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The Intergenerational Effect of Forcible Assimilation Policy on Education

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Abstract

For nearly a century, the Canadian government separated Indigenous children from their families and placed them in live-in institutions known as residential schools. Many speculate that this policy contributes to the struggles Indigenous children face today. Using a unique confidential data set, I identify the effects of a mother attending a residential school on her children. I find that children whose mother attended residential school fare better along health dimensions and yet worse along educational dimensions. I provide suggestive evidence that these findings are due to residential schooling impacting parenting style and parental attitudes towards education.

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"...[Residential schools'] impact has been transmitted from grandparents to parents to children. This legacy from one generation to the next has contributed to social problems, poor health, and low educational success rates in Indigenous communities today," (Truth and Reconciliation Commission (TRC) 2012, p.1).

"[f]or individuals, their removal as children and the abuse they experienced at the hands of the authorities or their delegates have permanently scarred their lives. The harm continues in later generations, affecting their children and grandchildren," (Wilson 1997, p.4).

1   Introduction

Educational differences between Indigenous and non-Indigenous peoples are prevalent in many countries, yet the extent of these differences varies considerably (United Nations 2009). For example, the differences in high school graduation rates between Indigenous and non-Indigenous people in Canada and Australia were nearly 30 percent.[1] In contrast, in New Zealand the difference was 13 percent (United Nations 2009).[2] While many informal explanations have been given for the educational differences and how it varies across countries, one policy often cited is the forcible removal of Indigenous children from their homes and their placement in boarding schools.[3] The statistics discussed above are consistent with the conjecture these schools

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[1] For 2006 and 2008 respectively.
[2] For 2006.
[3] See TRC (2012), Wilson (1997); Milloy (1999) and Smith (2009).

have large negative impacts: both Canada and Australia aggressively implemented policies of child removal and boarding schools while New Zealand did not (Smith 2009). The purpose of this paper is to examine this conjecture in more detail and within the Canadian context. To do so, I use the confidential wave of the Canadian 2001 Aboriginal Peoples Survey of Children and Youth to identify the intergenerational effects of residential schooling and the mechanisms through which they may operate.

In Canada, the boarding schools Indigenous children were forced to attend are known as Indian Residential Schools. These institutions were designed to educate and culturally assimilate Indigenous children. It is generally assumed that the effects of residential schools were traumatically negative for those generations that attended and through this impact, the schools are a cause of the health and educational struggles facing Indigenous youth today.[4] I find support for residential schooling having large negative effects on the next generations' education but through unexpected channels. Specifically, while I find negative effects on education, I simultaneously find positive effects on the next generations' health and no effect on parental outcomes. I explore this puzzling result and offer suggestive evidence on plausible mechanisms.

I begin by constructing a simple empirical model of the production of child outcomes that allows for outcomes to depend on residential school attendance. I also allow mothers to be systematically selected to attend residential school based on a set of unobservable family background characteristics. I use this framework to clarify the necessary restrictions for the effect of mother's residential school attendance to be identified and then use a quasi-family fixed

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[4] See Deiter (1999), Aboriginal Healing Foundation (2002), Smith et al 2005, Chrisjohn et al (2006), Stonefish (2007); Smith (2009) and Richards and Scott (2009).

effect estimator to identify the effects of mother's residential school attendance on her children's health and schooling outcomes.

Consistent with previous literature, I confirm that mothers who attended residential school do not have measurably poorer socio-economic status than those that did not (Feir 2012; Jones 2013). I then demonstrate that children who attended residential school, contrary to popular belief, are healthier than children whose mothers did not attend residential school even conditional on parental characteristics. Children of mothers who attended residential school are likely to be two percentage points taller, have a four percentage point lower BMI, and to be 14 percent more likely to be very physically active than other children their age. They are also five percentage points less likely to suffer injury and are six percentage points more likely to have been breast fed.

These findings and the nearly canonical positive association between parental socio-economic status and child health would lead one to expect that children whose mothers attended residential school would have better academic outcomes on average than those whose mothers did not.[5] Yet, I find the opposite. Children whose mothers attended residential school, despite having better health, perform worse along numerous educational dimensions. For example, they are nearly 15 percent less likely to get along with their teachers, 12.5 percentage points less likely to like school almost all of the time, 10 to 15 percentage points less likely to win awards and they are five percentage points more likely to be expelled or suspended. In fact, nearly 20

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[5] See Barrera (1990); Glewwe (1999); Case et al (2005); Lindeboom et al (2009); Maccini and Yang (2009).

percent of the gap in suspensions and expulsions between Registered Indian children and school aged children in Ontario could be explained by mother's residential school attendance.[6]

To the best of my knowledge this is the first work demonstrating that an intervention that increases educational attainment for the first generation (or at least doesn't decrease it) may actually decrease educational attainment for the second. This is a novel contribution to the literature that investigates the intergenerational persistence of education.[7] I believe this is also the first work that examines an intervention that positively impacts child health but negatively impacts child educational attainment.

Given the extremely established positive association between education and health, these findings present a bit of a puzzle. I provide suggestive evidence these results cannot easily be explained by the locational choice of the mother and suggest they could be explained by a change in parenting style. Specifically, I suggest that mothers that attended residential school may invest more in behaviours that increase the health of their children but may develop more negative attitudes towards Western education. I investigate the first mechanism by examining the effect of residential schooling on probability of their child being seriously injured in the past

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[6] Approximately 17 percent of Registered Indian children are suspended or expelled between the ages of 7 to 15 in my data. Approximately 8 percent of children in Ontario are suspended or expelled (Ontario Ministry of Education 2011). I estimate that mother's residential school attendance increases the likelihood of suspension or expulsion by about 6 percentage points. Approximately 20 percent of Registered Indian children's mothers attended residential school and about 20 percent of them were suspended or expelled as opposed to 15 percent of children whose mothers did not attend. The appropriate calculations imply residential school thus accounts for approximately 20 percent of the gap.

[7] See Thomas et al (1991); Behrman and Rosenzweig (2002); Currie and Moretti (2003); Oreopoulos et al (2003); Plug (2004); Antonovics and Goldberger (2005); Black et al (2005); Currie (2008); and Black and Devereux (2010).

year, eating vegetables every day, having been to the dentist in the past year, the likelihood of being breast fed, and the child's birth weight.

I investigate the second mechanism in two ways. First, I use data from the 1991 Aboriginal Peoples Survey to examine individual's experiences in school by residential school attendance. Second, I demonstrate that the negative educational findings are isolated among children who did not learn an Aboriginal language from their teachers. This could plausibly suggest that mothers are less supportive of education when their children are in educational environments that do not actively support Indigenous culture. Thus this work also contributes to the growing literature on the importance of the intergenerational transmission of attitudes and how they affect children's educational attainment (Foley et al 2012; Dohmen et al 2012). These findings also give a unique perspective on the possible importance of school-family match for child success.

In the next section I provide a brief history of residential schooling and discuss the existing literature on the intergenerational effects of residential schools. In Section 3 I discuss the data and basic patterns. In Section 4 I discuss the conceptual and empirical framework and in Section 6 , I present reduced form results. The last section concludes.

2   Brief History and Literature Review

The intergenerational effect of residential schooling and the channels through which it operates are of substantial importance. In Australia, as many as one in three Indigenous children were removed from their homes and in Canada it is estimated that 150,000 Indigenous children attended residential schools, with 80,000 former students living as of 2012 (Wilson 1997; TRC

2012). As of 2001, nearly 50 percent of individuals who identify as North American Indian in Canada reported that at least one family member attended residential school (Statistics Canada 2003).

Residential schooling existed in some form in Canada from the early 1800s until the late 1900s and was explicitly intended to assimilate Indigenous children. The Indian Act permitted the forcible removal of children into residential school beginning in 1920. If the law were enforced to its full extent, children could be forcefully removed from their home and their parents subject to fines or imprisonment if they resisted (Government of Canada 1920).

The discussion of residential schools often provokes very strong negative reactions. Numerous authors argue the residential schooling system was an attempt by the government to eradicate the Indigenous way of life (Chrisjohn et al 2006). Some academics have concluded that terms like "cultural genocide" and "ethnocide" are appropriate (Assembly of First Nations (AFN) 2002). Hudson and MacDonald assert that "the essence of what the Indian residential schooling system was…the attempted destruction of Indigenous languages, religions, and cultures in Canada" (Hudson and MacDonald 2012, p.4).

Children were often taken extraordinary distances to attend a residential school and many didn't see their family for years (Miller 1996, p.311-312; Aboriginal Healing Foundation, 2002; McFarlane 1999). Children were also often separated from their siblings and reports of loneliness were common. The school system was much more regulated than children's lives at home: half the day was spent in manual labour, while the other half in academics and religion (Gresko 1979; Milloy 1999). The manual labour component of residential schools partly funded the schools operations until it was officially banned in 1951 (Government of Canada 1997).

Upon arrival, children's clothing was replaced and their hair was cut. For some children, the act of removing their braids was particularly traumatic given their hair's cultural and spiritual significance (TRC 2012). Part of the residential school curriculum was cultural learning such as ethics, Western culture, and gender roles. Children were only permitted to speak English and were punished for speaking their native language. Some of these punishments were reported to have been severe. Examples of such severe punishment include being beaten to the point of permanent scarring (Crey and Fournier 1998, p.62), having needles inserted into one's tongue (Aboriginal Healing Foundation 2002, p.6), and being locked in a small closet for hours (TRC 2012). Residential schools are now notorious for the abuses children suffered when attending.[8]

Before the late 1960s, "Indians took no part in the processes of education," as a result of legal barriers and exclusion (Hawthorn 1967, p.40). However, parents frequently resisted the residential schooling system and attempted to prevent their children from attending these schools (Furniss 1995; Haig-Brown 1988). Parents were at times able to avert removal for some or all of their children through hiding them and negotiation with the Indian Agent (Milloy 1999). Residential schools also opened and closed over this time period, making it more or less easy for authorities to remove children and place them in residential schools. Since school opening and closing was largely controlled by the religious organizations that ran the schools, the federal government often didn't have as direct control (Milloy 1999; Feir 2012).

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[8] See Government of Canada (1997), AFN (2002), Milloy (1999), and The Economist (2000).

2.1 Selection into Residential School Attendance

Not all Indigenous children could be forced to attend residential school. The two factors that weighed heavily in whether a child could attend were 1) genetic lineage and 2) the perception of neglect, poverty or traditional connection.

First, the Indian Act (which gave agents of the federal government authority to remove children from their parents) only applied to Status Indians. While, the precise requirements to be a Status Indian varied, a sufficient genetic lineage from the original band lists compiled by Indian Affairs was required. Since 1951, paternal genetic lineage has been more heavily weighted in Status than material genetic lineage. I will refer to being a Status Indian as being a Registered Indian throughout this paper.

Second, the legislation left a substantial amount of discretion to the Superintendent General of Indian Affairs to select children to attend residential school. This discretion resulted in residential schools being operated for "orphan children, children from broken homes and those who because of isolation or the migratory way of life of their families, are unable to attend day schools," (Government of Canada 1965, p.44). Confidential reports in the 1960s suggested that more than 50 percent of children in residential schools fell into the category of "neglected"; the percentage was over 70 percent by the late 1970s (Milloy 1999). A set of authors have argued that many of the children sent to residential schools were not sent because they were neglected, but rather because their parents were in poverty or the authorities misunderstood Indigenous culture (Johnston 1983; Jacobs and White 1992). Feir (2012) provides statistical evidence that Indigenous children were heavily selected from the most culturally traditional homes.

In residential schooling's peak in the 1930s, approximately 50 percent of Registered Indian children enrolled in school attended residential school, but after the Second World War

the residential school system rapidly lost its political appeal and government policy shifted in favour of integrating Indigenous children into the public educational system. Closing down the residential schooling system took decades as the government arranged alternative schooling options for the children who attended and faced constant political battles with the religious organizations that ran the schools. The religious organizations were formally forced out of the residential schooling system in 1969 and talks began with Indigenous communities for Indigenous take-over of the remaining residential schools. The residential schooling system in its historical form became virtually extinct by the 1980s.

2.2   Previous Empirical Literature on Residential Schooling

While the anecdotal evidence on the intergenerational effects of residential schooling generally suggests that there were large negative consequences of the schools,[9] the empirical literature is sparse. Work by Bougie and Senécal (2010) finds a negative association between parental residential school attendance and parental perceptions of how well their child is doing in school. In addition, work by Bombay et al (2014) demonstrates an association between family contact with the residential school system, depression, and mental well-being. However, neither of these studies account for the systematic selection of students to attend residential school and each only consider one of the on or off reserve population. I contribute to this literature by including both the on and off reserve population, examining a broad array of children's outcomes, and accounting for the selective component of parental residential school attendance. The next section discusses the data used as part of this contribution.

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[9] See for example Haig-Brown (1988); Deiter (1999); Wesley-Esquimaux and Smolewski (2004); Cole et al (2006); Stonefish (2007); Gauthier (2010); and the TRC (2012).

The existing empirical literature that accounts for the systematic selection of Indigenous children into residential schooling is sparse and focuses on first generation effects. Feir (2012) and later Jones (2013) present evidence that attendance at a residential school results in children being more culturally and economically assimilated than had they not attended. Feir uses variation in changes in federal government policy and the historical geographic distribution of Catholics to instrument for residential school attendance. She also uses distance to the nearest residential school, school openings and closings to confirm her results. Jones estimates the intent to treat or have a residential school open within 500 kilometers of an individual's community during schooling age. Feir also estimates heterogeneity in the effect of residential school attendance by counterfactual educational environments and the extent of abuse present in a residential school during a given era. Auld and Feir (2014) estimate heterogeneous effects models of residential school attendance on adult height, obesity, diabetes and general health. They find substantial heterogeneity in the effects of attendance and find that children the most likely to attend residential school had substantial increases in height and decreases in the likelihood of obesity. They use the opening and closing of residential schools as an instrument for residential school attendance.

3   Data and Descriptive Statistics

I use the confidential wave of the 2001 Aboriginal Peoples Survey of Children and Youth (referred to as the APSCY here) to study the intergenerational effects of residential school. The children's wave of the APSCY is a post-census survey whose target population is children under the age of fifteen who were identified as either Métis, North American Indian or Inuit by the head of household in the Canadian Census. The APSCY includes a rich set of demographic,

health, and educational information. The questions about the child were asked of the person in the household "most knowledgeable" about him or her (Statistics Canada 2003).

Unfortunately, the children's wave of the APSCY does not include an overly rich set of information about the individuals in the household with the child and cannot be matched back to the adult wave of the 2001 APSCY because of sampling design. However, there is some basic information such as the number of individuals in the household, whether the child belongs to a two-parent family, education of the person who knows the child best, and the child's paternal and maternal ancestral origins. Uniquely, the survey also includes information on the residential schooling status of the individual who knows the child best as well was that individual's sibling's residential school status. Overwhelmingly, the individual that knows the child the best was the birth mother (approximately 80 percent of the total sample after excluding missing observations). I restrict the sample to only individuals whose birth mother was the key respondent. I also restrict the sample of children to those living outside of the Atlantic Provinces, Quebec and the Territories because these areas had much different levels of exposure to residential schooling than in the rest of Canada (King 2006). I make the above restrictions to ensure more uniformity in the unobservable characteristics of the children in the sample. Finally, I restrict the sample of children to those who are between the ages of seven and fifteen since I am interested in schooling outcomes.

One advantage of the confidential version of the 2001 children's wave is that it includes the on-reserve population, unlike the public waves used by Bougie and Senécal (2010). Earlier versions of the APSCY do not include a children's component and later versions do not include an on-reserve component, even in the confidential files. The 2001 APSCY surveyed 123 of the largest First Nations communities (reserves), 52 Inuit communities, 38 communities with a

concentration of 40 percent or more Indigenous peoples (28 of these communities are

predominately Métis) and five additional communities with large numbers of Indigenous peoples

(Prince Albert, North Battleford, Wood Buffalo, Yellowknife and Whitehorse). In most

provinces these communities covered between 50 to 55 percent of the on-reserve population.

There is notably less coverage of those living on-reserve in British Columbia due to the large

number of small reserves and the high cost of sampling. The inclusion of the on-reserve

population is fundamental for understanding the effects of residential schooling since only

children who were Registered Indians could attend residential school and in 2002 approximately

60 percent of Registered Indians lived on-reserve (Health Canada 2009).

The summary statistics presented in Table 1 highlight the importance of sampling both

the on and off reserve populations. Approximately forty percent of children whose mothers

attended residential school live on reserve and they are more likely to live on reserve than

children whose mothers did not. This suggests exclusion of either the on or off reserve

population will miss a substantial proportion of the picture.

Table 1: Summary Statistics

Variable	Mother Attended Residential School	Mother Did Not Attend Residential School
Background Characteristics		
Age of Child	10.342	10.396
	(0.160)	(0.066)
Female Child	0.596	0.487
	(0.038)	(0.015)
Age of Parent	37.061	35.068
	(0.421)	(0.174)
Latitude of Community	52.145	52.006

	(0.199)	(0.067)
Lives in Man, AB or SK	0.737	0.663
	(0.049)	(0.017)
The Child Is a Registered Indian	0.825	0.473
	(0.058)	(0.015)
The Child has Only Indigenous Origins	0.860	0.570
	(0.048)	(0.015)
Father has Indigenous Origins	0.737	0.668
	(0.054)	(0.016)
Mother has Indigenous Origins	1.000	0.814
	0.000	(0.015)
Origins Maternal Grandfather	0.753	0.714
	(0.021)	(0.016)
Origins Maternal Grandmother	0.737	0.625
	(0.054)	(0.016)
Origin Paternal Grandfather	0.702	0.556
	(0.053)	(0.016)
Origin Paternal Grandmother	0.912	0.675
	(0.047)	(0.016)
Whether Mother's Sibling Attended	0.737	0.069
	(0.039)	(0.006)
Child Has Been to the Dentist in Past Year	0.702	0.785
	(0.041)	(0.012)
Child Eats Vegetables Everyday	0.351	0.444
	(0.038)	(0.016)
Injured in the Past Year	0.123	0.167
	(0.018)	(0.011)
ln(Birth Weight of Child)	8.102	8.13
	(0.023)	(0.006)
Breast Fed	0.800	0.720
	(0.051)	(0.039)
ln(Height (cm) of Child)	4.041	4.050
	(0.013)	(0.005)
ln(BMI of Child)	3.019	3.027
	(0.037)	(0.008)
More Physically Active	0.466	0.358
	(0.044)	(0.013)
Mother Graduated High School	0.509	0.642
	(0.043)	(0.013)
The Number of Siblings the Child Has	3.421	2.597

	(0.155)	(0.056)
The Child Lives in a Two Parent Home	0.649	0.673
	(0.037)	(0.014)
They Live On-Reserve	0.368	0.239
	(0.033)	(0.009)
Child Gets Along Very Well with Teachers	0.579	0.628
	(0.044)	(0.015)
Child Likes School Almost Always	0.596	0.623
	(0.043)	(0.015)
Child has Received an Award for their Grades	0.719	0.699
	(0.039)	(0.014)
Child has Received an Award for Something Else	0.702	0.754
	(0.047)	(0.013)
Child has been Expended or Suspended	0.175	0.129
	(0.023)	(0.010)
N	867	4072

Notes: The table reports means of each variable with the standard error below in parentheses.

The results in Table 1 also suggest that mothers who attended a residential school are substantially different than those that did not. They are older and are also more likely to be located in the western provinces (Manitoba, Alberta or Saskatchewan). Given the geographic and temporal distribution of residential school presence, these patterns are expected.

We can also see that there are notable differences in the ethnic ancestry of children whose mothers attended residential school and children whose mothers did not: children who have mothers who attended residential school are more likely to have a father with Indigenous origins, maternal grandparents with Indigenous origins and are substantially more likely to have paternal

grandparents with Indigenous origins. Table 1 also indicates that six percent of mothers who did not attend residential school had siblings who did attend while approximately seventy percent of mothers who attended residential school had a sibling that attended.

The results in Table 1 also suggest that mothers who attended residential school have lower socio-economic status than mothers who did not: for example, mothers who attended residential school are about 14 percent less likely to have graduated high school and are less likely to live in a two parent household. Children who live in households were the mother attended residential school have on average one more brother or sister than children who live in households than where the mother did not. Children who have a mother who attended residential school are more likely to not get along very well with teachers and are more likely to be suspended or expelled. Generally, children of mothers who attended residential school seem to perform worse along schooling dimensions than children whose mothers did not. From the panel on child health we see that there is no clear pattern to whether children whose mothers attended residential school fare better or worse than children whose mothers did not.

However, because of the large difference in background between mothers who attended residential school and those that did not, it is not obvious that the patterns observed in child and mother outcomes are due to residential schooling itself or some observable or unobservable factor. The next section clarifies how I will try and differentiate between these possibilities.

4   Empirical Framework and Identification

In order to clarify the interpretation of the empirical results below and motivate my methodology, consider the system of three equations below. The first equation determines a mother's selection into residential school, the second determines a child's health outcomes and

the third determines child schooling outcomes. While much of the literature pays considerable attention to estimating the technology of skill formation (Heckman 2008, Cunha and Heckman 2008, and Cunha et al 2010), I focus on estimating the simple system below in order to make my contribution as transparent as possible. The system of equations jointly determining selection of mothers into residential schools and their children's outcomes is

$$
\begin{aligned}
r_i^* &= & x_i\beta + \mu_{i1} \\
h_i^* &= & x_i\gamma_1 + z_i\gamma_2 + \gamma_3 r_i + \mu_{i2} \\
s_i^* &= & x_i\alpha_1 + z_i\alpha_2 + \alpha_3 r_i + \mu_{i3},
\end{aligned}
\tag{1}
$$

where r_i^* is the latent propensity to be selected into residential school, h_i^* indexes general child health , and s_i^* represents an index of academic orientation. I measure child health using their BMI and height at the time of the survey, and how physically active they are relative to children their own age. I measure academic orientation by whether the child likes school most of the time, whether the child gets along with their teachers almost all of the time, whether they won awards for their grades, whether they won awards for other activities and whether they had ever been suspended or expelled.

The vector x_i contains a set of observable characteristics that influence the propensity of a future mother to attend residential school, such as age and region of residence while the vector z_i contains indicators of the mother's adult socio-economic status. If $r_i^* > 0$, then a mother attends residential school, denoted $r_i = 1$, and otherwise she does not, denoted $r_i = 0$. Residential school attendance is assumed to influence child health, h_i^*, and child academic orientation, s_i^*. The vector z_i may possibly depend on residential school attendance. Thus mother's residential school attendance is allowed to impact child academic achievement directly and also indirectly through influencing parental socio-economic status. The error terms in these three equations, μ_{i1}, μ_{i2}, and μ_{i3} are likely correlated given the systematic selection of children

into residential school based on their perceived deprivation as a child or their degree of cultural closeness and Indigenous ancestry. The following three equations make this correlation explicit:

$$
\begin{aligned}
\mu_{i1} &= \kappa_i + d_i + \varepsilon_{i1} \\
\mu_{i2} &= \lambda_1 \kappa_i + \lambda_2 d_i + \varepsilon_{i2} \\
\mu_{i3} &= \lambda_3 \kappa_i + \lambda_4 d_i + \varepsilon_{i3},
\end{aligned}
$$

where the variable κ_i denotes "cultural closeness" and d_i denotes "perceived disadvantage" and the ε_{i1}, ε_{i2} and ε_{i3} denote a set of uncorrelated, unobservable noise.

Cultural closeness, κ_i, indicates how connected a mother was to Indigenous culture and community in her youth. Factors associated with this include whether a mother was classified as a Registered Indian, lived on reserve in childhood, and whether her family participated in traditional cultural activities. Perceived disadvantage by the local authorities, d_i, also influences how likely a child would be to attend residential school as discussed in Section 2.1. Both of these factors impact the likelihood a child would be selected to attend residential school (LeBeuf 2011; Feir 2012).

4.1 Identification and Methodology

If I could directly observe κ_i and d_i then I could simply match or condition on these factors and estimate the system of equations in (1) using OLS or probit depending on whether the outcome of interest was linear or binary. Alternatively, if I could observe outcomes for multiple children in a family, some of whom were selected to attend residential school and some of whom were not, I could use family fixed effects to account for κ_i and d_i. Data limitations imply neither is feasible here.

Another plausible way to estimate the system would be to instrument for mother's residential school attendance using the opening and closing of the closest residential school as in Feir (2012) and Auld and Feir (2014). However, I cannot do this here for two reasons. First, I do not know the origin Indigenous community of the mother nor do I know which band she belongs to. This makes it impossible to predict which residential school a mother attended and therefore impossible to use the opening and closing of schools as an effective instrument. Second, given the average age of mothers in the sample they would have attended residential school largely in the 1970s. The number of school openings and closures in this period are small and arguably less likely to be exogenous than earlier closings (see Feir 2012).

Luckily however, the data used in this paper includes uniquely rich information on the Aboriginal ancestry of the mother's in the sample as well as their siblings own residential school attendance. I can use this information to substantially mitigate the role of unobservable factors in biasing the estimated effects of residential school attendance. Specifically, I propose that I can use information on the ancestral origins of each child's maternal grandmother, maternal grandfather, paternal grandfather and paternal grandmother to proxy for cultural closeness, κ_i, and whether the mother had at least one sibling who attended residential school to proxy for both cultural closeness not captured by my other measures and perceived disadvantage, d_i. Conditional on these proxies, I can use OLS or probit to estimate each equation above under the assumption that the errors are uncorrelated conditional on those proxies. Since this strategy uses a detailed set of indicator variables to control for unobservable family fixed factors, one could think about the identification strategy as a quasi-family fixed effect estimator. I provide

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suggestive evidence in Section 5 that this strategy plausibly controls for the unobserved

heterogeneity discussed above.[10]

While the indicator of whether a child's mother had a sibling who also attended

residential school should at least partially proxy for perceived disadvantage, I will not be able to

fully account for this source of unobserved heterogeneity. However, I will argue that the patterns

we observe in the data are not easily explained by this potential source of bias. Since

disadvantage in childhood can persist through generations, we would expect that any initial

disadvantage of the mother could influence both her adult outcomes and her children's health

and schooling outcomes negatively.[11]   In terms of the framework above, we would expect,

$\lambda_2 < 0$ and $\lambda_4 < 0$. Since residential schooling is positively correlated with d_i, omitting d_i from

the model will downwardly bias the estimated effect of residential schooling on child health and

child schooling outcomes. However, the results below suggest if anything, the health of children

whose mothers attended residential school is better than for those whose mothers did not. In

addition, mother's socio-economic outcomes are no worse. If d_i is not fully accounted for, given

the direction of the bias, these positive results would be more positive. While these may imply

that the schooling results are more negative than they would be otherwise, given the size of the

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[10] I have used regression adjustment rather than a non-parametric matching estimator because the overlap in the propensity score is weak if sibling's residential school attendance is included. I have examined whether the functional form restrictions I impose are driving the results by adding a 3rd degree polynomial in the propensity score and found the results are largely unaffected.
[11] The literature on intergenerational mobility is extensive. See Bjorklund and Jantti (2009) and Black and Devereux (2011) for a review. Given that Indigenous peoples in Canada are on average at the lower end of the income distribution (Feir 2013; Pendakur and Pendakur 2011) the expectation of this negative association is consistent with the literature (Black and Devereux 2011).

estimates for the negative effect of mothers residential schooling on education, the lack of capturing of d_i would have to be substantial to fully account for these negative effects.

5   A Falsification Test

The results in Table 2 suggest that conditioning on detailed ethnic ancestry helps mitigate bias created by the observable family environment and legal status of the mother in childhood. The prior literature has demonstrated that children in families with close cultural connections were more likely to be selected to attend residential school. However, once this selection is accounted for, residential schooling has large assimilative effects (Feir 2012; Jones 2013). Based on these findings, it would be expected that mothers' residential school attendance would be positively correlated with their children's Registered Indian status due to the fact mothers had to have been Registered Indians to attend residential school but at the same time that residential schooling itself would not have increased the likelihood of her child having Registered Indian status. The same would be true regarding whether the child reported only Indigenous origins. Thus, if conditioning on this set of detailed ancestry indicators and family residential school exposure eliminates any statistical relationship between Registered Indian status of the child and residential schooling of the mother, can be seen as evidence in favor of the quality of the proxies for cultural closeness, κ_i. That is, as a falsification test of the identification strategy, I estimate a model similar to the equations for h_i^* and s_i^* above,

$$y_i = \theta_0 + \theta_1 r + x_i \theta_2 + \theta_3 \kappa_i + \theta_4 d_i + \varepsilon_{i4},$$

where y is either child's Registered Indian status or child's report of Indigenous origins. We know a priori that the true value of $\theta_1 = 0$ is zero, that is, that these outcomes are not caused by mother's residential school status. If $\theta_1 = 0$ is estimated to have a substantial effect when I do

not condition on ethnic ancestry but such conditioning removes the apparent effect, then plausibility is lent to the identification strategy.

The first panel of Table 2 reports the association of a mother attending residential school with her child being a Registered Indian. We see a large positive association even conditional on region and reported Indigenous origins of the child. However, once whether a mother's sibling's residential school status is accounted for, the association becomes small and insignificant. This result suggests that a sibling's attendance at a residential school is highly correlated with the family characteristics that would cause someone to be selected into residential schooling. Similar results are seen in the second panel that reports the marginal effects of a mother attending a residential school on whether a child is reported to have only Indigenous origins. We would suspect, since prior work has demonstrated that residential school attendance increases assimilation, that a parent attending a residential school should not make her child more likely to report only Indigenous origins. Again, once the residential schooling status of the mother's siblings is controlled for, there is no association. This provides suggestive evidence that I am adequately capturing unobserved family background characteristics that could influence both mother's residential schooling status and the outcomes of interest.

Table 2: Falsification Test of Identification Strategy

	Registered Indian Status of Child			Reported Only Indigenous Origins		
	(1)	(2)	(3)	(1)	(2)	(3)
Mother Attended RS	0.417***	0.341***	0.068	0.297***	0.238***	0.049
	(0.053)	(0.062)	(0.081)	(0.045)	(0.054)	(0.081)
Gender of Child	-0.014	0.005	0.001	0.019	0.043	0.040
	(0.026)	(0.028)	(0.028)	(0.028)	(0.031)	(0.030)
Age of Mother	0.004	0.002	0.004	-0.004	-0.005	-0.004
	(0.006)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)

Age of Child	-0.009***	-0.001	-0.002	-0.009***	-0.005*	-0.007**
	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
Latitude	0.020***	0.012	0.017*	0.001	-0.001	0.003
	(0.005)	(0.009)	(0.010)	(0.008)	(0.009)	(0.010)
Origins Maternal GF		0.206***	0.208***		0.175***	0.178***
		(0.0360)	(0.037)		(0.052)	(0.051)
Origins Maternal GM		0.470***	0.460***		0.348***	0.330***
		(0.025)	(0.025)		(0.042)	(0.042)
Origin Paternal GF		0.313***	0.316***		0.179***	0.172***
		(0.032)	(0.033)		(0.051)	(0.050)
Mother's Sibling Attended			0.443***			0.311***
			(0.052)			(0.034)
Geographic Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports the marginal effects of each variable on the left either on the probability of the child having Registered Indian status or reporting only Indigenous origins and the effect's robust standard error is given in parentheses. The label ``RS'' refers to residential school, ``GF'' to grandfather, and ``GM'' to grandmother. The geographic fixed effects cluster provinces into northern and southern regions, with the exception of British Columbia where an additional fixed effect is specified for the coastal region. The asterisks indicate the level of significance: * p<0.10, ** p<0.05, *** p<0.01.

However, one could still argue that the patterns I see, such as better child health and worse performance formal educational institutions could be explained by imperfectly accounting for a mother's childhood cultural closeness. I provide further suggestive evidence against this possibility in Table A.1. Table A.1 shows the effect of mother's residential school attendance on her children's participation in cultural activities and Aboriginal language knowledge. The results in this table suggest that children of mothers who attend residential school are not more likely to participate in traditional culture as one would expect if unaccounted for "cultural closeness" was driving the results.

6   Main Results

The results in Table 3 provide evidence on the effects of residential school attendance on mother's outcomes. The key item to note is that the marginal effect of attending a residential

school does not statistically affect mother's educational attainment, number of children, the likelihood of receiving employment income, whether they live in a two-parent household nor whether their dwelling is in need of repair. These findings are consistent with the findings of Feir (2012) and Jones (2013), whose results suggest increases in educational attainment and employment. The point estimate on high school graduation is of the correct sign but statistically insignificant and smaller than in previous work. These results suggest that, given the direction of selection discussed in prior literature, I am underestimating the effect of residential schooling on parental outcomes and thus possibly other outcomes. Yet, the key point to take away from this table remains: residential school does not seem to harm parental socio-economic status according to these measures and the results are reasonably consistent with prior work.

Table 3: Evidence on Mother's Outcomes and Relationship with Residential School Attendance

	Dwelling in Need Of Repair		Two Parent Household		High School Degree		Employment Income		Number of Children	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Mother Attended RS	-0.072	0.021	-0.023	-0.023	-0.011	0.050	-0.008	0.067	0.730***	0.178
	(0.048)	(0.057)	(0.039)	(0.041)	(0.044)	(0.054)	(0.048)	(0.059)	(0.156)	(0.154)
Female	0.02	0.017	0.03	0.026	0.052*	0.050*	-0.003	-0.01	-0.033	0.005
	(0.029)	(0.028)	(0.025)	(0.025)	(0.028)	(0.028)	(0.027)	(0.027)	(0.09)	(0.087)
Age of Child	0.007	0.008	-0.008	-0.008	-0.012**	-0.012*	-0.009	-0.009	0.015	0.011
	(0.007)	(0.007)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.02)	(0.02)
Age of Mother	0.004	0.002	0.006***	0.005**	0.013***	0.012***	0.001	0.000	0.022***	0.032***
	(0.003)	(0.003)	(0.002)	(0.002)	(0.003)	(0.003)	(0.002)	(0.002)	(0.008)	(0.008)
Orig. Mater. GF		0.005		-0.039		-0.052		-0.081*		0.429***
		(0.044)		(0.042)		(0.046)		(0.043)		(0.114)
Orig. Mater. GM		-0.109***		-0.059*		-0.064*		-0.119***		0.540***
		(0.037)		(0.032)		(0.037)		(0.036)		(0.101)
Origin Pater. GF		-0.038		-0.091**		-0.019		0.005		0.502***
		(0.042)		(0.04)		(0.044)		(0.042)		(0.113)
Mother's Sibling Attended		-0.062		0.050*		-0.054		-0.052		0.476***
		(0.043)		(0.03)		(0.041)		(0.043)		(0.131)
Geog FE & Lat	Yes		Yes		Yes		Yes		Yes	

Notes: This table reports the marginal effects of each variable on the left on the dependent variable header listed above each row. The robust standard error of the marginal effect is given below in parentheses. The label ``RS'' refers to residential school, ``GF'' to grandfather, ``GM'' to grandmother and ``FE'' to fixed effects. The dependent variables are given as the header in each column. The dependent variable ``employment income'' is an indicator variable for whether the mother's main source of income was from employment. The geographic fixed effects cluster provinces into northern and southern regions, with the exception of British Columbia where an additional fixed effect is specified for the coastal region. The asterisks indicate the level of significance: * p<0.10, ** p<0.05, *** p<0.01.

The estimates in Table 4 show that children who have a mother that attended residential school fare better along numerous health dimensions than children whose mothers did not. Children who have a mother that attended a residential school tend to be about two percent taller conditional on age and gender, have a significantly lower body mass index (corresponding to approximately to a 6 percentage point decline in the probability of obesity) and are more likely to be physically active. These results suggest, somewhat sharply, that residential school attendance does not make mothers systematically less able or willing to care for their children.

Table 4: Children's Health Outcomes and the Effect of Mother's Residential School Attendance

	ln(BMI)		ln(Height)		Physically Active	
	(1)	(2)	(1)	(2)	(1)	(2)
Mother Attended RS	0.002	-0.071**	0.002	0.020*	0.123**	0.147***
	(0.038)	(0.035)	(0.010)	(0.011)	(0.049)	(0.055)
Gender of Child	-0.045***	-0.042***	-0.007	-0.009	(0.020)	-0.016
	(0.014)	(0.014)	(0.006)	(0.006)	(0.027)	(0.023)
Age of Child	0.017***	0.016***	0.046***	0.046***	-0.002	-0.001
	(0.003)	(0.003)	(0.001)	(0.001)	(0.001)	(0.001)
Age of Mother	0.001	0.002	-0.001	-0.001	0.005*	0.004
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
Origins Maternal GF		0.022		-0.014*		-0.109**
		(0.019)		(0.008)		(0.042)
Origins Maternal GM		0.041**		-0.011		-0.040
		(0.016)		(0.007)		(0.032)
Origin Paternal GF		0.017		-0.005		0.002
		(0.019)		(0.008)		(0.001)
Mother's Sibling Attended		0.068***		-0.014		-0.009
		(0.025)		(0.010)		(0.010)

Geographic FE & Latitude	Yes	Yes	Yes

Notes: This table reports the marginal effects of each independent variable listed on the left on the dependent variable listed in the first row of each column and its robust standard error in parentheses. The label ``RS'' refers to residential school, ``GF'' to grandfather, ``GM'' to grandmother and ``FE'' to fixed effects. The geographic fixed effects cluster provinces into northern and southern regions, with the exception of British Columbia were an additional fixed effect is specified for the coastal region. The asterisks indicate the level of significance: * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

In appendix Table A.2, I demonstrate that none of these differences appear to be due to residential schooling influencing parental socio-economic status or changes in reserve status. This result is not surprising given the evidence in Table 3 that residential schooling does not appear to have large effects on mother's outcomes. Unfortunately, I do not observe measures of mother's health so I cannot control for the possibility that mothers who attended residential school may be in worse or better health on average.[12]

Despite these results suggesting residential schooling may improve child health, Table 5 contains results that suggest children whose mother attended residential school perform worse in school. For example, children who have a mother who attended residential school are about 10 percentage points less likely to win awards for their grades or other activities (t=-1.96) and are approximately 4.3 percentage points more likely to be suspended or expelled (t=1.87). These

[12] It is unclear whether mothers who attended residential school would be in better or worse health on average. While Auld and Feir (2014) demonstrate that children who were in worse health were the ones systematically selected to attend residential school, residential schooling may have improved adult health for those that attended. Work by Jones (2013) suggests little impact of residential schooling on health while Kapsar (2014) finds negative effects.

effects are substantial. For example, only 7.7 percent of all students in Ontario schools had been expelled or suspended in 2003-04 whereas the proportion of Aboriginal children expelled or suspended was approximately 13.7 percent in 2001 (Ontario Ministry of Education 2011). This result implies that the intergenerational effects of residential school may be able to account for a non-inconsequential proportion of the gap in educational outcomes between Indigenous and non-Indigenous youth. These point estimates suggest that nearly 20 percent of the gap in suspensions and expulsions between Registered Indian children and other children in Ontario can be explained by mother's residential school attendance.

These worse schooling outcomes are accompanied by worse attitudes towards school: those children whose mothers attended residential school are 14 percentage points less likely to get along with their teachers and 12 percentage points less likely to enjoy school almost all of the time.

Table 5: Attitudes Towards School and School Performance

| | Attitudes | | | | Schooling Performance | | | | | |
| | Get Along -- Teachers | | Likes School | | Award for Grades | | Award for Other | | Suspended or Expelled | |
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Mother Attended RS	-0.086*	-0.146**	-0.036	-0.125**	0.014	-0.102*	-0.091*	-0.151**	0.058***	0.043*
	(0.052)	(0.059)	(0.048)	(0.055)	(0.041)	(0.052)	(0.047)	(0.063)	(0.020)	(0.023)
Gender of Child	0.140***	0.139***	0.147***	0.157***	0.078***	0.089***	-0.011	-0.006	-0.073***	-0.073***
	(0.027)	(0.027)	(0.027)	(0.026)	(0.025)	(0.025)	(0.024)	(0.023)	(0.014)	(0.014)
Age of Child	-0.036***	-0.036***	-0.040***	-0.040***	0.004	0.006	0.009	0.011*	0.034***	0.033***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.003)	(0.003)
Age of Mother	0.003	0.002	0.004	0.004*	0.000	-0.001	0.001	0.000	-0.003***	-0.003**
	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)
Origins Maternal GF		-0.027		0.000		-0.003		-0.025		0.040**
		(0.043)		(0.044)		(0.040)		(0.036)		(0.020)
Origins Maternal GM		-0.028		0.000		-0.039		-0.079***		0.001
		(0.035)		(0.036)		(0.031)		(0.027)		(0.016)
Origin Paternal GF		0.030		0.053		0.046		0.049		-0.004
		(0.041)		(0.042)		(0.038)		(0.034)		(0.021)
Mother's Sibling Attended		0.085**		0.112***		0.168***		0.095***		-0.006
		(0.038)		(0.035)		(0.025)		(0.032)		(0.014)
Geographic FE & Latitude	Yes		Yes		Yes		Yes		Yes	

Notes: This table reports the marginal effects of each independent variable listed on the left on the dependent variable listed in the first row of each column and its robust standard error in parentheses. The label ``RS'' refers to residential school, ``GF'' to grandfather, ``GM'' to grandmother and ``FE'' to fixed effects. The variable ``gets along - teachers'' is an indicator for whether the child gets along with other children generally very well. The variable ``likes school'' is an indicator for whether the child likes school almost all of the time. The geographic fixed effects cluster provinces into northern and southern regions, with the exception of British Columbia where an additional fixed effect is specified for the coastal region The asterisks indicate the level of significance: * p<0.10, ** p<0.05, *** p<0.01.

Appendix Table A.3 demonstrates that these patterns regarding child health and education persist even conditional on a full set of parental and child age fixed effects and on a set of 50 census division geographic controls.[13] In addition, Table 6 and Table 7**Error! Reference source not found.** demonstrate that none of the observed patterns can be accounted for in parental on-reserve status or other parental outcomes. Table 6 shows the estimates of the effect of a mother's residential school attendance on her child's schooling outcomes. Mothers having a higher level of education are systematically associated with better schooling outcomes. Specifically, a child's mother having a Bachelor's degree were about 12 percentage points more likely to like school almost always and win awards for their grades. They were also 15 percentage points more likely to have a child that won an award for a non-academic activity and were 4 percentage points less likely to have a child suspended or expelled. Living in a two parent household seemed to improve attitudes towards school and decrease the likelihood of being suspended or expelled. Children living on reserve were less likely to like school most of the time, but more likely to win awards for their grades and other activities. This may be due to the types of school children on reserve attend (sixty percent of children on reserve attend schools run by their First Nation (Richards and Scott 2009)).

Table 7 shows the effects of a mother's residential school attendance on her child's health outcomes conditional on the number of siblings the child has, an indicator of on-reserve status, the mother's highest level of education and whether the child lives in a two parent household. The only factors that are statistically associated with better health outcomes are mother's

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[13] Census divisions are the equivalent of an American county. See Appendix Table A.2 for these results.

education. Specifically, higher levels of education of the mother are correlated with children being more physically active than other children their own age. However, none of the effect of residential schooling can be explained through any of these channels.

	Get Along -- Teachers		Likes School		Award for Grades		Award for Other		Suspended or Expelled	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Mother Attended RS	-0.146**	-0.157***	-0.125**	-0.132**	-0.102*	-0.099*	-0.151**	-0.147**	0.043*	0.040*
	(0.059)	(0.059)	(0.055)	(0.058)	(0.052)	(0.052)	(0.063)	(0.063)	(0.023)	(0.023)
Gender of Child	0.139***	0.136***	0.157***	0.152***	0.089***	0.087***	-0.006	-0.009	-0.073***	-0.071***
	(0.027)	(0.026)	(0.026)	(0.026)	(0.025)	(0.025)	(0.023)	(0.023)	(0.014)	(0.013)
Age of Child	-0.036***	0.042	-0.040***	-0.025	0.006	0.106*	0.011*	0.036	0.033***	0.047
	(0.006)	(0.06)	(0.006)	(0.059)	(0.006)	(0.056)	(0.006)	(0.052)	(0.003)	(0.029)
Age of Mother	0.002	-0.015	0.004*	0.01	-0.001	-0.009	0.000	-0.003	-0.003**	-0.003
	(0.002)	(0.017)	(0.003)	(0.011)	(0.002)	(0.01)	(0.002)	(0.009)	(0.001)	(0.008)
Origins Maternal GF	-0.027	-0.01	0.000	0.021	-0.003	-0.047	-0.025	-0.074**	0.040**	-0.004
	(0.043)	(0.037)	(0.044)	(0.038)	(0.04)	(0.032)	(0.036)	(0.029)	(0.02)	(0.017)
Origins Maternal GM	-0.028	-0.016	0.00	0.016	-0.039	-0.013	-0.079***	-0.022	0.001	0.039**
	(0.035)	(0.042)	(0.036)	(0.042)	(0.031)	(0.04)	(0.027)	(0.037)	(0.016)	(0.020)
Origin Paternal GF	0.03	0.048	0.053	0.073*	0.046	0.038	0.049	0.044	-0.004	-0.006
	(0.041)	(0.04)	(0.042)	(0.04)	(0.038)	(0.038)	(0.034)	(0.034)	(0.021)	(0.021)
Mother's Sibling Attended	0.085**	0.101***	0.112***	0.119***	0.168***	0.160***	0.095***	0.097***	-0.006	-0.004
	(0.038)	(0.037)	(0.035)	(0.036)	(0.025)	(0.025)	(0.032)	(0.032)	(0.014)	(0.014)
More than Grade 10		-0.06		0.017		0.076**		0.090***		-0.003
		(0.039)		(0.039)		(0.034)		(0.03)		(0.018)
High School Graduate		0.034		0.040		0.045		0.114***		-0.005
		(0.042)		(0.043)		(0.039)		(0.033)		(0.021)
Some Training		-0.045		-0.038		0.112***		0.158***		-0.003
		(0.059)		(0.062)		(0.041)		(0.028)		(0.025)
Certificate		0.074		0.100**		0.041		0.140***		0.011

	(0.045)	(0.046)	(0.043)	(0.032)	(0.025)
Some University	-0.061	-0.019	0.124**	0.162***	-0.024
	(0.084)	(0.089)	(0.056)	(0.034)	(0.03)
Bachelors Degree	0.005	0.117*	0.122**	0.148***	-0.044**
	(0.076)	(0.065)	(0.052)	(0.039)	(0.021)
Graduate Degree	-0.176	0.036	0.132*	0.194***	-0.011
	(0.132)	(0.141)	(0.076)	(0.034)	(0.04)
Number of Siblings	-0.007	-0.002	0.003	-0.002	0.001
	(0.004)	(0.004)	(0.004)	(0.003)	(0.002)
On-reserve	-0.012	-0.043*	0.047**	0.053***	0.008
	(0.025)	(0.024)	(0.021)	(0.019)	(0.012)
Two Parent Household	0.085***	0.104***	0.018	-0.009	-0.033**
	(0.029)	(0.029)	(0.027)	(0.024)	(0.016)
Geographic FE & Latitude	Yes	Yes	Yes	Yes	Yes

Notes: This table reports the marginal effects of each independent variable listed on the left on the dependent variable listed in the first row of each column and its robust standard error in parentheses. The label ``RS'' refers to residential school, ``GF'' to grandfather, ``GM'' to grandmother and ``FE'' to fixed effects. The variable ``gets along - teachers'' is an indicator for whether the child gets along with other children generally very well. The variable ``likes school'' is an indicator for whether the child likes school almost all of the time. The geographic fixed effects cluster provinces into northern and southern regions, with the exception of British Columbia where an additional fixed effect is specified for the coastal region The asterisks indicate the level of significance: * p<0.10, ** p<0.05, *** p<0.01.

Table 7: The Impact of Parental Outcomes on Child Health

	ln(BMI)		ln(Height)		Physically Active	
	(1)	(2)	(1)	(2)	(1)	(2)
Mother Attended RS	-0.071**	-0.084**	0.020*	0.019*	0.147***	0.094*
	(0.035)	(0.033)	(0.011)	(0.011)	(0.055)	(0.053)
Sibling Attended RS	0.068***	0.062***	-0.014	-0.008	-0.009	-0.045
	(0.025)	(0.024)	(0.01)	(0.009)	(0.01)	(0.038)
Origins Maternal GF	0.022	-0.014	-0.014*	-0.003	-0.109**	-0.082*
	(0.019)	(0.021)	(0.008)	(0.009)	(0.042)	(0.045)
Origins Maternal GM	0.041**	0.026	-0.011	-0.006	-0.04	0.074*
	(0.016)	(0.018)	(0.007)	(0.008)	(0.032)	(0.041)
Origin Paternal GF	0.017	0.015	-0.005	-0.004	0.002	0.009
	(0.019)	(0.02)	(0.008)	(0.009)	(0.001)	(0.041)
Gender of Child	-0.042***	-0.043***	-0.009	-0.005	-0.016	-0.04
	(0.014)	(0.014)	(0.006)	(0.006)	(0.023)	(0.026)
Age of Child	0.016***	0.014***	0.046***	0.047***	-0.001	0.001
	(0.003)	(0.003)	(0.001)	(0.001)	(0.001)	(0.006)
Age of Mother	0.002	0.003**	-0.001	-0.001*	0.004	0.003
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.003)
More than Grade 10		-0.006		-0.006		0.144***
		(0.009)		(0.009)		(0.041)
High School Graduate		0.005		0.005		0.133***
		(0.009)		(0.009)		(0.045)
Some Training		0.009		0.009		0.185***
		(0.01)		(0.01)		(0.06)
Certificate		-0.004		-0.004		0.231***
		(0.012)		(0.012)		(0.051)
Some University		-0.001		-0.001		0.102
		(0.018)		(0.018)		(0.079)
Bachelors Degree		0.009		0.009		0.388***
		(0.019)		(0.019)		(0.066)
Graduate Degree		0.006		0.006		0.163
		(0.033)		(0.033)		(0.118)
Number of Siblings		-0.001		-0.001		0.006
		(0.001)		(0.001)		(0.004)
On-reserve		-0.007		-0.007		-0.029
		(0.008)		(0.008)		(0.024)
Two Parent Household		0.012		0.012		-0.031
		(0.007)		(0.007)		(0.028)
Geographic FE & Latitude	Yes		Yes		Yes	

6.1   Mechanisms

In the above framework I have remained agnostic over the channels through which residential schooling may directly affect child health and academic orientation. While there are many plausible explanations for the patterns observed above, I will provide suggestive evidence on the mechanisms that may result in increased child health, but reduced educational success. Specifically, I will suggest that residential schooling increases parental investments in child health, but results in worse parental attitudes towards Western education.

First, I will consider a plausible mechanism residential schooling may positively influence child health: parenting style. Table 8 contains estimates that suggest this could be partially due to parents adopting a parenting style that increases child health. For example, children whose mothers attended residential school are five percentage points less likely to be seriously injured in the past year and about six percentage points more likely to be breast fed. There is less evidence for residential schooling affecting the likelihood of a child to eat vegetables every day or to have been to the dentist in the past year, and there is not a statistically significant effect on birth weight. It is important to condition on the measures of the latent "cultural closeness" factor in order to arrive at these results. If one did not condition on these measures, there would be evidence that mothers who attended residential school are less likely to take their child to the dentist, for example. Taken together, these results suggest that residential

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schooling may increase the likelihood a parent engages in activities that improve their children's

health.

Table 8: The Effect of Residential School on Parenting Style Regarding Health Behaviour

	Ln(Birth Weight)		Child Injured		Been to Dentist		Breast fed		Eat Vegetables	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Mother Attended RS	-0.017	-0.023	-0.047**	-0.046*	-0.074*	-0.023	0.038	0.076**	-0.065	0.042
	(0.021)	(0.021)	(0.020)	(0.025)	(0.044)	(0.041)	(0.031)	(0.036)	(0.048)	(0.056)
Gender of Child	-0.047***	-0.046***	-0.053**	-0.047**	0.059***	0.060***	0.008	-0.007	0.070**	0.068**
	(0.012)	(0.012)	(0.021)	(0.020)	(0.022)	(0.021)	(0.025)	(0.024)	(0.028)	(0.028)
Age of Child	-0.000	-0.001	0.012**	0.012**	-0.007	-0.007	-0.005	-0.005	-0.008	-0.007
	(0.003)	(0.003)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.007)	(0.007)
Age of Mother	0.001	0.001	0.002	0.002	0.004**	0.003*	0.007***	0.005**	-0.001	-0.003
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)
Origins Maternal GF		0.018		-0.009		0.011		-0.034		0.008
		(0.019)		(0.032)		(0.029)	7	(0.041)		(0.045)
Origins Maternal GM		0.021		-0.049*		-0.062**		-0.016		-0.168***
		(0.015)		(0.028)		(0.025)		(0.033)		(0.036)
Origin Paternal GF		0.001		0.031		0.003		-0.056		-0.076*
		(0.018)		(0.030)		(0.028)		(0.039)		(0.043)
Mother's Sibling Attended		-0.003		0.016		-0.052		-0.005		-0.080*
		(0.019)		(0.029)		(0.037)		(0.100)		(0.042)
Geographic FE & Latitude	Yes		Yes		Yes		Yes		Yes	

Second, I will consider a plausible mechanism residential schooling may negatively influence educational success, specifically, though parental attitudes towards Western education. I obtain suggestive evidence in favor of this hypothesis using the Adult wave of the 1991 Aboriginal Peoples Survey. This survey contains questions regarding an individual's experiences with education. I find that individuals who attended a residential school are more likely to have had negative experiences with education and thus are possibly more likely to have negative attitudes towards school in adulthood. For example, Indigenous women who attended residential school, conditional on region, latitude, age and ethnic background were approximately 2.5 percentage points more likely to like nothing about school (t=4.70) and one percentage point more likely to dislike everything (t=2.28) using the same sample as Feir (2012). While these estimates do not control for selection, they are suggestive that parents who attended a residential school were more likely to have poor experiences with schooling. This result makes it plausible they could develop worse attitudes toward schooling that are reflected in the attitudes of their children.

As another way to explore the possibility that attitudes toward education may be driving the results, I focus on schooling that parents (or mothers) may perceive to be "assimilative" and education that is not viewed as assimilative. If parental attitudes were driving the results, we would expect to find the negative effects of residential schooling to be isolated to those schools that exclude Aboriginal culture from their curriculum.

Table 9 shows results stratified by whether a child has learned an Aboriginal language with the help of their teachers or not. We see that the negative effects of residential school appear to be isolated to those environments where Aboriginal language education is not present. These results do not seem to be driven solely by whether a child lives on reserve or likely attends a

band school, even in highly isolated communities where children likely attend a First Nation's operated school. If Aboriginal language education is not present, they seem to have worse schooling outcomes.

This is suggestive that residential school attendance of the mother only seems to matter for children in certain contexts: specifically, ones that don't actively support Indigenous culture. This is plausibly because of negative attitudes of the mother towards Western education developed though her experiences in residential school. Given the recent literature that suggests parental attitudes are transmitted through generations (Dohmen et al 2012) and the evidence that parental attitudes towards school can be substantially important for academic performance (Foley et al 2012), this is a plausible explanation for children's poor school performance, given they don't fare worse along any observable health dimension.

Table 9: Children's Attitudes Towards Schooling and School Performance by Aboriginal Language Presence in the Classroom

	Attitudes				Schooling Performance					
	Get Along -- Teachers		Likes School		Award for Grades		Award for Other		Suspended or Expelled	
	Ad Ed	No Ab Ed	Ad Ed	No Ab Ed	Ad Ed	No Ab Ed	Ad Ed	No Ab Ed	Ad Ed	No Ab Ed
Mother Attended RS	**-0.052**	**0.079**	**0.023**	**-0.166****	**0.031**	**-0.083**	**0.014**	**-0.108**	**0.066**	**0.048**
	(0.057)	**(0.061)**	**(0.053)**	**(0.074)**	**(0.041)**	**(0.073)**	**(0.039)**	**(0.070)**	**(0.050)**	**(0.037)**
Gender of Child	0.036	0.146***	0.057*	0.155***	0.073***	0.023	0.025	-0.017	-0.096***	-0.066***
	(0.032)	(0.042)	(0.031)	(0.046)	(0.023)	(0.039)	(0.024)	(0.030)	(0.022)	(0.021)
Age of Child	-0.035***	-0.035***	-0.031***	-0.025**	-0.003	0.010	-0.001	0.017**	0.041***	0.034***
	(0.008)	(0.010)	(0.007)	(0.011)	(0.006)	(0.010)	(0.006)	(0.007)	(0.005)	(0.006)
Age of Mother	-0.000	-0.006*	0.003	0.001	0.003	-0.005	-0.005**	-0.003	-0.005**	-0.000
	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.003)	-0.002	-0.003	-0.002	(0.002)
Origins Maternal GF	0.033	-0.120	0.063	0.007	0.058	-0.032	-0.027	-0.035	-0.008	0.080***
	(0.082)	(0.084)	(0.084)	(0.111)	(0.061)	(0.085)	(0.048)	(0.057)	(0.058)	(0.018)
Origins Maternal GM	-0.096	-0.059	0.072	-0.044	0.074	-0.001	-0.064	-0.212***	-0.015	0.019
	(0.078)	(0.097)	(0.082)	(0.115)	(0.080)	(0.091)	(0.061)	(0.038)	(0.064)	(0.043)
Origin Paternal GF	0.120	0.059	-0.038	0.015	0.047	-0.073	-0.023	0.072	0.031	-0.044
	(0.080)	(0.089)	(0.064)	(0.098)	(0.065)	(0.070)	(0.061)	(0.070)	(0.051)	(0.048)
Mother's Sibling Attended	0.086*	-0.004	0.018	0.07	0.009	0.103**	0.048	0.041	-0.049*	0.015
	(0.044	(0.058	(0.045)	(0.056)	(0.036)	(0.047)	(0.030)	(0.040)	(0.028)	(0.027)
Geographic FE & Latitude	Yes		Yes		Yes		Yes		Yes	

Notes: This table reports the marginal effects of each independent variable listed on the left on the dependent variable listed in the first row of each column and its robust standard error in parentheses. The label "RS" refers to residential school, "GF" to grandfather, "GM" to grandmother and "FE" to fixed effects. The variable "gets along - teachers" is an indicator for whether the child gets along with other children generally very well. The variable "likes school" is an indicator for whether the child likes school almost all of the time. The geographic fixed effects cluster provinces into northern and southern regions, with the exception of British Columbia where an additional fixed effect is specified for the coastal region. The asterisks indicate the level of significance: * p<0.10, ** p<0.05, *** p<0.01.

8   Discussion

I have presented evidence that residential schooling has negative intergenerational consequences for children's education. This is despite the evidence that residential schooling seems to improve child health and does not negatively impact a mother's socioeconomic status. This work adds to the literature on the importance of parental attitudes toward education by providing suggestive evidence that this puzzling finding could be explained by residential school attendance negatively affecting mothers' attitudes towards Western education. While the results regarding the mechanism are at best suggestive, these findings lend empirical support to the notion that residential schooling may be part of the reason Indigenous children perform worse in school than their non-Indigenous counterparts.

I also add to the literature on health and education by examining a policy intervention that has opposite effects on child health and education. This gives a more nuanced understanding of the production of child outcomes, the possible importance of parental values and of school-child match.

Finally, I contribute to the literature on the intergenerational transmission of education by examining the intergenerational effects of an education policy notorious for its treatment of Indigenous children and Indigenous culture. I demonstrate that while this policy did not have direct negative educational effects on those that attended (if anything they may have been positive), it may have harmed the educational attainment of the next generation.

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Appendix

Table A.1: Residential Schooling and Child Cultural Participation

	Understand Language Well		Speak Language Well		Language Very Important		Child Participates in Culture	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Mother Attended RS	0.031*	-0.008	0.034**	0.013	0.285***	0.073	0.118**	-0.029
	(0.017)	(0.01)	(0.016)	(0.011)	(0.046)	(0.048)	(0.047)	(0.041)
Gender of Child	-0.003	-0.002	-0.002	0.000	-0.005	0.009	0.042*	0.048**
	(0.008)	(0.006)	(0.006)	(0.005)	(0.024)	(0.024)	(0.024)	(0.024)
Age of Child	0.006**	0.004**	0.002	0.002	-0.001	-0.002	0.002	0.001
	(0.003)	(0.002)	(0.002)	(0.001)	(0.005)	(0.005)	(0.006)	(0.006)
Age of Mother	-0.002***	-0.001	-0.001*	0.000	-0.008***	-0.004**	-0.004*	-0.003
	(0.001)	(0.001)	(0.001)	(0.000)	(0.002)	(0.002)	(0.002)	(0.002)
Origins Maternal GF		0.031***		0.025***		0.178***		0.012
		(0.011)		(0.008)		(0.034)		(0.039)
Origins Maternal GM		0.050***		0.034***		0.264***		0.160***
		(0.009)		(0.007)		(0.026)		(0.029)
Origin Paternal GF		0.039***		0.026***		0.171***		0.128***
		(0.011)		(0.008)		(0.034)		(0.035)
Mother's Sibling Attended		0.023*		-0.003		0.152***		0.137***
		(0.012)		(0.007)		(0.04)		(0.038)
Geographic FE & Latitude	Yes		Yes		Yes		Yes	

Notes: This table reports the marginal effects of each independent variable listed on the left on the dependent variable listed in the first row of each column and its robust standard error in parentheses. The label "RS" refers to residential school, "GF" to grandfather, "GM" to grandmother and "FE" to fixed effects. The dependent variable "understand language well" is an indicator for whether the child understands their Aboriginal language well, while "speak language well" is an indicator for whether the child can speak their Aboriginal language well. The variable labelled "Language Very Important" indicates that the parent thinks it is very important that their child learns their native language and the final column labelled "Child Participates in Culture" indicates that the child participants in cultural activities such as traditional dances and other activities. The geographic fixed effects cluster provinces into northern and southern regions, with the exception of British Columbia where an additional fixed effect is specified for the coastal region. The asterisks indicate the level of significance: * p<0.10, ** p<0.05, *** p<0.01.

Table A.2: The Impact of Parental Outcomes on Investment

	ln(Birth Weight)		Child Injured		Been to Dentist		Breast Fed		Eat Vegetables	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Mother Attended RS	-0.023	-0.017	-0.044*	-0.052*	-0.027	-0.036	0.079**	0.062*	0.039	0.030
	(0.021)	(0.021)	(0.026)	(0.027)	(0.042)	(0.038)	(0.038)	(0.037)	(0.051)	(0.052)
Sibling Attended RS	-0.003	-0.004	0.013	0.026	-0.051	-0.052	-0.008	0.021	-0.078*	-0.031
	(0.019)	(0.019)	(0.028)	(0.025)	(0.037)	(0.034)	(0.036)	(0.032)	(0.040)	(0.039)
Origins Maternal GF	-0.046***	-0.045***	-0.014	0.045	0.059***	0.052**	-0.033	-0.020	0.064**	0.056**
	(0.012)	(0.012)	(0.034)	(0.034)	(0.021)	(0.021)	(0.040)	(0.047)	(0.027)	(0.025)
Origins Maternal GM	0.018	0.042**	-0.049*	-0.042	0.012	0.035	-0.015	0.001	0.009	0.054
	(0.019)	(0.021)	(0.028)	(0.030)	(0.026)	(0.028)	(0.032)	(0.037)	(0.043)	(0.045)
Origin Paternal GF	0.021	0.026	0.038	-0.012	-0.057**	-0.041	-0.054	-0.037	-0.164***	-0.147***
	(0.015)	(0.019)	(0.034)	(0.033)	(0.024)	(0.028)	(0.038)	(0.044)	(0.035)	(0.039)
Gender of Child	0.001	-0.021	-0.047**	-0.037*	0.003	-0.010	-0.007	-0.008	-0.074*	-0.061
	(0.018)	(0.019)	(0.020)	(0.019)	(0.025)	(0.027)	(0.023)	(0.024)	(0.042)	(0.043)
Age of Child	-0.001	-0.001	0.012**	0.016***	-0.007	-0.006	-0.005	-0.007	-0.006	-0.001
	(0.003)	(0.003)	(0.006)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)
Age of Mother	0.001	-0.000	0.002	0.001	0.003*	0.003*	0.005**	0.002	-0.003	-0.004*
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
More than Grade 10		0.015		0.030		0.048		0.074*		-0.065*
		(0.015)		(0.024)		(0.035)		(0.040)		(0.038)
High School Graduate		0.026		0.043		0.123***		0.157***		-0.074*
		(0.017)		(0.028)		(0.038)		(0.044)		(0.043)
Some Training		0.065***		0.040		0.182***		0.174***		0.024
		(0.019)		(0.036)		(0.044)		(0.052)		(0.055)
Certificate		0.059***		0.084***		0.154***		0.216***		-0.042
		(0.018)		(0.032)		(0.040)		(0.048)		(0.050)

Some University	0.015	0.158**	0.182***	0.143*	0.101
	(0.026)	(0.070)	(0.053)	(0.087)	(0.070)
Bachelors Degree	0.114***	0.052	0.154**	0.258***	-0.061
	(0.024)	(0.055)	(0.065)	(0.071)	(0.078)
Graduate Degree	0.081**	0.113	0.109	0.288***	-0.029
	(0.036)	(0.104)	(0.098)	(0.084)	(0.109)
Number of Siblings	-0.000	0.001	-0.008*	0.002	-0.002
	(0.001)	(0.003)	(0.004)	(0.004)	(0.004)
On-reserve	0.014	0.017	-0.013	-0.011	-0.116***
	(0.010)	(0.018)	(0.020)	(0.024)	(0.024)
Two Parent Household	-0.004	-0.012	-0.009	0.003	0.043
	(0.011)	(0.021)	(0.021)	(0.026)	(0.027)
Geographic FE & Latitude	Yes	Yes	Yes	Yes	Yes

Table A.3: The Effect of Mother's Residential School Attendance Accounting for Detailed Geographic and Age Fixed Effects

	(1)	(2)
ln(Birth Weight)	-0.023	-0.026
	(0.021)	(0.02)
Child Injured	-0.046*	-0.048**
	(0.025)	(0.023)
Been to Dentist	-0.023	-0.038
	(0.041)	(0.038)
Eat Vegetables	0.042	0.024
	(0.056)	(0.053)
ln(Height)	0.020*	0.017
	(0.011)	(0.011)
ln(BMI)	-0.071**	-0.074**
	(0.035)	(0.031)
Physically Active	0.147***	0.158***
	(0.055)	(0.053)
Get Along -- Teachers	-0.146**	-0.125**
	(0.059)	(0.054)
Likes School	-0.125	-0.133**
	(0.055)	(0.056)
Award for Grades	-0.102*	-0.076
	(0.052)	(0.051)
Award for Other	-0.151**	-0.141**
	(0.063)	(0.059)
Suspended or Expelled	0.043*	0.033*
	(0.023)	(0.018)
Latitude and Region effects	Yes	
Census division fixed effects		Yes
Linear control for mother's age	Yes	
Linear control for child age	Yes	
Fixed effects for mother's age		Yes
Fixed effects for child age		Yes

Notes: This table reports the marginal effects of mother's residential school attendance on each dependant variable listed in the first column with the effect's robust standard error given in parentheses below. The geographic fixed effects labelled "Region" cluster provinces into northern and southern regions, with the exception of British Columbia were an additional fixed effect is specified for the coastal region. Census division fixed effects indicates 52 regions in Canada. The asterisks indicate the level of significance: * $p<0.10$, ** $p<0.05$, *** $p<0.01$.