Christianity – the roots of Europe and the Western world

Paul S. Segerstrom
Stockholm School of Economics

Introduction

- Adam Smith is widely regarded as the founding father of economics and in his book *The Wealth of Nations* from 1776, the main focus was on explaining why some countries are rich and other countries are poor.
- Who has the best explanation today?
- Why did free markets first appear in the West and more generally, why did the West become so economically prosperous compared to all other regions of the world?

Niall Ferguson (2011), *Civilization: The West and the Rest.*

- "More competition", "more science" and "more private property" contribute to "economic prosperity".
- Religious beliefs do influence economic outcomes.

- "More science" contributes to "economic prosperity":

  [In the model of growth and trade, symmetric trade liberalization lead to more R&D, more innovation and higher long-run consumer welfare]

- "More private property" contributes to "economic prosperity":

  [In the model of intellectual property rights, stronger protection of private property leads to more technology transfer, more R&D employment, more innovation and higher long-run consumer welfare]

- "More competition" contributes to "economic prosperity":

  [In the Melitz model, symmetric trade liberalization lead to more competition, higher industrial productivity and higher consumer welfare]

Why are religious beliefs important?

- Suppose that the dominant religion in region A teaches that private property is good, that God approves of private property.
- Suppose that the dominant religion in region B teaches that private property is bad, associated with selfishness, that all property should be publicly owned.
- Then, other things being equal, region A is going to become much more prosperous than region B in the long run.
- Region A has a development-promoting religion, whereas region B has a development-retarding religion, to use the terminology in Lawrence Harrison (2006).

Niall Fergusen (2011, *Civilization: The West and the Rest*)

The Scientific Revolution that happened in Europe is perhaps best illustrated by a list of important breakthroughs:

- 1543 – Nicolaus Copernicus states the heliocentric theory of the solar system.
- 1572 – Tyco Brahe records the first European observation of a supernova.
- 1589 – Galileo's tests of falling bodies revolutionise the experimental method.
- 1600 – William Gilbert describes the magnetic properties of the earth and electricity.
- 1608 – Hans Lippershey and Zacharias Jansen independently invent the telescope.

- 1610 – Galileo discovers four of Jupiter's moons and infers that the earth is not at the centre of the universe.
- 1614 – John Napier introduces logarithms.
- 1628 – William Harvey accurately describes the circulation of blood.
- 1637 – Rene Descartes founds analytic geometry.
- 1654 – Fermat and Pascal found probability theory.
- 1661 – Robert Boyle defines elements and chemical analysis.
- 1669 – Isaac Newton presents the first systematic account of the calculus, independently developed by Gottfried Leibniz.
- 1687 – Isaac Newton states the law of universal gravitation and the laws of motion.
- 1738 – Daniel Bernoulli founds the mathematical study of fluid flow and the kinetic theory of gases.

- Those who decry 'Eurocentrism' as if it were some distasteful prejudice have a problem: the Scientific Revolution was, by any scientific measure, wholly Eurocentric.
- An astonishingly high proportion of the key figures – around 80 percent – originated in a hexagon bounded by Glasgow, Copenhagen, Krakow, Naples, Marseille and Plymouth, and nearly all the rest were born within a hundred miles of that area.
- In marked contrast, Ottoman scientific progress was non-existent in this same time period.
- The best explanation for this divergence was the unlimited sovereignty of religion in the Muslim world.

- Toward the end of the eleventh century, influential Islamic clerics began to argue that the study of Greek philosophy was incompatible with the teachings of the Koran.
- Islam holds that the universe is inherently irrational – that there is no cause and effect – because everything happens as the direct result of Allah's will at that particular time. Anything is possible.
- Attempts at science, then, are not only foolish but also blasphemous, in that they imply limits to Allah's power and authority.

- The prominent Sufi scholar Abu Hamid al-Ghazali (1055-1111) said, "It is rare that someone becomes absorbed in this [foreign] science without renouncing religion and letting go the reins of piety within him." He added that killing infidels was obligatory for all good Muslims.

- Under clerical influence, the study of ancient philosophy was curtailed, books burned and so-called freethinkers persecuted.

- In 1485 Bayezid II, sultan of the Ottoman Empire and caliph of Islam, outlawed the printing press. In 1515 a decree of Sultan Selim I threatened with death anyone found using a printing press.

- This failure to reconcile Islam with scientific progress was to prove disastrous. If the Scientific Revolution was generated by a network, then the Ottoman Empire was effectively offline.

- The only Western book translated into a Middle Eastern language until the late 1700s was a medical book on the treatment of syphilis.

- Some Ottomans came to realise that they needed to learn from the West.
- For example, in 1732 Ibrahim Muteferrika, an Ottoman official wrote in a book presented to Sultan Mahmud I:

  "Why do Christian nations which were so weak in the past compared with Muslim nations begin to dominate so many lands in modern times and even defeat the once victorious Ottoman armies?"

- The message of his book was clear: the Ottoman Empire had to embrace both the Scientific Revolution and the Enlightenment if it was to be credible as a great power.
- To describe the superiority of European governments was one thing. To implement reforms of the Ottoman system was quite another. Time and again, attempts at change fell foul of political opposition.

The Enlightenment and Science

- Stark (2014) identified all the significant scientific stars of the era beginning with the publication of Copernicus's *De revolutionibus* in 1543 and including all born prior to 1680.

- This yields a data set consisting of 52 star scientists.

- 3. Boyle, Robert (1627-1691), 4. Brahe, Tycho (1546-1601), 7. Copernicus, Nicolaus (1473-1543), 8. Descartes, Rene (1596-1650), 11. Fermat, Pierre (1601-1665), 13. Galilei, Galileo (1564-1642), 22. Halley, Edmond (1656-1742), 29. Kepler, Johannes (1571-1630), 32. Leibniz, Gottfried (1646-1716), 37. Newton, Isaac (1642-1727)

- By studying biographical information, Stark (2014) then coded each star scientist as to their personal piety.
- To code someone as **devout**, Stark required clear evidence of especially deep religious involvement. For example, Robert Boyle spent a great deal of money on translations of the Bible into non-Western languages.
- Stark used the code **conventionally religious** to identify those whose biography offers no evidence of skepticism but whose piety does not stand out as other than satisfactory to their associates.
- Finally, Stark reserved the label **skeptic** for anyone about whom he could infer disbelief, or at least profound doubt, in the existence of a conscious God. Only one of the 52 qualified: Edmond Halley – he was rejected for a professorship at Oxford on grounds of his "atheism."

Table 14-2 in Stark (2014):
Personal Piety of 52 Star Scientists (1543-1680)

Piety	Number	Percent
Devout	31	60%
Conventional	20	38%
Skeptic	1	2%
Total	52	100%

- It is only because Europeans believed in God as the intelligent designer of a rational universe that they pursued the secrets of creation.
- Johannes Kepler stated, "The chief aim of all investigations of the external world should be to discover the rational order and harmony imposed on it by God and which he revealed to us in the language of mathematics."
- In his last will and testament, the great chemist Robert Boyle wished the members of the Royal Society of London continued success in "their laudable attempts to discover the true Nature of the Works of God."
- One of the 52 star scientists [Leibniz, Gottfried (1646-1716)] even developed a new argument for the existence of God.

Leibniz asked, "Why is there something rather than nothing?" This led him to what philosophers call the **Leibniz Cosmological Argument**:

- Everything that exists has an explanation of its existence.
- If the universe has an explanation of its existence, that explanation is God.
- The universe exists.
- Therefore (from 1 and 3), the universe has an explanation of its existence.
- Therefore (from 2 and 4), the explanation of the existence of the universe is God.

- Looking at history, we find a biblically inspired confidence in the mathematical structure of the universe came *first*, before any actual scientific discoveries.
- Mathematician Morris Kline writes: "The early mathematicians were sure of the existence of mathematical laws underlying natural phenomena and persisted in the search for them because they were convinced *a priori* that God had incorporated them in the construction of the universe."
- People must first be convinced there *is* a mathematical order in nature. Otherwise they will not go searching for it – and science will not get off the ground.

The currently most influential book among economists about why some countries are poor

Acemoglu and Robinson (2012), *Why Nations Fail*.

- "Inclusive political institutions" contribute to "economic prosperity".
- Religious beliefs do not influence economic outcomes.

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What is wrong with Acemoglu and Robinson (2012)?

- A remarkable paper was published in the *American Political Science Review* in 2012, called "The Missionary Roots of Liberal Democracy" by author Robert D. Woodberry. (It won the American Political Science Association's 2013 Luebbert Best Article Award.)
- In this paper, Woodberry demonstrates historically and statistically that conversionary Protestants (CPs) heavily influenced the rise and spread of stable democracy around the world.

Woodberry (2012) writes:

- "CPs were a crucial catalyst initiating the development and spread of religious liberty, mass education, mass printing, newspapers, voluntary organizations, and colonial reforms, thereby creating the conditions that made stable democracy more likely."

- "Statistically, the historical prevalence of Protestant missionaries explains about half the variation in democracy in Africa, Asia, Latin America and Oceania and removes the impact of most variables that dominate current statistical research about democracy."

- "The association between Protestant missions and democracy is consistent in different continents and subsamples, and it is robust to more than 50 controls and to instrumental variable analysis."

- Woodberry focuses on conversionary Protestants because they actively attempt to persuade others of their beliefs, they emphasize the importance of everyone reading the Bible and they believe that grace/faith/choice saves people, not group membership or sacraments.
- For conversionary Protestants, everyone needs access to the Bible, not just elites. Therefore, everyone needs to read, including women and the poor.
- Furthermore, CPs expected ordinary people to make their own religious choices.
- They believed that people are saved through "true faith in God"; thus, each individual has to decide which faith to follow.

- Woodberry also studied the effects of Catholic missions but found that Protestant missions predict democracy, whereas Catholic missions do not.

- With Catholic missions, there has not been the same emphasis on everyone reading the Bible.

- I will now present the most important regression results in Woodberry (2012).

- In the regressions, the dependent variable is *Democracy* measured as each country's mean democracy scores from 1950-94 using data from Bollen and Paxton (hereafter, BP).

- Woodberry writes, "BP's variable has many advantages: it (1) includes more countries than most variables; (2) has a range of 0-100, which allows the use of ordinary least squares (OLS); and (3) minimizes rater bias (many other democracy scales systematically favor particular types of countries)."

- For independent variables, Woodberry uses three variables that measure the impact of Protestant missions: *Years Exposure to Protestant Missions*, *Protestant Missionaries per 10,000 Population in 1923* and *Percent Evangelized by 1900*. These three variables respectively measure the length, breadth and impact of missionary activity.

- The regression equation is

$$y_i = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \beta_3 x_{3i} + e_i, \qquad i = 1, 2, ..., n.$$

- The regression results are presented in the next slide.
- Coefficients and standard errors from robust regression (rreg in Stata).
- The constant coefficient is not shown in the table to save space.
- Notation used about statistical significance: $+ \leq .1$, $* \leq .05$, $** \leq .01$, $*** \leq .001$, two-tailed tests.
- Since several of the independent variables are skewed, Woodberry uses robust regression, which minimizes the impact of influential cases/outliers.
- However, the results are comparable using OLS or OLS with robust standard errors.

Robust Regression Predicting Democracy in "Non-West": Mean Level of Democracy from 1950-1994

Model	1	2	3
	Full Sample	Reduced to AJR "Settler" Mortality Sample	"Settler" Mortality Sample
Years Exposure to Protestant Missions	.16*** (.04)	.26*** (.05)	.26*** (.05)
Protestant Missionaries per 10,000 pop. in 1923	4.42*** (1.32)	4.20+ (2.13)	4.16+ (2.17)
Percent Evangelized by 1900	.28*** (.05)	.18+ (.10)	.19+ (.10)
"Settler" Mortality Rate (from AJR 2001)			.001 (.005)
N	140	57	57
R^2 from Robust Regression	.498	.631	.624

- The main regression result in the table is shown as the column labeled Model 1.
- One can see that all three variables related to Protestant missions strongly predict democracy (have coefficients that are positive and highly statistically significant).
- This regression is on the full sample of 140 countries in Africa, Asia, Latin America and Oceania. The sample excludes Europe, the United States, Canada, Australia and New Zealand, and thus the regression is a conservative test of CP influence.
- The R-squared of .498 indicates that the historical prevalence of Protestant missionaries explains about half the variation in democracy in Africa, Asia, Latin America and Oceania!

- In a very influential paper, economists Acemoglu, Johnson and Robinson (2001, AER) argued that "European mortality accentuated how exploitive European colonizers were and thus undermined the rule of law in high-mortality countries."
- They presented evidence that European-settler mortality influenced the development of democracy.
- However, their settler mortality data are sparse and the sample size plummets to 57.
- In the table, model 2 shows AJR's sample without controlling for settler mortality. Adding settler mortality (model 3) has no effect on the mission coefficients and the coefficient on the settler mortality rate variable is statistically insignificant.

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- As Woodberry explains, "These regressions challenge previous research about mortality's effect on political institutions; settler mortality does not influence democracy after controls for Protestant missions."

- Woodberry ran other regressions where many other variables that are mentioned in previous studies are included in addition to the three Protestant mission variables.

- He finds that none of these other variables continue to be statistically significant once the Protestant mission variables are included.

- "Variables related to missionary access and mortality (latitude, island, landlocked), alternative means of transmission (percent European, colonizers), and resistance to mission influence (percent Muslim, written language prior to mission contact) no longer have an effect."

Robust Regression Predicting Democracy in "Non-West": Mean Level of Democracy from 1950-1994

Model	1	2
British Colony	14.61**	3.29
Other Religious Liberty Colony	24.88*	16.00
Dutch Colony	9.99	-33.59
Never Colonized Significantly	2.12	.15
Latitude	.58*	.09
Island Nation	14.17*	4.71
Landlocked Nation	-13.99*	-.88
Percent European in 1980	.19+	.13
Percent Muslim in 1970	-.21**	-.02
Major Oil Producer	-5.99	-3.97
Literate Culture before Missionary Contact	-9.77+	-3.47
Years Exposure to Protestant Missions		.13*
Protestant Missionaries per 10,000 pop. in 1923		3.63*
Percent Evangelized by 1900		.22**
N	142	142
R^2 from Robust Regression	.412	.504

Robust Regression Predicting Democracy in "Non-West": Mean Level of Democracy from 1950-1994

Model	2	3
British Colony	3.29	4.98
Other Religious Liberty Colony	16.00	17.79
Dutch Colony	-33.59	-31.76
Never Colonized Significantly	.15	2.57
Latitude	.09	.11
Island Nation	4.71	5.04
Landlocked Nation	-.88	1.25
Percent European in 1980	.13	.12
Percent Muslim in 1970	-.02	-.01
Major Oil Producer	-3.97	-3.01
Literate Culture before Missionary Contact	-3.47	-3.52
Years Exposure to Protestant Missions	.13*	.13*
Protestant Missionaries per 10,000 pop. in 1923	3.63*	3.75*
Percent Evangelized by 1900	.22**	.17*
Years Exposure to Catholic Missions		.02
Foreign Catholic Priests per 10,000 pop. in 1923		.86

Robust Regression Predicting Democracy in "Non-West": Mean Level of Democracy from 1950-1994

Model	2	4
British Colony	3.29	
Other Religious Liberty Colony	16.00	
Dutch Colony	-33.59	-44.73**
Never Colonized Significantly	.15	
Latitude	.09	
Island Nation	4.71	
Landlocked Nation	-.88	
Percent European in 1980	.13	
Percent Muslim in 1970	-.02	
Major Oil Producer	-3.97	
Literate Culture before Missionary Contact	-3.47	
Years Exposure to Protestant Missions	.13*	.15***
Protestant Missionaries per 10,000 pop. in 1923	3.63*	4.39***
Percent Evangelized by 1900	.22**	.28***
N	142	142
R^2 from Robust Regression	.504	.500

- As Woodberry explains, "Controlling for Protestant missions removes the effects of most variables that dominate current statistical research about democracy".
- "Much of what we think we know about the roots of democracy needs reevaluation."

Acemoglu and Robinson (2012), *Why Nations Fail.*

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Table 4.1 in Harrison (2006, *The Central Liberal Truth*)

Hist. Dom. Religion	Countries	Population (in millions)	Per Capita GDP (2002)
Protestant	US, Germany Sweden, UK	530	$29,784
Jewish	Israel	6	$19,320
Catholic	France, Italy Spain, Brazil	904	$9,358
Orthodox	Greece, Russia Romania, Ukraine	262	$7,045
Confucian	South Korea, China Japan, Singapore	1491	$6,691
Buddhist	Thailand, Cambodia Laos, Mongolia	146	$4,813
Islam	Saudi Arabia, Egypt Morocco, Pakistan	1122	$3,142
Hindu	India, Nepal	1041	$2,390