcoming when we interpret our results, we can make the case that we advance on the existing approaches in several ways. Unlike Blau et al. (2011), we use a cross section of individuals who are second-generation immigrants and therefore not subject to the same degree of direct labor market adjustment processes. Consequently, our finding of an education gradient can be interpreted more easily as a genuine effect of schooling on the cultural assimilation paths of immigrants: the higher their level of education, the less of their contemporary behavior can be explained by the characteristics of their parent's country of origin. In addition, we offer evidence that assesses whether unobserved human capital drives our education gradient results, finding no evidence unobservable human capital affects our labor market results.

Lastly, our third contribution comes from linking the magnitude of culturally-transmitted gender roles to levels of schooling, which contributes to a body of work in sociology and psychology on acculturation, education, and gender roles.[9] Relying largely on qualitative studies or survey data, the general lesson of these studies is that second-generation immigrant women have more liberal views of gender norms than their parents and that at least some acculturation occurs regardless of educational attainment [Dasgupta (1998), Phinney and Flores (2002)]. In the context of Spain, Calvo-Salguero et al. (2008) provide evidence that gender-role attitudes tend to become more similar with greater educational attainment. But the causality can also be reversed: some cultures have less favourable attitudes towards educational achievement than others [Denessen et al. (2001), Fuligni and Witkow (2004)], and cultural differences in family background may be responsible for different levels of schooling across ethnic groups [Chiswick (1988)]. There seems to be no consensus, however, on whether and to what extent the experience of post-secondary education is a causal factor in undermining cross-generational cultural transmission of gender roles. The problem here is that higher education is correlated with less traditional attitudes, but education also directly affects labor supply. A positive association of labor force participation rates, schooling, and liberal gender roles may therefore be observed even in the absence of an indirect effect of schooling on gender stereotyping.

2 Data and Empirical Strategy

Our basic data source is the restricted individual files of the 2001 Canadian Census, but we also use the 2002 Ethnic Diversity Survey to dig deeper into the behavior of second-generation immigrants.

[9] Suárez-Orozco and Qin (2006) and Zhou (1997) provide general reviews.

The alignment of the Ethnic Diversity Survey with the 2001 census is one of our motivations to focus on that particular year.[10] The confidential Census files include comprehensive information on key variables such as the immigration history of the individual and her parents, labor market outcomes, occupation, educational attainment, and family structure for each individual. For each woman we compile relevant information regarding other members of the household, including spouse and the number of children, and we also obtain a measure of fertility based on the number of children in the household and the spouse's immigration and labor market characteristics. Our labor supply analysis centers on usual weekly hours worked. Our measure of fertility is based on the number of children under 18 living with their parents. We focus on females aged 30 to 40 who are in two-parent families (whether married or common-law). Women in this age range should have completed their education but are far from retirement, and the number of children still living in the household is most likely to coincide with their actual number of ever-born children. The sample is then further restricted to women that have been born in Canada, but have at least one foreign-born parent. For our main set of regressions, this parent will be the father, though we consider alternative specifications in a number of robustness checks below.

We then supplement each individual observation with information on the country of ancestry of her father (and mother). To this end, we employ cross-country data for female labor force participation and fertility, which we obtained from the International Labor Organization (ILO) and the United Nations demographic yearbook, respectively. Female labor force participation (FLFP) is defined as the rate of the economically active population for women over 10 years of age. We use the total fertility rate (TFR) as a measure of fertility. Expressed as the number of children per woman, TFR is the average number of children a hypothetical cohort of women of age of 15 to 49 would have had at the end of their reproductive life, had they been subject during their whole lives to the fertility rates of a given cross-sectional period (here 1950). In our main specification, we look at cultural proxies from the year 1950, ten to twenty years prior to the birth years of our second-generation women. We chose 1950 since this is the earliest date for which data for a reasonably large number of countries of origin are available.

This data choice provides the opportunity to contrast and build on the Fernandez and Fogli (2009) results (hereafter referred to as F&F). Their analysis used the 1970 U.S. Census because the

[10]The coverage of the Census is universal and mandatory, with 20 percent of private occupied households selected for the detailed 'long form' and 80 percent for the more cursory 'short form'. All long-form respondents are included in the master file, which is available for some Census years through special arrangement at Research Data Centres. We have also checked our results in the 2006 Census and found them very similar for labor supply, although less so for fertility.

country of birth of the father was available only in that year. They also used cultural data from 1950. However, the women in their 1970 sample were already 10 to 20 years old and their families were in the United States when the 1950 cultural ancestry variables were recorded. This means that their cultural proxy will embody any cultural change that occurred subsequent to the father's immigration; while the father was in the U.S. In contrast, looking at 2001 we can use cultural data more reflective of the cultural milieu in which the women's fathers grew up before immigrating. The women in our sample were born between 1961 and 1971, so the use of 1950 is much more likely to capture the cultural state of the country as the women's fathers knew it.

While our sample of source countries is largely limited by data availability for 1950, we also exclude countries that became centrally-planned economies around World War II. As F&F note, the parents immigrating from those countries must have done so before 1940, which disconnects them from the transformation theses countries went through during and in the aftermath of the war. To maintain comparability with the F&F results, we also excluded Russia as well as those countries for which F&F did not have enough observations in their sample.[11] In the remaining sample of 25 countries, we have 17 European countries, three countries in the Americas (Cuba, Mexico, and the U.S.), three countries in Asia (China, Japan, and the Philippines), and the rest in the Middle East (Syria and Lebanon). The distribution of the observations by country of father's origin is reported in Table 1. As can be seen, much of our sample comes from Europe. However, there is still substantial variation in both of our source-country 1950 variables. For example, the Netherlands has a female LFP rate of 18.7 percent and a TFR of 3.1 while Germany has 34.2 for the LFP and just 2.2 for TFR.

We now present descriptive information on our main 2001 census sample. We report the means (along with standard deviations for continuous variables) for our variables in several different samples in Table 2. The number of observations listed at the bottom of the table uses the sample weights to report the population-level equivalent that is represented by our sample.[12] Our main sample is composed of two-parent families with a Canadian-born female between the ages of 30 and 40 who has a foreign-born father. This sample is in the first column of Table 2. The next four columns break this sample into four mutually exclusive and exhaustive categories based on the female's education: high school incomplete, high school diploma, some post-secondary education

[11] Rerunning the regressions with those countries included does not change our results.

[12] The long-form Census is a twenty percent sample of the Canadian population, so on average the population-level counts are about five times the actual number of observations in our dataset. We present the population-level counts to conform to Statistics Canada rules on reporting of means in the Census.

(PSE), and university degree or higher. The final two columns present samples we do not use in our analysis, but are both useful benchmarks. The second-last column imposes that both the woman's parents be Canadian-born—this can be thought of as a 'very native' benchmark. The final column looks at families with the same criteria as the main sample, but with first-generation immigrant women instead of Canadian-born women.

The first two rows of Table 2 display the main dependent variables we use in our analysis, weekly hours of work and number of children. Women in our main sample work 25.2 hours on average and have 1.7 kids. Hours of work shows an increase across the education groups in the next columns of the table, while number of children decreases with education. The work and fertility of the second-generation women in our main sample is very comparable to both the first-generation immigrants and the 'very native' benchmark sample. The next two variables are the 'culture' variables that are at the core of our analysis. We report both the female labor force participation rate and the total fertility rate in the country of origin for the women's father in 1950. The average FLFP in these countries in 1950 was 24.5 percent, and the average number of children as measured by the TFR was 2.7. There is little systematic pattern in these variables across education attainment groups. The next rows in the table show the age and education of the women and of her partner. Immigrants are substantially more likely to have a university degree and correspondingly less likely to have high school or less education, compared to the 'very native' benchmark. First-generation immigrants show slightly better education attainment than the second-generation women in our main sample. The partners of the women show a similar education pattern. The next set of variables in the table reports further immigration-related information about the family, including the place of birth of the parents, the partner, and the language and ethnic group of the family. Immigrants are more likely to speak a foreign-language, but less likely to have a partner of the same ethnic group than the 'very native' sample in the second-last column.

To close this section, we provide a simple presentation of our empirical strategy which previews our results. We reduce our 2001 census data to the level of the 25 countries in our sample as categorized by the place of birth of each woman's father, and take the means of our key variables: hours of work and number of children.[13] We then plot these variables against the 1950 values for female labor force participation and total fertility rate. We do this separately for those without a high school diploma and those with a university degree or more, in order to highlight what will be

[13]There are fewer than 25 datapoints per education group on each graph because Statistics Canada data release guidelines required us to suppress some countries with small counts for the education-group cells.

a main theme of our results—the differences by education.

The results are plotted in Figure 2, with triangles for the high education group and squares for the low education group. We also plot a simple regression line for each education group in each graph. For work, there is a clear positive relationship between the 1950 source country LFP and hours worked by women in 2001 for the lower-educated women. For the university graduates, however, the relationship is less clear. In the second panel, the same holds for fertility—a positive relationship can be seen for the low-education group but not for the high-education group. There are several outliers for fertility: China, Lebanon and Mexico being three. Even without these outlier observations included, the simple fit line has a positive slope for the low-education group.[14] These scatter plots are not definitive, but provide a preliminary indication of the shape of our results and preview the pivotal role played by education in our findings below.

3 Results

In this section we present our main results. We begin with our baseline specification, which updates and extends the benchmark F&F research framework to the case of Canada. We present our baseline results for both labor supply and fertility, along with checks for connections to the existing literature and robustness. In the second part of this section, we present our novel education gradient results, along with a similar set of robustness checks. Later, we take up the inquiry into the channels and mechanisms for the education gradient in Section 4.

3.1 Baseline Findings

In our baseline specification, we estimate a reduced-form model of the following form:

$$y_{ijl} = \beta_0 + \beta_1 Y_j + \boldsymbol{\beta_2'} \mathbf{X_i} + \gamma_l + u_{ijl} \tag{1}$$

where for each woman i residing in a census metropolitan area (CMA) l whose father was born in country j, y_{ijl} is the individual outcome of interest (weekly work hours or number of children, respectively), Y_j is the corresponding aggregate outcome in country j in the year 1950, X_i is a vector of individual characteristics that varies with the specification and is discussed below, γ_l is a set of indicator variables for the census metropolitan area, and u_{ijl} is an error term. Since the

[14] For fertility, the estimated slope for the low-education group is 0.27(0.06) using the number of country observations as weights. Without the three fertility outliers, this slope becomes 0.21(0.10).

main explanatory variable of interest varies by country of origin, all the standard errors we report are corrected for clustering at the country-of-origin level.

Our basic results on the cultural influences on labor supply and fertility, respectively, are presented in two separate tables below. For ease of comparison with the findings for U.S. data of F&F, we chose a set of controls identical to theirs. Consider first Table 3 where the outcome is weekly hours worked by individual i and the cultural proxy is FLFP in 1950 in the father's country of birth. All regressions control for location (census metropolitan area) and age and its square.

Looking at the coefficient on the cultural proxy in column (1) which contains only the age and metropolitan area controls, we see that it is positive and significant at the 5 percent level, indicating that women whose parents were born in countries where women participated less in the work force work less themselves, on average. The magnitude of our estimate is quite similar to F&F, who obtain a coefficient of 0.047 in a similar specification. This correlation, however, may be driven by factors other than culture. For instance, the parents' human capital may systematically vary by country of origin with FLFP rates, and since educational attainment tends to be transmitted across generations, may indirectly affect their daughters' incentives to work. To avoid these types of biases generated by a correlation between unobserved parental characteristics by country of ancestry and individual characteristics affecting labor supply, the regressions in column (2) and (3) add further individual controls; specifically the woman's level of education (dummy variables for high school, some post-secondary education, and at least a university degree) and husband characteristics (age, education, and income), respectively. The latter is important since the degree of assortative matching may systematically differ with parental characteristics. One should note, however, that doing so ignores the indirect effect of culture on work incentives through cultural differences in the desired level of schooling or the desired marriage market outcomes. Column (2) shows that through the inclusion of a women's level of education, the measured direct effect of culture is reduced in magnitude and loses its statistical significance, indicating that some of the observed co-variation between culture and outcomes was indeed through human capital transmission. Controlling additionally for husband characteristics, on the other hand, increases the measured cultural influence again, as seen in column (3). This suggests that assortative matching in education was partly responsible for the result in column (2): women with ancestry from countries with higher FLFP tend to be educated more and tend to be married to men with higher education and higher income. The husband's higher income will decrease the incentives for his wife to work, leading to a downward bias in the estimated strength of cultural influence. In what

follows, we will take the specification in column (3) as our main specification.

In the full specification in the last column of Table 3, an increase in the level of FLFP in 1950 by one standard deviation (across countries) is associated with an increase of 0.57 hours worked per week and the effect is statistically significant at the 5 percent level. For the average women in the sample, weekly hours worked would increase by 2.3 hours or roughly 10 percent if her father comes from Turkey (where FLFP in 1950 was over 50%) rather than Lebanon (where it was below 7%). The point estimate of 0.048 is again very similar to the corresponding estimate of 0.045 in F&F. Finally, column (4) adds the second cultural proxy (TFR in this case) to capture the possibility that the two proxies have independent effects through reflecting different aspects of culture. For example, although both variables relate to gender norms and women's role in society, the TFR may also reflect the desired family size, which in turn affects women's decision to work. Yet, it appears that TFR in 1950 does not help explain female labor supply.[15]

In Table 4, we repeat the exercise for fertility. The outcome here is the number of children under 18 living in the household and the cultural proxy is the 1950 TFR in the father's country of birth. Again, all regressions control for location (census metropolitan area) and age and its square.

We see that the measured effect is smaller and remains insignificant throughout, except when we include FLFP in 1950 as a second cultural proxy. For similar specifications, F&F obtain statistically significant estimates for TFR in the range of 0.194 to 0.250. In the last column, the measured effect of the FLFP in 1950 is negative, providing evidence that cultural norms in support of working women reduces the desired family size of the Canadian women in the sample. The fact that controlling for FLPF in the country of ancestry increases the measured cultural influence of TFR is somewhat surprising, although the two measures are not as negatively correlated as one would think.[16]

A key contribution of our paper is that our dataset allows us to check the sensitivity of the results to several data-driven assumptions in the F&F analysis. We are able to relax some of the constraints under which they operated and also study whether our results are sensitive to the specification used. Specifically, since the Canadian Census also provides information on the country of birth of an individual's mother as well as the parents of the spouse, we can investigate whether the extent of cultural influence of other members of a women's close family, such as her mother or partner,

[15]We also ran some regressions of labor supply that control for the presence of a child under the age of five living in the household, as this may affect the tendency to work but does not fully capture the impact of culture on family size. The cultural proxy drops in magnitude to 0.03 and becomes insignificant at the 5 percent level.

[16]The raw correlation coefficient between those two variables is only -0.01 in our sample of 25 countries.

is stronger or weaker than that of her father. To see whether the time span between measured cultural heritage and observed individual outcome matters, we also consider a specification where we use country of origin characteristics (FLFP and TFR) from 1980. With our 2001 data, the gap between observed outcome and measure of cultural influence is then just over 20 years, and thus similar to the gap that F&F used in their analysis. As the authors note, one could argue that employing later dates for cultural proxy variables is sensible since the transmitted values of a women's parents and other members of their social network are best reflected in the behavior of their counterparts who continue to live in the country of origin. The results of the corresponding regressions are presented in Table 5. The first three columns for each outcome (hours worked or number of children) is related to the cultural background of different family members. To avoid obvious selection issues, we confine the sample of spouses to Canadian born men or women, and measure the cultural background of the spouse through his (or her) father's country of ancestry. The last column for each dependent variable (columns (4) and (8) respectively) show the results for the cultural proxy (FLFP and TFR, respectively) measured in 1980 as opposed to 1950.

On the one hand, the results are not very encouraging for the cultural transmission hypothesis. Neither the mother's culture nor the partner's (father's) culture seem to matter for either labor supply or fertility choices of the women in our sample. Both results come somewhat unexpected. A significant fraction of the women in our sample have parents who are both foreign born and come from the same source country, implying that some of the variation in the data used to identify the coefficient is the same for our father's cultural proxy and mother's cultural proxy regressions. Similarly, we have a number of marriages in our second generation that are endogamous, i.e., to members of the same ethnic group.[17] The choice of a later decade for measuring the cultural influence also does appear to render the cultural influence weaker. In some sense, the findings suggest that the specification of F&F, which was primarily dictated by data availability in the 1970 census, does not hold robustly to other circumstances. Our data do not strongly support cultural transmission in Canada across generations using the original specification, and our sensitivity analysis seems to lend further support to this conclusion.

In summary, while we find some effect of cultural beliefs on work and fertility outcomes in these basic specifications, the magnitude of the effect is fairly small and for fertility not consistently

[17]We ran the same regressions with the partner's mother's country of origin characteristics with similar results. This finding also contrasts with Fernández et al. (2004) who present evidence that women are more likely to work if they are married to a man who grew up with a working mother. We would have expected a strong influence of the partner's culture based on their findings, although the channel here is arguably more indirect, and thus directly comparable.

significant. Overall, therefore, the evidence is not nearly as compelling as in F&F. This stands in contrast to most of the literature mentioned in the Introduction, which—based on U.S. data—finds a strong and persistent effect of culture on economic outcomes. However, in the next section we uncover new evidence that refines and restates the case for a fundamental influence of cultural heritage on work and fertility: the effect of education. When the education composition of the sample is considered, and when we allow for differing impact by education, the results are much more supportive of a case for the cultural transmission of values.

3.2 The Education Gradient in Cultural Assimilation

It is somewhat surprising that, to date, the economics literature on cultural influence on the one hand, and assimilation on the other hand, has not produced a more comprehensive analysis of the role of education. While many contributions include the level of education as an explanatory variable, and discuss possible concerns of omitted variable bias due to unobserved human capital transmission, to the best of our knowledge this paper is the first to specifically study how schooling affects the speed and scale of acculturation. There is a multitude of channels through which levels of schooling can affect how parents' culture is reflected in their daughters' economic choices, ranging from the role of education in fostering skills and attitudes that accelerate assimilation to peer group effects. We address these possible channels in the next section. But first in this subsection we present the basic evidence on the education gradient to establish evidence that education plays an important role in the transmission of cultural values.

Research into labor market assimilation of immigrants such as Blau et al. (2011) has investigated how assimilation varies by education groups. That work potentially suffers from the weakness that education is not exogenously assigned, so the education choices made by women may reflect underlying preferences and unobservable characteristics that also influence labor supply and fertility choices. That is, education may be endogenous to labor supply and fertility because of correlations with unobservables or because of simultaneity between education and labor market and fertility decisions. Ideally, random assignment of education or an instrumental variables strategy to compare women across exogenously-assigned levels of education is necessary to provide strong causal inferences.

Importantly, we go beyond Blau et al. (2011) by providing some evidence suggesting unobserved human capital factors may not be correlated with our cultural proxy variables and education inter-

actions. That said, we also view the establishment of robust associations of education with cultural assimilation as a crucial step forward in shedding some light on the mechanisms of acculturation. We hope that further research will address more concretely the causal nature of this association.

Table 6 below reports on a series of regressions in which we re-run the basic specification from Tables 3 and 4 but interact the woman's level of educational attainment with the cultural proxy under consideration, thereby allowing the magnitude of cultural transmission from parent to daughter to vary with the latter's education. As before, the outcome variables are weekly hours worked and the number of children in 2001, and the cultural proxies are FLFP and TFR in the father's country of origin in 1950, respectively. All regressions have CMA fixed effects, include age and age square, and spousal controls (husband age, age square, education, and income). To facilitate comparison with our earlier findings, we replicate the baseline coefficients in the first columns for each outcome variable for our preferred specification. The regression including the interaction terms with education is shown beside the base specification.

Two observations stand out. First, the magnitudes of the main effects of the cultural proxies (which represent the impact on the lowest level of education achievement—high school dropouts) are large; 0.207 for hours worked and 0.237 for fertility. Compared to the base case in the first and third columns, the cultural influence of the country of ancestry is four times higher for high school dropouts than it is for the average woman in the case of labor supply, and about eight times higher in the case of fertility. The size of the effect is economically significant: one standard deviation decrease in the country of origin's FLFP, for instance, is associated with two hours less work per week for the average women without a high school degree, as compared to 0.5 hours less per week for the population-wide average. Second, and perhaps most notably, we see a smooth and steady decline in the estimated effect of culture on women's outcomes as educational attainment increases and we move from a high-school dropout to a women who has completed university. This can be seen in the interaction coefficients. For example, the hours worked result starts at 0.207 for dropouts, but is 0.112 lower for those with a high school diploma; 0.165 lower for those with some post-secondary; 0.204 lower for those with a university degree or more. Indeed, for women with a university degree, our results indicate *no cultural transmission across generations at all, precisely measured.* The same basic pattern holds for the number of children in the last column of the table, with the 0.237 main effect being cancelled out for those with a university degree with an interaction coefficient of -0.261.

Although our finding is certainly novel, it is not necessarily surprising. As mentioned above, numerous sociological and psychological studies have argued that differentials in education are associated with different paths of socialization and differential retention of cultural norms and beliefs, both theoretically and in survey data.[18] To our knowledge, however, our study is the first to provide quantitative evidence to support these arguments. Moreover, the effect is strikingly smooth across educational achievements. While women who did not finish high school are strongly influenced by culture, cultural beliefs become less and less important as they climb the educational ladder, until the effect of culture that is nil for university educated women, precisely measured. This, may also help to explain the difference in conclusions between US studies such as F&F, and the present Canadian study. In the F&F sample, 28 percent of the women have not earned a high school diploma or equivalent, and another 53 percent have not gone beyond high school. In our data, in contrast, only 7.7 percent of the women have not completed high school and 14.4 percent stopped at high school. So, our Canadian 2001 sample is much more highly educated than the 1970 U.S. sample, meaning that our results for the lower-educated segments of our sample should be compared to F&F. In that comparison, our results are much closer to F&F.

We now check on the robustness of our results in several ways. We repeat the analysis of Table 5 by checking how the results change when we use alternative measures of culture. In Table 7 we present the results of specifications using the country of origin of the women's father (our baseline), the women's mother, the father of the partner, and the 1980 value for the culture variables for the country of the women's father. We repeat this for weekly hours worked and for the number of children. In the second column we see that the results for the women's mother now align fairly closely to those for the women's father in the first column. This is also true for the number of children. Using the cultural variables for the country of origin of the father of the women's partner, we find no significant effects even with the education interaction. Finally, using the 1980 values in place of the 1950 values, we find very similar effects for fertility but small and insignificant effects for hours worked.

Summing up, the results in this section point to a strong relationship between educational achievement and the extent to which cultural variables matter for economic decisions. For our main specification with the father's country of ancestry as our cultural indicator, we find an *education gradient in cultural assimilation*; that is, a smooth and steady decline in the estimated effect of

[18]The equalizing force of education (and income) has also been recognized as important for the question of whether morality varies by culture. Haidt et al. (1993), for example, find that cultural differences in moral judgment across social classes within each country were larger than differences across nations.

culture on women's outcomes as their level of education increases from a high-school dropout to a women who has completed university. We also consistently find that whenever culture matters for women without a high school diploma, comparable women who successfully finished university will show no such dependency. For this high education group, our results strongly suggest that the (precisely measured) effect of culture is approximately nil. As mentioned at the outset of the subsection, our evidence can only be interpreted as causal with strong assumptions about unobservable characteristics of women that might influence both education attainment and fertility/labor supply. However, our approach matches that of Blau et al. (2011) in the labor market assimilation literature. Moreover, in the next section we go beyond the existing literature on education gradients by providing evidence in the next section against a confounding effect of unobserved human capital. We view the establishment of the existence of an education gradient in cultural assimilation to be an important step in understanding the impact of culture. In that light, the question that naturally arises now is why education matters for acculturation; through what mechanism. In the following section, we explore this issue in some detail and present some additional findings to help shed light on some of the underlying forces at work.

4 Culture, Education, and Human Capital

Our work in the previous section established an education gradient in cultural assimilation, showing that the influence of legacy economic variables on second-generation immigrant women depends strongly on the women's level of education. In this section we explore several explanations for this relationship in the context of a discussion of the interplay of culture, education, and human capital. We begin with an examination of possible unobserved human capital that may differ across ethnic groups and be correlated with the source-country culture variables we employ. This improves the case for a causal interpretation of the associations we have estimated. Following that, we discuss and provide evidence on the possibility that education affects the speed of assimilation through peer effects—longer time in school might mean relatively more time spent with others outside one's own ethnic group. Finally, we describe and investigate ways that education might directly change human capital and cultural attitudes, which could underlie the education gradient in cultural assimilation.

4.1 Omitted Human Capital

In the presence of systematic differences in unobserved human capital across ethnic groups, we may observe a spurious correlation between a women's ancestry and the outcomes we consider. This unobserved human capital may be embodied either in the women themselves (through systematic differentials in her parents' education that are not captured in a woman's formal education), or in her same-ethnicity social network, which may affect women of different backgrounds through external effects in the spirit of Borjas (1995).

Since the Canadian Census contains no information about either the education of an individual's parents or the quality of her social network, one straightforward strategy is to test for omitted variable bias by looking at the earnings of the women in our sample. If the cultural variables we use in our analysis are correlated with unobservable human capital that matters for the labor market, we should see those factors reflected in earnings.[19] In other words, if ancestry is systematically correlated with unobserved human capital differences, then ancestry should also help explain variation in earnings, conditioning on formal education and other observed characteristics. In Table 8, we report the results of standard Mincer regressions, using the log of annual earnings as our dependent variable. Following F&F, in addition to education we control for potential experience (measured by a women's age minus number of years of education minus six), and potential experience squared. As before, all regressions have CMA fixed effects and the spousal controls are age, age square, education, and income.[20]

The results show the expected strong direct effect of education attainment on earnings, with university degree holders in the first column showing a 0.817 log point advantage over high school dropouts in earnings. However, the coefficients on the cultural proxy (here the source-country female labor force participation) are insignificant or small. The coefficient on the cultural proxy in column (2) is precisely measured, but the effect is close to zero (even a 10 percentage point boost in a source country's FLFP only increases earnings by 3 percent) and becomes statistically indistinguishable from zero once we add the education interactions. That is, if there is an effect, it is small and does not vary with educational achievement. We take this finding as an indication

[19] See F&F for a similar reasoning. Using auxiliary datasets, the authors also run a series of regressions where they add parental levels of education and other measures capturing systematic differences in the quality of education across different countries of origin as controls in their main specification, and show that the effect of the cultural proxy on outcomes remains robust.

[20] In all specifications with spousal controls, only spousal income shows up as significant, and the effect is very small.

that our main result on the educational gradient of education is not driven by unobserved systematic differences in human capital across different cultural backgrounds. While not definitive for interpreting the associations we measure as causal, this finding does provide some measure of confidence that unobserved human capital differences across source-country backgrounds are not driving our education gradient results.

4.2 Education and Peer Influences

If we think of cultural transmission as a mechanism that involves socialization via imitation and learning from peers, cultural transmission will be different for women who did not finish high school as compared to women who have successfully completed university. It is easy to imagine, for example, that a college or university environment will provide more exposure to Canadian culture and diminish the influence of their source-country culture. Also, higher education in itself may convey a message of 'openness' to other cultures and increased 'adaptability'. Overall, therefore, it is easy to envision that interactions with one's own ethnic group become more sparse, and one's own ethnic background becomes consciously less important, the higher one's educational achievement. We investigate these possibilities using three different analyses to look for education gradients in peer effects and exposure to one's own ethnic group. The three analyses are: direct peer interactions, home culture (spouse's ethnicity and language), and neighborhood ethnic concentrations.

We draw on data from Canada's 2002 Ethnic Diversity Survey (EDS) to examine peer interactions and exposure directly. The survey collects a national representative sample of over 42,000 non-Aboriginal Canadian residents aged 15 years or over, using the 2001 Census as the frame for the data-gathering; but over-sampling ethnic or visible minority groups. The EDS was designed to provide information to better understand how Canadians of different ethnic backgrounds interpret and report their ethnicity and how people's ethnic backgrounds affect their participation in the social, economic and cultural life in Canada. To replicate our primary selection from the main analysis, we restrict observations to married or common-law Canadian born women who are 30-40 years old and whose father immigrated to Canada from one of the countries in our sample. The resulting sample is very small compared to the Census; around 560 observations. To increase the sample we also try relaxing our age limits to include women aged 25-50. This extended sample has about 1160 observations.

To form a dependent variable, we take a set of six responses in the EDS about the degree of contact

and socialization with members of their ethnic group in their family and friends. These responses together provide a picture of the strength of the respondents ties to her home country. To put this in operation, We make an index based on the six responses.[21] We then standardize the index by dividing by the standard deviation.[22] We also create a binary dependent variable to indicate the index takes a value greater than or equal to three.

The results of our EDS index regressions are in Table 9. We use the same set of control variables as with our hours and fertility regressions, but without the home-country cultural proxies. We are interested here in the direct impact of education on our cultural attachment dependent variables. The estimates reveal a strong and positive relationship between the index and education attainment; with strong and significant impacts for those with some post-secondary education and university graduates. That is, women with more education report significantly *more* ties with family and groups of their own ancestry than less-educated women. This is true for all specifications, including those where we allow for an extended sample with a bigger age range to increase the number of observations. This evidence does not support the contention that higher-educated women have lesser ties or exposure to people from their own ethnic group—if anything the opposite appears to be true.

We now turn back to the Census to look at further indicators of the potential peer influence of education. Using the Census, we can observe two aspects of the home environment of the women in our sample to see whether the home environment directly correlates with education. If women with higher education are less likely to have a spouse born in Canada or speak their source-country language, this could explain our education gradient in cultural assimilation.[23] Table 10 presents these results in the first two columns. Like in Table 9, our interest is in the direct impact of education on our spouse and family dependent variables. The estimated coefficients on education are almost all statistically insignificant. There is no evidence of an education gradient; high and low educated women are equally likely to be married to a partner born in Canada. The same is true for speaking a foreign language in the home.[24]

[21]The index is the sum of six binary variables based on the following measures: has family in original place of birth; foreign-born spouse; frequent contact with family in original place of birth; half or more of friends have same ethnic ancestry; customs and traditions rated important or very important; participates in at least one ethnic group or organization.

[22]We standardize using the mean and standard deviation of the whole sample of married women, so the mean and standard deviation reported in the table are different than 0 and 1.

[23]Angrist (2002) finds evidence for strong preferences for within-group marriage among U.S. second generation immigrants in the first half of the twentieth century.

[24]We cut observations from French-speaking countries like Belgium and France and English-speaking countries like the U.S. and U.K. from this sample, since immigrants from those countries are not speaking foreign languages.

The final piece of the peer-effect analysis is to look at the ethnic composition of the neighborhood in which the woman lives. If there is an education gradient with locational decisions, this could change the quantity of interactions with people from her source country ethnic group. We create three dependent variables to capture ethnic concentration at the Census subdivision level. Census subdivisions correspond to municipalities in many provinces, so this conception of neighborhood is broad. The first is an indicator whether the woman lives in a neighborhood with a higher-than-average share of her own source-country ethnic group. The second is a continuous variable measuring the share of people from her own source-country in her neighborhood. The last is the share of people from her broader source-country region, using fourteen global regions. The results are in Table 10 in the last three columns. These regressions include our standard set of control variables, but also ethnic group fixed effects, so the coefficients on the dummies for educational achievement should be interpreted relative to high school dropouts of the same ethnic group, controlling for the overall national prevalence of that group. For our 'above average' and 'narrow ethnic' dependent variables, there is no difference between high school dropouts, high school graduates, and those with some post-secondary education. However, there is a small negative association for those with university degrees. That is, our second-generation women with university degrees are slightly less likely to live in areas with high concentrations of people from their own source country. This finding does open the door to a small peer effect, but the pattern is relatively weak compared to the strong and incremental pattern of our education gradient for cultural assimilation.

Taken together, the above results using either the EDS or the Census do not present strong evidence in favor of peer exposure effects. We conclude that an explanation for the educational gradient of acculturation based on higher-educated women becoming more acculturated due to lower frequency of interaction with other ethnicities does not fit the data very well. For direct ethnic social interactions, our EDS results show *more* frequent interactions with same-ethnic people for higher-educated women, while in the Census there is little or no relationship of education with family or neighborhood ethnic concentration variables.

4.3 Human Capital and Gender Attitudes

We now turn to examine ways education in itself could affect assimilation through the acquisition of human capital—conceived here broadly to include fostering both skills and attitudes that affect

choices on labor supply and fertility. This could happen in one of two ways. First, new skills will expand the skill set (such as computer programming or effective writing) of a young woman. Additional skills diminish the *relative* importance for her labor market and life choices of the attitudes she may have learned from her parents and ethnic community. Second, education may change the way one views the world; fostering open-mindedness as a value in itself. Being exposed to new ideas may cause young women to re-examine cultural norms and expectations they picked up from their parents. In so far as education transmits novel values and beliefs upon the individual that are different from those of his or her culture, formal education can accelerate the speed of assimilation. Indeed, governments and other institutions have made deliberate use of this method of acculturation in the past, as exemplified in the history of Indian boarding schools in the U.S., and the residential school system imposed on aboriginal people in Canada. In this second 'life view' channel, additional education *displaces* the cultural endowment received by a woman from her parents.

Gender attitudes present a particular manifestation of the 'life view' channel for human capital-driven acculturation. Higher education attainment is associated with weaker gender stereotypes and a general liberalization of attitudes, both across countries and individuals, and over time.[25] Rather than learning from experience, the sociological literature on the subject emphasizes the effect of eduction in exposing individuals to the ideas of feminism ("enlightenment"), thereby providing alternative interpretations of women's roles in the society [Davis and Robinson (1991)]. In what comes below, we attempt to test for the importance of gender attitudes as one element of this 'life view' channel. This is not an exhaustive test of the '1ife view' channel; nor do we present evidence about the 'skill' channel described above. In this way, we view our exercise here as exploratory about the role of human capital rather than definitive.

Our data do not allow us to test directly whether the education the women in our sample received prompted them to abandon their source-country culture in favor of Canadian values. However, to the extent that the gap between these source-country values and their Canadian equivalent varies in size, we can still look for signs supporting this process of acculturation based on the following thought experiment. Assume education directly transmits Canadian values. If those values clash more with the values the individual received from the source country, we would expect the cultural gradient of assimilation in those countries be more pronounced. Expressed differently: if some source countries share very *similar* values to those in Canada, we should *not* expect the

[25]See, e.g. Bolzendahl and Myers (2004) and the references therein.

assimilation process for immigrants from these countries to vary considerably with their education since the displacement of their source-country values for Canadian values is not large.

We approach a test for this idea by categorizing the countries of origin in our sample into two groups. Noting that both labor supply and fertility decisions have strong gender-role components, we use data from the World Value Survey (WVS) database to identify countries as either 'progressive' or 'traditional', using the average responses by Canadians in the World Value Survey as a benchmark.[26] That is, we categorize as 'traditional' each source country in our data that exhibits more traditional gender role attitudes than Canada. We focus on two questions from the WVS. The first question is from the first wave of WVS (1981–1984) and asks respondents to agree or disagree with the following statement: "If a woman wants to have a child as a single parent but she doesn't want to have a stable relationship with a man, do you approve or disapprove?" (Indecisive answers were permitted.) In this first wave, this was the only question relating to gender roles. The second question is from the next wave of the WVS and asks respondents to agree or disagree with the statement "Marriage is an out-dated institution." To illustrate the data, Figure 3 shows how countries' responses in the WVS regarding the latter question place them relative to Canada, and how they relate to the main cultural proxies we consider. The countries we code as 'traditional' lie in the graph to the left of the Canada response.

Using this categorization, we rerun our main education gradient specification, allowing the education gradient of assimilation to vary depending on whether the source country is more traditional than Canada or not. The regressions thus include an additional interaction term where the *culture* × *education* variables are further interacted with a dummy for being traditional. The results are presented in Table 11. The extra impact of education on assimilation can be ascertained by examining the coefficients on the interaction between 'traditional' and the culture-education variables in the bottom four rows of the table.

In the first column of the table, the -0.125 coefficient on the *traditional* × *culture* interaction indicates that the impact of the source-country FLFP rate is smaller for our traditional set of countries (categorized by the 'single mothers' WVS question) than the 0.317 coefficient for the countries that are more progressive than Canada. Moreover, the next three rows show positive coefficients, which indicates that the education gradient is actually *less* steep for the traditional

[26]The WVS database is the most comprehensive source of empirical data on people's beliefs and values, covering a majority of the world's population over time, in seven waves from 1981 to 2017. For detailed information, see http://www.worldvaluessurvey.org/wvs.jsp.

countries. The point estimates for the categorization using the 'housewife' question in the third column are similar in sign, but lose statistical significance. The same basic message comes through for the results on the number of children in the 2nd and 4th column as well—a smaller overall impact of the cultural variable in the more traditional countries, with little change to the education gradient. This evidence goes some way in suggesting that these women assimilate (in relative terms) more quickly, although with less evidence of a differential education gradient.[27] These results therefore do not lend support to the 'life view' channel described above which suggested that the education gradient in cultural assimilation might be explained by the gap between the gender attitudes in source countries versus the attitudes prevalent in Canada.

4.4 Summary

In this section we examined different potential mechanisms that might underly the education gradient in cultural assimilation. By looking at earnings regressions, we found little evidence for unobserved human capital that might be correlated with our source-country culture variables. We also found little evidence to support the notion that higher education leads to speedier assimilation because of decreased exposure to the source-country culture through extended peer interactions with other Canadians while attending higher education. Finally, we do not find evidence that women from cultures more traditional than Canada show a different education-assimilation profile, which casts doubt on the idea that education causes Canadian attitudes about women, family, and work to displace source-country attitudes.

The explanations for the education gradient explored here have failed to yield a clear indication of the source of the gradient. We still view our work here as a contribution by suggesting productive paths for future research on this topic. In particular, explanations we were not able to test here—such as the 'skills' component of human capital—should be examined more carefully. Moreover, progress in understanding any phenomenon also proceeds by learning what channels may not be actively contributing to it.

[27] In absolute terms, more traditional source countries tend to be farther away from Canadian conditions (see Figure 3), and thus actual assimilation may have be as far progressed as for the other group. Also note that women in the more traditional source country group work more, not less, than their progressive counterparts. As noted before, this is true for the source countries in 1950 as well: countries such as the US, China, Turkey, Denmark, the Philippines, and Norway had more traditional gender roles than Canada but higher female labor force participation.

5 Concluding Remarks

In this paper we examine the impact of culture on the work and fertility decisions of second-generation immigrants to Canada. We take the fertility and female work patterns observed in the immigrant family's source country in 1950 and relate those historical cultural elements to decisions made by working-age women in Canada in 2001. Using a standard approach from an influential paper in the literature, We find mixed evidence that these cultural variables matter for hours worked and for the number of children born to second-generation immigrant women in Canada. This suggests that the path of cultural assimilation may differ in contexts other than the 1970 U.S. cohort studied in Fernandez and Fogli (2009). However, once we allow the impact of cultural influences to vary by education, our results align much more closely with the existing literature.

We uncover a novel result: an education gradient in cultural assimilation. Women with low levels of education exhibit work and fertility decisions reflecting a strong and persistent influence of the historical source-country patterns of work and fertility. In sharp contrast, the decisions of women with university degrees show no influence of source-country cultural variables. Having established this result, we proceed to explore several possible explanations for the source of the education gradient. We present tests for the influence of unobserved human capital, peer effects through more exposure to Canadian culture, and gaps between source-country and Canadian gender attitudes. However, none of these explanations yields confirming evidence.

Questions about cultural assimilation of immigrants to Western countries have risen to a prominent position in public debate. Our finding that higher education is associated with speedier cultural assimilation should present a contribution to this debate. However, further research into the sources of the education gradient of cultural assimilation is needed before precise policy recommendations can flow from this finding.

References

Adserà, Alícia, and Ana Ferrer (2016) 'Occupational skills and labour market progression of married immigrant women in Canada.' *Labour Economics* 39, 88–98

Adserà, Alícia, and Ana M Ferrer (2014) 'The myth of immigrant women as secondary workers: Evidence from Canada.' *The American Economic Review* 104(5), 360–364

Alesina, Alberto, and Nicola Fuchs-Schündeln (2007) 'Good-bye Lenin (or not?): The effect of communism on people's preferences.' *The American Economic Review* 97(4), 1507–1528

Almond, Douglas, Lena Edlund, and Kevin Milligan (2013) 'Son preference and the persistence of culture: evidence from South and East Asian immigrants to Canada.' *Population and Development Review* 39(1), 75–95

Angrist, Josh (2002) 'How do sex ratios affect marriage and labor markets? evidence from America's second generation.' *Quarterly Journal of Economics* 117(3), 997–1038

Antecol, Heather (2000) 'An examination of cross-country differences in the gender gap in labor force participation rates.' *Labour Economics* 7(4), 409–426

Blau, Francine D, Lawrence M Kahn, Albert Yung-Hsu Liu, and Kerry L Papps (2013) 'The transmission of womens fertility, human capital, and work orientation across immigrant generations.' *Journal of Population Economics* 26(2), 405–435

Blau, Francine D, Lawrence M Kahn, and Kerry L Papps (2011) 'Gender, source country characteristics, and labor market assimilation among immigrants.' *The Review of Economics and Statistics* 93(1), 43–58

Bolzendahl, Catherine I, and Daniel J Myers (2004) 'Feminist attitudes and support for gender equality: Opinion change in women and men, 1974–1998.' *Social Forces* 83(2), 759–789

Borjas, George J (1995) 'Ethnicity, neighborhoods, and human-capital externalities.' *American Economic Review* 85(3), 365–90

Calvo-Salguero, Antonia, José Miguel Ángel García-Martínez, and Adelaida Monteoliva (2008) 'Differences between and within genders in gender role orientation according to age and level of education.' *Sex Roles* 58(7-8), 535–548

Carroll, Christopher D, Byung-Kun Rhee, and Changyong Rhee (1994) 'Are there cultural effects on saving? Some cross-sectional evidence.' *The Quarterly Journal of Economics* 109(3), 685–699

Chiswick, Barry R (1988) 'Differences in education and earnings across racial and ethnic groups: Tastes, discrimination, and investments in child quality.' *The Quarterly Journal of Economics* 103(3), 571–597

Citizenship and Immigration Canada (2015) 'Canada fact and figures: Immigrant overview – permanent residents 2014'

Dasgupta, Shamita Das (1998) 'Gender roles and cultural continuity in the Asian Indian immigrant community in the US.' *Sex roles* 38(11-12), 953–974

Davis, Nancy J, and Robert V Robinson (1991) 'Men's and women's consciousness of gender inequality: Austria, West Germany, Great Britain, and the United States.' *American Sociological Review* 56(1), 72–84

Denessen, Eddie, Geert Driessen, Frederik Smit, and Peter Sleegers (2001) 'Culture differences in education: Implications for parental involvement and educational policies.' *A bridge to the future* pp. 55–66

Eylem Gevrek, Z., Deniz Gevrek, and Sonam Gupta (2013) 'Culture, intermarriage, and immigrant women's labor supply.' *International Migration* 51(6), 146–167

Fernandez, Raquel (2007) 'Alfred Marshall Lecture: Women, work, and culture.' *Journal of the European Economic Association* 5(2-3), 305–332

Fernandez, Raquel, Alessandra, and Fogli (2006) 'Fertility: The role of culture and family experience.' *Journal of the European Economic Association* 4(2-3), 552–561

Fernández, Raquel, Alessandra Fogli, and Claudia Olivetti (2004) 'Mothers and sons: Preference formation and female labor force dynamics.' *The Quarterly Journal of Economics* 119(4), 1249–1299

Fernandez, Raquel, and Alessandra Fogli (2009) 'Culture: An empirical investigation of beliefs, work, and fertility.' *American Economic Journal: Macroeconomics* 1(1), 146–77

Fortin, Nicole M (2015) 'Gender role attitudes and womens labor market participation: Opting-out, AIDS, and the persistent appeal of housewifery.' *Annals of Economics and Statistics* (117–118), 379–401

Frank, Kristyn, and Feng Hou (2015) 'Source-country gender roles and the division of labor within immigrant families.' *Journal of Marriage and Family* 77(2), 557–574

Fuligni, Andrew J, and Melissa Witkow (2004) 'The postsecondary educational progress of youth from immigrant families.' *Journal of Research on Adolescence* 14(2), 159–183

Gibson, Campbell J., and Emily Lennon (1999) 'Historical census statistics on the foreign-born population of the United States: 1850-1990.' *Population Division Working Paper No. 29* p. https://www.census.gov/population/www/documentation/twps0029/twps0029.html

Greif, Avner (1994) 'Cultural beliefs and the organization of society: A historical and theoretical reflection on collectivist and individualistic societies.' *The Journal of Political Economy* 31, 865–88

Haidt, Jonathan, Silvia Helena Koller, and Maria G Dias (1993) 'Affect, culture, and morality, or is it wrong to eat your dog?' *Journal of personality and social psychology* 65(4), 613

Henrich, J., R. Boyd, S. Bowles, C. Camerer, E. Fehr, H. Gintis, and R. McElreath (2001) 'In search of homo economicus: Behavioral experiments in 15 small-scale societies.' *The American Economic Review* 91(2), 73–78

Pew Research Center (2016) 'Statistical portrait of the foreign-born population in the United States.' http://www.pewhispanic.org/2016/04/19/

Phinney, Jean S, and Juana Flores (2002) 'Unpackaging acculturation aspects of acculturation as predictors of traditional sex role attitudes.' *Journal of Cross-Cultural Psychology* 33(3), 320–331

Riphahn, Regina T. (2003) 'Cohort effects in the educational attainment of second generation immigrants in Germany: An analysis of census data.' *Journal of Population Economics* 16(4), 711–737

Statistics Canada (2017) 'Immigration and ethnocultural diversity highlight tables, 2016 census.' *Statistics Canada Catalogue no. 98-402-X2016007*

Suárez-Orozco, Carola, and Desirée Baolian Qin (2006) 'Gendered perspectives in psychology: Immigrant origin youth.' *International Migration Review* 40(1), 165–198

Zhou, Min (1997) 'Growing up American: The challenge confronting immigrant children and children of immigrants.' *Annual review of sociology* 29, 63–95

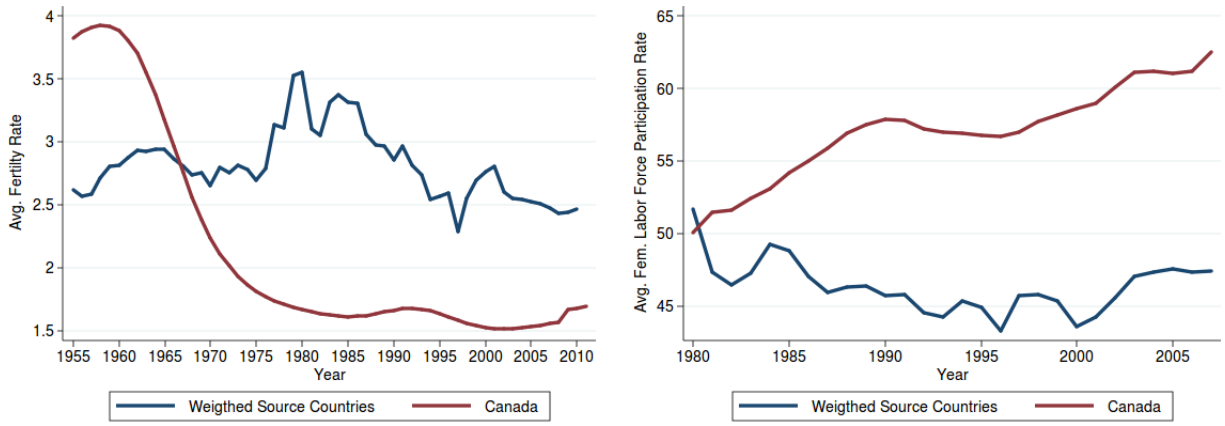

Figure 1: Fertility and FLP rates in Canada versus Immigrant Source Countries

Source: International Labor Organization and United Nations Demographic Yearbook. For the period 1997-2001, the data are only available for a few selected countries. Details are available from the authors upon request.

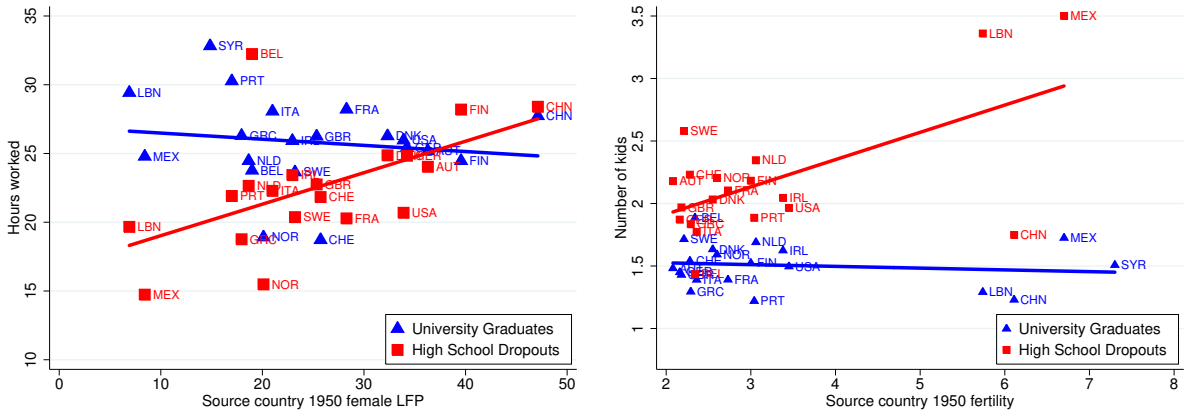

Figure 2: Work and Fertility, 2001 Canada vs. 1950 Source Country

Source: Authors' calculations using the 2001 Canadian Census.

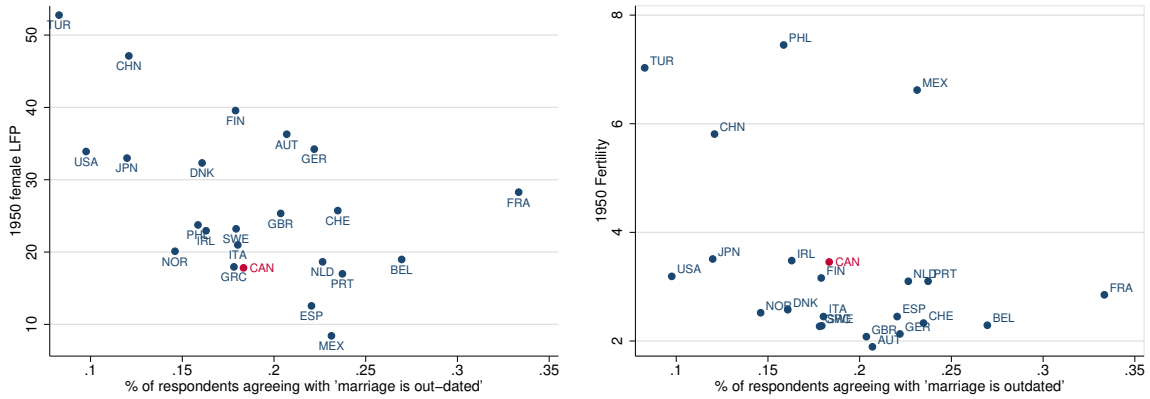

Figure 3: Source Country Culture Proxy and Cultural Values

Source: World Values Survey, various years.

Source Country	Sample Proportion	Data from 1950 Female LFP	TFR
Italy	0.302	21.0	2.4
United Kingdom	0.208	25.3	2.2
Netherlands	0.135	18.7	3.1
Germany	0.101	34.2	2.2
Greece	0.046	18.0	2.3
United States	0.043	33.9	3.5
Portugal	0.032	17.0	3.0
China, People's Republic of	0.030	47.1	6.1
Ireland, Republic of (EIRE)	0.021	23.0	3.4
Denmark	0.013	32.3	2.6
Austria	0.012	36.3	2.1
France	0.011	28.3	2.7
Belgium	0.009	19.0	2.3
Finland	0.006	39.6	3.0
Lebanon	0.006	6.9	5.7
Switzerland	0.005	25.7	2.3
Mexico	0.004	8.4	6.7
Norway	0.003	20.1	2.6
Spain	0.003	12.6	2.6
Sweden	0.002	23.2	2.2
Philippines	0.002	23.8	7.3
Turkey	0.002	52.8	6.9
Syria	n.a.	14.9	7.3
Cuba	n.a.	12.2	4.2
Japan	n.a.	33.0	3.0

[a] **Note:** Sample proportions from the 2001 Canadian Census. Reported is the proportion of the sample coming from each country of birth, categorized by the country of birth of the women's father. "N.a." indicates not available—Syria, Japan, and Cuba are suppressed to respect Statistics Canada's disclosure guidelines. Female LFP is the female labor force participation percentage, taken from the International Labor Organization data. TFR is the total fertility rate, taken from the United Nations demographic yearbook.

Table 1: Sample Proportions and Source Country Labor Force and Fertility

		Mother Education Subsamples					
	Main Sample	Highschool incomplete	Highschool Diploma	some post-secondary	University Degree	Canadian born Both parents	Immigrants
Weekly work hours	25.2	22.5	23.8	25.2	26.6	25.2	23.5
	(18.8)	(19.2)	(18.8)	(18.5)	(19.3)	(18.9)	(19.7)
Number of children under age 18	1.7	2.0	1.9	1.8	1.4	1.8	1.7
	(1.1)	(1.2)	(1.1)	(1.1)	(1.1)	(1.1)	(1.2)
FLP in country of origin 1950	24.5	24.1	23.6	24.3	25.2		25.4
	(7.1)	(6.8)	(6.3)	(6.9)	(7.8)		(7.8)
TFR in country of origin 1950	2.7	2.7	2.6	2.6	2.7		3.8
	(0.9)	(0.9)	(0.7)	(0.8)	(1.0)		(1.7)
Age	35.2	35.7	35.8	35.2	34.8	35.6	35.4
	(3.1)	(3.1)	(3.1)	(3.1)	(3.1)	(3.1)	(3.0)
Highschool incomplete	0.077	1.000	0.000	0.000	0.000	0.143	0.092
Highschool diploma	0.144	0.000	1.000	0.000	0.000	0.159	0.111
Some PSE	0.508	0.000	0.000	1.000	0.000	0.497	0.486
University degree	0.270	0.000	0.000	0.000	1.000	0.201	0.311
Age of partner	37.6	38.5	38.5	37.6	36.8	38.2	38.4
	(5.1)	(5.8)	(4.9)	(5.0)	(5.0)	(5.1)	(6.0)
Partner highschool incomplete	0.119	0.495	0.155	0.102	0.025	0.180	0.114
Partner highschool diploma	0.120	0.094	0.287	0.116	0.046	0.140	0.106
Partner some post-secondary	0.511	0.375	0.476	0.626	0.355	0.496	0.482
Partner university degree	0.249	0.036	0.083	0.156	0.574	0.184	0.298
Income of partner	5.5	4.1	4.8	5.2	6.7	4.9	5.6
	(6.2)	(3.2)	(4.1)	(5.3)	(8.5)	(6.0)	(8.0)
Canada born	1.000	1.000	1.000	1.000	1.000	1.000	0.000
Canada-born father	0.000	0.000	0.000	0.000	0.000	1.000	0.139
Canada-born mother	0.268	0.333	0.272	0.265	0.252	1.000	0.145
Canada-born partner	0.828	0.817	0.809	0.835	0.826	0.938	0.944
Speaks foreign language	0.203	0.194	0.191	0.202	0.212	0.016	0.291
Above average ethnic share	0.755	0.751	0.775	0.766	0.726	0.720	0.715
Same-ethnic pctage in neighborhood	0.155	0.175	0.160	0.157	0.143	0.351	0.139
	(0.143)	(0.156)	(0.143)	(0.144)	(0.134)	(0.248)	(0.157)
Sample	150720	11650	21745	76615	40705	833165	73635

Note: Source is 2001 Canadian census. The mean of each variable is noted; standard deviations are in parentheses for non-binary variables. Sample size is population-level equivalent. PSE is Post-secondary education.

Table 2: Descriptive Statistics

dependent variable	Weekly Hours worked in 2001			
	(1)	(2)	(3)	(4)
culture proxy FLFP1950	0.053**	0.039*	0.047**	0.048**
	(0.020)	(0.020)	(0.018)	(0.020)
high school		0.941**	1.554***	1.553***
		(0.342)	(0.373)	(0.373)
some PSE		2.564***	3.708***	3.707***
		(0.461)	(0.467)	(0.467)
university degree+		3.845***	6.433***	6.434***
		(0.802)	(0.709)	(0.708)
2nd culture proxy TFR1950				-0.036
				(0.124)
husband controls	no	no	yes	yes
adj R^2	0.008	0.011	0.026	0.026
obs (rounded)	29370	29370	29370	29370

[a] **Note:** The main culture proxy of interest is female labor force participation in country of ancestry 1950 (father). The second cultural proxy is fertility rates in country of ancestry 1950 (father). The sample consists of married 2n generation immigrant women 30-40 years old. All regressions have CMA fixed effects and include age and age square. Husband controls are age, age square, education, and income. Standard errors clustered at country of ancestry. Superscripts ***, ** and * indicate significance at 1%, 5% and 10%, respectively.

Table 3: Cultural Influence on Labor Supply

dependent variable	Number of Children in 2001			
	(1)	(2)	(3)	(4)
culture proxy TFR1950	0.022	0.031	0.029	0.051**
	(0.052)	(0.045)	(0.044)	(0.024)
high school		-0.065	-0.082*	-0.084*
		(0.050)	(0.046)	(0.045)
some PSE		-0.184***	-0.199***	-0.194***
		(0.037)	(0.034)	(0.030)
university degree+		-0.443***	-0.447***	-0.435***
		(0.050)	(0.052)	(0.047)
2nd cultural proxy FLFP1950				-0.012***
				(0.004)
spousal controls	no	no	yes	yes
adj R^2	0.09	0.106	0.123	0.128
obs (rounded)	29370	29370	29370	29370

[a] **Note:** The main culture proxy of interest is the fertility rate in country of ancestry 1950 (father). The second cultural proxy is female labor force participation in country of ancestry 1950 (father). The sample consists of married second-generation immigrant women 30-40 years old. All regressions have CMA fixed effects and include age and age square. Husband controls are age, age square, education dummies, and income. Standard errors clustered at country of ancestry. Superscripts ***, ** and * indicate significance at 1%, 5% and 10%, respectively.

Table 4: Cultural Influence on Fertility

dependent variable	Weekly Hours worked in 2001				Number of Children in 2001			
	(father)	(mother)	(partner's father)	(1980)	(father)	(mother)	(partner's father)	(1980)
Culture proxy	0.047**	0.024	0.005	0.006	0.029	0.038	0.013	0.029
	(0.018)	(0.028)	(0.016)	(0.023)	(0.044)	(0.040)	(0.027)	(0.044)
high school	1.554***	1.203***	1.535***	1.468***	-0.082*	-0.045	-0.083**	-0.082*
	(0.373)	(0.368)	(0.344)	(0.396)	(0.046)	(0.047)	(0.041)	(0.046)
some PSE	3.708***	3.576***	3.894***	3.627***	-0.199***	-0.184***	-0.197***	-0.199***
	(0.467)	(0.500)	(0.451)	(0.427)	(0.034)	(0.043)	(0.031)	(0.034)
university degree+	6.433***	6.749***	6.696***	6.576***	-0.447***	-0.427***	-0.440***	-0.447***
	(0.709)	(0.496)	(0.594)	(0.680)	(0.052)	(0.055)	(0.046)	(0.052)
adj R^2	0.026	0.027	0.025	0.026	0.123	0.124	0.117	0.123
obs (rounded)	29370	28070	35590	27280	29370	28070	35590	29370

[a] **Note:** Culture proxy is female LFP and/or fertility rates in country of ancestry 1950. The sample consists of married second-generation immigrant women 30-40 years old. All regressions have CMA fixed effects and include age and age square. Husband controls are age, age square, education, and income. Standard errors clustered at country of ancestry. Superscripts ***, ** and * indicate significance at 1%, 5% and 10%, respectively.

Table 5: Cultural transmission (Baseline Sensitivity Analysis)

	Weekly hours worked		Number of Children	
	Base	Interaction	Base	Interaction
Culture proxy	0.047**	0.207***	0.029	0.237***
	(0.018)	(0.067)	(0.044)	(0.075)
High School	1.554***	4.301**	-0.082*	0.350**
	(0.373)	(1.889)	(0.046)	(0.173)
Some PSE	3.708***	7.693***	-0.199***	0.353**
	(0.467)	(2.025)	(0.034)	(0.148)
University degree+	6.433***	11.409***	-0.447***	0.253
	(0.709)	(2.448)	(0.052)	(0.184)
Culture proxy x High School		-0.112*		-0.160**
		(0.069)		(0.069)
Culture proxy x Some PSE		-0.165**		-0.207***
		(0.076)		(0.059)
Culture proxy x Uni Degree+		-0.204**		-0.261***
		(0.091)		(0.069)
adj R^2	0.026	0.026	0.123	0.126
obs (rounded)	29370	29370	29370	29370

[a] **Note:** Culture proxy is female LFP and/or fertility rates in country of ancestry 1950 (father). The sample consists of married second-generation immigrant women 30-40 years old. All regressions have CMA fixed effects, include age and age square, and spousal controls (husband age, age square, education, and income). Standard errors clustered at country of ancestry. Superscripts ***, ** and * indicate significance at 1%, 5% and 10%, respectively.

Table 6: Education on Cultural Transmission

dependent variable	Weekly Hours worked in 2001				Number of Children in 2001			
	(father)	(mother)	(partner's father)	(1980)	(father)	(mother)	(partner's father)	(1980)
Culture proxy	0.207***	0.152***	0.052	0.019	0.237***	0.251***	0.080	0.229**
	(0.067)	(0.055)	(0.089)	(0.045)	(0.075)	(0.091)	(0.096)	(0.096)
high school	4.301**	5.229**	3.296	1.423	0.350*	0.392	0.363	0.366**
	(1.889)	(2.015)	(2.578)	(1.766)	(0.173)	(0.241)	(0.248)	(0.147)
some PSE	7.693***	6.472***	4.17*	4.702**	0.353**	0.418**	0.142	0.215
	(2.025)	(1.360)	(2.274)	(1.880)	(0.148)	(0.207)	(0.266)	(0.153)
university degree+	11.409***	10.415***	7.853***	7.269***	0.253	0.278	-0.106	0.033
	(2.448)	(1.649)	(2.250)	(2.440)	(0.184)	(0.233)	(0.267)	(0.174)
culture ×high school	-0.112	-0.168**	-0.093	0.003	-0.160**	-0.160	-0.135*	-0.239***
	(0.069)	(0.083)	(0.124)	(0.041)	(0.069)	(0.100)	(0.081)	(0.083)
culture ×some PSE	-0.165**	-0.120**	-0.028	-0.019	-0.207***	-0.223**	-0.102	-0.218**
	(0.076)	(0.048)	(0.112)	(0.045)	(0.059)	(0.087)	(0.088)	(0.088)
culture × uni degree	-0.204**	-0.151**	-0.064	-0.014	-0.261***	-0.261***	-0.101	-0.249***
	(0.091)	(0.065)	(0.110)	(0.054)	(0.069)	(0.091)	(0.090)	(0.094)
adj R^2	0.026	0.027	0.026	0.025	0.126	0.127	0.123	0.119
obs (rounded)	29,370	28,070	27,280	35,590	29,370	28,070	29,190	35,590

[a] **Note:** Culture proxy is female LFP and/or fertility rates in country of ancestry 1950. The sample consists of married second-generation immigrant women 30-40 years old. All regressions have CMA fixed effects, include age and age square, and spousal controls (husband age, age square, education, and income). Standard errors clustered at country of ancestry. Superscripts ***, ** and * indicate significance at 1%, 5% and 10%, respectively.

Table 7: Education and Cultural Transmission (Sensitivity Analysis)

dependent variable	Annual earnings in 2001				
	(1)	(2)	(3)	(4)	(5)
culture proxy FLFP1950		0.003**		0.002**	0.007
		(0.001)		(0.001)	(0.005)
experience	-0.003	-0.003	-0.009	-0.009	-0.008
	(0.013)	(0.013)	(0.012)	(0.012)	(0.013)
experience squared	0.001	0.001	0.001	0.001	0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
high school	0.174***	0.173***	0.154***	0.154***	0.228
	(0.044)	(0.044)	(0.041)	(0.041)	(0.145)
some PSE	0.398***	0.395***	0.364***	0.362***	0.473***
	(0.046)	(0.047)	(0.043)	(0.043)	(0.134)
university degree+	0.817***	0.810***	0.739***	0.735***	0.854***
	(0.044)	(0.045)	(0.041)	(0.041)	(0.140)
culture × high school					-0.003
					(0.007)
culture × some PSE					-0.005
					(0.005)
culture × uni degree					-0.005
					(0.006)
spousal controls	no	no	yes	yes	yes
adj R^2	0.0731	0.0733	0.0756	0.076	0.0757
obs (rounded)	24,980	24,980	24,980	24,980	24,980

[a] **Note:** Dependent variable is the log of annual earnings. The sample consists of married second-generation immigrant women 30-40 years old. All regressions have CMA fixed effects. The husband controls are age, age square, education, and income. Standard errors clustered at country of ancestry. Superscripts ***, ** and * indicate significance at 1%, 5% and 10%, respectively.

Table 8: Earnings and Culture

Sample Dep. Variable	Main Std. Index	Main Index≥3	Extended Std. Index	Extended Index≥ 3
High school	0.214	0.191	0.046	0.047
	(0.170)	(0.131)	(0.129)	(0.061)
Some PSE	0.471***	0.328***	0.311***	0.212***
	(0.135)	(0.099)	(0.105)	(0.057)
University degree+	0.615***	0.372***	0.467***	0.264***
	(0.137)	(0.095)	(0.077)	(0.056)
Mean	0.262	0.598	0.252	0.591
Std Deviation	(0.806)	(0.491)	(0.791)	(0.492)
adj R^2	0.159	0.147	0.096	0.079
obs (rounded)	560	560	1160	1160

[a] **Note:** Data from the 2002 Ethnic Diversity Survey. Married second-generation immigrant women 30-40 years old in the main sample. Extended sample has ages 25-50. All regressions have CMA fixed effect, include age and age square, as well as age, age square, education, and income of husband. Standard errors clustered at country of ancestry. Superscripts ***, ** and * indicate significance at 1%, 5% and 10%, respectively.

Table 9: Education and Cultural Attachment

dependent variable	Home Culture		Neighborhood Culture		
	Partner Can	Foreign Language	> Avr Ethn	Narrow Ethn	Broad Ethn
High school	-0.014	0.002	0.006	0.000	-0.001
	(0.013)	(0.020)	(0.009)	(0.004)	(0.003)
Some PSE	-0.001	0.017	-0.006	-0.003	-0.003
	(0.009)	(0.014)	(0.009)	(0.004)	(0.004)
University degree+	-0.011	0.023*	-0.034**	-0.011**	-0.007
	(0.016)	(0.012)	(0.012)	(0.003)	(0.003)
Mean	0.828	0.203	0.755	0.155	0.179
Std Deviation	(0.378)	(0.402)	(0.430)	(0.143)	(0.195)
adj R^2	0.044	0.109	0.188	0.495	0.801
obs (rounded)	29,370	20,670	29,370	29,370	29,370

[a] **Note:** The dependent variables are defined as follows. Partner Canborn is binary and equals one if the respondent's partner is Canadian born. Foreign Language is binary which equals one if a foreign language other than English or French (the two official languages) is spoken in the home. The > Avg Ethn variable is binary and equals one if the women lives in a neighborhood with above average level of her ethnic group. Narrow Ethn is defined as the share of the same-ethnicity group in the neighborhood where the women resides using exact country of origin match. Broad Ethn is the same measure but defining ethnicity more broadly by grouping ethnicities into 14 regions in the world. Sample is from the 2001 census, selecting married second-generation immigrant women 30-40 years old. All regressions have CMA fixed effect, include age and age square, as well as age, age square, education, and income of husband. The neighborhood regressions also include an ethnic group fixed effect. Standard errors clustered at country of ancestry. Superscripts ***, ** and * indicate significance at 1%, 5% and 10%, respectively.

Table 10: Education and Spousal/Family Culture

VWS Question	Single Mothers		Housewife	
dependent variable	hours	children	hours	children
culture proxy	0.317***	0.254***	0.230***	0.316***
	(0.062)	(0.036)	(0.051)	(0.025)
culture × high school	-0.234***	-0.151**	-0.128*	-0.142**
	(0.074)	(0.056)	(0.064)	(0.070)
culture × some PSE	-0.246***	-0.159***	-0.194***	-0.154***
	(0.067)	(0.054)	(0.065)	(0.060)
culture × uni degree+	-0.335***	-0.199***	-0.268***	-0.210***
	(0.079)	(0.060)	(0.064)	(0.063)
traditional	1.344*	0.118	-0.171	0.395***
	(0.738)	(0.126)	(1.231)	(0.123)
traditional × culture	-0.125**	-0.155***	-0.051	-0.222***
	(0.047)	(0.049)	(0.056)	(0.040)
traditional × culture × high school	0.114***	-0.008	0.019	0.006
	(0.033)	(0.048)	(0.030)	(0.035)
traditional × culture × some PSE	0.080*	0.043	0.063**	0.034
	(0.040)	(0.040)	(0.026)	(0.025)
traditional × culture × uni degree+	0.130**	0.059	0.108***	0.064**
	(0.059)	(0.041)	(0.030)	(0.027)
adj R^2	0.026	0.133	0.027	0.133
obs (rounded)	29370	29370	29370	29370

[a] **Note:** The dependent variable is either Hours Worked in 2001 or Number of Children in 2001 and the cultural proxy is either FLFP and LFP in 1950, respectively. Sample is married second-generation immigrant women 30-40 years old. All regressions have CMA fixed effect, include age and age square, as well as age, age square, education, and income of husband. Source countries are coded as traditional (traditional =1) if the women's father's home country was more traditional than Canada on the respective question of the WVS. Standard errors clustered at country of ancestry. Superscripts ***, ** and * indicate significance at 1%, 5% and 10%, respectively

Table 11: Progressive vs Traditional Source Countries and Acculturation