THERE ARE MORE OF US: DECLINING RELIGIOUS INTERMARRIAGE AMONG THE RELIGIOUSLY UNAFFILIATED IN CANADA

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ABSTRACT

In Canada, between 1981 and 2011, religious intermarriage for men and women without a religious affiliation declined from 38 percent to 21 percent. Over the same period, the unaffiliated population grew from 7 percent to 23 percent. We analyze Canadian census and survey data to examine the role of changing marriage markets, and in particular, increased group size, on decreased intermarriage among the unaffiliated. We select married young adults aged 18 to 34, residing in census urban areas. We include individual and group-level characteristics in probit models to estimate religious intermarriage for unaffiliated men and women. The model explains about two-thirds of observed changes in religious intermarriage, depending on period and sex. Decompositional analyses show that group-level characteristics account for 81-90 percent of the explained changes in intermarriage, depending on period and sex. For both sexes, relative group size was the single largest contributor to decreased intermarriage among the unaffiliated.

INTRODUCTION

Intermarriage or marriage between partners from different social groups such as races, ethnic groups, or religions is not as common as homogamy or marriage between persons who are similar on these or other characteristics. Many factors operate to encourage homogamy while discouraging or even forbidding intermarriage (see Kalmjin 1998 for a useful review). The literature on intermarriage is dominated by racial intermarriage (for some recent examples, see Fryer 2007, Fu 2001, Hou et al. 2015, Lee and Edmonston 2005, and Qian and Lichter 2011), which is not surprising given the important role of race and racial boundaries in many countries, including the U.S. and Canada. Researchers and popular commentators alike often view increased racial intermarriage as a particularly significant indicator of reduced social distance between racial groups and weakened racial boundaries (see for example Alba and Nee 2003; Lee and Edmonston 2005).

In this paper, we examine religious intermarriage or marriage between persons of different religions. In previous research on Canadian religious intermarriage trends and patterns from 1981 to 2011 (Lee et al., forthcoming), we found three distinct religious intermarriage trends: relatively high and increased intermarriage among Protestants, Catholics, Jews, and Buddhists; low and stable intermarriage levels among Sikhs and Hindus; and decreased intermarriage among Muslims, from very low levels, and those reporting no religion, from relatively high levels. The relatively high intermarriage levels among the unaffiliated declined from 38 percent in 1981 to 21 percent in 2011. Over the same period, the proportion of Canadians without a religious affiliation tripled between 1981 and 2011, from 7 percent in 1981 to 23 percent in 2011 (Lee et al. forthcoming).

We extend our previous research to focus on the role of changing marriage markets, and in particular, the role of increased group size, on declining intermarriage among those reporting no religious affiliation. The focus on declining intermarriage among the religiously unaffiliated contributes to the literature on intermarriage in several ways.

First, there is less research on religious intermarriage compared with racial intermarriage, mainly because of lack of data. To examine trends and predictors of religious intermarriage, researchers need multiple large representative data sets with detailed information on individuals and couples. The decennial U.S. census and the American Community Survey which replaced the long-form U.S. census beginning with the 2010 decennial census are prohibited from asking questions about religion. This has limited U.S. research on religious intermarriage and most U.S. research on this topic have utilized the General Social Survey (McCutcheon 1988; Rosenfeld 2008; Sherkat 2004) or other smaller sample surveys (Lehrer 1998; Rosenfeld 2008).

Second, unlike racial statistics where people cannot report having no racial identity (except for non-response), the option of reporting no religious affiliation offers an opportunity to consider and examine a category of people for whom religious identity and boundaries may not exist, or may exist in a fundamentally different way from those who report a religion. In addition, the unaffiliated have not been a main focus of previous studies of religious intermarriage which have usually focused on intermarriage between persons of specific religions such as Protestants, Catholics, and Jews (Hoge 1995; Kennedy 1952; Sherkat 2004) or particular groups such as Catholics (Davidson and Widman 2002) or Jews (Brym et al. 1985; Mayer 1980).

Third, the unaffiliated have usually tended to intermarry at higher levels than persons with religious affiliations (Lee et al. forthcoming). This is often interpreted to mean that among the unaffiliated, religion and religious boundaries hold little or no importance for choosing a

marital partner. However, if more people are reporting no religious affiliation, and fewer unaffiliated are intermarrying, opting instead to marry a partner who is also unaffiliated, this may signal a new development where having no religious affiliation may become a new form of identity, separating this secular group from others with religious affiliations. Increased endogamy among people without a religious affiliation may represent a new form of homogamy. There are important implications of such a development, including the possibility of greater divisions and tension between secular and religious communities, and changes to the role of religion in public and social policies.

THEORETICAL PERSPECTIVES ON INTERMARRIAGE

Factors affecting intermarriage can be classified into two broad categories: social integration factors and demographic constraints (Kalmijn 1998; Kalmijn and Van Tubergen 2010; Qian and Lichter 2007). Social integration factors affect the formation and consolidation of individuals' marital preference for in- or out-group members, including cultural norms and values as well as social distance and economic inequalities between social groups. For most social groups, the normative pattern is preference for in-group members. Demographic constraints refer to population-level opportunities that facilitate or impede the realization of individuals' preference for in-group marriage or out-group marriage. Relative group size is one key dimension of such structural constraints.

Social Integration Perspective

The social integration perspective focuses on personal preferences, third-party influences (including parents, peers, mass media, religious and political institutions), and cultural and structural assimilation (Kalmijn and van Tubergen 2010). In the case of race and marriage, personal preferences for endogamy are strongly influenced by cultural similarities, social

distance, and economic inequalities between racial groups. When racial intermarriage increases, it is usually interpreted from the perspective of Gordon's (1964) concept of structural assimilation, that is, the incorporation of racial minorities into mainstream social networks and institutions. Intermarriage is considered a particularly significant indicator of weakening or eroding racial boundaries, leading to reduced social distance and inequalities between the majority/dominant racial group (whites in the U.S. and Canada, for example) and racial minorities (Alba and Nee 2003; Hwang et al. 1997; Lee and Boyd 2008; Qian and Lichter 2007).

Religious endogamy or intermarriage can be similarly explained. Most religions encourage endogamy and many have strict rules against marrying out. As Hoge (1952:302) noted, "All religious groups prefer same-faith marriages for their youth." Endogamous preferences are reinforced through other overlapping characteristics such as ethnicity and cultural affinities, and social inequalities between religions. Religious intermarriage may therefore represent a weakening of religious boundaries, decreased social distance between religions, or increased secularization in society (Kalmijn 1991; 1998).

Demographic Constraints Perspective

The role of demographic constraints is explained by Blau and his co-authors who propose that structural conditions function as overt constraints on personal opportunities in marriage markets (Blau et al. 1982; Blau and Schwartz 1984). Although people may prefer to marry within their social group (be it racial or ethnic or religious), there must be an adequate pool of suitable matches for this preference to be realized. In addition, Blau and Schwartz (1984) suggest that inter-group heterogeneity is another key demographic constraint and is assumed to positively affect inter-group marriage since it increases the opportunity to find cross-group

alternatives. Heterogeneity is defined as "the chance expectation that two randomly selected persons belong to two different groups" (Blau and Schwartz 1984: 10).

Compared with the importance of relative group size, however, inter-group heterogeneity plays a minor role in explaining intermarriage between minority and majority groups, for two reasons. First, inter-group heterogeneity usually varies little across marriage market (Blau et al. 1982). Second, when the minority group is relatively small in size, its members have a large potential pool of potential mates to select from even just a limited or particular segment of the majority group (Hou et al. 2015.)

Drawing on the macrostructural perspective, researchers have examined marriage markets and intermarriage where a marriage market represents the pool of potential partners for a person seeking a partner. The concept of a marriage market borrows the market analogy from economics and has been usefully applied to research on intermarriage (Blau et al. 1982; Harris and Ono 2005; Rosenfeld 2001). Important aspects of a marriage market include the relative sizes of groups, and similarities or differences within a group on race, ethnicity, and socioeconomic status. As race, ethnicity, and socioeconomic status are key factors in assortative mating, within-group diversity may reduce the chance to find a suitable partner who are similar on these characteristics within the group (Hwang et al. 1997; Kalmijn and van Tubergen 2010).

Group size is a key factor in understanding intermarriage, and researchers have proposed procedures to account for its effect when measuring intermarriage rates (Besanceney 1965; Schoen 1986). In recent years, loglinear models have been frequently used to adjust observed patterns of intermarriage by controlling for the size of different groups in the model. Loglinear models estimate how the odds of intermarriage would compare to those of homogamy, if all groups in the model were of equal size (see, for example, Qian and Lichter 2011).

Besides controlling for group size, researchers have further refined the idea of a marriage market to add a spatial component as most marriages form in local areas (Blau et al. 1982; Harris and Ono 2005; Hou et al. 2015). Instead of a national marriage market, these studies used smaller geographical units to proxy local marriage markets and provide improved measures of intermarriage by taking into account variations in important demographic characteristics (for example, racial composition) of different local areas.

DATA

To study national trends and predictors of religious intermarriage, researchers need multiple large representative data sets with detailed information on individuals and couples. The Canadian census, which is conducted every five years, includes a question on religion in the long-form census every ten years in alternating censuses (see Statistics Canada 2013a, for a brief summary of the history of the Canadian census). Data on religion are based on self-identification to an open-ended question. For example, the question on religion in the two most recent data sets used, the 2001 census and 2011 National Household Survey (NHS) was: "What is this person's religion?" Respondents were instructed to write in the space provided one specific denomination or religion even if they were not currently practicing the religion. Several examples of religions were listed below the question, including Roman Catholic, United Church, Muslim, or Jewish. There was a fill-in circle for those reporting no religion (see Statistics Canada 1981, 1991, 2001, and 2011 for further details).

Canadian census data therefore represent a unique data source for research on religion, and in particular, religious intermarriage trends, because of sufficiently large nationally representative samples of married couples from different religious backgrounds, including smaller religious groups, over many decades.

The data for this study are from the 1981, 1991, and 2001 Canadian censuses 20% microdata files, and the 2011 National Household Survey (NHS).[1] This study includes only residents in census metropolitan areas (large urban areas) or census agglomeration areas (small urban areas) because we treat these urban areas as the unit of local marriage markets to derive our demographic constraints and other contextual/marriage market measures (Blau et al. 1982; Crowder and Tolnay 2000; Harris and Ono 2005; Hou et al. 2015).

This study limits analysis to religiously unaffiliated young adults in opposite sex unions (legal marriage or common-law), aged between 18 and 34 (although the maximum age for their partners could reach 54). Previous studies commonly restrict analysis to young adults as proxies for recently formed unions (Fu 2001; Gullickson 2006; Qian 1997). We include cohabitating or common-law individuals because it has become the most common path of entry into conjugal relationships (Kennedy and Bumpass 2008) and cohabitation is particularly prevalent among young adults (Blackwell and Lichter 2000).[2]

The study sample includes both Canadian-born and foreign-born. For the foreign-born, we exclude persons who immigrated to Canada at age 18 or older because adult immigrants could have married in their source countries or may have limited exposure to people from different religious backgrounds in Canada. We refer to the immigrants in the study sample as "child immigrants." The final sample sizes range from 17,300 in 1981 to 65,300 in 2011 for young unaffiliated wives and from 21,800 in 1981 to 61,700 in 2011 for young unaffiliated husbands.

Variables and Measures

In this study, religion is classified into 9 broad groups: Protestant, Catholic, Jewish, Buddhist, Hindu, Sikh, Muslim, other religions, and no religion. When an individual with no religion (the unaffiliated) has a partner from any of the other eight religions, he/she is considered

intermarried (either legally married or common-law union). As this study focuses on intermarriage of the unaffiliated, intermarriage between individuals reporting any of the other eight religious groups is not considered.

Two sets of predictors are included in multivariate analyses of intermarriage among the unaffiliated. One set is measured at the individual level while the other is measured at the level of local marriage markets or group level.

Individual Level Predictors

Individual level predictors include age (in single year, ranging from 18 to 34), marital status (common-law vs. legally married), nativity (child immigrants who arrived in Canada before age 18 versus the Canadian-born), racial status (non-whites versus whites), education, and the logarithm of annual earnings. Education has five categories: less than high school, high-school graduate, some post-high school education, Bachelor's degree, and post-Bachelor or graduate degree. Annual earnings include income from paid and self-employment, and are adjusted to 2011 constant dollars. Negative or zero earnings are assigned the value of 1 for the logarithm transformation.

Group or Contextual Level Predictors

Contextual variables measured at the local marriage markets include earnings ratio, within-group education dissimilarity, within-group ethnic dissimilarity, within-group sex ratio, and the relative population size of unaffiliated young adults.

Earnings ratio is computed as the ratio of the average earnings among the unaffiliated young adults (age 18 to 34) over the average earnings of young adults who reported a religion. This variable is used to represent the economic status of the unaffiliated as a group relative to individuals with a religion in a local marriage market.

Within-group education dissimilarity measures the level of difference in the distribution of the five educational levels between unaffiliated young men and women. The value of this variable could range from 0 to 100 and can be interpreted as the percentage of the unaffiliated men that would have to change their educational level to achieve equal distribution with unaffiliated women. Similarly, within-group ethnic dissimilarity measures the level of difference in the ethnic composition between unaffiliated young men and women. Seven ethnic groups are used in deriving this measure: British ethnic origin, French ethnic origin, other European ethnic origin, Blacks, Asians, other visible minorities, and Aboriginals.

Since education and ethnicity are two key dimensions along which marriage homogamy is structured, these two measures are used to capture the effect of within-group heterogeneity on religious intermarriage. Higher within-group heterogeneity is expected to increase religious intermarriage as members seek partners outside of the group who are similar on education and ethnicity.

The last two group-level measures indicate the role of demographic constraints: (1) within-group male/female ratio (or sex ratio), which is the population size of unaffiliated young men divided by the population size of unaffiliated young women, and (2) relative population size of the unaffiliated, defined as the ratio of the unaffiliated population and the population with a religion in a local marriage market. These two group-level factors have been commonly used in empirical research to capture the effects of demographic constraints on intermarriage. A higher sex ratio is expected to increase intermarriage while increased relative group size reduces intermarriage.

Data Limitations

While the census and NHS data examined in this paper represent a uniquely valuable source for addressing our research questions, we note some data limitations. The data used in this study do not have measures of personal preferences and attitudes and group-level social norms. This is a common limitation of studies using national population census or survey data. These unobserved/unmeasured factors could contribute to change in religious intermarriage rates that cannot be accounted for by the included individual-level and marriage-market level predictors.

Census and NHS data also cannot address questions of how religious people are, indicated by behavioral indicators such as religious attendance and practices, or subjective assessment of their religiosity, such as strength of religious beliefs. Increases in religiosity over time could reduce the likelihood of religious intermarriage for the unaffiliated (that is, persons with a religion would become less likely to marry someone without a religion), while decreases in religiosity over time would have an opposite effect.

Another limitation is that the data measure religion at the time of data collection, and we do not know if there had been any religious switching before or after the formation of a union. If such possible switching biases towards one particular direction, for example, if more people switched out of a religion to join the ranks of the unaffiliated after marriage, and this tendency has increased over time, it could be a factor for observed declines in religious intermarriage among the unaffiliated.

METHODS

We conduct descriptive analyses to provide background information on religious trends in Canada and the study sample. In the multivariate analyses, we estimate a multi-level probit model to predict intermarriage among the unaffiliated. The probit model is estimated separately

for males and females. Using results from the probit models, decomposition analysis is used to specify the relative contribution of different predictors to changes in intermarriage.

Probit Model

We use a multi-level probit model to incorporate both individual-level characteristics and marriage-market level measures to predict intermarriage between the unaffiliated and individuals with a religion. The model is specified as

$$P(Y = 1|x) = \Phi(\beta_t T + \beta_j x_j)$$

where $P(Y = 1|x)$ is the probability of an unaffiliated individual having a partner with a religion, given a set of individual-level and group-level characteristics (T, X); β_t and β_j are the estimated probit coefficients; Φ is the standard normal cumulative density function; and x_j represents all explanatory variables discussed in the variables section. Data from the four decades (1981, 1991, 2001, and 2011) are pooled together, and T is coded as three dummy variables (1991, 2001, and 2011, with 1981 as the reference). These dummy variables are used to represent changes over time in the likelihood of intermarriage among the unaffiliated.

In the data, individuals are nested within the local marriage market from which the contextual variables are derived. The dependency among observations within a local marriage market can lead to underestimated standard errors in the regression coefficients. To address this problem, we use robust variance estimation that takes into account cluster effects (correlated errors within metropolitan areas) and unequal variances across metropolitan areas (Steenbergen and Jones 2002). Such a model is equivalent to a fixed-intercept model with level-1 covariates and level-2 predictors within the framework of Hierarchical Linear Models (Raudenbush et al. 2000).

We construct models separately for unaffiliated women and men because they tend to have different intermarriage rates (for example, men have higher religious intermarriage rates – Lee et al. forthcoming). In addition, the effects of explanatory variables may differ by gender (Qian and Lichter 2011). Such complications are better handled in gender-specific models (Hwang et al. 1997; Kalmijn and van Tubergen 2010).

Decomposition Analysis

We adopt a decomposition approach for non-linear models to examine the extent to which the observed change in religious intermarriage between 1981 and 2011 can be accounted for by the selected explanatory variables and the contribution of each explanatory variable (Even and Macpherson 1993; Yun 2004). This approach has been applied to a wide range of dichotomous outcomes, such as unionization, intermarriage, and poverty (Even and Macpherson 1993; Hou et al. 2015; Morissette and Drolet 2001).

The decomposition approach involves two steps. The first is to identify the "explained" portion of the change in the prevalence of religious intermarriage. This "explained" portion is attributable to changes in covariates between two periods. It equals the difference between the observed changes and the estimated marginal effect of T in the above probit model controlling for all covariates.

The second step is to identify the contribution of each covariate to the "explained" portion. The contribution of explanatory variable x_j to the explained difference is calculated as

$$\frac{(\bar{X}_{t2} - \bar{X}_{t1})\beta_j}{\sum(\bar{X}_{t2} - \bar{X}_{t1})\beta}$$

where $\bar{X}_{t2}$ is the mean of x_j in time 2 while $\bar{X}_{t1}$ is the mean of x_j in time 1 (Even and Macpherson 1993; Yun 2004).

DESCRIPTIVE RESULTS

< Table 1 About Here >

We begin with descriptive results to provide a context for the multivariate results. As previously noted, the proportion of Canadian adults who report no religion has increased dramatically since 1981, growing from 7.1 percent of adults aged 18 years and older in 1981 to 23.1 percent in 2011 (see Table 1). We show separate percentages among younger adults, those aged 18 to 34 years (see bottom of Table 1), because young adults comprise the study sample for later analyses. For this category, the percent unaffiliated increased from 9.5 percent in 1981 to 31.8 percent in 2011.

Males are more likely to report no religion than females, and the gender gap has slightly widened. In 1981, 8.8 percent of males aged 18 years and older reported no religion compared with 5.6 percent of females. In 2011, 25.6 percent of males and 20.5 percent of females were unaffiliated. There is a similar pattern between males and females for those aged 18 and 34 years old.

Although the proportion of adults reporting no religion has increased over time, the pattern by age has remained similar. The highest proportion reporting no religion is found among younger adults, especially those aged 25 to 34 years (see Table 1). The percent reporting no religion decreases with older age. It is noteworthy that while there are age cohort differences, where higher percentages of younger cohorts report no religion, the trend towards being unaffiliated cuts across all cohorts, as shown in Table 2. Differences by age cohorts are larger, however.

< Table 2 About Here >

Limiting further descriptive findings to adults aged 18 to 34, among the Canadian-born, the percent unaffiliated grew from 8.7 percent in 1981 to 33.7 percent, while among the foreign-born, the increase was from 14.9 percent to 24.6 percent (see Table 3).

< Table 3 About Here >

Nativity is also related to another sociodemographic characteristic in Canada, visible minority status (or race).[3] A higher proportion of immigrants are visible minorities,[4] so we compared the percentages reporting no religion by visible minority status (see Table 3). In 1991, 22.4 percent of visible minorities and 13.8 percent of non-visible minorities (that is, Caucasians/whites) reported no religion.[5] By 2011, the percent unaffiliated was 24.4 percent among visible minorities and 34.1 percent among non-visible minorities. Together with the findings on nativity differences, Canadian-born whites have become a larger share of the unaffiliated.

We examined differences by education and found that becoming unaffiliated occurred among all levels of education and differences by education had narrowed over time. For example, in 1981, 7.3 percent of high school graduates reported no religion compared with 13.8 percent of university graduates. In 2011, 33.7 percent of high school graduates and 31.9 percent of university graduates reported no religion.

Comparisons by geographical and metropolitan area of residence revealed large differences. Higher proportions of young people who reside in the western part of Canada (that is, the Prairie Provinces and British Columbia) report no religion, a pattern that persists over time. British Columbia stands out with over half (53.3 percent) of young persons aged 18-34

reporting no religion in 2011, compared with Quebec, for example, where just 19 percent of persons in the same age group report no religion.

Finally, while young adults who reside in metropolitan areas were slightly more likely to report no religion in 1981 (11.3 percent compared with 7.7 percent for those in non-metropolitan areas), the small difference had further narrowed by 2011 (32.4 percent in metropolitan areas and 30.4 percent in non-metropolitan areas). What is more striking is the overall trend of becoming unaffiliated, regardless of metropolitan or non-metropolitan residence.

< Table 4 About Here >

The intermarriage rate of the unaffiliated decreased from 52.3 percent in 1981 to 25.2 percent in 2011 among men, and from 29.8 percent to 15.6 percent among women (see top panel, Table 4). Unaffiliated men were more likely to intermarry than unaffiliated women, but the gender difference has narrowed substantially, from 22.5 percent in 1981 to 9.6 percent in 2011.

When the unaffiliated intermarried, their partners were mostly Protestants or Catholics (see Table 4). The rate of intermarriage with Protestants declined much more than that with Catholics. The rates of intermarriage with other smaller religion groups were very small and did not change much over the study period.

< Table 5 About Here >

Table 5 shows means of individual and group-level characteristics/predictors of the study sample. At the individual level, for both husbands and wives, the share who are in a common-law relationship has increased, from about 24-25 percent in 1981 to 56-58 percent in 2011. The share of child immigrants (relative to the Canadian born, as adult immigrants were excluded from the sample) has decreased from about 10-11 percent in 1981 to 5 percent in 2011. The

share of non-whites (or visible minorities) tripled from about 4-5 percent in 1981 to 12-14 percent in 2011. Educational level improved considerably, particularly among women, with declines in those without a high school education and increases in those with a Bachelor's degree. The average real earnings (that is, adjusted for inflation) of unaffiliated men decreased over time. This is consistent with the general trend in declining labor market outcomes of young men in Canada. In comparison, the real earnings of unaffiliated women increased continuously over time.

At the group level (regardless of marital status, that is, also including people not in a conjugal relationship), the unaffiliated earned more than individuals with a religion in 1981, but this pattern was reversed in later periods. The educational levels and ethnic composition between unaffiliated men and women were similar, as indicated by the small dissimilarity indexes which could range from 0 to 100 in value. There are more unaffiliated men than unaffiliated women, although the sex ratio has declined over time. Most importantly, relative group size, defined as the population size of the unaffiliated over that of people with a religion, doubled from 1981 to 2001, and increased another 65 percent from 2001 to 2011.

MULTIVARIATE RESULTS

Probit Model Results

< Table 6 About Here >

Table 6 shows results from estimating probit models of intermarriage for unaffiliated husbands and wives. Model 1 shows the change in the proportion of intermarriage among the unaffiliated using 1981 as the reference year. For instance, the coefficient for "2011" in Model 1 for unaffiliated husbands implies that the proportion of intermarriage among unaffiliated husbands decreased by 0.271 points (or 27.1 percentage points). The coefficients associated with

the three year dummy variables in Model 2 are the changes in the proportion of intermarriage after controlling for all individual and group-level predictors in the probit model. For both unaffiliated husbands and wives, intermarriage has decreased in each decade, since 1981. The decreases are larger among husbands, and all changes are statistically significant after controlling for the included individual-level and group-level predictors (except for unaffiliated wives between 1981 and 2001).

The included predictors account for about two-thirds of the observed changes in intermarriage rates, depending on period and sex. For unaffiliated husbands, older age, being in a common-law relationship, and being non-white are all associated with lower likelihoods of intermarriage. The effect of education is not linear as having less education (less than high school) and more education (graduate degree) both lower the likelihood of intermarriage compared to those with a Bachelor's degree. Of the individual-level predictors, only higher earnings have statistically significant positive effects, increasing the likelihood of intermarriage.

For unaffiliated husbands, among group-level predictors, higher group average earnings, larger within-group ethnic dissimilarity, and higher sex ratio increase intermarriage. In contrast, larger relative group size is associated with a lower intermarriage. Within-group education dissimilarity did not affect unaffiliated husbands' intermarriage.

The included predictors for unaffiliated wives have generally similar effects. Older age and being non-white lower intermarriage while higher earnings increase intermarriage. The effects of education are not statistically significant. For group-level predictors, higher group average earnings increase intermarriage and, as for unaffiliated husbands, relative group size has a large negative effect. However, unlike for husbands, sex ratio has no significant effect on

intermarriage for unaffiliated women. Within-group education and ethnic dissimilarities also did not affect unaffiliated wives' intermarriage.

Decomposition Analysis Results

< Table 7 About Here >

Table 7 shows results from decomposition analysis and the contribution of each predictor to the explained change over time in intermarriage. The first row presents the observed changes, while the second row presents the unexplained changes. Both rows are replicated from Table 6. The third row, explained change, is simply the difference between the first and second rows. The lower portion of the table shows the contribution of each predictor, in percentage, to the explained change for each period.

Among unaffiliated men, relative group size, sex ratio, and earnings ratio, all being group-level predictors, contributed the most (around 86 to 87 percent) to the explained change. For example, for the overall 1981 to 2011 period, earnings ratio (10.8 percent) plus sex ratio (30.4 percent) plus relative group size (44.9 percent) together accounted for 86 percent of the explained change. Between 1981 and 1991, the change in sex ratio played a larger role than the change in relative group size. However, for the whole period from 1981 to 2011, the change in relative group size played a larger role than the change in sex ratio, accounting for 45 percent of the explained change in intermarriage. Over time, earnings ratio explained less of the decline in intermarriage.

For unaffiliated women, two marriage market predictors, relative group size and earnings ratio, contributed the most (81 to 90 percent) to the explained changes in intermarriage. For example, earnings ratio (34.5 percent) plus relative group size (46.9 percent) accounted for over 81 percent of the explained change in intermarriage between 1981 and 1991. For the whole

period, from 1981 to 2011, change in relative group size was the largest factor in explaining changes in intermarriage, accounting for 75 percent of the explained change in unaffiliated women's intermarriage. Indeed, relative group size was the largest factor in unaffiliated women's declining intermarriage throughout the period under study while the role of earnings ratio declined over time.

DISCUSSION AND CONCLUSION

The main purpose of this paper has been to examine the role of changing marriage markets, and in particular, changing relative group size, on declines in religious intermarriage among those without a religious affiliation in Canada. The macro-structural perspective on intermarriage highlights the role of demographic constraints on intermarriage, and many previous studies of intermarriage have shown the important role of relative group size on intermarriage: the larger the group, the lower the intermarriage rate (see, for example, Davidson and Widman 2002; Schoen 1986).

Results provide strong support for the macro-structural perspective on intermarriage. Three key group-level factors – earnings ratio, sex ratio, and relative group size – accounted for 86 percent of decreased religious intermarriage among unaffiliated husbands and 96 percent of the decline in religious intermarriage among unaffiliated wives over the 1981 to 2011 period.

The findings also provide compelling evidence of the powerful role that relative group size has on religious intermarriage among the unaffiliated. Relative group size was the single largest contributor to decreased intermarriage between 1981 and 2011 among unaffiliated wives and husbands in Canada, accounting for 75 percent of the explained decline in intermarriage for

unaffiliated wives, and 45 percent of the explained decline in intermarriage for unaffiliated husbands.

Another marriage market measure, sex ratio, increased unaffiliated husbands' intermarriage but did not affect unaffiliated wives' intermarriage. Unaffiliated husbands may experience a "marriage squeeze" and respond by seeking partners with religious affiliations. As the unaffiliated population increased over time, with more unaffiliated women becoming available, the effect of sex ratio should decrease, and this is what the results show. Descriptive results show a higher proportion of men reporting no religious affiliation, so unlike unaffiliated men, unaffiliated women would not experience a scarcity of unaffiliated potential partners and the effect of sex ratio on intermarriage for unaffiliated wives, while positive, is small and not statistically significant.

The effects of another marriage market economic measure, earnings ratio of the unaffiliated over those with religious affiliations, are positive for both unaffiliated husbands and wives. At the individual level, higher earnings also increase intermarriage for both husbands and wives. One interpretation implies a form of status exchange whereby economically advantaged unaffiliated individuals exchange their economic success for marriage with someone who has a religious affiliation. This would assume that having a religion is more desirable in the marriage market, but we do not know if this is the case. Questions have also been raised about the status exchange hypothesis when applied to racial intermarriage (Rosenfeld 2005), so much more information and research is needed to support a status exchange interpretation of these results.

An alternative explanation suggests that economically advantaged people tend to marry other similarly advantaged people, regardless of race or religion. Some studies of racial intermarriage support the idea of education assortative mating whereby highly educated people

tend to marry one another (Fu and Heaton 2010; Kalmijn 1991; Qian et al. 2001). Some racially intermarried couples have higher socioeconomic status than their racially endogamous counterparts (Lee 2010), lending further support to the idea of assortative mating. We did not examine characteristics of spouses of intermarried unaffiliated husbands and wives, but future research to investigate the relative merits of the status exchange and assortative mating hypotheses on intermarriage among the unaffiliated would be important contributions to the literature.

While this paper's primary focus is on marriage market factors on unaffiliated people's intermarriage, we note that two individual characteristics have similar effects on unaffiliated husbands' and wives' intermarriage. Intermarriage is lower with increased age, and non-whites are less likely to intermarry. The age gradient is similar to findings from many previous studies of racial (see for example Lee and Edmonston 2005) and religious intermarriage (Lee et al. forthcoming). Lower religious intermarriage among non-whites is also consistent with research showing the continued importance of race in marriage where, despite increases in recent years, racial intermarriage still remains relatively low (Hou et al. 2015; Kalmijn 1993; 1998).

This paper's examination of how changing marriage markets, and in particular increases in group size, contributed to declines in intermarriage among the unaffiliated in Canada, produced many new findings and also raised some questions for future research. The results lead us to conclude that the unaffiliated population will continue to grow, and religious intermarriage for this population will continue to decline. The emergence and expansion of an increasingly endogamous unaffiliated community could signal further weakening of the role of religion in Canadian society and/or could be an indicator of a growing divide between religious and non-religious communities. Religious differences also overlap with nativity and race, as Canadian-

born whites become a larger proportion of the unaffiliated. Taken together, these different trends add complexity to how the role of religion may be changing in marriage and other areas of social life in Canada.

[1] The Canadian federal government decided to eliminate the long form census from the 2011 census, replacing it with a voluntary household survey. Information that would have been included in the 2011 long form census, including religion, was instead collected in the 2011 NHS.
[2] For convenience, we use "marriage" and "intermarriage" and "wives" and "husbands" to refer to the study sample even though individuals in common-law unions are included.
[3] The Employment Equity Act of Canada defines visible minorities as "persons, other than Aboriginal persons, who are non-Caucasian in race or non-white in colour." Visible minorities include Chinese, South Asians, Blacks, Filipinos, Latin Americans, Arab, West Asians, Koreans, and Japanese (Statistics Canada 2013b: 14).
[4] In 2011, 19.1 percent of Canada's population identified as visible minority. Of this, 30.9 percent were born in Canada and 65.1 percent were foreign-born (Statistics Canada 2013b).
[5] Data for all visible minorities are not available in 1981, so Table 3 shows data on visible minorities from the 1991 census on.

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Table 1. Percentage of Canadian Adults, by Age and Sex, Who Report No Religion, 1981 to 2011				
	1981	1991	2001	2011
All Adults, 18 Years and Older	7.1	11.5	15.0	23.1
Males	8.8	13.5	17.2	25.6
Females	5.6	9.7	13.0	20.5
Age Groups				
18-24	8.8	14.8	20.0	30.9
25-34	10.2	14.8	20.4	32.5
35-44	7.5	13.3	16.6	26.6
45-54	5.8	9.7	14.1	21.7
55-64	4.4	7.6	10.5	18.2
65+	3.0	5.7	8.1	12.2
Sample Size, Adults 18 Years and Older	349,910	602,050	612,608	695,022
Adults, Aged 18-34 Years	9.5	14.8	20.2	31.8
Males	11.2	16.4	22.0	34.8
Females	7.9	13.2	18.4	29.7
Source: Statistics Canada, Public Use Microdata Sample Files.				

Table 2. Percentage of Canadian Adults, by Birth Cohort from 1921-25 to 1986-90, Who Report No Religion, 1981-2011

Birth Cohort	1981	1991	2001	2011
1986-90				34.3
1981-85				32.4
1978-80			21.5	30.7
1971-75			21.3	28.4
1966-70		14.9	18.5	24.9
1961-65		14.5	17.0	22.6
1956-60	11.3	13.9	15.7	20.8
1951-55	10.5	12.0	14.6	19.3
1946-50	9.8	10.1	13.0	17.0
1941-45	7.8	8.5	10.9	13.8
1936-40	6.8	7.8	9.3	11.9
1931-35	6.2	7.2	8.9	10.3
1926-30	5.2	6.4	8.4	10.1
1921-25	4.6	5.2	7.0	9.4
Sample Size, Adults 18 Years and Older	349,910	602,050	612,608	695,022

Source: Statistics Canada, Public Use Microdata Sample Files.

Table 3. Selected Characteristics of Canadian Adults, Aged 18-34, Who Report No Religion, 1981-2011 (in percentages)

	1981	1991	2001	2011
All Adults, 18-34 Years	9.5	14.8	20.2	31.8
Canadian-born	8.7	14.1	20.0	33.7
Foreign-born	14.9	18.7	21.0	24.6
Visible Minority	n.a.	22.4	22.9	24.4
Not Visible Minority	n.a.	13.8	20.8	34.1
Education				
Less than high school	8.7	16.7	22.5	33.7
High school graduate	7.3	14.1	19.9	33.7
Post-high school	10.0	12.5	15.7	29.4
University graduate or more	13.8	14.5	20.9	31.9
Region				
Atlantic Provinces	2.7	6.7	12.4	24.9
Quebec	2.6	4.2	8.4	19.0
Ontario	9.4	14.7	20.5	30.3
Prairie Provinces	12.5	19.4	26.9	38.2
British Columbia	26.4	36.9	43.7	53.3
Northern Canada	6.8	21.1	30.4	42.9
Metropolitan Residence	11.3	16.3	21.8	32.4
Non-metropolitan Residence	7.7	12.3	17.2	30.4
Sample Size, Adults 18-34 Years	150,293	223,286	181,344	196,727

Source: Statistics Canada, Public Use Microdata Sample Files.

Table 4. Intermarriage among the Unaffiliated, and Percentage Distribution of Spouse's Religion among Intermarried Unaffiliated Husbands and Wives, aged 18-34

		1981	1991	2001	2011
Percent Intermarried					
	Husbands	52.3	38.6	35.9	25.2
	Wives	29.8	22.3	23.9	15.6
Wives of Unaffiliated Husbands		percent			
	Protestant	31.0	19.1	14.3	9.5
	Catholic	20.4	18.7	20.1	13.9
	Jewish	0.5	0.3	0.4	0.3
	Buddhist	0.1	0.1	0.3	0.5
	Hindu	0.0	0.1	0.1	0.1
	Sikh	0.0	0.0	0.1	0.1
	Islam	0.0	0.1	0.1	0.1
	Other religions	0.3	0.3	0.5	0.6
	No religion	47.7	61.4	64.1	74.8
Husbands of Unaffiliated Wives					
	Protestant	14.9	9.1	7.1	4.5
	Catholic	13.5	12.4	15.5	10.1
	Jewish	0.4	0.2	0.3	0.2
	Buddhist	0.2	0.2	0.3	0.3
	Hindu	0.0	0.0	0.1	0.1
	Sikh	0.0	0.0	0.1	0.1
	Islam	0.1	0.1	0.2	0.2
	Other religions	0.6	0.3	0.5	0.3
	No religion	70.2	77.7	76.1	84.4
Sample size		count			
	Unaffiliated husbands	21,800	34,300	35,500	61,700
	Unaffiliated wives	17,300	32,900	35,800	65,300

Note: all counts are rounded to the nearest 100.

Data sources: the 1981, 1991, and 2001 Census of Population 20% sample and the 2011 National Household Survey.

Table 5. Means of Individual-level and Group-level (Marriage Market) Predictors

	1981	1991	2001	2011
Unaffiliated Husbands				
Individual-level predictors				
Age	28.16	28.89	28.70	28.92
Common law	0.24	0.34	0.50	0.58
Child immigrant	0.11	0.08	0.06	0.05
Non-white (visible minority)	0.04	0.13	0.10	0.12
Less than high school	0.29	0.29	0.21	0.11
High school graduation	0.37	0.43	0.42	0.41
Some post-high school	0.13	0.13	0.18	0.23
Bachelor's degree	0.14	0.11	0.14	0.18
Graduate degree	0.07	0.04	0.05	0.07
Log earnings	10.28	9.93	9.82	9.65
Marriage market predictors				
Earnings ratio	1.10	0.97	0.94	0.97
Within-group education dissimilarity	6.35	6.39	9.04	12.68
Within-group ethnic dissimilarity	3.24	2.66	3.35	3.41
Sex ratio	1.48	1.30	1.23	1.20
Relative group size	0.17	0.30	0.38	0.63
Unaffiliated Wives				
Individual-level predictors				
Age	26.96	27.96	27.89	28.14
Common law	0.25	0.33	0.48	0.56
Child immigrant	0.10	0.08	0.06	0.05
Non-white (visible minority)	0.05	0.14	0.11	0.14
Less than high school	0.32	0.28	0.19	0.09
High school graduation	0.35	0.40	0.35	0.30
Some post-high school	0.16	0.19	0.24	0.28
Bachelor's degree	0.12	0.11	0.17	0.23
Graduate degree	0.04	0.03	0.06	0.09
Log earnings	7.68	8.07	8.36	8.44
Marriage market predictors				
Earnings ratio	1.09	0.97	0.94	0.98
Within-group education dissimilarity	6.28	6.39	9.06	12.69
Within-group ethnic dissimilarity	3.17	2.61	3.34	3.38
Sex ratio	1.47	1.29	1.22	1.20
Relative group size	0.18	0.31	0.39	0.64

Data sources: the 1981, 1991, and 2001 Census of Population 20% sample and the 2011 National Household Survey.

Table 6. Marginal Effects of Probit Models Predicting Intermarriage among the Unaffiliated

	Unaffiliated Husbands				Unaffiliated Wives			
	Model 1		Model 2		Model 1		Model 2	
	dy/dx		dy/dx		dy/dx		dy/dx	
Year (reference 1981)								
1991	-0.137	***	-0.045	***	-0.075	***	-0.026	**
2001	-0.164	***	-0.037	**	-0.059	***	0.006	
2011	-0.271	***	-0.102	***	-0.141	***	-0.047	***
Individual-level predictors								
Age			-0.002	***			-0.004	***
Common law			-0.034	***			0.005	
Child immigrants			-0.021				-0.010	
Non-whites			-0.044	***			-0.018	**
Less than high school			-0.026	***			-0.010	
High school graduation			-0.003				-0.002	
Some post-secondary			0.007				0.005	
Graduate degrees			-0.021	**			-0.004	
Log earnings			0.006	***			0.004	***
Marriage market predictors								
Earnings ratio			0.151	**			0.126	***
Within-group education dissimilarity			-0.001				-0.001	
Within-group ethnic dissimilarity			0.003	*			0.002	
Sex ratio			0.183	***			0.022	
Relative group size			-0.164	***			-0.157	***
Model pseudo R squared	0.030		0.042		0.014		0.024	
Number of observations	153,202		153,202		151,302		151,302	

Note: dy/dx is the differencec in the proportion of intermarriage for one unit increase in the predictor.

** significant at p <0.01

*** significant at p <0.001

Data sources: the 1981, 1991, and 2001 Census of Population 20% sample and the 2011 National Household Survey.

Table 7. Decomposition of the Explained Changes in Intermarriage among Unaffiliated Husbands and Wives

	Unaffiliated Husbands			Unaffiliated Wives		
	Change between			Change between		
	1981-1991	1981-2001	1981-2011	1981-1991	1981-2001	1981-2011
Total change in proportion intermarried	-0.137	-0.164	-0.271	-0.075	-0.059	-0.141
Unexplained change	-0.045	-0.037	-0.102	-0.026	0.006	-0.047
Explained change	-0.092	-0.128	-0.170	-0.049	-0.064	-0.094
Explained change as 100 percent	100.0	100.0	100.0	100.0	100.0	100.0
Individual-level predictors						
Age	1.8	0.9	0.9	9.0	6.2	4.8
Common law	4.0	7.4	7.0	-0.9	-1.9	-1.6
Child immigrants	-0.8	-0.9	-0.8	-0.6	-0.7	-0.5
Non-whites	4.8	2.3	2.2	3.8	2.1	1.8
Educational attainment	-0.4	-2.2	-3.1	-1.1	-2.8	-2.9
Log earnings	2.6	2.5	2.4	-3.2	-4.1	-2.8
Marriage market predictors						
Earnings ratio	21.9	19.4	10.8	34.5	32.3	15.2
Within-group education dissimilarity	0.1	3.3	5.6	0.2	4.0	5.6
Within-group ethnic dissimilarity	2.2	-0.3	-0.3	2.7	-0.6	-0.4
Sex ratio	39.0	38.4	30.4	8.8	9.1	6.2
Relative group size	24.8	29.1	44.9	46.9	56.4	74.7