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The Effect of Religious Belief on Fertility Rates in Europe and the United States

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CHAPTER ONE

INTRODUCTION

Europe is experiencing what British historian Niall Ferguson calls the greatest "sustained reduction in European population since the Black Death of the fourteenth century."[1] According to the 2005 World Population Data Sheet, Europe has an average Total Fertility Rate (TFR) of 1.4 and a -10% projected population change from 2005 to 2050.[2] Over the last fifteen years, Europe has experienced unprecedented low fertility rates defined as at or below 1.3 children per woman.[3] In striking contrast, the United States has a 2.0 TFR and a 42% projected population change from 2005 to 2050.[4] Pope John Paul II identified "the diminishing number of births," as a sign of "existential anguish" and "fear of the future" which accompanies a "loss of Europe's Christian memory."[5] He further contends that Europe is experiencing, "an obsessive concern for personal interests and

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[1] Niall Ferguson, "Europe: Eurabia?" *Hoover Digest* 3 (summer 2004) [journal on-line]; available from http://www.hooverdigest.org/043/ferguson2.html; accessed 20 October 2005.

[2] Population Reference Bureau, "2005 World Population Data Sheet of the Population Reference Bureau," available from http://www.prb.org/pdf05/05WorldDataSheet_Eng.pdf; accessed 8 Oct. 2005, 11

[3] Hans-Peter Kohler, Francesco C. Billari, and Jose Antonio Ortega, "Low and Lowest-Low Fertility in Europe: Causes, Implications and Policy Options," 18 March 2005; available from http://www.ssc.upenn.edu/~hpkohler/papers/Low-fertility-in-Europe-final.pdf; accessed 11 Oct. 2005, 1.

[4] Population Reference Bureau, "2005 World Population Data Sheet," 8; "Projected populations based upon reasonable assumptions on the future course of fertility, mortality, and migration," 14; The U.S. is borderline below replacement level which is defined as, "slightly more than two children per women." Hans-Peter Kohler, Francesco C. Billari, and Jose Antonio Ortega, "Low and Lowest-Low Fertility in Europe," 1.

[5] John Paul II, *Ecclesia in Europe*, Post-Synodal Apostolic Exhortation, Rome, 28 June 2003; available from http://www.vatican.va/holy_father/john_paul_ii/apost_exhortations/documents/hf_jp-ii_exh_20030628_ecclesia-in-europa_en.html; accessed 15 Oct. 2005, 8.

privileges," and "with the spread of individualism [there is] an increased weakening of interpersonal solidarity."[6]

Understanding why Europe is experiencing remarkably declining fertility rates while the United States is not, can provide worthwhile insight into a political problem relevant to the citizens and governments of both Europe and the U.S. Sustained low fertility rates leads to population aging and population decline. With an increase in the old-age dependency ratio, population aging strains government budgets with fewer workers supporting a growing retired population. The shrinking working-age population caused by population decline could also threaten productivity and economic growth.[7] In addition, population decline can "make military actions increasingly difficult for most nations," because of financial constraints on government spending and the loss of support from a "Private Ryan" phenomenon where every soldier is valued at a personal level.[8] Finally, the increased labor demands created from population aging and decline can cause a growth in immigration which may threaten social cohesion.[9] Europe's population problem is relevant to U.S. security because European's "demographic vacuum" is being filled by increased immigration from the Islamic world.[10]

This paper investigates the extent to which differences in religiosity explain the difference in total fertility rates between Europe and the United States. I argue that while

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[6] Ibid.

[7] Population Reference Bureau Staff, "Transitions in World Population," *Population Bulletin* 59, no. 1 (March 2004): 25, 28.

[8] Phillip Longman, "The Global Baby Bust," *Foreign Affairs* 83, no. 3 (May/June 2004): 70.

[9] Population Reference Bureau Staff, "Transitions in World Population," 28.

[10] George Weigel, *The Cube and the Cathedral: Europe, America, and Politics Without God, (*New York: Basic Books, 2005), 133.

religious people have more children than non-religious people both in Europe and the United States, income and female employment are intervening variables. I contend that, between 1990 and 1999, a positive correlation between mean rate of children (MRC) and attendance to religious services existed strongly in Great Britain, somewhat in France, less so in Poland,[11] and not at all in Ireland or the U.S.[12] Applying these micro level findings to a macro level means that the differences in fertility rates between the United States and Europe cannot be fully explained by differences in levels of religiosity. Finally, I speculate that those religious people that have more children than non-religious people do so because religious belief provides comfort, strength and hope for the future.

Although I do not seek to solve Europe's population problem, I consider my research in understanding what has caused the problem to be an important part in attaining a solution. I address my paper to the founders of the European constitution because they play a critical role in the formation of the future of Europe. The European constitution is also particularly relevant because of the controversy surrounding recognition of Europe's Christian heritage.[13] The final draft used for the treaty negotiations in June 2004 merely made reference in the preamble to "the cultural, religious, and humanist inheritance of Europe."[14] According to former French President Valéry Giscard d'Estaing, who presided

[11] Between 1997 and 1999.

[12] The data might have been skewed by a decline in marriage rates.

[13] Ibid., 57.

[14] Ibid., 62.

over the European constitutional convention, "Europeans live in a purely secular political system, where religion does not play an important role."[15]

Literature Review

McDonald provides an overview of "a range of theoretical paradigms that may have applicability in the explanation of low fertility, defined as fertility below replacement level."[16] Rather than argue in favor of a universal theory of low fertility, McDonald recognizes "very distinct dimensions of overlap between [the theories]," and proposes that they should be considered in combination "in different weightings for different societies."[17] Four of the major theories are the "demand or rational choice theory," the "gender equity theory," the "post-materialist values theory," and the "theory of risk and opportunity."[18] I will consider all four theories in my analysis.

According to the "demand or rational choice theory," which was founded by Becker, "in deciding to have a child, people make the considered calculation that the benefits of an additional child outweigh the costs. Decline in fertility thus implies that the relative price of a child has increased, couple incomes have fallen or there has been a change in the shape

[15] "Unholy Row on God's Place in EU Constitution," *Christian Century*, 5 April 2003; [journal on-line]; available from http://www.findarticles.com/p/articles/mi_m1058/is_7_120/ai_99988479; accessed 28 Oct. 2005.

[16] Peter McDonald, "Theory Pertaining to Low Fertility," Paper presented at the International Union for the Scientific Study of Population Seminar on International Perspectives on Low Fertility: Trends, Theories, and Policies, Tokyo, Japan, 21- 23 March 2001; available from http://demography.anu.edu.au/Publications/ConferencePapers/IUSSP2001/PaperMcDonald.doc; accessed 10 Oct. 2005, 4; Replacement level is "slightly more than two children per women." Hans-Peter Kohler, Francesco C. Billari, and Jose Antonio Ortega, "Low and Lowest-Low Fertility in Europe," 1.

[17] Ibid.

[18] Ibid, 4, 8 & 11.

of the couple's utility function for children versus other goods."[19] This primarily economic model, notes that the "indirect or opportunity costs of having children (lost market earnings due to having children) are contingent upon the feasibility of combining market work with children."[20] My data analysis will address this economic model by comparing fertility levels between religious and non-religious people in Europe and the U.S. across low, middle and high income levels.

The "gender equity theory" focuses on the opportunity costs faced by women in advanced countries where "the male breadwinner model still underpins family-orientated social institutions."[21] According to this theory, low fertility in advanced countries occurs when

> … the levels of gender equity in institutions that deal with people as individuals, such as education and market employment, are high while, on the other hand, the levels of gender equity applying in institutions that deal with people as members of families, such as industrial relations (the terms and conditions of employment), family services, the tax system, social security and the family itself are low.[22]

A combination of "demand or rational choice theory" and "gender equity theory," constitutes the primary school of thought arguing against my original hypothesis that religious beliefs have a strong effect on fertility rates.

Several sources contend that a decline in fertility rates in Europe can be explained by factors independent of religious influence including socioeconomic changes and the ability for women to have both a family and a career. Kohler, Billari, and Ortega argue that the lowest-low fertility in Europe is due to "socioeconomic incentives to delay

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[19] Ibid., 4; see also G. Becker, *A Treatise on the Family*, (Cambridge: Harvard University Press, 1981).

[20] Ibid., 5.

[21] Ibid., 12.

[22] Ibid., 11.

childbearing," which are reinforced by social feedback from other women and the lack of institutional settings supporting the compatibility of childbearing and labor market participation.[23] They contend that the primary reason that the U.S. does not share Europe's population problem is the presence of various institutional factors which increase women's ability to combine work and childbearing, including "a labor market that allows more flexible work hours and makes it easier to leave and then re-enter the labor force."[24] Rosenbluth, Light, and Schrag agree that "fertility in industrialized countries is strongly affected by a woman's ability to balance family and career."[25] Lesthaeghe and Willems predict that below-replacement level fertility will continue into the future as EU countries continue to improve employment and educational opportunities for women.[26] In order to address this school of thought, my research will compare fertility rates between religious and non-religious women who worked when they had a child under school age.

The "post-materialist values theory" explains low fertility in relation to changes in values that "shift the utility function [of the demand or rational choice theory] away from children towards other goods."[27] Several sources refer to this theory as the "second

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[23] Hans-Peter Kohler, Francesco C. Billari, and Jose Antonio Ortega, "Low and Lowest-Low Fertility in Europe: Causes, Implications and Policy Options," 18 March 2005; available from http://www.ssc.upenn.edu/~hpkohler/papers/Low-fertility-in-Europe-final.pdf; accessed 11 Oct. 2005, 42.

[24] Ibid., 31.

[25] Frances Rosenbluth, Matthew Light, and Claudia Schrag, "The Politics of Low Fertility: Global Markets, Women's Employment, and Birth Rates in Four Industrialized Democracies," August 2002, Working Paper, Yale University, CT; available from http://www.yale.edu/polisci/rosenbluth/politics%20of%20Low%20Fertility1.pdf; accessed 10 Oct. 2005, 1.

[26] Ron Lesthaeghe, and Paul Willems, "Is Low Fertility a Temporary Phenomenon in the European Union?" *Population and Development Review* 25, no. 2 (June 1999); [journal on-line]; Available from JSTOR; Http://links.jstor.org/sici?sici=0098-7921%28199906%2925%3A2%3C211%3AILFATP%3E2.0.CO%3B2-Z; accessed 8 Oct. 2005, 227.

[27] Peter McDonald, "Theory Pertaining to Low Fertility," 8.

demographic transition."[28] Both theories stipulate that "changes in social and demographic behavior have been driven by the growth of the values of individual self-realization, satisfaction of personal preferences, liberalism and freedom from traditional forces of authority, particularly religion."[29] My thesis focuses on this "freedom from… religion," as an explanation for low fertility in Europe. While Weigel offers a broader, conceptual perspective of how secularism has caused a "crisis of civilizational morale" and "demographic suicide" in Europe,[30] my work will provide a more focused and scientific approach.

The literature that already exists on the relationship between religion and fertility supports my thesis. Both Longman and McFalls acknowledge that there is a correlation between religious conviction and high fertility, citing evidence from the U.S.[31] Lehrer argues that religious affiliation influences economic and demographic outcomes in the U.S. because it "has an impact on the perceived costs and the perceived benefits of various interrelated decisions that people make over the life cycle," such as how many children to

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[28] Joseph A. McFalls, Jr., "Population: A Lively Introduction," 4th ed, *Population Bulletin* 58, no. 4 (Dec. 2003): 6; see also Joëlle E. Sleebos, "Low Fertility Rates in OECD Countries: Facts and Policy Responses," OECD Social, Employment and Migration Working Papers 15, 7 Oct. 2003; available from from http://www.oecd.org/dataoecd/13/38/16587241.pdf; accessed 10 Oct. 2005, 13; F.G. Castles, "The World Turned Upside Down: below replacement fertility, changing preferences and family-friendly public policy in 21 OECD countries," 13 *Journal of European Social Policy* no. 3, London; C. Lochhead, "The Trend Toward Delayed First Childbirth: Health and Social Implications," *ISUMA. 1 Canadian Journal of Policy Research*, no. 2 (Autumn); and, R. Lesthaeghe and G. Moors, "Recent Trends in Fertility and Household Formation in the Industrialized World," *Review of Population and Social Policy*, no. 9.

[29] Peter McDonald, "Theory Pertaining to Low Fertility," 8; See also Joëlle E. Sleebos, "Low Fertility Rates in OECD Countries: Facts and Policy Responses," 13.

[30] George Weigel, *The Cube and the Cathedral: Europe, America, and Politics Without GodI (*New York: Basic Books, 2005): 27.

[31] Phillip Longman, "The Global Baby Bust." *Foreign Affairs* 83 no. 3 (May/June 2004): 76; Joseph A. McFalls, Jr., "Population: A Lively Introduction," 10.

have.[32] Norris and Inglehart provide a comparison of fertility across "most secular," "moderate," and "most religious" nations and note that while women are having far fewer children during the last thirty years in all types of nations, "there remains sharp contrasts between the most secular and religious societies," where religious societies have significantly higher levels of fertility than secular societies.[33] Adsera reports that in Spain, religion has a positive effect on both family size and the timing of births.[34] My research will extend Lehrer's work and explore Norris and Ingelhart's findings by comparing the case of the U.S. to other industrialized countries in Europe

The fourth and final theory, the "theory of risk and opportunity," asserts that since "we cannot know with certainty what the costs and benefits [of having the next child] will be… decision makers may err on the side of safety [by limiting the number of children] in order to avert risk or they may pursue an opportunity that is within their reach."[35] As already noted, Pope John Paul II identifies Europe's "fear of the future" with its loss of faith.[36] In the final part of my thesis, I will explore this link between religious faith and security or hope in the future and how this link might explain the disparity in fertility rates between secular Europe and religious America.

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[32] Evelyn L. Lehrer, "Religion as a Determinant of Economic and Demographic Behavior in the United States," *Population and Development Review* 30, no. 4 (Dec. 2004) [journal on-line]; available from http://www.blackwell-synergy.com/doi/pdf/10.1111/j.1728-4457.2004.00038.x; accessed 14 Oct. 2005, 707.

[33] Pippa Norris and Ronald Ingelhart, *Sacred and Secular: Religion and Politics Worldwide* (Cambridge: Cambridge University Press, 2004): 233.

[34] Alicia Adsera, "Martial Fertility and Religion: Recent Changes in Spain," Institute for the Study of Labor Discussion Paper no. 1399, Nov. 2004; available from http://opus.zbw-kiel.de/volltexte/2005/3132/pdf/dp1399.pdf; accessed 15 Oct. 2005, 23.

[35] Peter McDonald, "Theory Pertaining to Low Fertility," 7.

[36] John Paul II, *Ecclesia in Europe*, 8.

Conceptualization

The following defined concepts are important components related to my thesis. The countries that I focus my research on in the European Union are France, Ireland, Poland, and Great Britain. I compare fertility among these countries and the U.S. on a macro level using the Total Fertility Rate (TFR), "the average number of children a woman would have assuming that current age-specific birth rates remain constant throughout her childbearing years (usually considered to be ages fifteen to forty-nine)."[37] On a micro level, I measure fertility using the Mean Rate of Children (MRC), the mean number of children ever born to women 18- 49 years of age calculated through SPSS analysis of the "European and World Values Surveys Integrated Data File, 1999- 2002" (EWVS).[38] Countries with unprecedented low fertility rates are defined as those at or below 1.3 children per woman.[39] Although population decline "can be caused by fertility decline, increased mortality rates and increased emigration,"[40] my research only considers fertility decline. Measures of religiosity are based on self-reported surveys which include questions on the extent to which respondents consider religion to be important in their life; the frequency of attendance to religious services; and whether the respondent claims to be religious, not religious or atheist. Income levels, or the measurement of household family income, are taken from the EWVS variable "income recoded" which recoded incomes into three levels,

[37] Population Reference Bureau, "2005 World Population Data Sheet," 14.

[38] Ingelhart, Ronald, et al. "European and World Values Surveys Integrated Data File, 1999- 2002, Release 1." *ICPSR: Inter-University Consortium for Political and Social Research.* January 2005. Data Downloaded from http://www.worldvaluessurvey.org/services/index.html. Accessed 20 February 2005; Younger women were not included in the EWVS.

[39] Hans-Peter Kohler, Francesco C. Billari, and Jose Antonio Ortega, "Low and Lowest-Low Fertility in Europe: Causes, Implications and Policy Options," 18 March 2005; available from http://www.ssc.upenn.edu/~hpkohler/papers/Low-fertility-in-Europe-final.pdf; accessed 11 Oct. 2005, 1.

[40] Joseph A. McFalls, Jr., "Population: A Lively Introduction,"4.

low, middle and upper.[41] Female education levels are measured by a gender analysis of the EWVS variable "education recoded" which recoded education into three levels, low, middle and upper.[42] Female employment is measured by a gender analysis of the "International Social Survey Program: Family and Changing Gender Roles III, 2002" (ISSP) variable "R worked outside: kid under school age" which measures the respondents who worked full-time while they had a child under school age.[43] In the macro section of my paper, I compare contraception use and abortion rates in the five case study countries. Contraception use refers to "the percentage of married or "in-union" women ages 15- 49 who are currently using contraception; 'any method' includes modern and traditional methods."[44] Abortion rates are measured by "Total Abortion Rates," "the total number of abortions that would be experienced by the average woman during her reproductive lifetime, given present age-specific abortion rates."[45]

Operationalization

I use primary data to measure all of my variables. The 2005 World Population Data Sheet provides data on total fertility rates for the case study countries.[46] The remaining

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[41] Ingelhart, Ronald, et al. "European and World Values Surveys Integrated Data File, 1999- 2002, Release 1."

[42] Ibid.

[43] International Social Survey Program (ISSP), "International Social Survey Program: Family and Changing Gender Roles III, 2002," ICPSR version, 24 November 2004; available from http://webapp.icpsr.umich.edu/cocoon/ICPSR-STUDY/04106.xml; accessed 28 Oct. 2005

[44] Lori Ashford and Donna Clifton. "2005 Women of Our World." PRB: *Population Reference Bureau*. Feb. 2005. Available from http://www.prb.org/Template.cfm?Section=PRB&template=/ContentManagement/ContentDisplay.cfm&ContentID=12298. Accessed 25 February 2005, 2.

[45] Stanley K. Henshaw, Susheela Singh and Taylor Haas, "The Incidence of Abortion Worldwide," 25 *International Family Planning Perspectives*, supplement, January 1999, available from http://www.guttmacher.org/pubs/journals/25s3099.html; accessed 4 February 2006.

[46] Population Reference Bureau, "2005 World Population Data Sheet," 8, 11- 13.

variables, except contraception use and abortion rates, are measured within each of the European countries I have selected and the U.S using the "European and World Values Surveys Integrated Data File, 1999- 2002," (EWVS) and the "International Social Survey Program: Family and Changing Gender Roles III, 2002 (ISSP).[47] Both cross-national data collections allow me to analyze demographic and socio-economic variables in SPSS, including MRC, religious belief (according to frequency of attendance to religious services, importance of religion, and religiosity of the respondent), family income levels, female levels of education, female employment with a child under school age,[48] and perceptions of comfort and strength provided by religion. Additional EWVS datasets from past years, available for online analysis, are used to examine trends in fertility and religiosity over time.[49] Contraceptive use data and abortion policies come from the Population Reference Bureau (PRB) publication, "2005 Women of Our World;"[50] while Total Abortion Rates are drawn from the report by Henshaw, Singh and Haas.[51] Because the data on contraception use and abortion rates are given on a macro level of the entire country, I am not able to

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[47] International Social Survey Program (ISSP), "International Social Survey Program: Family and Changing Gender Roles III, 2002;" and Ingelhart, Ronald, et al. "European and World Values Surveys Integrated Data File, 1999- 2002, Release 1."

[48] This variable is specific to the ISSP and does not include data for Great Britain or Ireland.

[49] "Data analysis of the World Values Survey." The Values Surveys 1981- 1999. Available from http://www.jdsurvey.net/bdasepjds/wvsevs/PrinAnalize.jsp. Accessed 12 February 2006.

[50] "World Contraceptive Use 2003," United Nations, Population Division, Department of Economic and Social Affairs; available from http://www.un.org/esa/population/publications/contraceptive2003/WallChart_CP2003.pdf; accessed 20 Oct. 2005.

[51] Lori Ashford and Donna Clifton, "2005 Women of Our World," PRB: *Population Reference Bureau*, Feb. 2005, available from http://www.prb.org/Template.cfm?Section=PRB&template=/ContentManagement/ContentDisplay.cfm&ContentID=12298; accessed 25 February 2005, 2, 7.

analyze them on a micro level in SPSS to distinguish between religious and non-religious people.

Research Methods

I will use cross-sectional analysis and a time-series analysis to evaluate the relationship between religious faith and fertility rates in Europe and the U.S. I approach my research using nonexperimental designs because the data required to prove or disprove my hypothesis must be collected over very large and diverse populations. I will rely on individual survey data that has already been conducted by the European and World Values Surveys and the International Social Survey Program for a micro-level cross-sectional analysis using SPSS, and "aggregate" data[52] for a macro-level cross-sectional analysis. The survey data will also be used in a time-series analysis to examine the results of the micro-level cross-sectional analysis over time.

Although cross-sectional design has limitations, including "lack of control over exposure to the independent variable and inability to form pure experimental and control groups,"[53] my thesis relies on data analysis which can be controlled through SPSS. Ideally, I would use the micro-level cross-sectional design for all my research because it allows me to control for variables using SPSS, including income levels, female education levels, and female employment status, that may affect the independent (religious belief) and dependent variables (fertility rates). Unfortunately, because individual survey data on contraception use and abortion is not available, I must use "aggregate" data that does not conform to

[52] Janet Buttolph Johnson and H.T. Reynolds, *Political Science Research Methods*, 5th ed. (Washington, D.C.: CQ Press, 2005): 75; "aggregate" data "describe collectivities (e.g., precincts, states, countries) from various sources like census reports, national archives, or previous studies."

[53] Ibid., 81.

SPSS analysis. The macro-level analysis is also necessary to draw conclusions about the whole country from the results of the individual analysis. I will use a time-series analysis to identify trends in fertility and religiosity over time to strengthen my cross-sectional analysis. More specifically, I will use a time-series analysis to determine if trends in attendance to religious services have an impact on fertility trends, measured by MRC. Data analysis will thus provide the basis for causal inferences in my research.

Population and Sampling

In order to draw conclusions about Europe and the United States, I draw my population from four European countries: France, Ireland, Poland, and Great Britain. These countries were selected because they exhibit varying behaviors with respect to religious belief and fertility. Ireland (1.87 TFR) and France (1.85 TFR) share high fertility rates but only 34% of the reporting French population believe in God while 73% do in Ireland. Great Britain (1.66 TFR) has a middle fertility rate and low belief in God (38%) while Poland (1.25 TFR) has a very low fertility rates but high belief in God (80%).[54] This range in the relationship between fertility rates and religious belief indicates that variables must be controlled within each European case study country to try to account for differences between countries. The relevant[55] EWVS population sample sizes are: U.S.: 831, France: 954, Ireland: 639, Poland: 697 and Great Britain: 574;[56] while the ISSP

[54] The World Factbook, "Rank Order- Total Fertility Rate," CIA, available from http://www.cia.gov/cia/publications/factbook/rankorder/2127rank.html; accessed 3 February 2006.

[55] Respondents of child-bearing age (18- 49).

[56] Ingelhart, Ronald, et al. "European and World Values Surveys Integrated Data File, 1999- 2002, Release 1."

provides the following relevant[57] sample sizes: U.S.: 283, France: 511, Ireland: 0, Poland: 255 and Great Britain: 0.[58]

Observations/ Data Processing/ Analysis

I expect to observe one of two results from my research: either a positive or a negative relationship exists between religious beliefs and fertility rates. If I find that the relationship is negative, my thesis will be disproved. If I find a positive relationship, then my thesis will be proven. A positive relationship will be demonstrated if after controlling for my variables (family income levels, female education and employment, contraceptive use and abortion) within the U.S. and the four selected European countries I find that people who are more religious have higher fertility rates than those who are less religious. A negative relationship will exist if I find that after controlling for these same variables within the U.S. and the four selected European countries, people who are more religious have lower fertility rates than those who are less religious.

[57] Female respondents of child-bearing age who answered the survey question on employment status with a child under school age.

[58] ISSP, "International Social Survey Program: Family and Changing Gender Roles III, 2002," 47, 52, 57, 79, 96, 123.

CHAPTER TWO

COMPARING FERTILITY RATES BETWEEN THE U.S. & EUROPE

Fertility can be measured either as period or cohort fertility. According to McFalls, "the total fertility rate (TFR) and the crude birth rate are period fertility rates because they measure fertility for a given period of time," and "completed fertility is a cohort measure because it describes the fertility of a specific cohort of women."[59] While the crude birth rate is "the most easily obtained and most often reported fertility measure... [it] is highly sensitive to the age structure of a population."[60] The TFR is "a 'synthetic' measure that does not apply to any specific woman or group of woman," but is "one of the most valuable rate for comparing fertility among countries."[61] The TFR measures "the fertility of an imaginary group of women who pass through their fictitious reproductive lives subject to the rates of child-bearing experienced by real women in a given year."[62] The completed fertility rate (CFR) "equals the average number of births per woman at the end of childbearing years," of a specific cohort of women born in the same year.[63] While CFR has the advantage of being "an unambiguous and real measure of fertility," it is not widely used because of its "substantive drawback [of being] primarily affected by childbearing

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[59] Joseph A. McFalls, Jr., "Population: A Lively Introduction," 7.

[60] Ibid.; "[The crude birth rate] is calculated from the number of babies born in a given year (or any other time period) divided by the mid-year population, and it is expressed as the number of births per 1,000 people."

[61] Ibid., 6; "The TFR is the sum of the rates of each five-year age group multiplied by five."

[62] Ibid.

[63] John Bongaarts, "The End of the Fertility Transition in the Developed World," 28 *Population and Development Review*, no. 3 (September 2002); available from http://www.popcouncil.org/pdfs/councilarticles/pdr/PDR283Bongaarts.pdf; accessed 20 March 2006, 421.

levels in the past."[64] After considering the various available measures of fertility, I selected TFR for the macro-level cross-sectional analysis, since it is considered the best rate for comparing fertility among countries.

Countries in the European Union have lower total fertility rates (TFRs) than the United States. According to the CIA World Factbook, the 2005 TFR for the European Union was 1.47 and 2.08[65] for the United States.[66] The TFRs of the four European countries being used in the case study are as follows (in descending order from highest to lowest): Ireland at 1.87, France at 1.85, Great Britain at 1.66, and Poland at 1.25.[67] Interestingly, the U.S., Irish and British governments view their country's level of fertility as "satisfactory," while the French and Polish governments view their own as "too low".[68] The rate of natural increase (RNI), "the birth rate minus the death rate, implying the annual rate of population growth without regard for migration," for the case study countries are as follows: U.S. 0.6%, Ireland 0.8%, France 0.4%, Great Britain 0.2%, and Poland -0.0%.[69] Ireland's higher RNI compared to the U.S. is probably due to its lower infant mortality rate.[70]

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[64] Ibid., "Peak childbearing years occur typically two or three decades before the end of the reproductive years when the women whose completed fertility is being measured were in their 20s and early 30s. As a result, the CFR does not provide useful information on recent trends in fertility."

[65] Just under replacement level.

[66] The World Factbook, "Rank Order- Total Fertility Rate," CIA, available from http://www.cia.gov/cia/publications/factbook/rankorder/2127rank.html; accessed 3 February 2006. Albania (2.04) and Iceland (1.92) are the only European countries that have TFRs close to the U.S. Ibid.

[67] Ibid.

[68] Population Reference Bureau, "2005 World Population Data Sheet of the Population Reference Bureau;" available from http://www.prb.org/pdf05/05WorldDataSheet_Eng.pdf; accessed 8 Oct. 2005, 14, 8, 11, 12.

[69] Ibid.

[70] Ireland's Infant Mortality Rate is 4.8 while the U.S. is at 6.6. Ibid, 8, 11.

In order to conduct a micro-level cross-sectional analysis of fertility, I had to create a new measure of fertility, the mean rate of children (MRC). This measure was necessary because the surveys I use only ask respondents, "Have you had any children?" and not "Have you had any children in the last year? (or another specific period)". I could have measured CFR using the survey data, but such a cohort measure only provides data for fertility rates between 1960 and 1970 instead of the current rates relevant to my thesis. I calculated the MRC for each case study country by finding the mean of the total number of children female respondents of child-bearing age[71] admitted to having in the survey. The results were as follows (in descending order): Ireland: 1.81, Great Britain: 1.74, U.S.: 1.64, Poland: 1.57, France: 1.33.[72] The biggest disparities between the TFR and the MRC occur with the U.S. (-0.44 difference), France (-0.52) and Poland (+0.32). The disparities might be explained by returning to the discussion on the different measurements of fertility. If I had measured the MRC for a specific cohort of women, the results would have more closely reflected the TFR for 1960- 1970. On the other hand, for the MRC to accurately measure period fertility, as the TFR does, I would have needed to know how many children the five specific age-groups of women were having *in that specific year*. The MRC also fails to accurately reflect the TFR because it does not necessarily reflect the age distribution of the country's real population. But, the MRC is the best fertility measure for the data that is available and so I use it in my micro-level analysis acknowledging that it does not reflect the macro-level TFR.

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[71] Limited to ages 18-49 because no respondents younger than 18 were included in the data.

[72] Ingelhart, Ronald, et al. "European and World Values Surveys Integrated Data File, 1999- 2002, Release 1;" Standard Deviation was highest for Ireland's MRC (1.898) while the U.S. had the second highest (1.441) and Great Britain had the lowest (1.384).

CHAPTER THREE

COMPARING RELIGIOSITY BETWEEN THE U.S. & EUROPE

While scholars generally agree that religiosity "play[s] a more important role in the lives of Americans compared to Europeans [except other comparably religious countries like Ireland and Poland],"[73] there is still debate over why and to what extent. Norris and Inglehart propose the "theory of existential security and secularization," where "secularization is most closely linked with whether the public of a given society has experienced relatively high levels of economic and physical security."[74] To explain why societies such as the U.S., Ireland [and Poland][75] are "persistently more religious in their habits and beliefs than comparable Western nations sharing a Christian cultural heritage," Norris and Inglehart argue that "societal vulnerability, insecurity, and risk, that [they] believe drives religiosity," are matters of both levels of national economic resources and their distribution.[76] They contend that:

> The U.S. is exceptionally high in religiosity in large part… because it is also one of the most unequal postindustrial societies under comparison. Relatively high levels of economic insecurity are experienced by many sectors of U.S. society, despite American affluence, due to the cultural emphasis on the values of personal responsibility, individual achievement, and mistrust of big government, limiting the role of public services and the welfare state for basic matter such as healthcare covering all the working population.[77]

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[73] Thomas Frejka and Charles F. Westoff, "Religion, Religiousness and Fertility in the U.S. and in Europe," revised 16 March 2006; Proposed Paper for *Population Association of America 2006 Annual Meeting Program;* available from http://paa2006.princeton.edu/download.aspx?submissionId=60969; accessed 28 March 2006.

[74] Pippa Norris and Ronald Ingelhart, *Sacred and Secular,* 27.

[75] Norris and Ingelhart do not include Poland, but I assert that the same conclusions might be made about Poland.

[76] Ibid., 106.

[77] Ibid., 108.

My data analysis comparing religiosity between the U.S. and Europe will reflect the above interpretation held by Norris and Inglehart that America is "exceptionally religious" among postindustrial societies.[78] I will return to the "theory of existential security and secularization" in Chapter Eight when I discuss the relationship between religion and hope in the future.

In opposition to Norris and Inglehart, some scholars argue that Europe is not exceptionally secular. Davie considers the question: "Might it not be the case that Europeans are not so much *less* religious than citizens in other parts of the world as *differently* religious?"[79] Using data from the 1981 and 1990 findings of the European Values System Study Group (EVSSG), Davie found a situation he calls "believing without belonging" where "while many Europeans have ceased to participate in religious institutions, they have no yet abandoned many of their deep-seated religious inclinations."[80] Making references to Halbwachs and Hervieu-Léger, Davie proposes "the paradox of modernity, which in its historical forms removes the need for and sense of religion (the amnesia), but in its utopian forms cannot but stay in touch with the religious (the need for a religious future)."[81] Manuel and Mott extend Davie's theory to conclude that a "collective memory" of Catholicism continues to influence Latin Europe in "periodic, ontological moments," while secularism "control[s] the quotidian

[78] Except, of course, Ireland and Poland.

[79] Grace Davie, "Europe: The Exception That Proves the Rule?" *The Desecularization of the World: Resurgent Religion and World Politics*, ed. Peter L. Berger (Washington, D.C.: Ethics and Public Policy Center, 1999), 65.

[80] Ibid., 68.

[81] Grace Davie, *Religion in Modern Europe: A Memory Mutates* (Oxford: Oxford University Press, 2000): 31; see also Paul Christopher Manuel and Margaret Mott, "Une Messe est Possible: The Imbroglio of the Catholic Church in Contemporary Latin Europe," Center for European Studies Working Paper No. 113, April 2004; available from http://www.ces.fas.harvard.edu/publications/ManuelMott.pdf; accessed 18 Sept. 2005, 23.

epistemological experience[s]."[82] I will take this school of thought into account when I conduct my data analysis specifically by using variables that measure religious beliefs in addition to church attendance when evaluating the effect of religiosity on fertility in Europe.

Using survey data and SPSS analysis I conducted a cross-sectional comparison of religiosity in the U.S. and the four European case study countries. To measure religiosity, I used the following variables: the extent to which respondents consider religion to be important in their life; the frequency of attendance to religious services; and whether the respondent claims to be religious, not religious or atheist. For each variable I compared the results for respondents within child-bearing age (18- 49) to respondents 50+ to determine if differences occurred between age groups. The results confirmed Norris and Inglehart's findings that the U.S., Ireland and Poland have higher degrees of religiosity than the remaining two case study countries.

The first measure of religiosity is the importance of religion for respondents. According to a 2002 *Pew Global Attitudes Project*, "among wealthy nations… [the] U.S. stands alone in its embrace of religion."[83] In response to the *Pew Project* question, "how important is religion in your life—very important, somewhat important, not too important, or not at all important," 59% (six-in-ten) people in the U.S. said "religion plays a *very* important role in their lives," while only 36% did in Poland, 33% in Great Britain, and 11%

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[82] Paul Christopher Manuel and Margaret Mott, "Une Messe est Possible: The Imbroglio of the Catholic Church in Contemporary Latin Europe," 24; "Periodic, ontological moments" are "the extraordinary times of life (birth, marriage, death) as well as… the traditional ceremonial times (Christmas, Easter)" and "the quotidian epistemological experience[s]" are "métro boulot dodo" (metro, work, sleep), 3.

[83] Andrew Kohut, Director, "Among Wealthy Nations… U.S. Stands Alone In Its Embrace of Religion," *The Pew Global Project Attitudes*, release 19 Dec., 2002, available from http://people-press.org/reports/pdf/167.pdf, accessed 20 Feb. 2005.

in France.[84] Although Ireland was not included in this 44-nation survey, the same question was asked in the EWVS which included Ireland. According to these results 57.2% of respondents from the U.S. said that religion was "very important" to them, 44.7% in Poland, 32.3% in Ireland, 12.6% in Great Britain and 10.9% in France.[85] This order remains constant even after controlling for respondents of child-bearing age (18-49): 53.8% in the U.S., 39.3% in Poland, 17.7% in Ireland, 8.7% in Great Britain and 7.5% in France.[86] This data shows significant changes in levels of religious importance in Europe after controlling for respondents of child-bearing age while the U.S. level remains constant. Interpretation of this difference could mean that either religiosity in Europe is declining by generation or religiosity increases with age.

A second measurement of religiosity is frequency of attendance to religious services. The EWVS provided the survey data from all five case study countries in response to the question "how often do you attend religious services—more than once a week, once a week, once a month, only on special holy days/Christmas/Easter, other specific holy days, once a year, less often, or never practically never."[87] Table 1 reveals that among respondents of childbearing age, Poland attends religious services most frequently, the U.S. and Ireland share equal rates, while Great Britain and France attend the least frequently. There is debate over the accuracy of reported church attendance in American since Americans tend to over-report, because they are "anxious to be seen as

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[84] Ibid.

[85] SPSS Analysis; Ingelhart, Ronald, et al. "European and World Values Surveys Integrated Data File, 1999- 2002, Release 1."

[86] Ibid.

[87] Ibid.

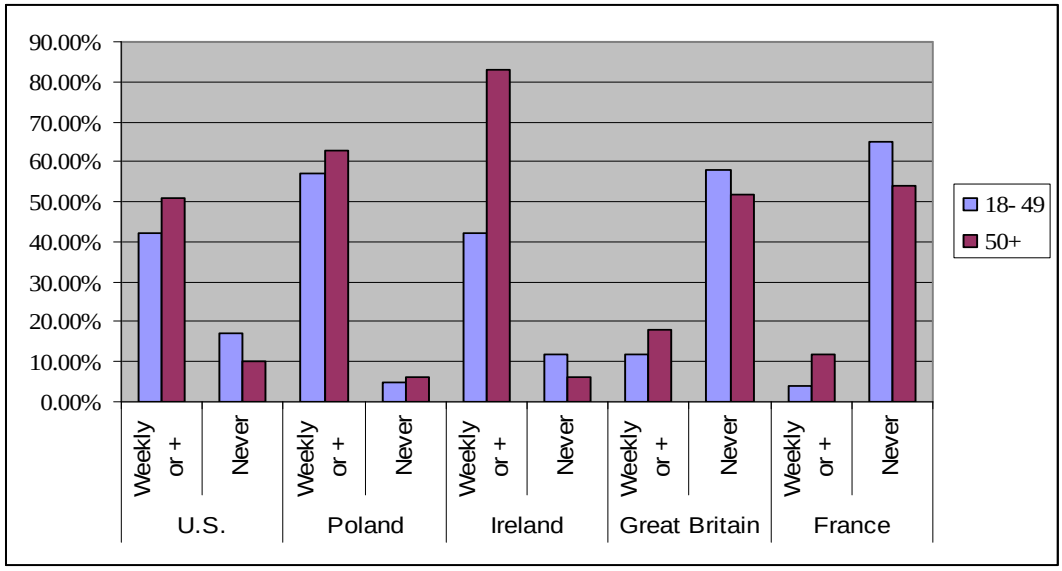
Table 1: Religious Services Attendance[88]

Country	Weekly or More	Never or Practically Never
U.S.	42.4%	17%
Poland	56.6%	4.7%
Ireland	42.4%	12.2%
Great Britain	11.8%	57.9%
France	4.4%	65%

churchgoers."[89] But, this debate remains controversial,[90] and reflects the position of religion in American culture.

Figure 1 compares the frequency of religious services attendance between

Figure 1: Religious Services Attendance by Age[91]



[88] Ibid.

[89] Grace Davie, *Europe, the Exceptional Case: Parameters of Faith in the Modern World*, (London: Darton, Longman & Todd, 2002): 28.

[90] Ibid.

[91] SPSS Analysis; Ingelhart, Ronald, et al. "European and World Values Surveys Integrated Data File, 1999- 2002, Release 1."

respondents of childbearing age and respondents aged 50 or older. This distribution reveals that in all five case study countries, respondents aged 50 or older attend religious services more frequently than respondents of childbearing age. Ireland has a significant difference of 41% between its respondents in the two age groups. Both Great Britain and France have a higher percentage of respondents in both age groups who "never or practically never" attend religious services.

A final measure of religiosity is whether the respondent characterizes himself or herself as "a religious person, not a religious person, or a convinced atheist."[92] Table 2

Table 2: Religiosity of the Person[93]

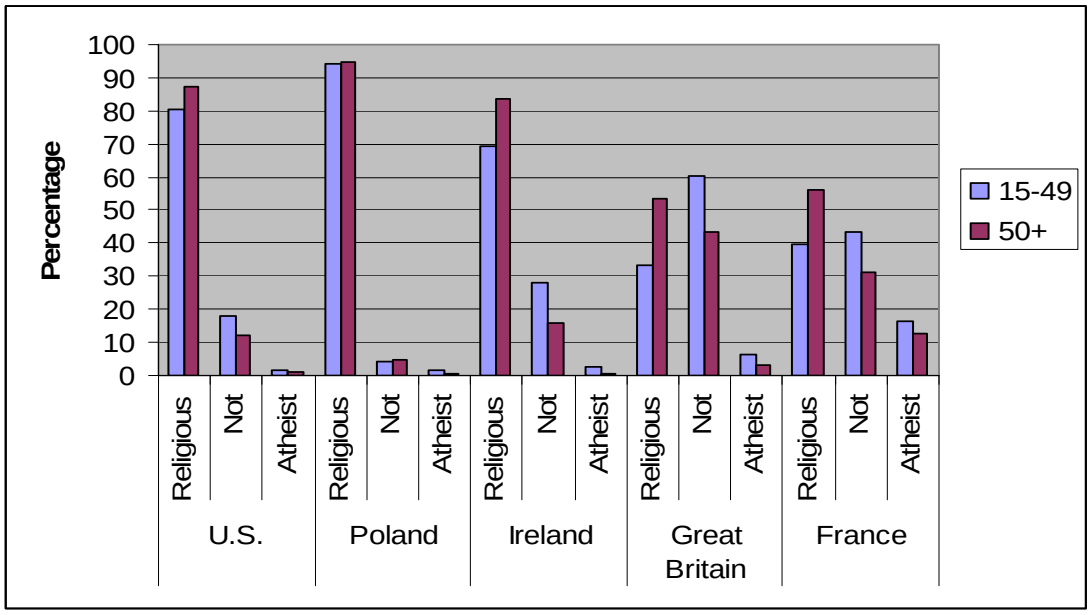
Country	Religious	Not Religious	Convinced Atheist
U.S.	80.5%	17.8%	1.7%
Poland	94.2%	4.3%	1.5%
Ireland	69.4%	28%	2.6%
Great Britain	33.1%	60.3%	6.6%
France	39.9%	43.5%	16.6%

shows the results for respondents of childbearing age in the five case study countries. In this category, the U.S. ranks high (80.5%), but Poland has the highest percentage at 94.2%. The number of childbearing aged respondents who identify themselves as religious is moderately high in Ireland and lowest in France and Great Britain. Figure 2 compares the religiosity of the person between respondents of childbearing age and respondents aged 50 or older. This comparison reveals that Polish respondents of both age groups are highly self-identified religious, while all the other countries have higher self-identified religious

[92] Ibid.

[93] Ibid.

Figure 2: Religiosity of the Person by Age[94]



people in the 50+ age group. Interestingly, France has the highest percentage of respondents in both age groups who identify themselves as "convinced atheists."

In summary, the U.S. clearly ranks the highest on the importance of religion for respondents among all five case study countries. Poland ranks the highest, followed closely behind by the U.S. and Ireland, for frequency of attendance to religious services. And, Poland again outranks the U.S. for number of self-identified religious respondents. Thus, among the case study countries, Poland, the U.S. and Ireland are highly religious while Great Britain and France are more secular.

[94] Ibid.

CHAPTER FOUR

RELIGIOUS V. NON-RELIGIOUS MRC IN 1999

As already noted in Chapter One, several scholars attest that, "people who actively practice a religion tend to have higher fertility than nonreligious people."[95] The table Norris and Inglehart used to show their important comparison of fertility across "most secular," "moderate," and "most religious" nations is reproduced in Table 3.[96] Clearly,

Table 3: Fertility Rates According to Type of Society

Type of Society	Fertility Rate	
	1970- 75	2000- 05
Most Secular	2.8	1.8
Moderate	3.3	1.7
Most Religious	5.4	2.8
All Nations	3.8	2.1

Source: Pippa Norris and Ronald Ingelhart,
Sacred and Secular: Religion and Politics Worldwide, 232.

religious societies have significantly higher levels of fertility than secular societies. Note that Norris and Inglehart included nations of all levels of economic development in their study. Although literature exists which analyzes interdenominational differences of fertility,[97] I do not examine this variable in my data analysis because the population samples are too small to produce significant results.

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[95] Joseph A. McFalls, Jr., "Population: A Lively Introduction," 4th ed., *Population Bulletin* 58, no. 4 (Dec, 2003): 10; see also, Phillip Longman, "The Global Baby Bust," 76; Evelyn L. Lehrer, "Religion as a Determinant of Economic and Demographic Behavior in the United States," 707; Pippa Norris and Ronald Ingelhart, *Sacred and Secular: Religion and Politics Worldwide, 233;* and Adsera, "Martial Fertility and Religion: Recent Changes in Spain,"23.

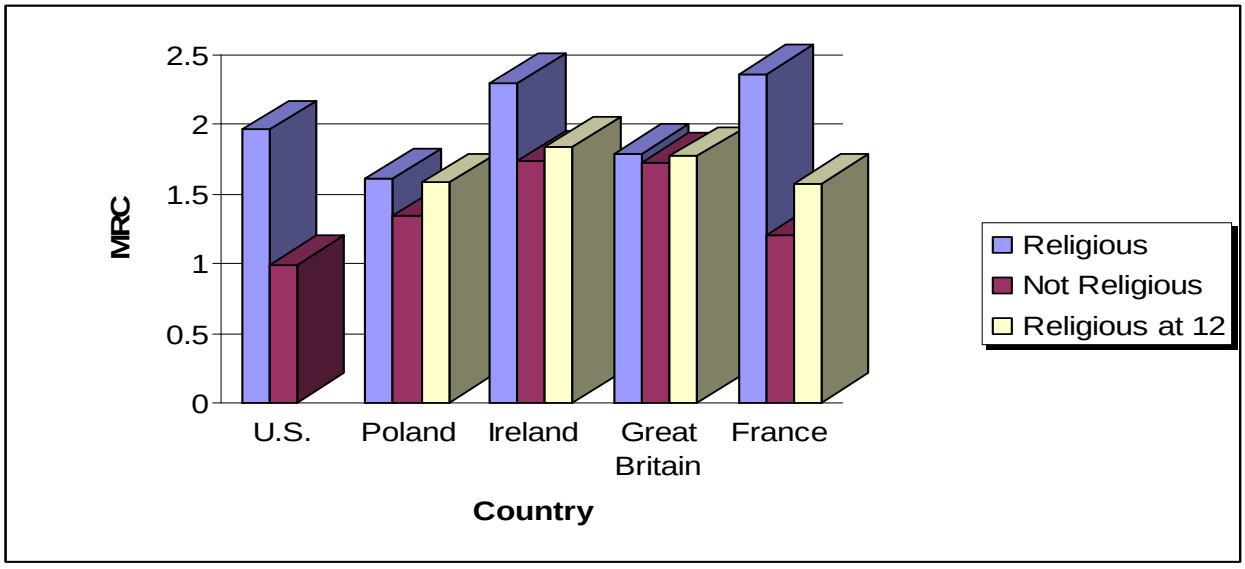
[96] Pippa Norris and Ronald Ingelhart, *Sacred and Secular: Religion and Politics Worldwide*, 233.

[97] Adsera, "Martial Fertility and Religion: Recent Changes in Spain,"5; "Certain churches such as Conservative Protestants, Catholics, and especially Mormons," have a "more pronatalist orientation."

To test the theory that religious people have more children than non-religious people, I conducted a cross-sectional analysis comparing the MRC to attendance to religious services using the EWVS.[98] In order to address the question of whether women become more religious after they have children instead of having more children because they are already religious, I will include, when the data is available, the MRC trend for respondents who attended religious services once a week or more when they were 12 years old.[99] The following graphs illustrate how religious MRCs and non-religious MRCs compare for each of the case study countries.

Figure 3 shows an overview of how the MRC levels compare across the case study

Figure 3: Overview of Religious v. Non-Religious MRC[100]



[98] SPSS Analysis; Ingelhart, Ronald, et al. "European and World Values Surveys Integrated Data File, 1999- 2002, Release 1."

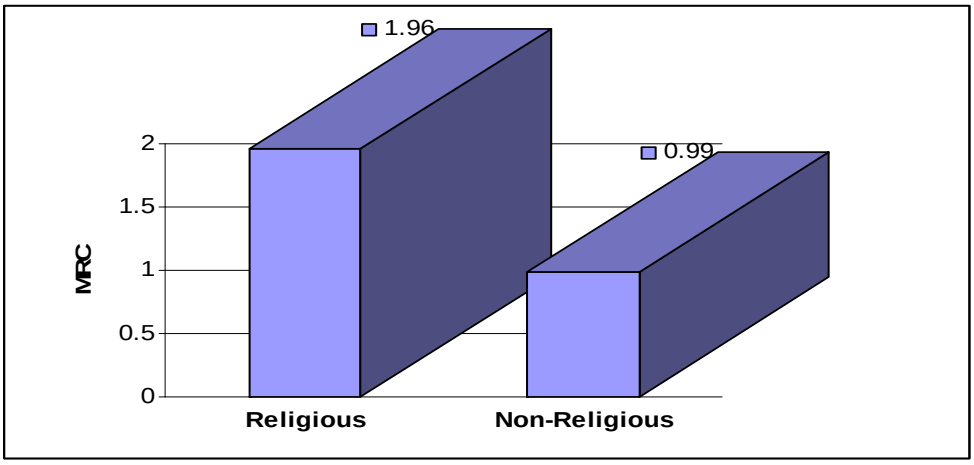
[99] Idea from Thomas Frejka and Charles F. Westoff. "Religion, Religiousness and Fertility in the U.S. and in Europe," 16; Data not available for the U.S.

[100] SPSS Analysis; Ingelhart, Ronald, et al. "European and World Values Surveys Integrated Data File, 1999- 2002, Release 1."

countries. As the bar graph illustrates, for all countries, the religious MRC is higher than the non-religious MRC. France has the highest level of religious MRC, followed by Ireland and the U.S. The MRC of respondents who were religious at 12 is consistently higher than the non-religious MRC demonstrating that religion influences childbearing rather than the other way around. In order to more clearly understand the comparison between religious and non-religious MRCs I will graph each country individually.

The comparison of religious and non-religious MRC in the United States is illustrated in Figure 4. The data reveals a substantial decrease in fertility among non-

Figure 4: U.S.- Religious v. Non-Religious MRC[101]

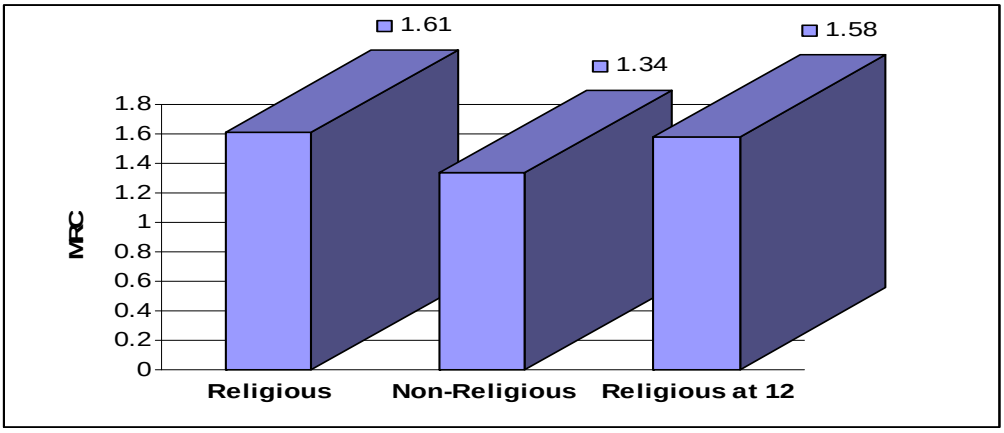


religious respondents. Unfortunately, no data exists in the survey for an analysis of the MRC of U.S. respondents who attended religious services when they were 12.

The comparison of religious and non-religious MRC in Poland is illustrated in Figure 5. Surprisingly, religious MRC in Poland is low despite the high levels of religiosity documented in Chapter Two. I take up this issue on a micro level in the next chapter and on a macro level in Chapter Seven. A final note about Figure 5, the religious

[101] SPSS Analysis; Ingelhart, Ronald, et al. "European and World Values Surveys Integrated Data File, 1999- 2002, Release 1."

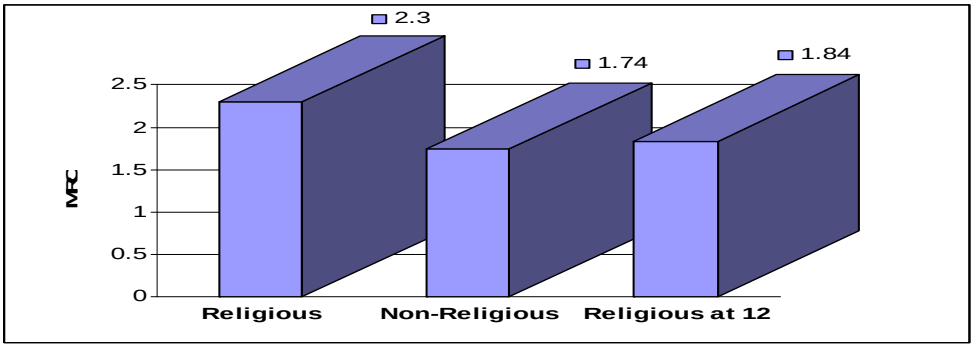
Figure 5: Poland- Religious v. Non-Religious MRC[102]



MRC is very similar to the religious at 12 MRC which could be interpreted to mean that Polish people who are raised religious remain religious when they become of childbearing age.

The comparison of religious and non-religious MRC in Ireland is illustrated in Figure 6. MRC levels in Ireland are very high, especially among religious respondents, affirming the claim that religion and fertility are positively correlated. An interesting point in this graph is the big difference between religious MRC and religious at 12 MRC. This

Figure 6: Ireland- Religious v. Non-Religious MRC[103]



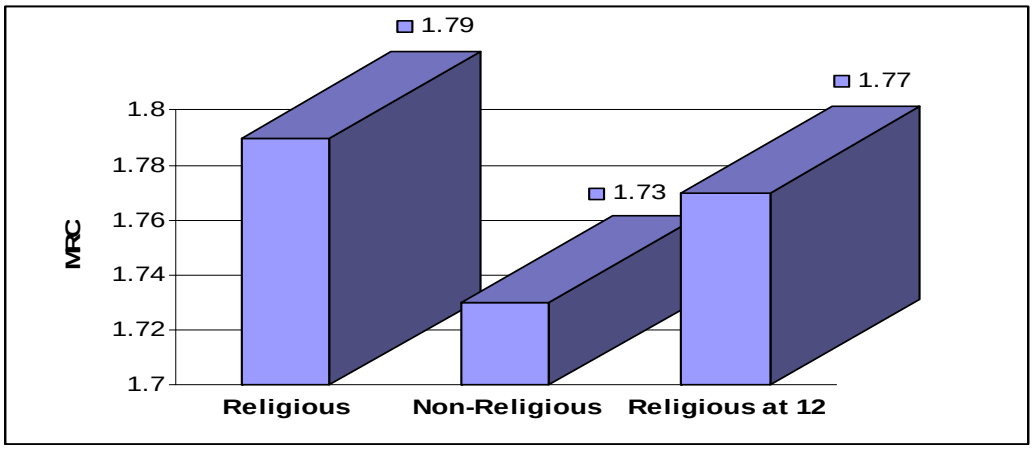
[102] SPSS Analysis; Ingelhart, Ronald, et al. "European and World Values Surveys Integrated Data File, 1999- 2002, Release 1."

[103] SPSS Analysis; Ingelhart, Ronald, et al. "European and World Values Surveys Integrated Data File, 1999- 2002, Release 1."

difference might be a reflection of a decline in religious attendance with age. The religious at 12 MRC does exceed the non-religious MRC, strengthening the claim that religious people have more children rather than people with children become religious.

The comparison of religious and non-religious MRC in Great Britain is illustrated in Figure 7. As with the other countries, the religious MRC exceeds the non-religious MRC

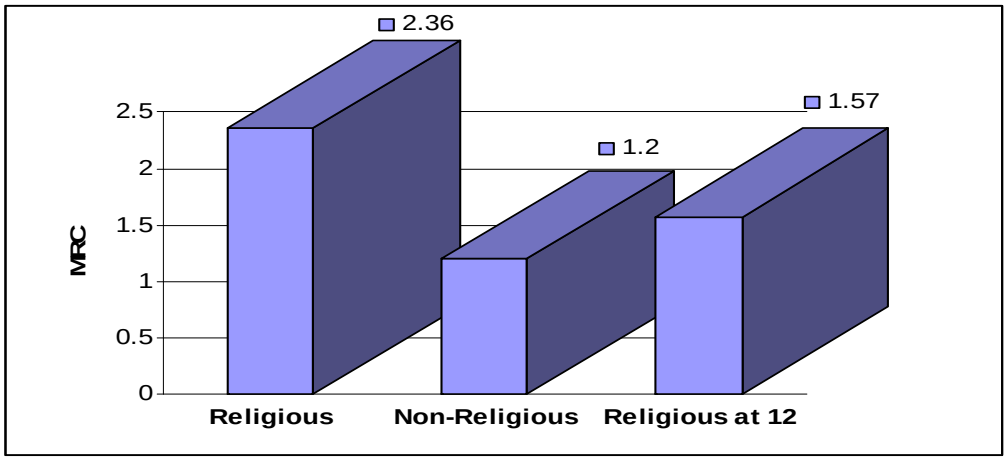
Figure 7: Great Britain- Religious v. Non-Religious MRC[104]



in Great Britain, but with merely a 0.06 difference. The religious at 12 MRC continues the pattern of exceeding the non-religious MRC, but here again, the difference is very small. The comparison of religious and non-religious MRC in France is illustrated in Figure 8. Surprisingly, France has the highest level for the religious MRC, suggesting that the few religious adherents in France that attend services regularly make a substantial contribution to their country's fertility rate. As with the previous countries, both the religious MRC and the religious at 12 MRC exceed the non-religious MRC strengthening the claim that religious has a positive influence on fertility.

[104] SPSS Analysis; Ingelhart, Ronald, et al. "European and World Values Surveys Integrated Data File, 1999- 2002, Release 1."

Figure 8: France- Religious v. Non-Religious MRC[105]



In summary, all the data affirmed that religious people have higher fertility rates than non-religious people, although the results from Great Britain were not significantly persuasive. France had the highest level of religious MRC, followed by Ireland and the U.S. The MRC of respondents who were religious at 12 was consistently higher than the non-religious MRC demonstrating that religion influences childbearing rather than the reverse. The next chapter examines the difference between religious and non-religious MRCs of 1999 in greater depth to further explore the influence of religion on fertility.

[105] SPSS Analysis; Ingelhart, Ronald, et al. "European and World Values Surveys Integrated Data File, 1999- 2002, Release 1."

CHAPTER FIVE

IN-DEPTH ANALYSIS OF RELIGIOUS V. NON-RELIGIOUS MRC IN 1999

According to the Population Reference Bureau, "three factors that contribute indirectly to fertility levels through the proximate determinants are education, income, and gender roles—the social roles and relative power held by men and women."[106] The influence of income and women's education and employment on fertility was already noted in Chapter One in the discussion of the "demand or rational choice theory" and the "gender equity theory."[107] I address each of these three factors individually through a cross-sectional analysis of survey data to determine if they have a greater influence over fertility rates than religion.

MRC Analysis Controlling for Income Levels

The Population Reference Bureau maintains that "income is clearly linked to fertility levels across and within countries. Women in richer countries generally have fewer children than women in poorer ones. The exceptions to this relationship are the rich oil-producing states of the Middle East, where cultural traditions that foster low status for women also support high fertility."[108] According to the "demand or rational choice theory," couple incomes play a critical role in determining if the opportunity cost of having

[106] Population Reference Bureau. "2005 World Population Data Sheet of the Population Reference Bureau." 16.

[107] Peter McDonald, "Theory Pertaining to Low Fertility," 4, 8 & 11.

[108] Population Reference Bureau. "2005 World Population Data Sheet of the Population Reference Bureau." 16.

children is worthwhile.[109] While higher incomes could support more children, "a new emphasis on quality of children as distinct from their quality… [has] led to increases in the costs of children."[110] Thus, literature strongly suggests that income will be a critical factor in fertility rates.

In order to determine if income is an intervening variable in the relationship between religiosity and fertility in Europe and the U.S., I conducted a cross-sectional analysis of data from the EWVS using SPSS. I continued the use of the MRC and religiosity measurement by frequency of attendance to religious services from Chapter Three, and added the "Income Recoded" variable which divides family incomes into lower, middle and upper. In addition, I included the regular MRC as a reference point in comparing the religious and non-religious MRCs. The results for each case study country are displayed in Tables 4- 8.

Table 4 shows the various MRCs for U.S. respondents according to income level.

Table 4: United States[111]

Income Level	Religious MRC	Non-Religious MRC	MRC
Lower	1.96	1.18	1.58
Middle	1.95	.81	1.65
Upper	1.96	.96	1.76
Total	1.96	1.04	1.65

Across all income levels, religious MRCs are significantly higher than non-religious MRCs. All of the religious MRCs share very similar values, a result which provides strong

[109] Peter McDonald, "Theory Pertaining to Low Fertility, 4; see also G. Becker, *A Treatise on the Family*, (Cambridge: Harvard University Press, 1981).

[110] Ibid., 4.

[111] SPSS Analysis, WVS 1999.

evidence that income does not influence fertility decisions among religious Americans. The non-religious MRCs reflect the literature which claims that fertility decreases as income increases. Finally, the regular MRC most closely corresponds to the religious MRC implying that U.S. fertility is strongly influenced by religion.

Table 5 shows the various MRCs for Polish respondents according to income level.

Table 5: Poland[112]

Income Level	Religious MRC	Non-Religious MRC	MRC
Lower	1.87	.85	1.81
Middle	1.53	1.34	1.56
Upper	1.33	2.19	1.19
Total	1.62	1.34	1.58

The results for Poland show a higher value for the religious MRCs than the non-religious MRC for the lower and middle income levels but not the upper level. The religious MRC declines as income goes up while the non-religious MRC increases as income increases. Thus, fertility for religious respondents in Poland follows a negative correlation with income reflecting the literature while fertility for non-religious respondents follows a positive correlation. As with the U.S., the regular MRC most closely corresponds with the religious MRC.

Table 6 shows the various MRCs for Irish respondents according to income level. The religious MRC is only greater than the non-religious MRC in the upper income level, but this fact weakens the literature's claim. Ireland shares Poland's religious MRC pattern by following a negative correlation with income level. But, unlike Poland, the non-religious

[112] Ibid.

Table 6: Ireland[113]

Income Level	Religious MRC	Non-Religious MRC	MRC
Lower	2.53	3.01	2.41
Middle	2.42	2.45	2.09
Upper	2.25	1.04	1.63
Total	2.36	2.12	1.95

MRC also observes the same negative correlation. The regular MRC is too divergent from the other MRCs to draw any comparisons.

Table 7 shows the various MRCs for British respondents according to income level.

Table 7: Great Britain[114]

Income Level	Religious MRC	Non-Religious MRC	MRC
Lower	1.58	1.91	1.80
Middle	1.64	2.16	2.03
Upper	1.82	1.73	1.88
Total	1.73	1.95	1.90

Like Poland and Ireland, the religious MRC for Great Britain only exceeds the non-religious MRC in the upper income level. The results further weaken the literature's claim because the religious MRC has a positive relationship with income. The regular MRC corresponds closely to the non-religious MRC in the lower and middle income levels, but is more similar to the religious MRC in the upper income level.

Table 8 shows the various MRCs for French respondents according to income level. Like the U.S., the religious MRC in France exceeds the non-religious MRC across all income levels. Both the religious and non-religious MRCs follow a positive correlation to

[113] Ibid.

[114] Ibid.

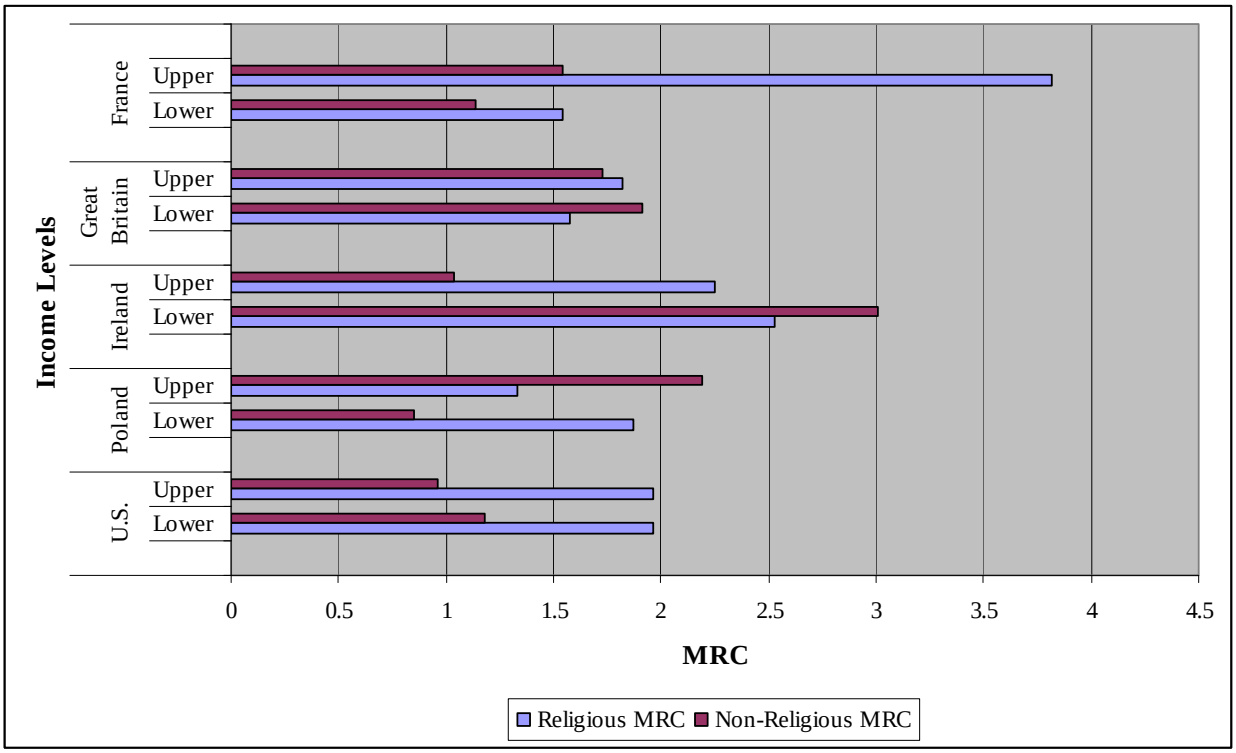
Table 8: France[115]

Income Level	Religious MRC	Non-Religious MRC	MRC
Lower	1.54	1.14	1.19
Middle	2.50	1.28	1.40
Upper	3.82	1.54	1.69
Total	2.42	1.29	1.41

income level, again weakening the literature's claim. The regular MRC most closely corresponds with the non-religious MRC which is consistent with my thesis since France ranks low for both religiosity and MRC.

Refer to Figure 9 for a summary illustration of MRCs in the upper and lower income

Figure 9: Summary of MRCs & Income Levels[116]



[115] Ibid.

[116] Ibid.

levels. Overall, MRCs had a positive correlation with income in France and Poland, and a negative correlation in Great Britain, Ireland and the U.S. So, a majority of the case study countries support the literature. Non-religious MRCs exceeded religious MRCs in Great Britain for lower income, in Ireland for lower income, and in Poland for upper income. Overall, Ireland had the highest religious MRC (in lower income) and Poland had the lowest (in lower income). Income proved to be an intervening variable to a large extent in Ireland and Poland, to a lesser extent in Great Britain and not at all in France or the U.S.

MRC Analysis Controlling for Women's Education Level

According to the American National Center for Health Statistics, "a women's educational level is the best predictor of how many children she will have."[117] The 1994 results of the U.S. study put out by Mathews and Ventura reveal that:

> women with 0- 8 years of education had the highest birth rates overall, while those who started but did not complete college had the lowest. For women 30- 39 years of age, however, those with college degrees had the highest rates… For college-educated women, low first birth rates for women in their twenties and high rates for women in their thirties point to the continuing trend of delayed childbearing.[118]

These results suggest that education has a positive influence on fertility rates, though fertility is postponed. Heiland, Prskawetz and Sanderson made a similar conclusion about the relationship between education and fertility in their study of West Germany.[119] Explanations for this positive relationship include "greater confidence in one's ability to

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[117] T.J. Matthews and Stephanie J. Ventura, "Birth and Fertility Rates by Educational Attainment: United States, 1994," *National Center for Health Statistics Monthly Vital Statistics Report* 45, no. 10 (24 April 1997); available from http://www.cdc.gov/ncha/data/mvsr/supp/mv45_10s.pdf; accessed on 25 November 2005.

[118] Ibid., 2.

[119] Frank Heiland, Alexia Prskawetz, and Warren C. Sanderson, "Do the More-Educated Prefer Smaller Families?" Vienna Institute of Demography Working Papers, March 2005; available from http://www.oeaw.ac.at/vid/download/WP2005_3.pdf; accessed 12 February 2006.

cope with family stress," "greater tolerance for raising kids," and "the ability to afford a larger family."[120] The literature raises the possibility that education levels are the variable explaining fertility levels.

In order to determine if women's education is an intervening variable in the relationship between religiosity and fertility in Europe and the U.S., I conducted a cross-sectional analysis of data from the EWVS using SPSS. I continued the use of the MRC and religiosity measurement by frequency of attendance to religious services, and added the "Education Recoded" variable which divides education levels into lower, middle and upper. In addition, I included the regular MRC as a reference point in comparing the religious and non-religious MRCs. Unfortunately, the MRC does not take into account postponed fertility, so the results are not entirely accurate. The results for each case study country are displayed in Tables 9- 13.

Table 9 shows the various MRCs for U.S. respondents according to education level. None of the MRC trends correspond to the literature since they all follow a negative correlation with education level. The religious MRC does exceed the non-religious MRC

Table 9: United States[121]

Education Level	Religious MRC	Non-Religious MRC	MRC
Lower	2.06	1.32	1.76
Middle	2.03	1.66	1.76
Upper	1.91	0.44	1.53
Total	1.96	0.99	1.64

[120] Ibid., 22.

[121] SPSS Analysis, WVS 1999.

across all levels of education, indicating that education does not interfere with the positive relationship between religiosity and fertility in the U.S. The regular MRC does not correspond to either of the other MRCs.

Table 10 shows the various MRCs for Polish respondents according to education

Table 10: Poland[122]

Education Level	Religious MRC	Non-Religious MRC	MRC
Lower	2.02	1.73	1.95
Middle	1.34	1.62	1.38
Upper	1.39	0.74	1.19
Total	1.61	1.34	1.57

level. As in the U.S., all the MRCs in Poland follow a negative correlation with education levels, further weakening the literature's claim. The MRCs of religious respondents are higher than the MRCs of non-religious respondents within the lower and upper education levels, but not the middle education level. The regular MRC most closely corresponds with the religious MRC.

Table 11 shows the various MRCs for Irish respondents according to education

Table 11: Ireland[123]

Education Level	Religious MRC	Non-Religious MRC	MRC
Lower	3.02	2.27	2.61
Middle	2.22	1.02	1.64
Upper	1.52	0	.94
Total	2.30	1.74	1.81

[122] Ibid.

[123] Ibid.

level. Ireland continues the trend set by the U.S. and Poland with a negative relationship between all the MRCs across the education levels. Again in common with the U.S., the religious MRC among religious Irish respondents is significantly higher than the MRC among non-religious Irish respondents within each education level. Analysis of how education level influences non-religious respondents in Ireland is speculative because only two non-religious female respondents were in the upper level of education and neither of them claimed to have children. The regular MRC is too inconsistent to coincide with either of the other MRCs.

Table 12 shows the various MRCs for British respondents according to education

Table 12: Great Britain[124]

Education Level	Religious MRC	Non-Religious MRC	MRC
Lower	2.23	2.32	2.25
Middle	1.98	1.41	1.67
Upper	0.47	1.00	.79
Total	1.77	1.75	1.76

level. Similar to the three preceding countries, all of the MRCs in Great Britain follow a negative correlation with education levels. The MRCs of religious respondents in Great Britain are higher than the MRCs of non-religious respondents in the middle and upper education levels, but non-religious MRCs are higher by 0.09 in the lower education level. The regular MRC coincides more with the religious MRC than the non-religious MRC.

Table 13 shows the various MRCs for French respondents according to education level. Out of all the case study countries, France is the only one to show a positive relationship between the MRC and lower to upper education levels. But, this relationship

[124] Ibid.

Table 13: France[125]

Education Level	Religious MRC	Non-Religious MRC	MRC
Lower	2.29	1.56	1.69
Middle	2.04	0.96	1.06
Upper	2.57	0.72	.91
Total	2.36	1.2	1.33

exists for the religious MRC and not the non-religious MRC which follows a negative correlation. Like the U.S. and Ireland, the religious MRC in France is higher than the non-religious MRC across and between all education levels. The regular MRC most closely corresponds with the non-religious MRC.

In summary, religious MRCs in the U.S., Ireland and France were higher than non-religious MRCs across all levels of education while in Poland and Great Britain they were higher in at least one level. Ireland had the highest religious MRC at 3.02 in the lower education level while Great Britain had the lowest at 0.47 in the upper education level. The religious MRC in all of the case study countries except France followed a negative correlation with education level which challenges the literature. This negative relationship might be a reflection of postponement of childbirth that does not show up in the MRC measurement. Education is not an intervening factor in the comparison between religiosity and fertility.

MRC Analysis Controlling for Women's Employment Status

Rosenbluth, Light and Schrag contend that, "fertility in industrialized countries is strongly affected by a woman's ability to balance family and career."[126] Sleebos proposes

[125] Ibid.

that "the difficulty that women face in combining work and family responsibilities account for the fact that, in general, the proportion of women with children is higher among those that do not work than for those who do."[127] Sleebos also observes that "across countries, the proportion of women with children is generally higher among those working part-time than among those working full-time."[128] Through a pooled time-series analysis, Engelhardt and Prskawetz found that "across regions, the inhibiting effects of female labor force participation are smaller in Scandinavian countries, in West European countries as well as in non-European countries than in South European countries with weak family/-work-friendly institutions."[129] Literature offers a strong case that female employment has a negative relationship with fertility that could interfere with a religious influence on fertility.

In order to determine if women's employment is an intervening variable in the relationship between religiosity and fertility in Europe and the U.S., I conducted a cross-sectional analysis of data from the ISSP using SPSS. I continued the use of the MRC and religiosity measurement by frequency of attendance to religious services, and added the "R worked outside: kid under school age" variable which measures the respondents who

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[126] Frances Rosenbluth, Matthew Light, and Claudia Schrag. "The Politics of Low Fertility: Global Markets, Women's Employment, and Birth Rates in Four Industrialized Democracies." August 2002.Working Paper. Yale University, CT. Available from http://www.yale.edu/polisci/rosenbluth/politics%20of%20Low%20Fertility1.pdf. Accessed 10 Oct. 2005.

[127] Sleebos, Joëlle E. "Low Fertility Rates in OECD Countries: Facts and Policy Responses," 24.

[128] Ibid.

[129] Henriette Engelhardt and Alexia Prskawetz, "A Pooled Time-Series Analysis on the Relation Between Fertility and Female Employment," Vienna Institute of Demography- European Demographic Research Papers; available from http://www.oeaw.ac.at/vid/download/edrp_1_05.pdf; accessed 15 February 2006, 30.

worked full-time while they had a child under school age.[130] In addition, I included the regular MRC as a reference point in comparing the religious and non-religious MRCs. Because data was not available to calculate the MRC for Great Britain and Ireland, my data analysis does not include these two countries. The results for each case study country are displayed in Tables 14- 16.

Table 14 shows the various MRCs for U.S. respondents according to employment status when the respondent had a child under school age. The trends in the MRCs are consistent with the literature, fertility is higher among respondents who stayed home than among respondents who worked full-time. While the religious and non-religious MRCs are comparable among respondents who worked full-time, surprisingly, the non-religious MRC greatly exceeds the religious MRC among respondents who stayed home. The U.S. fertility data results from the ISSP are not consistent with the results from the EWVS. The regular MRC is not consistent enough to coincide with either of the other MRCs.

Table 14: United States[131]

Employment Status w/ kid under school age	Religious MRC	Non-Religious MRC	MRC
Worked full-time	2.17	2.18	2.09
Worked part-time	2.16	1.83	2.01
Stayed home	2.44	3.22	2.50
Total	2.24	2.32	2.16

Table 15 shows the various MRCs for Polish respondents according to employment status when the respondent had a child under school age. While the religious MRC trend

[130] International Social Survey Program (ISSP), "International Social Survey Program: Family and Changing Gender Roles III, 2002."

[131] SPSS Analysis, ISSP, "International Social Survey Program: Family and Changing Gender Roles III, 2002."

Table 15: Poland[132]

Employment Status w/ kid under school age	Religious MRC	Non-Religious MRC	MRC
Worked full-time	2.21	3.33	2.15
Worked part-time	1.90	NA	2.35
Stayed home	2.36	1.50	2.29
Total	2.25	2.29	2.23

corresponds with the literature, the non-religious MRC in Poland shows a positive relationship between employment and fertility. The non-religious MRC in Poland exceeds the religious MRC among respondents who worked full-time. Unlike the U.S., the religious MRC in Poland exceeds the non-religious MRC among respondents who stayed home. The regular MRC most closely corresponds with the religious MRC.

Table 16 shows the various MRCs for French respondents according to employment

Table 16: France[133]

Employment Status w/ kid under school age	Religious MRC	Non-Religious MRC	MRC
Worked full-time	1.50	1.76	1.79
Worked part-time	NA	2.05	1.95
Stayed home	2.44	2.06	2.06
Total	2.00	1.90	1.89

status of child-bearing age when the respondent had a child under school age. The MRCs in France confirm the literature since they follow a negative relationship with employment. As with Poland, the non-religious MRC in France exceeds the religious MRC among respondents who worked full-time while the religious MRC exceeds the non-religious

[132] Ibid.

[133] Ibid.

MRC among respondents who stayed home. The regular MRC most closely corresponds with the non-religious MRC.

In summary, the data from the ISSP reveals that the religious MRCs in all the countries examined follow a negative correlation with female employment, affirming the literature. While religious MRCs in Poland and France exceeded non-religious MRCs among respondents who stayed at home, non-religious MRCs in the same two countries exceeded religious MRCs among respondents who worked full-time. Although U.S. data from this survey was inconsistent with the U.S. data from the World Values Survey and data for Ireland and Great Britain was not available, the data that was available suggests that female employment is an intervening variable on the relationship between religiosity and fertility.

CHAPTER SIX

TIME-SERIES ANALYSIS OF MRC & RELIGIOSITY

According to Inglehart, "the biggest single consequence of the declining role of the church is the huge decline in fertility rates."[134] Berman, Iannaccone and Ragusa associate the low fertility rates in Southern Europe with "declining religiosity (as measured by church attendance)" specifically among the Catholic population.[135] While Chapter Four already covered the supporting literature and evidence for the claim that the religious MRC generally exceeds the non-religious MRC, except in Great Britain; this chapter uses a time series analysis to isolate the effect of trends in religious attendance on the MRC.

Because the EWVS only includes data from 1981 and 1999 for all five case study countries, the time-series analysis is limited to this nineteen year period.[136] Fertility is measured by the MRC, as usual, except all age groups will be included since the online data analysis tool does not allow multiple controlled comparisons. Religiosity will also be measured by the usual variable, attendance to religious service. Figures 10a- 14 show the trends for both MRC and attendance to religious services once a week or more by respondents for each of the five case study countries.

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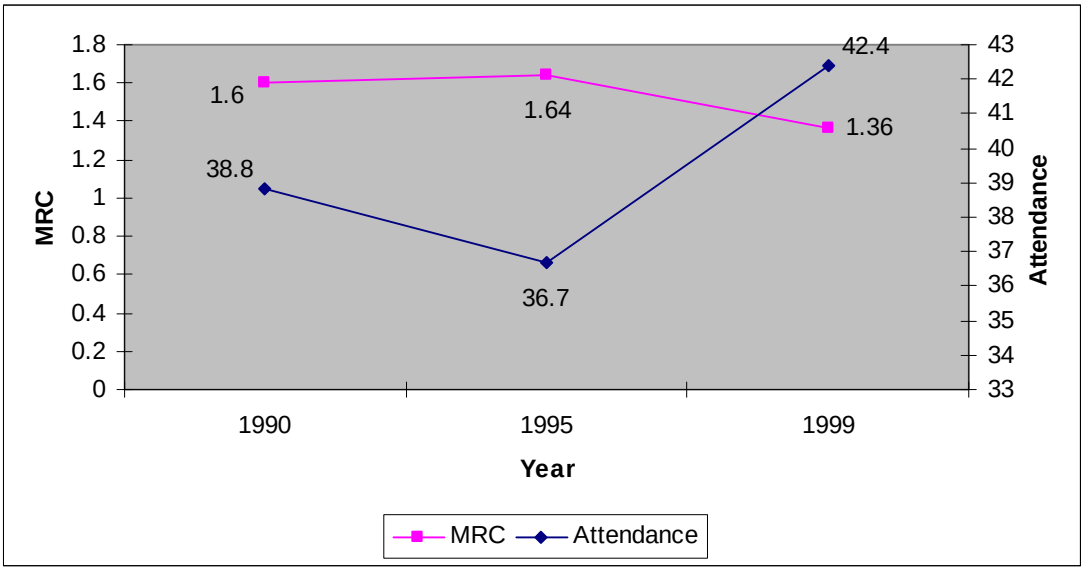
[134] Noelle Knox, "Religion Takes a Back Seat in Western Europen."

[135] Eli Berman, Laurence R. Iannaccone and Giuseppe Ragusa, "From Empty Pews to Empty Cradles: Fertility Decline Among European Catholics," The Association for the Study of Religion, Economics, and Culture (ASREC) Conference Paper, September 2005; available from http://gunston.gmu.edu/liannacc/ERel/S2-Archives/REC04/Berman_Iannaccone_Ragusa%20-%20Catholic%20Fertility.pdf; accessed 25 March 2006, 4.

[136] "Data analysis of the World Values Survey;" The earliest WVS data from Poland is from 1989 and the earliest data from the U.S. is from 1982.

Figure 10a shows a negative relationship between the trends of MRC and attendance in the U.S. between 1990 and 1999.[137] While the MRC decreased from 1.6 in 1990 to 1.36

Figure 10a: U.S.- MRC & Attendance



in 1999, attendance increased from 38.8% in 1990 to 42.4% in 1999. The year 1995 was an exception to this pattern because MRC increased slightly (1.64) and attendance decreased (36.7%), but the trends maintained a negative relationship. Figure 10b shows the trends of MRC and marriage of respondents of child-bearing age in the U.S. A sharp decline in marriage rate from 60.1% in 1995 to 44.7% in 1999 corresponds with the sharp decline in MRC from 1.64 to 1.36 over the same period.[138] Thus, a decline in married respondents of child- bearing age between the 1995 and 1999 surveys could explain the negative correlation between MRC and attendance in the previous graph. Also, the decline in MRC might have been even greater had religious attendance not increased.

[137] Ibid.

[138] Ibid.

Figure 10b: U.S- MRC & Married

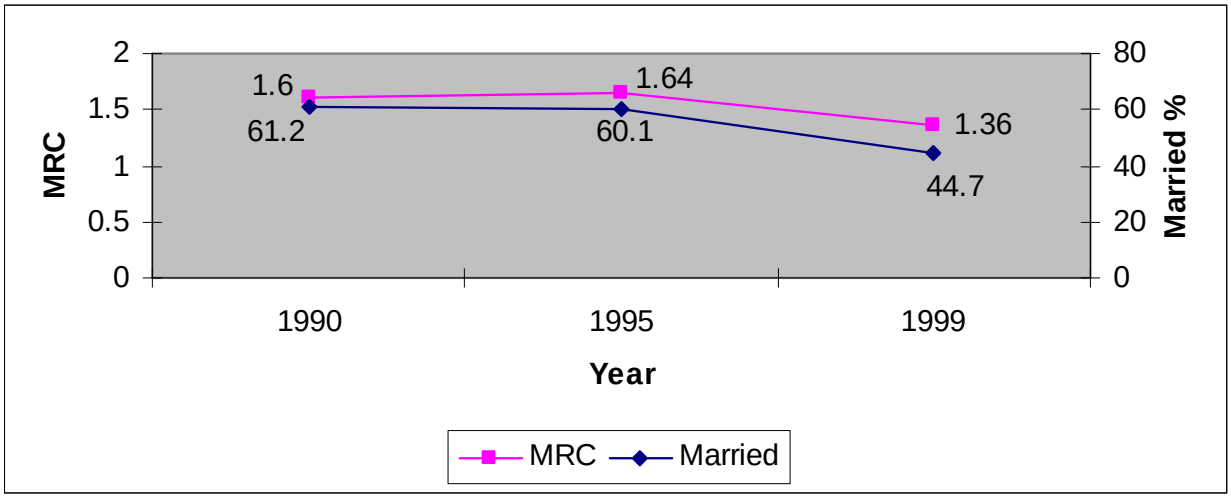
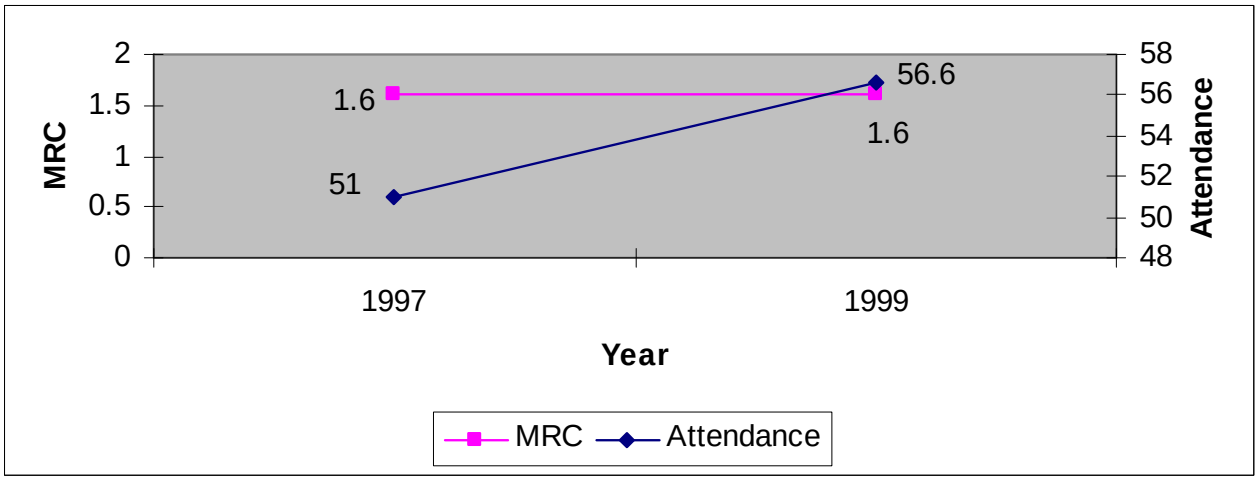


Figure 11 shows the trends of both MRC and religiosity in Poland between 1997 and

Figure 11: Poland- MRC & Attendance



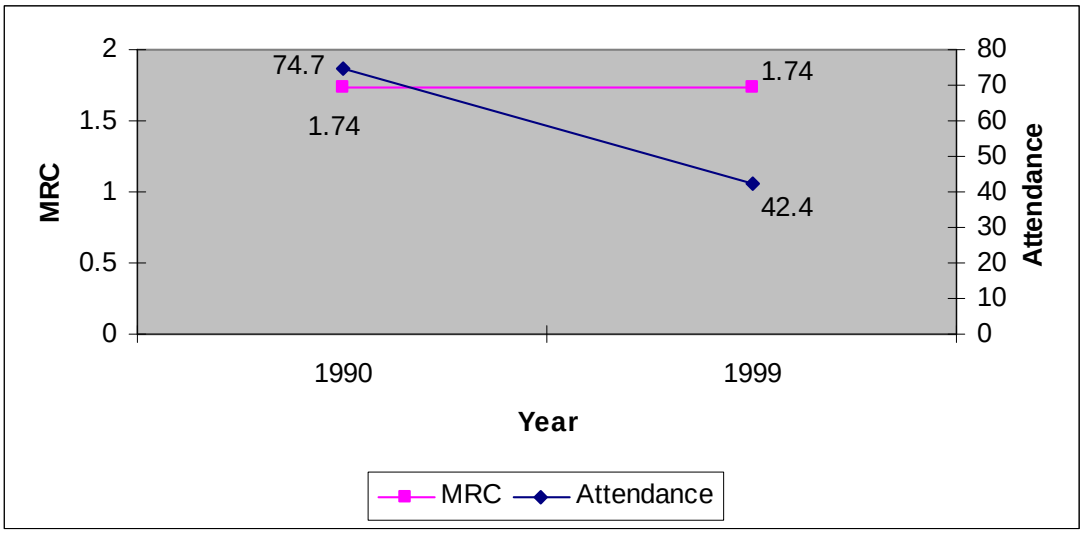
1999.[139] While attendance increased slightly from 51% in 1997 to 56.6% in 1999, MRC stayed at 1.6.[140]

Figure 12 shows the trends of both MRC and religiosity in Ireland between 1990

[139] Ibid.

[140] A better analysis of the relationship between MRC and attendance over time in Poland could be reached if data was available from 2005.

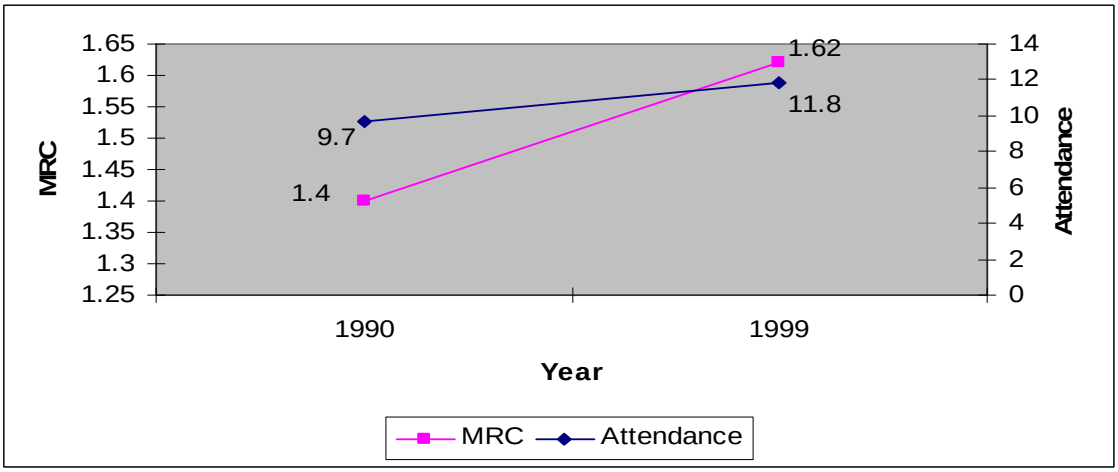
Figure 12: Ireland- MRC & Attendance



and 1999.[141] MRC remained at 1.74 between 1990 and 1999, while attendance decreased dramatically by 32.3% during the same period. Thus, the trends in MRC and attendance in Ireland do not have a strong correlation.[142]

Figure 13 shows the trends of both MRC and religiosity in Great Britain between

Figure 13: Great Britain- MRC & Attendance



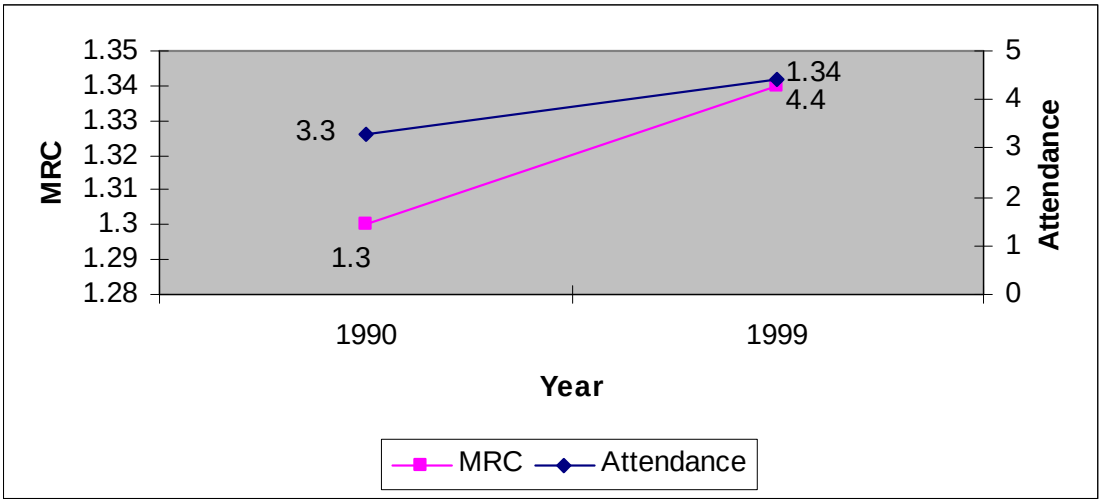
[141] Ibid.

[142] If data from 2005 was available, I could better understand the relationship between MRC and attendance in Ireland.

1990 and 1999.[143] The data reveals that as MRC increased to 1.62 in 1999, attendance also increased to 11.8%. Thus, MRC and attendance trends in Great Britain have a strong positive correlation.

Figure 14 shows the decline in both MRC and religiosity in France between 1990

Figure 14: France- MRC & Attendance



and 1999.[144] According to the data presented in this graph, the MRC and attendance trends in France have a positive correlation. Between 1990 and 1999, MRC increased slightly from 1.3 to 1.34 as attendance increased from 3.3% to 4.4%.

In summary, the trends for both MRC and religiosity over time have a strong positive correlation in Great Britain, a weak positive correlation in France and Poland, and a negative correlation in the U.S and Ireland. Data from Poland is less conclusive since it only spanned three years. The U.S. had a strong positive correlation specifically between 1990 and 1995, but a negative correlation between 1995 and 1999. This change might be explained in part by the decrease in married respondents which closely corresponds to the

[143] Ibid.

[144] Ibid.

decrease in MRCs. The overall data results might also be flawed because limitations in analyzing the data failed to allow for the control of respondents of child-bearing age when calculating both MRC and religiosity. The data above suggests that a correlation between MRC and religious attendance is not universal among the case study countries.

CHAPTER SEVEN

MACRO LEVEL ANALYSIS OF RELIGIOISTY & FERTILITY

While Chapters Three through Six have been analyzing the relationship between religiosity and fertility on a micro level, this chapter will return to the macro level introduced in Chapter Two to evaluate the relationship between religiosity and fertility using "aggregate" data. In Chapter Two, the TFRs for the five case study countries where (in descending order from highest to lowest): the U.S. at 2.08, Ireland at 1.87, France at 1.85, Great Britain at 1.66, and Poland at 1.25.[145] In Chapter Three, the case study countries where ranked from highest to lowest frequency of attendance to religious services for 1999 as follows: Poland at 56.6%, the U.S. at 42.4%, Ireland at 42.4%, Great Britain at 11.8%, and France at 4.4%.[146] Unfortunately, 1999 is the earliest available data for frequency of church attendance in the world. In order to make a more accurate comparison between fertility and religiosity, the 1999 TFRs for the case study countries in order from highest to lowest are as follows: U.S. at 2.08, Ireland at 1.88, France at 1.79, Great Britain at 1.71, and Poland at 1.37.[147] France and Poland are outliners that pose a challenge to my thesis that TFR and religious attendance are positively correlated.

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[145] The World Factbook, "Rank Order- Total Fertility Rate,"

[146] SPSS Analysis.

[147] Jean-Paul Sardon and Glenn D. Robertson, "Recent Demographic Trends in the Developed Countries," *Population* 57, no. 1 (Jan.- Feb. 2002): 134-135.

Addressing the French Problem: High TFR & Low Religiosity

The high French TFR but low religious attendance could be explained by the French government's aggressive pronatalist policies. French Family Policy provides maternity/parental leave, early childhood education and care, family and child cash allowances and tax benefits which might provide increased certainty for the future in place of religious belief.[148] But, two sources that examined the effectiveness of various government supported pro-natalist policies concluded that such policies had merely a temporary or modest effect at increasing fertility. Chamie's study considered the impact of policies, programs, and incentives meant to encourage fertility including maternity and paternity leave, childcare, part-time employment, job security and cash allowances.[149] He concludes that any influence on fertility tends to be short lived and increased gender equality at work and home actually causes further declining fertility.[150] Sleebos argues that "policy-makers should probably not expect too much from pro-natalist policies," because only a weak positive relation exists between these policies and reproductive behavior.[151] Even if the effect of pronatalist policies on fertility is weak, it could still explain in part why France is able to maintain a high TFR without the positive effect of religiosity.

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[148] The Clearinghouse on International Developments in Child, Youth, and Family Policies at Columbia University, "France," Last Updated June 2004; available from http://www.childpolicyintl.org/countries/francehi.pdf; accessed 5 February 2006.

[149] Joseph Chamie, "Low Fertility: Can Governments Make a Difference?" Paper presented at the annual meeting of the Population Association of America, Boston, MA., 1- 3 April 2004; available from http://paa2004.princeton.edu/download.asp?submissionId=42278; accessed 12 Oct. 2005, 2.

[150] Ibid., 11.

[151] Joëlle E. Sleebos, "Low Fertility Rates in OECD Countries: Facts and Policy Responses," 48.

Ajami suggests an alternative potential solution to the French problem: "High fertility rate "is a factor of its Muslim population."[152] An SPSS analysis of data from the ISSP reveals that the MRC of French respondents who identify themselves with Islam is 2.33, significantly higher than the MRC of respondents who identify themselves with no religion (1.90).[153] According to a CNN article, France has "the largest Muslim population in Europe, where 1 in 10 identifies with Islam."[154] Muslim fertility could account for the high TFR in France.

Addressing the Polish Problem: Low TFR & High Religiosity

The low Polish TFR but high religious attendance could be explained by its infertility rates. According to the Polish Institute of Human Genetics estimates, "almost 20% of Polish couples are infertile, and 40- 60% of them are attributed to the 'male factor.'"[155] Comparable data on the other case study countries was not available.

Another possible explanation for Poland's low TFR despite its high religiosity is that Polish women are postponing childbearing. According to results of the "Population Policy Acceptance Study" (PPAS), 49.8% of Polish women desire 2 children while 33.6%

[152] Fouad Ajami, "The Moor's Last Laugh," *Wall Street Journal*, 22 March 2004. Available from http://www.hvk.org/articles/0304/143.html; accessed 12 November 2005.

[153] SPSS Analysis, ISSP, "International Social Survey Program: Family and Changing Gender Roles III, 2002."

[154] Jim Bittermann, "French Muslims Seek Stronger Voice," CNN, 6 March 2002; available from http://cnnstudentnews.cnn.com/2002/WORLD/europe/03/06/france.muslims; accessed 25 March 2006.

[155] Dorota Sanocka and Maciej Kurpisz, "Infertility in Poland- present status, reasons and prognosis as a reflection of Central and Eastern Europe problems with reproduction," 9 *Med Sci Monit*, no. 3, 2003, available from http://www.MedSciMonit.com/pub/vol_9/no_3/3480.pdf; accessed on 2 February 2006.

desire 3 +.[156] The survey results also provided data on the reasons Polish respondents gave for giving birth. The top three reasons given were: "I am too concerned about the future my children will have," "I already have all the children I want," and "A(nother) child would cost too much."[157] Thus, in the case of Poland, fertility rates are low because parents are considered about the future. This reason directly challenges my theory that religion provides adherents hope for the future, which I discuss in the next chapter. But, insecurities in Poland might be greater than the other case study countries because of its Communist history. Inglehart claims that "communist rule had huge costs—not only materially, but also in terms of human happiness," and human happiness has "a strong linkage with economic development."[158]

Additional Variables: Contraception Use and Abortion Rates

Bongaart identifies "the percent of women using contraception" and "the level of abortion," as two "proximate determinants… that directly affect fertility and explain most of the differences in fertility levels among countries."[159] I use "aggregate" data to demonstrate that neither contraception use nor abortion rates are relevant variables in explaining fertility differences in the case study countries.

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[156] Robert Bosch Stiftung, ed. "The Demographic Future of Europe- Facts, Figures, Policies: Results of the Population Policy Acceptance Study (PPAS)," DIALOG-Project Conference Paper, 16 November 2005; available from http://www.bib-demographie.de/ppa/PPAS_brochure_en.pdf; accessed 15 March 2006, 10.

[157] Ibid., 12.

[158] Ronald Inglehart, "Globalization and Postmodern Values," *The Washington* Quarterly (Winter 2000); available from http://wvs.isr.umich.edu/papers/globaliza.pdf; accessed 20 April 2006, 218, 221.

[159] Population Reference Bureau. "2005 World Population Data Sheet of the Population Reference Bureau," 15.

First, contraception can be ruled out as an explanation for differences between high and low TFRs in the case study countries because contraception use by women is comparable among the case study countries except Poland, which has the lowest rate of use, but also the lowest TFR.[160] According to the Population Reference Bureau publication "2005 Women of Our World," 76% of married women of reproductive age in the U.S. use contraception; 75% of married women of reproductive age in France use contraception; 84% of married women of reproductive age in Great Britain use contraception; and, only 49% of married women of reproductive age in Poland use contraception.[161] If contraception use could explain the differences in TFR among the case study countries, Poland would have had the highest rate, but since it has the lowest, contraception is not an indicator of fertility differences between Europe and the U.S.

Abortion also can be ruled out as an explanation for differences between high and low TFRs in the case study countries because the 2004 abortion policy of Poland is one of the most restrictive while Poland has the lowest TFR. In Ireland, abortion is "prohibited, or permitted only to save a woman's life;" and, in Poland, abortion is "permitted on physical or mental health grounds… or more special cases such as rape, incest, or fetal impairment or abnormality."[162] For the remaining countries, the U.S., Great Britain and France, abortion is "permitted on broad socioeconomic grounds and health grounds or

[160] Contraception use data for Ireland is not available.

[161] Lori Ashford and Donna Clifton. "2005 Women of Our World," 4, 6 & 7.

[162] Lori Ashford and Donna Clifton, "2005 Women of Our World," PRB: *Population Reference Bureau*, Feb. 2005, available from http://www.prb.org/Template.cfm?Section=PRB&template=/ContentManagement/ContentDisplay.cfm&ContentID=12298; accessed 25 February 2005, 2, 7.

without restriction as to reason, with gestational limits."[163] Total Abortion Rates also do not explain fertility differences because the U.S. has the highest rate but the highest TFR and Poland has the lowest rate but the lowest TFR. The abortion rates are as follows: 0.69 for the U.S. in 1996; 0.18 for Ireland in 1996; 0.37 for France in 1995; 0.48 for Great Britain in 1996;[164] and, in Poland, "the legal abortion rate is currently near zero as a consequence of new restrictions."[165]

American Immigration Not a Contender

According to Phillip Longman, the U.S. has a higher fertility rate than other industrialized countries only because of its "success in attracting large numbers of immigrants who produce comparatively large families."[166] But, the largest portion of U.S. immigrants, Latin Americans, [53.3% of foreign-born in 2003],[167] are largely religious. According to the EWVS, of the U.S. respondents of child-bearing age who identified themselves as ethnically Hispanic and who attend religious services once a week, 42.3% have had 2 or more children compared to 11.1% who have had 2 or more children but never or practically never attend religious services.[168] Also, natural increase (excess of birth over

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[163] Ibid.

[164] Stanley K. Henshaw, Susheela Singh and Taylor Haas, "The Incidence of Abortion Worldwide."

[165] Stanley K. Henshaw, Susheela Singh and Taylor Haas, "Recent Trends in Abortion Rates Worldwide," 25 *International Family Planning Perspectives*, no. 1, March 1999, available from http://www.guttmacher.org/pubs/journals/2504499.html#8; accessed 4 February 2006; "Many Poles reportedly seek abortion services in nearby countries or from illegal providers in Poland."

[166] Phillip Longman, *The Empty Cradle: How Falling Birthrates Threaten World Prosperity And What To Do About It*, (New York: Basic Books, 2004): 16.

[167] Luke J. Larsen, "The Foreign Born Population in the U.S., 2003," *US Census Bureau* (Issued August 2004); available from http://www.census.gov/prod/2004pubs/p20-551.pdf; accessed on 30 November 2005.

[168] SPSS Analysis, WVS

deaths) accounts for the majority of this U.S. fertility growth, while only 40% of the growth can be attributed to immigration.[169] U.S. immigration does not exclude the influence of religious belief on fertility rates.

[169] Hans-Peter Kohler, Francesco C. Billari, and Jose Antonio Ortega, "Low and Lowest-Low Fertility in Europe," 28.

CHAPTER EIGHT

SPECULATIONS ON WHY CORRELATION EXISTS

Several scholars offer speculations for why religiosity encourages fertility. Lehrer offers the explanation that "some religions provide psychological and social rewards to couples who have many children, in the form of approval, social status, and blessings."[170] Berman, Iannaccone and Ragusa list five "mechanisms" that might link religiosity and fertility:

> First, religion could affect individual preferences for children or for use of birth control. Second, religion could influence social norms regarding childbearing and women's work. Third, religion could affect education and thus change the shadow price of raising children. Fourth, religious communities could lower the effective price of raising children by providing child-friendly social services, such as day care, schools, and medical care. Finally, religion could affect national politics and thus the provision of child-friendly social services by government.[171]

Norris and Inglehart's "theory of existential security and secularization,"[172] suggests that "all things being equal, the experiences of growing up in less secure societies will heighten the importance of religious values, while conversely experience of more secure conditions will lessen it."[173] This theory corresponds nicely with the demographic "theory of risk and opportunity,"[174] whereby religious people feel more secure about the future through their faith which might encourage childbearing.

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[170] Evelyn L. Lehrer, "Religion as a Determinant of Economic and Demographic Behavior in the United States," 711.

[171] Eli Berman, Laurence R. Iannaccone and Giuseppe Ragusa, "From Empty Pews to Empty Cradles: Fertility Decline Among European Catholics," 4.

[172] See Chapter Three.

[173] Pippa Norris and Ronald Ingelhart, *Sacred and Secular*, 18.

[174] Peter McDonald, "Theory Pertaining to Low Fertility," 4.

The theory that religious belief perpetuates hope for the future and gives people a brighter outlook on the future can be evaluated using SPSS analysis. According to the World Values Survey, 55.3% of those people who identified themselves as religious also said that the future looks bright compared to the 49.2% who identified themselves as not religious and 47.6% who identified themselves as convinced atheists.[175] Religion provides comfort and strength. In response to the World Values Survey question, "Do you find that you get comfort and strength from religion?" 56.1% of respondents from the 5 case study countries said "yes" while only 37.2% said "no."[176]

Hope for the future derived from religious beliefs has a positive relationship with the MRC. Table 17 below shows that respondents from the World Values Survey of child-

Table 17: Comfort & Strength from Religion & MRC

Country	**Comfort & Strength From Religion**	**MRC**
United States	Yes	1.47
	No	0.82
	Total	*1.32*
Poland	Yes	1.53
	No	1.34
	Total	*1.5*
Ireland	Yes	1.79
	No	1.20
	Total	*1.59*
Great Britain	Yes	1.63
	No	1.56
	Total	*1.58*
France	Yes	1.53
	No	1.07
	Total	*1.20*

[175] Ibid.

[176] Ibid.

bearing age from the five case study countries who stated that they gain comfort and strength from religion have higher MRCs than people of child-bearing age who answered no.[177]

Poland provides an example of a country with a weaker economy than the other case study countries and a strong religious adherence. According to Rocco Buttiglione, Italy's nominee for justice minister of the EU,[178] "[f]or the masses [in Eastern Europe], religion provides a sense of certainty in an uncertain world." And since the collapse of communism and its anti-religious ideology, people in Eastern Europe are taking advantage of their new freedom to worship.[179] While Poland exemplifies Norris and Inglehart's "theory of existential security and secularization," the results of the (PPAS) cut the link between hope for the future through religious adherence and fertility.[180] An evaluation of the relationship between religious hope and fertility cannot extend to the other case study countries because the PPAS does not include them.

In summary, while there are several reasons why religiosity might be linked with fertility, my research supports Norris and Inglehart's "theory of existential security and secularization," especially as it relates to the "theory of risk and opportunity." Data analysis of the EWVS provides strong supporting evidence that religiosity is linked to comfort, strength and hope in the future, which, in turn, is linked to higher MRCs.

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[177] Ibid.

[178] Noelle Knox, "Religion Takes a Back Seat in Western Europe."

[179] Ibid.

[180] Robert Bosch Stiftung, ed. "The Demographic Future of Europe- Facts, Figures, Policies: Results of the Population Policy Acceptance Study (PPAS)," 10.

CHAPTER NINE

CONCLUSION: SUMMARY OF RESULTS & POLITICAL IMPLICATION

Although I had originally expected to observe a positive relationship between religious beliefs on a micro level that could be extended to a macro level to explain the difference in fertility rates between the U.S. and Europe, I instead met with inconclusive results. In Chapter Two, I found that the U.S. ranked the highest in TFR among all five cast study countries. In Chapter Three, literature and data analysis revealed that while the U.S. ranked the highest for importance placed on religion, Poland surpassed the U.S. in frequency of church attendance and self-identified religiosity. The first data analysis of the relationship between religiosity and fertility was conducted in Chapter Four. The results, except Great Britain, affirmed my expectation that religious MRCs would be greater than non-religious MRCs. As I took the data analysis deeper, problems began to emerge.

Chapter Five involved an examination of three potential intervening variables: income, education and employment for women. Income proved to be an intervening variable to a large extent in Ireland and to a lesser extent in Great Britain and the U.S. A majority of the data results from the income analysis confirmed the literature that had identified a positive correlation between MRCs and income levels. Female education proved not to be an intervening factor in the comparison between religiosity and fertility, although the results could be flawed since the MRC does not show the effect of postponed childbearing. This flaw could also explain why the MRC results challenged the literature by following a negative correlation with education level. Although data from the ISSP survey, which was used in the female employment data analysis, revealed U.S. data that was inconsistent with the previous survey results from Chapter Four, and failed to include

data for Ireland and Great Britain, the results did suggest that female employment is an intervening variable on the relationship between religiosity and fertility.

Chapter Six covered one final micro-level data analysis-- a time-series to see if attendance trends had any observable influence on the MRC trends. The results were inconclusive, a strong positive correlation occurred in Great Britain, a weak positive correlation occurred in France and Poland, and a negative correlation occurred in the U.S and Ireland. One variable that I examined to see its effects on the results from the U.S. was marriage rates, and they proved to follow a trend similar to the MRC. Another potential explanation for the inconclusive results is that the online survey analysis tool I was forced to use did not allow me to control for more than two variables, so the MRC and religiosity results included all age groups. This failure to distinguish between the childbearing generation and the older generation might have resulted in skewed results as the tables in Chapter Three reveal the large disparities in religiosity between the two age groups.

Chapter Seven examined the case study countries on a macro-level using "aggregate" data. The problems presented by France, for its high TFR and low religiosity, and Poland, for its low TFR and high religiosity, were examined. Some possible solutions that were considered included the effect of policies enacted by the pro-natalist government in France; the influence of high Muslim fertility rates; the impact of infertility rates in Poland; and, the possibility that Polish couples are postponing bearing children because of an insecure future. Contraception use and abortion levels were eliminated as potential intervening variables on the difference between TFR in Europe and the U.S. since the country with the lowest TFR, Poland, also had the lowest use of contraception and abortion. Finally, American immigration was ruled out as a candidate for explaining the

difference between U.S. and European fertility since it only accounts for 40% of the fertility and the immigrants are largely Hispanic bringing high fertility rates into the U.S. influenced by their religious culture.

Chapter Eight speculated on reasons why a correlation between religiosity and fertility might exist. Among the reasons were child-friendly social services, security in the future, and strength and comfort. Although my original thesis was disproven, the value of religiosity as described in Chapter Eight has not been disproven.

Political Implications

My research findings have important political implications. First, governments that are concerned about low fertility rates in their country should consider the cost concerns facing people who are debating whether or not they can have children. According to the survey of Polish respondents, women desired more children but they decided not to because of the fear they had of the future. Government might consider what they can do to assuage this fear, perhaps follow the model of France with its pro-natalist government policies. Further research should be done on how the ability for women to juggle a career and a family influences fertility. Governments should carefully consider their immigration policies since vacuums created by low fertility will be filled by immigrants who bring with them their native, often religious cultures. Finally, governments should explore the role religion plays in their society and what consequences might arise if religious influence was either augmented or diminished.

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