

WORLD FUTURE GUIDE 2016



THE POLICY REPORT OF THE SECULAR POLICY INSTITUTE



Greg Neimeyer
The Future of Policy
Florida



Edwina Rogers
Secular Voters
Washington, DC



Elham Manea
Sharia vs. Western Law
Zurich



Mark Juergensmeyer
Secularism vs. Religion
California



Amatzia Baram
Dictatorship vs. Theocracy
Haifa



Aymenn Jawad Al-Tamimi
Syria
Quneitra, Syria



Holger Mey
Defense Technology
Munich



Elliot Cohen
Surveillance Technology
Florida



Patrik Lindenfors
Religion vs. Health
Stockholm



Elizabeth Loftus
Witness Testimony
Los Angeles



A.C. Grayling
Education
London



Silvian Ionescu
Climate Change
Romania

About the Secular Policy Institute

Mission

The Secular Policy Institute (SPI) is a think tank organization of thought leaders, writers, scholars and speakers with a shared mission to influence public opinion and promote a secular society. We believe governmental decisions and public policies should be based on available science and reason, and free of religion or religious preferences.

Objectives

- Lobby governments and businesses globally towards separation of church and state;
- Produce an annual World Future Guide as a resource for policymakers;
- Coordinate a worldwide coalition of more than 300 secular groups; and
- Assemble scientists and secular scholars as SPI Fellows to serve as resources for the United States Congress and parliaments worldwide.

Our Fellows

Secular Policy Institute Fellows are distinguished scientists and scholars who are dedicated to policymaking informed by the most current, accurate information available. Through proactive education and ongoing collaboration, fellows offer leverage to their allies and lobby for political and societal change around the world.

The World Future Guide

The World Future Guide collects the public policy recommendations and findings on demographic trends from the foremost fellows at the Secular Policy Institute. Leading thinkers give research and opinion on law, education, and healthcare, practical advice on defense and surveillance technology, the big picture trends on the interplay between secular government and religion, and more. And we give you a scoop: a peek into the finances of the Islamic State!

Our ten articles are written by fellows from seven countries representing diverse points of view. Yet each is committed to a rational, evidence-based analysis of a timely topic that can inform effective public policy. The first in a series of Guides, the World Future Guide 2016 provides critical secular insights into timely topics of international import in the hopes of guiding more informed public opinion and policy making within the increasingly secular world in which we live.

The World Future Guide 2016

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The Future of Policy



To influence politics, you must lead an important voting bloc or marshal the facts to inform critical decisions on timely topics. We do both at the Secular Policy Institute (SPI).

The Institute consists of a strong international coalition of secular groups with 305 members from 30 countries around the world. Together we represent the billion people worldwide, religious and nonreligious, who advocate for the separation of church and state. We believe that government decisions should be made through a scientific evidence-based understanding of the world, and the application of critical thinking and rational thought.

SPI has also built an authoritative think tank of leading secular scholars that serves to accelerate the work of our fellows and advocates. We sponsor their scientific and public policy research and disseminate it to educate politicians and inform global public opinion.

In our inaugural year, SPI has:

- Created a nationwide program for local school groups in the US;
- Spoken publicly to thousands in the US, New Zealand, Canada, and the Czech Republic on secular issues;
- Met with ambassadors, Members of Congress, and White House staff;
- Fueled coalition letter campaigns to influence politics worldwide;
- Built a global list of secular events;



*Greg Neimeyer, Advisory Board Chair
Secular Policy Institute*

- Generated the world's largest directory of secular groups;
- Compiled hundreds of secular books, research papers, studies, and other web resources;
- Then added dozens of original SPI reports and articles; and
- Funded, organized, or promoted dozens of secular projects around the world

And of course, we compiled the *SPI World Future Guide 2016* to showcase our fellows' scientific findings and policy opinion. Launched in Washington, D.C., the Guide is distributed to all members of the U.S. Congress and staff, to select members of the Executive Branch, and to members of the United Nations.

This guide collects the public policy recommendations and findings on demographic trends from the foremost

fellows at the SPI, as well as from other leading secular scholars. These thinkers provide authoritative research and opinion on law, climate change, education, and healthcare, practical advice on defense and surveillance technology, and address big-picture trends and developments on contemporary topics of global import. And they even give you a sneak peek into the finances of the Islamic State!

Our ten articles are written by leading academic experts from eight countries

representing diverse points of view. Yet each is committed to a rational, evidence-based analysis of a timely topic that can inform effective public policy. The first in a series of annual Guides, the SPI World Future Guide 2016 provides critical secular insights into major topics of international import in the hopes of guiding more informed public opinion and policy making within the increasingly secular world in which we live.

Secular Voters



Influential Public Policy

The best way to solve a problem is to look at the facts and think clearly. To solve the world's most important *political* problems, look to the **world's largest think tank dedicated to reason and science**, the Secular Policy Institute. As the founder and CEO of the Secular Policy Institute's efforts, I steer our pioneering efforts to connect the world's leading secular thinkers to the world's leading decision-makers.

Secular people are easy to define. We simply want greater separation of church and state in governments around the world. While some of us are atheists, many of us are religious or spiritual people who believe that faith-based thinking can emotionally distract politicians from trusting a scientific consensus, embracing factual evidence, and supporting their views with grounded, reasoned arguments.

The Secular Policy Institute coordinates 52 fellows, advisors, and staff to that purpose. Based in Washington, DC, we educate and work with politicians and businesspeople around the world. We are also the **world's largest coalition of secular groups**, an umbrella group for hundreds of secular groups in 29 countries who represent the hundreds of millions of secular people around the world. Our allies are active in local communities, from orphanages in



*Edwina Rogers, CEO
Secular Policy Institute*

Uganda to supporting ex-Muslims from the Middle East. We influence national policy from the US Congressional debate on climate change to Ireland's blasphemy laws.

We are natural allies to those who feel that politicians are also distracted by campaign contributions and lobby groups. Like all people, we want every local, state, and national administrations to embrace policies that help their citizens, but we also ask for proof that these policies work.

We are natural allies to those who support science education and its links to prosperity. Like everyone, we enjoy the fruits of technology, but we also embrace science as the best way to understand our planet and society. Scientists devote their lives to the mastery of evidence that supports their

conclusions. We value their role in public policy.

It's an intuitive worldview. When you need expertise, ask the experts who have proven their merit in well-established, peer-reviewed research journals. Why would you take "expertise" from anyone else?

Powerful Voters

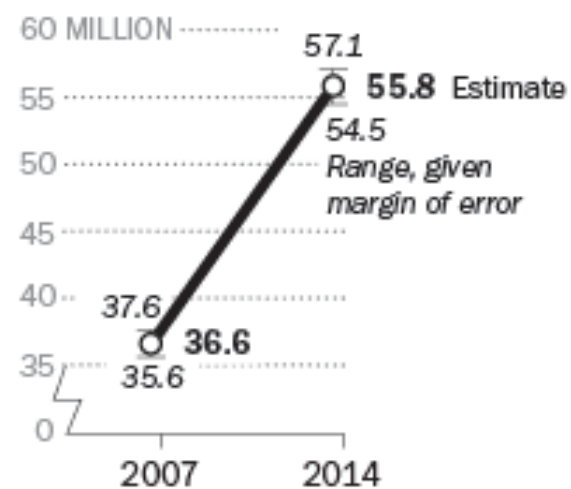
Our numbers are large and growing. Globally, 16% of humans are unaffiliated with religion, making secular people the 3rd largest belief group after Christians (31.5%) and Muslims (23.2%)¹.

In the United States, atheists, agnostics, and religiously unaffiliated people are the fastest growing minority, forming an important voting bloc, with an annualized growth rate of 5.1%². Beyond the 3.1% of openly atheist Americans, An additional 4% say they do not believe in God or a universal spirit, even though they don't use the word 'atheist'³. Then an additional 15.8% of Americans are either agnostic or belong to "nothing in particular". The 2010 US Census found 34 million Americans without a religious affiliation⁴, but today that number has risen to 56 million Americans, 22.8% of the

country⁵. Among all age groups those with no religion are growing, especially amongst those born since 1990 (36%)⁶.

These numbers take a leap upwards when you include our spiritual and religious allies, the people who feel that faith has enough influence in government, and that reason and science should have more. People in most countries, when asked, "Do you believe in making smart decisions?" would agree that intelligent thought is key to human flourishing. To us, "taking something on faith" seems too much like blindly following authority.

Rapid Growth of Religiously Unaffiliated



Source: 2014 Religious Landscape Study, conducted June 4-Sept. 30, 2014

PEW RESEARCH CENTER

¹ [The Global Religious Landscape](#), Pew Research Center, December 2012

² [America's Changing Religious Landscape](#), Pew Research, May 2015, growth from 16.1% to 22.8% over 7 years.

³ [5 Facts About Atheists](#), Pew Research Center, October 2013

⁴ [US 2010 Census, Table 75. Self-Described Religious Identification of Adult Population](#), 2010.

⁵ [America's Changing Religious Landscape](#), Pew Research, May 2015

⁶ [American Religious Identification Survey](#), Trinity College, March 2009

The secular movement forms a powerful voting bloc, and if you haven't heard from us yet, that's because until recently, religion has been so dominant that many of us kept our opinions to ourselves. Now we are speaking out in greater and greater numbers about the views we have always held in privacy and that influenced our votes. At every level of community and government, we want:

- Greater separation of church and state, with more reason and science
- A normalized role and acceptance for those who have no religion

The time is right for politicians around the world to embrace secular people and our views on public policy. This guide is our introduction to you.

Other Resources

You can find more on our website, www.SecularPolicyInstitute.net:

- Public policy recommendations on dozens of political topics
- A daily report on global secular news
- A weekly newsletter with original, in-depth think tank analysis
- Our list of more than 300 coalition member groups around the world

- A worldwide secular calendar
- Books, surveys, academic papers, and blog articles on secularism
- Our prestigious list of fellows, advisors, and staff
- Advocacy campaigns and open letters to political decision-makers
- Proposed and active secular projects from a dozen countries

You can also find our original reports and public speeches, including:

- [SPI Secular Resource Guide](#), which explains secular people and their demographics and political views
- [Abuse in America's Faith-Based Initiative System: An SPI Report](#)
- [Science Has Left the House \(and the Senate\)](#), a public speech
- [SPI Secular Policy Guidance for the United States](#)

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Islamic vs. Western Law



About the Author

In a plural society, we should respect the culture of all people. However, in the law, we should treat everyone the same. So how should Western legal systems respond to Muslims who claim exemptions from the law because of their religion? Is conservative Islam's treatment of its women something to be respected or refuted?

The crux of the problem is when religion goes beyond a cultural and spiritual function to providing social services, education, and setting laws and enforcing them. To what extent should religions be allowed to act as private governments?

The answer will surely inform similar cases outside of Islam, like that of Kim Davis, the Kentucky Clerk who in 2015 claimed the religious right to refuse marriage certificates. The Catholic Church prefers to self-police its own child abuse violations, Christian Scientists prefer to not take sick children to hospitals, and conservative Jewish, Christian, and Muslim schools that receive government funding want to teach religious concepts like creationism in favor of established curricula.

[Dr. Elham Manea](#) begins the discussion with this position paper on the incorporation of Islamic and Sharia

law into Western legal systems. She works as an associate professor of



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Politics in Zurich University and as a consultant for Swiss government agencies and international human rights organizations.

She is a Member of the Federal Commission for Women Affairs. Dr. Manea is author of *Ich will nicht Schweigen: Der Islam, Der Westen und die Menschenrechte*, Herder Verlag, 2009, which is based on a series of articles she wrote in Arabic about the concept of a Humanistic Islam.

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When States Legally Sanction Discrimination

Elham Manea

Integrating Islamic law in family law in European and North American societies poses a serious threat to women's rights – and to national integrity.

Introduction

Every time the suggestion of introducing Islamic law in Western legal system is mentioned, it is tempered by its proponents with the sentence: *this would only affect the family law*. Yet it is precisely *because* this suggestion concerns family law, it should be rejected. For the issue here relates to nothing but legally sanctioned discrimination against women and children.

Calls for the introduction of forms of Islamic Law, Sharia, into European and North American legal systems have often been made by three groups of people.

First, from Islamic organizations which often represent a traditional if not conservative reading of Islam. Second, from high European or North American officials or figures, who seem to be genuinely concerned about the integration of Muslim communities in their respective countries, and consider the move inevitable for any "successful" integration of Muslims. Third, from within the circle of legal

anthropology academics, who are leading a theoretical and intellectual discourse on the state.

Problematic experience of legal pluralism

At the heart of the issue is a debate on *legal pluralism*, defined by Jacques Vanderlinden as "the existence within particular society of different legal mechanisms applying to identical institutions".

The three groups of proponents often tried to appease the uneasiness of European and North American public opinion by stating that: firstly, if such a step was introduced, it would only affect civil and familial affairs; and secondly, any such step would not and should not contradict the principles of human rights.

The problem with their argument is threefold: First, it ignores the very problematic experience of legal pluralism in Arab and Islamic societies. Secondly, it disregards the discourse that has been taking place in Arab and Islamic societies against the use of religious laws in family affairs. And thirdly, it is simply not possible to introduce Islamic law in family domain without violating human rights.

Creating a divisive society

Relating to the first point: Legal pluralism is the legacy of the Ottoman rule. Under the Ottoman's *millet*

system in countries like Egypt or in regions such as Great Syria, "recognized" religious groups, such as Christians, were organized into relatively self-contained autonomous communities. Each was directed by a religious leader; had its own religious laws and customs; and each assumed social and administrative functions concerning diverse matters, among them issues of marriage and divorce.

A closer look at these Ottoman policies reveals that they in fact fostered the hegemony of Sunni elites over non-Sunnis and non-Muslims while keeping religious, sectarian, and denominational divisions intact. Very tellingly, the family legal systems adopted during that period simply mirrored the division of these societies. Hence, family laws during the Ottoman period mirrored three key elements:

- The hegemony of Sunni jurisprudence over that of non-Sunni Muslims;
- The fragmentation of society along religious, denominational, and sectarian lines, as each community had its own family law; and
- Tribal autonomy as tribes' customary laws – called *al Orf* – regulated their family affairs.

The Ottoman legacy still daunts the Arab region. Indeed, family laws in most Arab societies today reflect these same features and divisions.

In addition, my research has revealed a political function for the application of legal pluralism in Arab states today. In fact, legal pluralism exists when the state fails to treat its citizens, who are

divided along religious, sectarian or tribal lines, as equal before the law.

My research has further indicated that the system of legal pluralism in family laws, while discriminating against women, has been the tool that has helped perpetuate the very social division of Arab societies: it has kept society divided, hindering intermarriage between Sunnis and Shiites, Christians and Muslims and Jews, superior tribes and inferior tribes etc. In the process, in each country, it has sabotaged nation-building and the development of a national identity.

Pressure on minorities

The system has furthermore been instrumental in the Islamization of societies where other religious minorities live. Simply put, the supremacy of Islamic law in cases of conflict, inheritance and guardianship has led to incremental effects that gradually led to the conversion of non-Muslims.

For example, the prohibition of mixed marriage between a Muslim woman and a non-Muslim man has a political function that makes sure that only Muslim men are allowed to marry non-Muslim women and so their children will automatically become part of the Muslim community. Non-Muslim women, however, are not allowed by law to inherit from their Muslim husbands unless they convert to Islam! Many will do exactly that for obvious reasons.

Gender-biased application of Islamic law

Returning to my second point, according to which the implementation of Sharia law disregards the critical discourse that has been taking place in Arab and Islamic societies on Islamic Law and its gender-biased application in the family domain – a discourse, one should emphasize, that started in the mid-19th century.

Many Arab and Islamic intellectuals and writers, both men and women, have made the point that the emancipation of women is a condition for the rise of their societies in general. This emancipation cannot be separate from the laws that govern their lives – specifically family laws. Within an Arab context, Tunisian Taher Haddad was the first to specifically point to Islamic law as part of the problem, and its reformation as part of the solution.

More than 75 years later, in 2005 to be precise, the Arab Human Development report, *Towards the Rise of Women in the Arab World*, dedicated to the conditions women in Arab societies live it, repeated the same argument. Many women, the report argues, continue to struggle for fair treatment; but they are left victim to conservative authorities, *discriminatory laws*, chauvinist male peers and tradition-minded kinsfolk, who regulate their aspirations, activities, and conduct.

Islamic patriarchy

Most importantly, the report pointedly argued that Islamic family laws are discriminating against women and

should be changed. The reports' authors put it this way:

"Most Arab legislation is characterized by a marked deficit in gender equality in family law. The notion that men are women's keepers and have a degree of command over them is sustained in Islamic scriptures. In legal practice, this has translated into laws requiring husbands to support their wives financially, laws ordaining wifely obedience, laws granting men alone the right to dictate divorce and laws granting men the right to the compulsory return of their wives in the event of a revocable divorce (talaq raj'i)."

Notice that this report was written by Arab and Muslim scholars and experts, not by Western experts, and these Arab scholars did not see a problem in calling the problem by its name, that is: laws derived from the Islamic law discriminate against women in family relations.

Male guardianship over women

This brings me to my last point, which is straightforward. Third, it is not possible to introduce Islamic law in the family domain without violating human rights.

Islamic family laws discriminate against women in family relations in matters relating to marriage, divorce, custody of children, mobility, and inheritance. A quick comparison between some of the provisions of the United Nations Convention on the

Elimination of all forms of Discrimination against Women (CEDAW) and Islamic provisions in family matters makes this assertion clear.

To give one example, while CEDAW insists on the free will and equal rights of man and woman in entering marriage, Islamic law insists on male guardianship as a condition to contract a marriage. In fact, the male guardian has a power to impose a marriage on a virgin girl without her knowledge or consent (except in the Hanafi School, one of the four major Sharia schools), and for a marriage contract involving a non-virgin female to be legally sound, the consent of the bride *and* the guardian is needed.

Given this discrepancy, you might understand why I have little sympathy for such voices calling for the introduction of Islamic law in family

affairs in European and North American societies. It is the consequences of such calls that one should examine to understand how dangerous they could be to concepts of gender equality and women's and children's rights.

In fact, these voices are actually calling for the legitimization of systematic discrimination against women and children. And such discrimination will certainly not help any successful integration of migrants' communities of Islamic faith.

Indeed, it will only lead to the cementation of closed parallel societies, with two types of women, Western women who enjoy their rights according to the state's laws, and migrants' women who do not.

Secularism vs. Religion

About the Author



Are secular society and religious society fated to “war”? Or is that a false rallying cry used by both sides? If freedom of speech is essential, can atheists draw prophet Mohammad cartoons? What if Muslim women are coerced to wear headscarves?

As communication makes a global society possible, becoming more homogeneous, what role is there for the heterogeneous religions inside it? Is secularism itself a kind of religion? Are we fated to squint and pretend that all religions are sort of the same?

And perhaps there is cause for hope. Religion is a powerful motivator and organizer. If secularism and religion can find a comfortable working relationship, perhaps religion can be harnessed to embrace pluralism, instead of to fight for special interests.

SPI Fellow [Mark Juergensmeyer](#) is director of the Orfalea Center for Global and International Studies, professor of sociology and global studies, and affiliate professor of religious studies at the University of California, Santa Barbara. He is a pioneer in the field of global studies and writes on global religion, religious violence, conflict resolution and South Asian religion and politics.

He has published more than 300 articles and 20 books, including the recent *Global Rebellion: Religious Challenges to the Secular State*



SPI Fellow

Mark Juergensmeyer

(University of California Press, 2008). An earlier version of this book was named by the New York Times as a notable book of the year.

His widely-read “Terror in the Mind of God: The Global Rise of Religious Violence” (2003), is based on interviews with religious activists around the world—including individuals convicted of the 1993 World Trade Center bombing—and was listed by the Washington Post and the Los Angeles Times as one of the best nonfiction books of the year.

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The Global Future of Religion and Secularism

Mark Juergensmeyer

Introduction

What will religion and secularism look like in the global era some fifty years from now? Though all options are open, there are some significant trends, though in differing directions. In some cases religious groups have become more defensive, more rigid and insular. In response, secular societies have become fearful of the power of religious extremists and become even more protective of individual rights. In yet other cases progressive groups within religious communities have formed alliances with their secular colleagues in an expression of what may become a new kind of global culture, a global spirituality that may flower in the future.

At present, globalization as a culturally homogenizing force has brought the world closer, but this is not always regarded as a good thing. In 1978, when the Islamic revolution took the reins of power in Iran, the Ayatollah Khomeini vowed to eradicate what he called “West-toxification,” the inebriation of Western culture. He imagined that the US military and economic support for propping up the power of the Shah of Iran was a mask for an even more devious form of exploitation: the possession of Iran’s religious soul. That perception persists, and in many parts

of the world globalization still is seen as the importation of anti-religion, thought to be conveyed in the guise of globalized superficial consumer culture.

Defensive religion

One prognosis for the future is the persistence of these defensive forms of religiosity. Some of them are quite violent. In 2014, the extremist rebel movement in Syria that was for a time affiliated with al Qaeda took on a new identity as the Islamic State of Iraq and Syria, and went on a remarkable raid across the border into Western Iraq where it seized large swaths of territory, including Mosul, Iraq’s second largest city, and some of the most important oil fields in the country. Along with a rigid and uncompromising interpretation of Shari’a law, the bloodthirsty guardians of the movement used public beheadings as a way of advertising their savage determination. It then changed its name to the Islamic State, proclaiming that a new Muslim nation had been conceived, one that its leaders thought would eventually embrace the world.

ISIS is a political movement, to be sure, a raw grab for power supported in part by marginalized Sunni Arabs in Syria and Iraq who feel disenfranchised from political power by the Shi’a governments in Damascus and Baghdad. But it is also religious, in a rigid and uncompromising way, which indicates how a defensive extreme religiosity can be fused with movements for political power. Most of

the world's Muslims reject ISIS, of course, regarding it as marginal at best, demonic at worst, and they have nothing to do with it. At the same time, however, other forms of defensive religiosity have emerged not only in Muslim societies but throughout the world.

In India, the resurgence of the Bharatiya Janata Party – supported by Hindu nationalist groups – raises fears that India's traditional stance of secularism (which in the Indian context means treating all religious communities equally) will be compromised. In Bhutan, Myanmar and Sri Lanka, it is Buddhist extremists who have marginalized and oppressed minority groups (Hindus in Bhutan, Muslims and Christians in Myanmar, and all non-Buddhist communities in Sri Lanka). In Japan, strident new religious movements have threatened the country's security. In Indonesia, that country's long-standing reputation for liberal Islam is challenged by demands that the government side against religious groups regarded as heretical to Muslim sensitivities, such as Baha'i and Ahmadiyya. In Israel, the vision of Messianic Zionists for the creation of "biblical Israel" by incorporating the West Bank has made it difficult to negotiate a two-state solution for the Israel-Palestine conflict. In Europe and the United States, militant right-wing Christian groups satanize Islam and marginalize immigrant Muslim communities. In the United States, the wrath of Christian extremists is not only against Muslims but against the traditional tolerance of American secular

society. The American Christian right has promoted public laws in line with their religious beliefs, especially regarding such matters as the right for women to choose in terminating pregnancies and the civil rights of sexual minorities.

Defensive secularism

Such religious extremists often regard secularism as the enemy. This religious war against secularism is rooted in the perception that secularism is not just neutral towards religion, but hostile to it, and carries a set of values—a kind of anti-religion of its own. What defensive religious activists fear is that agents of globalized secularism will try to eradicate religion from public life. And in some cases, they may be right.

The controversy over banning headscarves in France is an interesting case in point. The French government has taken the position that secularism in public life is promoted by the absence of any markers of religious identity in government-sponsored locales, including schools and government offices. Many Muslims see this as an assault on religion in general and Islam in particular, since those perceived to violate these standards are mostly observant Muslims rather than, say, head-covered Catholic nuns.

Behind this perception of a religious-secular clash is a socio-political issue, the difficulties in integrating immigrant Muslim communities into European society. The confrontation over the

cartoon portrayal of the Prophet Mohammad in recent confrontations in Copenhagen and Paris have, in the background, a sense of marginalization for which the cartoon issue is a religious expression. Still, these difficult and sometimes violent encounters point to a larger division, the different understanding of the role that religion should play in public life. There is such a dichotomy between these ways of conceiving civil order, and such strong passions on either side, that the global confrontation has all the hallmarks of being a new Cold War.¹

Like the old Cold War, the contestation between these new forms of culture-based politics and the secular state is global in its scope, binary in its opposition, occasionally violent, and essentially a difference of ideologies. Like the old Cold War, each side tends to stereotype the other. According to an Islamic political strategist in Sudan, the post-Cold War West needed a new “empire of evil to mobilize against.” He suggested that Muslims have become, for the West, the new Communists. Similarly, he and other religious politicians needed a stereotype of their own, a satanic secular foe that would help them mobilize their own forces. Unlike the old Cold War, the West (now aligned with the secular leaders of the former Soviet Union) confronts an opposition that is neither politically united nor, at present, militarily strong. Yet the violence persists.

Some blame religion for the problem. It is commonplace to hear accusations that religion is by its nature violent, or that some kinds of religion—Islam is usually the culprit—are more violent than others. The underlying assumption was that something is seriously wrong with religion in the non-Western world. And yet from many religious activists’ perspectives it is secular nationalism, and not religion, that has gone wrong. They see the Western models of nationhood—both democratic and socialist—as having failed, and they view religion as a hopeful alternative, a base for criticism and change.

Religious secularism: a new global religion?

A third vision of the future is one in which the more extreme forms of religion and secularism, and the implicated war between them, is surmounted by a new understanding of global moral community. In recent years there has been a wide and growing discussion about the possibilities of a global civil society focused around the concept of “cosmopolitanism” — the notion of a shared sense of global citizenship. The pronouncement that at this moment at the dawn of the 21st century and in the era of globalization we are entering into a cosmopolitan age was forcefully made by Kwame Anthony Appiah in his book, *Cosmopolitanism: Ethics in a World of Strangers*.² Appiah, a scholar of Ghanaian and British background, thought in terms of a

shared global ethic. It is a theme that has been elaborated by Ulrich Beck in *Cosmopolitan Vision*, and Giles Gunn in *Ideas to Die For: the Cosmopolitan Challenge*.³ The German political philosopher, Jürgen Habermas, has been thinking about the public sphere and its relationship to both nationalism and transnationalism for some time.

The conversations about cosmopolitanism do not talk much about the role of religion, but this is where the late American sociologist, Robert Bellah, has made a striking contribution. In one of his last essays, presented as paper in a Luce Foundation-supported project on religion in global civil society that I directed, Bellah elaborated on the idea of a global civil society undergirded by shared spiritual and moral values. His ideas, which I have summarized in a new book, *God in the Tumult of the Global Square*, elaborate on his earlier concept of a “civil religion” – a set of moral values and religio-patriotic symbols – that ties together a nation’s political community.⁴ In his paper for our project, Bellah ruminates about the possibility of an emerging global community, one that will have a shared moral and spiritual core. He insisted that only a moral consensus could provide the basis for transnational institutions of accountability. Though he appreciated Habermas’ attempts to think about the idea of citizenship beyond narrow nationalism, Bellah thought that Habermas’ notion of an “abstract constitutional patriotism” was an insufficient base for creating a global

civil society. For that one needs moral commitment. And this is where religion comes in.

Bellah admitted that the passions of religious commitment do not always run towards a spirit of open tolerance and interfaith harmony. Quite the opposite is often the case. As the rise of strident nationalist religious movements around the world has demonstrated, religious fervor, as Bellah puts it, has “often been used for evil as well as good purposes.” Still, Bellah believes that the potency of religious passions can be harnessed for good—by which he means a more inclusive sense of religiosity. Moreover, global society needs this kind of religious zeal. “Only such powerful motivation could make human rights genuinely practical” on a global scale, Bellah insists. And he goes on to point out that every religious tradition contains within it the reverence for life and the appreciation for human dignity that is at the basis of universal human rights—not only Christianity, but also Islam, Judaism, Hinduism, Buddhism, and Chinese religion. The *Analects* of Confucius, Bellah reminds us, states that “all within the four seas are brothers.” Buddhism regards all human life (and for that matter all animate life) as having within it the Buddha nature. Thus religious traditions are the likely sources for a world-wide appreciation of the universality of the principles underlying human rights.

But how can religious leaders be encouraged to turn the message of

religious traditions more clearly in the direction of global humanity and away from narrow xenophobia and self-interest? Early in the paper Bellah made the observation that people are never as united as they are in a situation of war, when they bind together in opposition to a common enemy. At this later point in the paper he returns to the theme of war—or at least great social turmoil—and speculates that it will take an awareness of social, economic, and environmental catastrophes so severe that people will turn to religious insights for condemnation of the selfish policies that led these situations and unite in what William James once called “the moral equivalence of war.”⁵ Bellah warns, however, that “anxiety and fear have often fueled extremely regressive movements” and even in a time of catastrophic economic inequality and massively irresponsible inaction in the face of the environmental disaster that will accompany global warming and extreme climate change, “there is no certainty” that these crises will “move people in the right direction.” Still, Bellah would have been impressed by statements of Pope Francis in recent years that “trickle-down economics” has led to grave economic injustice, and that the denial of climate change was morally sinful.⁶

Whether statements such as the Pope’s are the beginning of a common front among religious and secular leaders against the economic and environmental crises of our day is an interesting question, but the very fact of the Pope’s

statement—and the enormous support for his outreach towards the poor and marginalized elements of global society—does give some credibility to the possibility of Bellah’s assertion that religious traditions can be partners in a transnational stewardship of the environment and a moral commitment to an egalitarian global civil society. Bellah concludes his paper by saying that he is convinced that “religious motivation is a necessary factor” in transforming the growing global moral consensus into effective forms of civil society. He envisions the possibility of world law and global governance that will be created in response to an “actually existing global civil society” that has “a spiritual dimension drawing from all the great religions of the world.”

Implicit in Bellah’s formulation is the notion that adherents of secularism will have to be open to this kind of multicultural religiosity and morality as well. Already one of the fastest growing group of idealists in the West are the “nones” – concerned people, many of them young, who disdain organized religion but do not regard themselves as atheists. They check the category of “none,” when asked about their religiosity, and often describe themselves as spiritual rather than religious. They are, in a sense, religious secularists, and they may be forbears of an emerging global religion.

What is most novel about this way of thinking is the idea that secular society and religion need each other. Bellah

makes it clear that for global civil society to be grounded in a common moral commitment it will take more than Immanuel Kant's idea of a universal acceptance of a lowest common denominator of ethical sensitivity or John Rawls' notion of overlapping consensus. Religious traditions provide basic moral concepts and, perhaps more importantly in Bellah's thinking, the passion and determination to bring these ethical ideals into fruition. At the same time, the health of religious traditions depends on their ability to survive and thrive in the multicultural environment of the modern global world, to accommodate themselves so secularism. It is from the soil of a truly global civil society, this vision suggests, that a new form of global religiosity and a common moral ethic might emerge.

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2. Kwame Anthony Appiah, *Cosmopolitanism: Ethics in a World of Strangers* (New York: W.W. Norton, 2006).
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Dictatorship vs. Theocracy



About the Author

Saddam Hussain's government in Iraq in the 1970s was brutal, and yet had secular components, including liberal freedoms for minorities and women. When the secular regime religion came to power in Iraq "Islamized" itself, how did that change? Then how did it change further after the fall of Saddam and the rise of ISIS?

Where a dictatorship is ultimately rational because it is self-serving, a theocracy does not necessarily have such limits. In this essay, Amatzia Baram analyzes the secular and religious history of modern Iraq and gives policy recommendations.

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The Dictatorship of Your Choice: From Saddam's Secular Dictatorship to Al-Baghdadi's Caliphate

Amatzia Baram

Ba'th Brutal but Secular Dictatorship

This brief article will try to analyze the difference between secular and extreme religious dictatorships using the example of modern Iraq and to draw some tentative conclusions. When the Ba'th party came to power in Iraq in 1968 it was led mainly by two people: President Ahmad Hassan al-Bakr and his Vice President Saddam Husayn. Soon after coming to power they introduced a secular system in education, law and culture. While secular, their system was equally brutal though. They did not tolerate any political activity that was not fully approved by the internal security apparatuses. The penalty for opposition activity was anywhere between arrest and torture, death and disappearance, which meant the same. Their approach to opposition was very similar to that of Soviet Russia under Joseph Stalin, and Saddam was explicitly proud of it. His worst crimes were the gassing of thousands of Iraqi Kurdish civilians in 1987 and the murder of tens of thousands of Shi'i Iraqis when he put

down a massive revolt in March 1991. There is very little to say for this regime, but there still are some things that need to be mentioned.

In the first place, with the glaring exception of the Jews between 1968 and the mid-1970s, non-Muslim religious minorities were protected and, on the face of it, treated as equals. It may be argued that there were very subtle indications that a Sunni-Muslim is somehow superior to a Christian or to a Yazidi, even to a Shi'i Muslim, but non-Muslims could reach the highest level in government. For example: two Christians (one of them the "Founding Father" of the party), one Druze and one Shabak were members in the two top leaderships of the Ba'th party, the Iraqi and the pan-Arab ones. Christians could be found as senior professors in universities, as engineers in all technological fields, as directors of large projects, as businessmen and in some cases even in the internal security apparatuses. Most importantly, Christians, Yazidis and others minorities were safe, as tight intelligence control of the population made it nearly impossible for Islamist extremists, Sunnis and Shi'is alike, to attack churches and communities.

Another positive aspect of the oppressive Ba'th regime was its western-oriented approach to economy and development. Even though the party skimmed some 5% of all oil revenues for its own purposes, until the Iraq-Iran War (1980-88), most revenues

were invested in the economy and, with the exception of Saddam's family, corruption was strongly discouraged. Despite strong Soviet influences the Ba'th also allowed private and mixed economy. Most importantly: there were no religious restrictions imposed on any activity whatsoever. Banks worked according to international standards which meant no "Islamic" banks; in Christian parts of the country one could see pigsties, alcohol was consumed in public everywhere and liquor shops became very widespread. Bars and pubs became a good business. Islamic law did not apply except for certain aspects of personal status. In such cases women were discriminated against, as they are in Israel in the Jewish and Islamic religious courts, but at least the *shari'ah* in those cases was practiced mostly through civil, rather than religious courts.

Indeed, another domain where Ba'thi secularism helped society was that of the status of women. Women were encouraged during most of Ba'th rule to work outside of the home. Women's education was equal to that of men's, and almost all schools, from primary to university, were mixed. The result was that women showed up in university in large numbers and eventually found their way to government jobs and were successful also in the private sector. The streets of Baghdad: be it in university or in the more glitzy parts of town, were full of girls and women with their hair revealed and their dress code typically western. Only near large Shi'i

mosques, especially in and around the Shi'i religious center and quarter of Kazimayn, could one see a majority of women wearing hijab and all covered in black. In Basra, Najaf and Karbala, this sight was more widespread but in Mosul, for example, a major Sunni and Christian stronghold, a veiled woman was a rare sight indeed. In difficult times, when the economy was in decline, prostitution became very widespread, but this phenomenon is quite common everywhere and, anyway, prostitutes were not punished.

Saddam failed miserably in his endeavor to eliminate the divide among Sunni and Shi'i Arabic speakers. Ba'th pan-Arabism is, theoretically-speaking, language, rather than religion-based. Arabs: Sunnis, Shi'is, Christians, Yazidis, Shabak, Druze, are all seen as perfectly equal. The Ba'th regime did not allow therefore anti-Shi'i diatribes and, representing around 50% of the population, the Shi'is were encouraged to join the ruling party. My assessment is that more than 50% of party membership consisted of Shi'is. In terms of party promotion there was a "glass ceiling" at the upper-middle echelon, that of the *Shu'ba*, affecting the Shi'is. Still, at the top three party echelons Shi'is were represented at around 30-35%. In the military some 20% of all generals were Shi'i. All this failed to win mass Shi'i support for the regime, because Saddam could not go far enough and make the sense of Sunni supremacy disappear but, within the limits that he considered safe, he tried.

When in March 1991 he was faced with the Shi'i revolt he reacted with ferocity surprising even for him. This rendered regime-Shi'i harmony a distant dream, but there were no further similar crackdowns. Saddam's regime in its secular mode was evidently atrocious. Between politically-motivated executions, casualties of the war against Iran (for which Khomeini though was equally responsible) and the Kuwait war, and the bloody suppression of the 1991 revolt it left behind it a wake of death and destruction unprecedented in the history of modern Iraq. I see no reason to mourn its removal. And yet, as long as people kept out of opposition activity, unless it needed them to fight its wars, of course, the regime did not get involved in their daily lives beyond a tight security surveillance and an occasional arbitrary arrest to keep the deterrence alive.

Islamization

Under the impact of a costly, unsuccessful and un-ending war with the Islamic Republic of Iran (1980-88) Saddam came under great pressure to give up his secularism. As he described it to his party luminaries in a closed-doors meeting in 1986, Khomeini's accusations that the Ba'th were "atheists" harmed the regime a great deal mainly in the eyes of their more religious Shi'is but, also, in Sunni circles. Saddam also explained that the Muslim clerics were becoming too popular for comfort. There is also evidence that due to the hardships of

the war people were turning to religion. Gradual Islamization, befriending the Muslim Brotherhood in Egypt and Sudan, and courting the hated clerics inside Iraq, therefore, was Saddam's remedy. Since 1993 a "Faith Campaign" was in full swing. Education became greatly Islamic, many new mosques were built, Party and state officials were forced to study Qur'an and *Shari'ah*, *Shari'ah* law was imposed on many walks of life including draconian punishments, and the bars, pubs and discotheques were closed down. Women were encouraged to stay at home though they were not forced to resign. Even though in some of its aspects this was "*Shari'ah-lite*" (no alcohol consumption in public, but alcoholic drinks were still legally available), this campaign put a complete end to the traditional Ba'thi scorn for religion. Rather than a sign of ignorance and proof of a primitive character under the early Ba'th regime, religiosity became now prestigious.

The Islamization campaign, while introducing the *shari'ah* only partially, proved already to be brutal and hugely damaging. The most innocuous aspect of it was reducing the weekly hours dedicated to English and the sciences in schools, and replacing them with religious studies. Since it was done on an all-national scale, and since a very large number of clerics and students of religion became all of a sudden teachers, for some 15 years a whole generation of Iraqi pupils and students was exposed extensively to the religious

views of the most conservative segment of society. This was a good preparation for the rise of ISIS in the Sunni parts of Iraq. Moreover: for years Izzat Ibrahim al-Duri, Saddam's Number Two, channeled large subsidies to groups of Sunni Salafi and Wahhabi extremists in Baghdad University and in Saddam University for Islamic Studies. Some of the graduates of this generation of scholars are today serving as *Shari'ah* courts judges, preachers and imams in the areas under ISIS control. Indeed, "Abu Bakr al-Baghdadi" is himself a graduate of the Department of Islamic Studies at Baghdad University. The brutal aspect of Saddam's Islamization campaign was represented by amputations of hands and legs for theft and unauthorized corruption as well as by the beheading of young women accused (mostly falsely) of prostitution. Women's status, too, suffered as a result of concessions, *shari'i* and non-*shari'i* alike, to male traditionalists. In economic terms a return to Islam meant that many billions of dollars were spent on new mosques instead on improving the dilapidated infrastructure. It must be emphasized that there was no shortage of mosques in Iraq before the Islamization campaign. Mitigating all these unfortunate changes was Saddam's continued fascination with pre-Islamic pagan cultures and his decision not to impose the hijab by law. Indeed, under Saddam Iraq never saw a structured "morality police". Likewise, his decision to ban the public consumption of alcohol never applied to

the private home or to private meetings. Importantly also, the Islamization never applied to religious minorities: the Christians and others were never discriminated against. Yet, all things considered, as the Islamization Campaign took Iraq back to a middling position between its old, secular system and the practice of extreme religious regimes like those of Iran, Saudi Arabia and the Taliban, it piled up religious brutalities, inequities and restrictions on top of the original Ba'athi brutality and coercion. Worst of all: as part of his Islamization Campaign, Saddam unknowingly prepared the extremist Islamic cadre that later performed ISIS quantum leap from "*shari'ah* lite" to what they considered to be a fully-fledged, strictly *shari'ah*-controlled Islamic caliphate. His education system prepared the Sunni masses that will be able to accept, even if willy-nilly, this kind of extreme interpretation of Islam.

ISIS

In June of 2014 ISIS forces defeated an Iraqi force that was more than ten-fold its size and its military hardware. Within one day its spiritual leader, Ibrahim Awad Ibrahim al-Badri al-Samarra'i, AKA "Abu Bakr al-Baghdadi", made two crucial declarations. The first one was that his plan is to "settle the account" (*tasfiyat al-hisab*) with the Shi'a by conquering Karbala and leveling it to the ground. The second announcement was declaring himself a caliph and his rule a caliphate. Most of the military commanders under him are former Iraqi

officers from Saddam's military. Many of his clerical colleagues are Iraqi-Sunni Salafis who became more prominent than ever in Iraq during the last decade of Ba'th rule. Today they control around 1/3 of Iraq and a similar proportion of Syria. Their contribution is the creation of a perfect amalgam between Saddam's brutality and the Taliban's religious extremism. Because prisons are difficult to maintain, and because they truly believed that this is Islam in its purest form, stoning, severing limbs, crucifying, beheading and burning people alive are very common practices. A vicious "morality police", including some police women, is imposing strict Islamic dress code and "proper behavior". Drinking and smoking, as well as other habits considered un-Islamic, are severely punished. The whole legal, taxation and financial systems are Islamic, according to ISIS interpretation, but this does not prevent the regime from squeezing its citizens out of their last penny through road block taxes and confiscations of property. In schools in the largest cities like Mosul and Raqqa, only Quran and Hadith (and jurisprudence for older students) are being taught and the children are provided with a lavish dose of jihadism.

While under Saddam Iraq's international relations were volatile and occasionally extremely violent, Iraq still had a diplomatic presence in many countries. ISIS is very different: like the Ba'th they manage to radiate influence into a number of Islamic countries and

populations but nowhere do they have diplomatic representation because they consider all the regimes of the Muslim world as deviant or even infidel. This way their legal experts legitimized the burning alive of the Jordanian fighter pilot: they found a medieval ruling that allows this nauseating practice when it comes to heretics, and the Jordanian regime and its agents are precisely that in their view. ISIS used a Qur'anic verse that allows an unlimited number of sex slaves as long as they are either bought or part of war booty (*Surat al-Nisaa*, Aaya 3). Likewise, they believe that true Islam means that pagans must be converted forcibly to Islam or killed, and this is how they treated the Yazidis. As for Christians and Jews ("people of the book") and, according to some Islamic interpretations, also Zoroastrians, they should be treated as "protected people" (*ahl al-dhimma*): they may be tolerated as long as they pay a high poll tax (*jizyah*) and recognize their inferior status. The beheading of Western journalists and the systematic murder of prisoners of war were performed without providing *Shar'i* explanations. Saddam's Iraq saw many thousands of executions, but prisoners of war were not systematically executed and, except for the shocking hanging on March 15, 1990 of the Observer journalist Farhad Bazoft, inquisitive foreign correspondents were expelled, not killed. The list of ISIS atrocities and oppression goes on and on.

Conclusion

The question raised here is: which of the two systems: the secular and the Salafi dictatorships, is more discriminating, more oppressive, more brutal, more inhumane, more dangerous? Secular Iraq under Saddam cost the lives of hundreds of thousands of young men and shattered the economy. It fought a war that eventually became defensive but was originally meant to secure full sovereignty and control over the Shatt al-Arab, to humiliate Khomeini, hopefully even to topple him, to cut through the Gordian Knot of Sunni-Shi'i tension in Iraq and to turn Iraq into the leader of all Arabs. Even though he was seriously provoked by Khomeini Saddam's hubris got the best of him and his decision to go to war was enormously costly. Conquering Kuwait and refusing to withdraw peacefully was an even more momentous expression of his inferiority-superiority complex and the results were even more devastating. Had Saddam managed to develop a nuclear arsenal there is no telling where this would have taken him. And yet, one can only wonder what would Caliph al-Baghdadi do if he had a million-strong army equipped with two thousand tanks, five hundred jet fighters, chemical & biological weapons, and a nuclear arsenal on the way. Even without all that he already declared war not only on all the regimes of the Middle East and North Africa but also on the West and on Russia. Furthermore: Saddam's power had very little sway outside of Iraq, while al-Baghdadi's lure is already

reaching very far, from the Sinai, through Libya to sub-Sahara Africa and even Europe. Finally, unlike Saddam the "caliph" is dictating to his subjects every aspect of their lives, from dress-style to their diet, to being slaves or owning slaves. My conclusion is that, at least when it comes to Iraq, a brutal secular dictatorship is bad enough, but a Salafi religious one is worse.

But is this the case only when it comes to Iraq? In Iran Khomeini's religious dictatorship replaced the secular one of the shah and the results are for everyone to behold. Unlike under the shah, women are oppressed almost in every realm, from their dress code, imposed by a brutal "morality police", to the workplace and personal freedom. People are stoned and hanged for sexual "crimes" like homo-sexual behavior and infidelity. The number of political prisoners has gone through a quantum leap. A faltering economy was replaced with a failing one and a degree of official corruption was replaced by a fully-fledged corrupt system. The Shah gave limited support to anti-regime political activities in Iraq, but this came to an end in 1975, when the Shah and Saddam Husayn signed the Algiers agreement. Khomeini and Kahmene'i, for their part, established a global network of terrorism stretching from Lebanon and Syria through Saudi Arabia and the Yemen and all the way to Argentina and other Latin American states. A similar case is that of the atrocities performed by the Muslim Brethren-supported Islamist dictator

Umar al-Bashir in the Sudan who replaced the half-secular dictator Gaafar Nimeiry (Ja'far al-Numayri).

Last but not least, the secular regime of Bashar al-Asad is a crazed blood-drenched power system. A central part of its practice since 2011 has been the mass-murder of his citizens just because they came under the control of his Sunni-Islamist opposition. As different from the case of Saddam, however, Asad's road to Islamic fundamentalism, even to half-way Islamization, is blocked by the fact that he belongs to a tiny non-Muslim sect, the Alawites. Any regime-sponsored Islamization campaign in Syria is bound to back-fire as pretty soon the Sunni majority would be inspired to attack the Alawite minority, whom they consider to be pagans. This is the main reason why the Ba'th regime of Damascus remained essentially secular. Being a matter of sheer survival for them they are happy to receive support from Islamists like the regime in Tehran and Lebanon's Hezbollah, but the Alawites have not so far changed their secular nature. Both sides in the Syrian civil war committed horrendous war crimes, but it would seem that ISIS and even al-Qaida-affiliated *jabhat al-nusra* are worse. This does not mean that Asad should be allowed to stay in power. Like Saddam he, too, deserves to disappear. It does mean though that much of his secular power base should be a central part of the new system in Syria if Syria remains in one piece. As this author sees it,

Syria should be allowed to become a loose federal system of three, four or five regional autonomies. If one is Alawite, another is Kurdish and yet another is Druze, together with the Christians and the Alawites they can guarantee the secular nature of the federation. This will still be the case even if the Sunni-Arab part or parts decide, democratically or through the coercion of a local dictator, to adopt the Shari'ah as their constitution, as indeed demanded by the Muslim Brethren and the other Salafi movements. Likewise, while to varying degrees the Muslim Brethren, al-Qa'ida and ISIS are enemies of the West, the ethnic and religious minorities are not. This fact is likely to reduce substantially the threat of Islamic terrorism emanating from Syria.

My tentative conclusion is by no means universal. If correct, it relates only to the Middle East and North Africa. After all, Adolph Hitler and Joseph Stalin were atheists and yet their dictatorships were far bloodier than those of Christian dictators like [Francisco](#) Franco and António de Oliveira Salazar. In the Middle East and North Africa all thoroughly-religious regimes were at least as - or more - oppressive than their secular equivalents. Evidence of un-democratic practices during its one year in power suggests that even the democratically-elected regime of Egypt's former president Muhammad Mursi belonged to the same "family" of Islamist dictatorships.

Islamic State



About the Author

A powerful way to undermine Islamic State is to understand and degrade its fundraising. So far intelligence agencies have only made guesses.

Now in this world exclusive, a scoop for the Secular Policy Institute, SPI Fellow Aymenn Jawad Al-Tamimi exposes the financial workings of Islamic State directly from their own documents. How much comes from abroad and how much from their own “business operations”?

[SPI Fellow Aymenn Jawad Al-Tamimi](#) is a leading world expert on the Islamic State, a secular Arab from the UK and Iraq who advises governments worldwide on the Middle East, Islam, and terrorism. He is a graduate from Brasenose College, Oxford University, and Fellow at the Middle East Forum, a think tank.

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Unseen Islamic State Financial Accounts for Deir az-Zor Province

Aymenn Jawad Al-Tamimi

The question of where the Islamic State [IS] acquires its funding has been a subject of much discussion. Though ideological partisans often see a private Gulf Arab funding hand behind IS, the general consensus now seems to accept that IS is not dependent on foreign donors in any meaningful way, and thus largely acquires its revenues from resources within the territories it operates, including taxation, sales of oil and gas, antiquities and the like. Thus, the majority of the debate now focuses on trying to determine the relative importance of each of these sources of revenue.

A number of analyses have been produced relying on local sources within Iraq and Syria, and in this regard I highly recommend [Die Zeit's investigation from December 2014](#), the fruit of a team of researchers including my colleague Yassin Musharbash.

However, a deficiency in all the work thus far on IS finances is a lack of statistics from IS itself on income and expenditures, and so a degree of guesswork in estimating has always been involved. The exclusive documents that will be presented below—obtained from IS' Diwan Bayt al-Mal (financial ministry) in eastern Syria's

Deir az-Zor province (Wilayat al-Kheir)—provide a remedy in giving a first time view of IS budgets by its own account for the month of Rabi' al-Awal 1436 AH (c. 23 December 2014–22 January 2015).

For context, Deir az-Zor province has been almost entirely under the control of IS since July 2014, while a regime presence still holds out in parts of Deir az-Zor city and at a military airport. In defeating the rebels in Deir az-Zor province, IS has gained a monopoly on oil and gas resources in the province. The province's long-standing importance to the oil and gas sector of the Syrian economy is well-known, and it undoubtedly constitutes the largest pool of oil and gas resources in Syria that IS has been able to exploit.

As part of its narrative of 'breaking the borders' between Syria and Iraq, IS created a '[Euphrates Province](#)' that spans eastern Deir az-Zor province and western Anbar province, including the districts of Albukamal in Syria and al-Qa'im, Rawa and Anah in Iraq.

Figures in the documents help us to quantify IS financing. From IS' richest province in fossil fuels, revenues and expenditures for the province come in the form of millions of dollars on a monthly basis, not tens or hundreds of millions. Further, despite the significant holdings of oil and gas resources, these sources of revenue by no means constitute the majority of IS' income in the province. Statistically, revenue streams for the province can be divided

as follows using the data from the documents:

Source	% Revenue
Oil & Gas	27.7%
Electricity	3.9%
Taxes	23.7%
Confiscations	44.7%

As can be seen, a plurality of the income actually comes from confiscations of property and money. This may take place for a number of reasons: e.g. residents who fled their homes, violations of IS regulations and illicit smuggling of goods, particularly forbidden items like cigarettes and alcohol. Movement across border areas is important in this regard when combined also with transit fees for legitimate travel and transportation of goods.

Meanwhile, IS' expenditures primarily go towards military upkeep in the form of expenditures for bases and paying fighters' salaries. Conspicuously absent from the expenditures are accounts for salaries of workers officially under the authority of the Diwan al-Ta'aleem (education). The [reason for this](#) is that the IS process of revamping the education system in accordance with its ideology required the closing of many schools in this period to subject teachers and staff to 'repentance' and Shari'a lessons, while the regime continued to pay salaries though under strict conditions for the recipients to

come in person to the relevant places stipulated by the regime. Note that the Islamic Police comes under the Diwan al-Hisba working closely with IS' judiciary department (Diwan al-Qada wa al-Mazalim), and both these diwans play key roles in [confiscations of goods](#) and [property](#). Here is the breakdown of expenditures by percentage.

Expenditure	As a %
Expenditures for bases	19.8%
Fighters' salaries	43.6%
Media	2.8%
Islamic Police	10.4%
Diwan al-Khidamat (Services Department)	17.7%
Diwan Bayt al-Mal (aid sums)	5.7%

Some more points of analysis to consider:

- Popular conceptions of IS income need to have a more sober and realistic perspective on the role oil and gas revenues. Daily revenues from the oil wells here (total divided by 30) yield on average \$66,433. If this is the average revenue from IS' best oil holdings in Syria and one engages in reasonable extrapolation, then one will come nowhere near the total figure of [\\$3 million a day for IS in oil sales](#) that was [widely touted in the media in summer 2014](#), even when making allowances for subsequent damage to infrastructure

from coalition airstrikes. A sounder estimate would put such income at no more than 5-10% of that figure.

- On a related historical note, one should dismiss accounts that portray IS' predecessors as being [suddenly enriched from eastern Syrian oilfields and antiquities beginning in late 2012](#), based on hearsay about alleged computer flash sticks revealing IS finances and off-base regarding the dynamics of control of eastern Syrian oil over the course of the Syrian civil war (pace the Guardian report, IS' predecessor ISIS did not exist in late 2012, let alone 'commandeer' eastern Syrian oilfields).
- The sale of antiquities under the authority of the antiquities subdivision of the [Diwan al-Rikaz](#) is not explicitly mentioned in the accounts here, but it is most likely included within taxation as part of the IS bureaucratic structure. [Documents captured from the Abu Sayyaf raid by U.S. forces](#) appear to show a 20% tax to be paid on antiquities sold in Deir az-Zor province. Two of the individual transactions presented from December 2014 illustrate tax payments of more than \$10,000, while the third constitutes a little over \$1000.
- Despite IS' propaganda on 'breaking the borders' and the creation of 'Euphrates Province', the inclusion of Albukamal within Deir az-Zor province financial data and

transactions is an example of how IS still deals in prior administrative boundaries. Compare with [a previous July 2015 document I published](#) from Wilayat al-Kheir's Diwan al-Khidamat ordering for an Abu Dujana al-Libi to be paid \$100,000 for a road project between Albukamal and al-Qa'im. [Other administrative documents from 'Euphrates Province'](#) indicate that IS administration rarely seems to deal with the territory as a united entity, but rather by its Syrian and Iraqi halves. This is so even as travel within 'Euphrates Province' is relatively easy, as a friend of mine from Rawa now works in Albukamal, and residents on both sides of the Iraq-Syria border regularly cross both ways for business, market shopping etc.

- Ultimately, the most vital IS revenues depend on the continued existence of its bureaucratic structure within the territories it controls, and there is little one can do to disrupt that short of destroying that structure militarily. The suggested siege-like strategy to trigger a collapse from within is impossible to realize in the current circumstances, as one cannot wholly isolate IS territory from interactions with the outside world, and so cash flows will continue. The Iraqi government's decision to cut off direct salary payments to workers in IS-held areas will certainly help reduce IS taxation revenues, but it was not the sole avenue for cash

flow, and though hardships for residents will increase, IS' rigid security apparatus is still highly capable of suppressing major revolt.

Images of the documents, with translations, are available at <http://www.aymennjawad.org/17916/the-archivist-unseen-islamic-state-financial>.

Defense Technology



About the Author

With advancements in technology and globalization, countries face more cybersecurity and homeland security issues while also learning to reconcile differences between civilian and commercial and military technology.

In this essay, SPI Fellow Holger Mey shows that greater technology does not always lead to greater security. In matters of defense and security, technology itself does not win wars, but the tactics and tools that a country *gains* through the use of technology.

Mey also discusses the complexly cooperative relations between the U.S. and European nations throughout the recent past, emphasizing the importance on countries to fortify their defense for the sake of freedom.

Dr. Holger Mey is Vice President of Advanced Concepts, Airbus Defence and Space, in Munich. Previously, he worked for 12 years as a self-employed security policy analyst and consultant in Bonn. He also served as President & CEO of the Institute for Strategic Analyses (ISA). He is also Honorary Professor for Foreign Policy at the University of Cologne, Germany.

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The Use of New Technology in Security and Defense: The Need for Renewed Transatlantic Trust

Holger H. Mey

General Remarks and Observations

In examining the role of technology for defense and security, it is important to understand the context in which technology is being used.

- First, any technology is only as useful as the mission or task it serves. The best air defense of the world is of little use if the opponent has no aircraft. If the opponent does have aircraft, however, it is essential.
- Second, technological superiority does not guarantee success (e.g. positive war outcomes). Germany did not lose World War II because it was technologically inferior (it was not), nor did the United States win the Vietnam War despite its technological superiority. Hence, there must be other factors that determine outcomes of war.
- Third, it is less about technology per se, than about the skillful exploitation of the opportunities it creates. The most important factors determining battle outcomes are skills, employment, and tactics, rather than force-to-force ratios or force-to-space

ratios or technological superiority or inferiority.

- Fourth, the question is less about how precisely one can destroy a particular target but rather what difference it makes. For instance, NATO may well destroy some bridges over the Danube, but what if Slobodan Milošević does not care because he does not want to cross the river, or he has a boat or a helicopter? The issue is the extent to which the destruction of a specific target furthers the accomplishment of one's war objectives. Hence, the most important question is less about "effects" than about the utility of certain measures to promote the post-war order.
- Fifth, technology is a very dynamic and competitive process: Today's advantage represents tomorrow's standard. There will always be, as in nature, a competition between offense and defense and between measures and counter-measures.
- Sixth, while many things change with historical developments, some elements may endure, a statement that also applies to techTransatlantic Security Task Force Series Policy Brief 2 nology. History is always about continuity and change. New things do not always replace traditional things. The bow-and-arrow, as a long-range weapon, is superior to the club — but only as long as the archer does not come within striking distance of the club. Close-quarters combat remains important.

Finally, quantity is a quality in itself. In many scenarios, numbers matter. One might have a weapon system that can handle five threats simultaneously, but what if the attacker enjoys a six-to-one advantage? True, quality is better than quantity — but especially if deployed in large numbers.

Defense and Security

Commercial or civilian technology and military technology increasingly, but not completely, overlap. Defense technology has moved from spin-offs to spin-ins: in the past, many technologies developed specifically for military purposes turned out to have useful civilian applications. Today, military systems benefit dramatically from the commercial sector. The central question concerns the proper balance between commercial-off-the-shelf technology and military specifications. Military requirements are not always adequately reflected in commercial mass products. And how could they be? Hardening electronics to sustain overpressure of 100,000 PSI is usually not a requirement for civilian or commercial products, but it is essential for high-tech artillery shells that contain electronic parts that need to survive the acceleration of firing the shell, or earth-penetrating warheads where electronic components need to survive hitting the earth's surface and penetrating the ground. If you are sitting in a tank and the opposing tank turns its turret or gun in your direction and you have to fire immediately, you do not want to read on

your screen: “push control/alt/delete to reboot your system” or “call your system administrator.”

Another example of this overlap is in law enforcement. Indeed, the police are responsible for security in cities at home. And yet, in many cases the military is responsible for security in cities in which they are employed abroad. Increasingly, armed forces find themselves in missions abroad fulfilling tasks that could, or even should, be done by police forces. Of course, all those security missions can be done by the military, which should then, however, be equipped and trained accordingly and employed in sufficient numbers. Cyber/hacker attacks are another example where there is, at least at the beginning, little clarity as to whether the attack comes from within a country or represents an external attack. Bio-terrorism can also be an external challenge or an internal one. But when a disease breaks out, one does not necessarily and immediately know the character of this threat. Could it be an internal affair, perhaps some home-bred terrorist, or perhaps a means of warfare launched by an external actor? The virus might be brought into a country by a terrorist or by a tourist. As such, it is not always clear whether a particular threat is a problem for military defense or homeland security.

The economic drivers of commercial and civilian markets are not necessarily useful for the defense and security sector. Five economic trends shape

commercial and civilian markets: 1 Reducing costs; 2 Increasing efficiency; 3 Making everything user-friendly; 4 Making everything interoperable, standardized, and according to norms; and 5 Outsourcing the rest.

A key question, however, is: What about security? While these trends reflect important economic developments, they might, at the same time, significantly increase the vulnerability of the critical infrastructure and, thereby, society in general. Products that are developed and optimized for the commercial world do not necessarily fulfil the highest security and safety standards. Indeed, the civilian market, unlike a product that is made to meet wartime challenges, does not demand the same tough standards.

Defense and security have to be seen in the context of international relations. Under the condition of international competition among states that are not partners or allies, international relations are about option and option-denial. Hence, it is about widening one's own room for maneuver and about denying too many options to the other side, which would otherwise reduce one's own freedom to act. And, as the Former German Defense Minister Peter Struck said some years ago: Germany also needs to be defended at the Hindu Kush. While this might be right, and without discussing whether or not Germany needs be defended also at the Euphrates and Tigris, the underlying wisdom is that one may have to

intervene once in a while in order to protect one's own homeland (and preferably so far away from one's own territory). So, without an (occasional) intervention, it may be difficult to defend one's homeland. However, this is also true the other way around: without a safe and secure homeland, it will be difficult — and too risky — to intervene. Would NATO really have bombed a foreign capital in the Balkans for 78 days if Milošević had had nuclear weapons and long-range delivery vehicles? What happens if a country (that the West labels a rogue state) gives up its nuclear program, as Libya did, under Western pressure? The world observed how the West toppled the regime soon after. Would the West do the same in North Korea if it remains a nuclear state?

Military power in international relations remains important, in the sense of virtual power or indirect use, even if not employed in a shooting war. If a person, armed with a gun, were to rob a bank without firing a shot, can we consider that the weapon has been used? Indeed it has. Let's take a generic scenario to illustrate this point: If Iran declared that it would mine the Strait of Hormuz, what would the European reaction be? The Europeans would quarrel over how tough their communiqué should be — and Teheran would be shocked to death. What would the reaction of the U.S. Navy be? It would convey two messages: First, we will clear the Strait within five days, and second, in the meantime, we will sink the entire Iranian

Navy. Everyone on the planet understands this indirect effect of military power — the Chinese, the Indians, the Russians, the Arabs, everybody except most of the Germans and a fair number of Europeans.

Asymmetry in warfare has been a hot item since the advent of Western armies being caught in drawn out battles in terrains they do not (want to) master. Of course, asymmetry is nothing new and cuts both ways. All wars are about exploiting one's own advantage and exploiting the weakness of the opponent. Western countries must employ their own military in asymmetrical ways as well. Reacting symmetrically in response to hijacked airliners flying into skyscrapers by directing civilian airliners into “their” big buildings is absurd; reacting symmetrically in response to refugees flooding one's own country by sending one's own people as refugees to the “other country” is absurd as well. In both cases, Western countries do what they have done for centuries, in that they topple the regime or they intervene and help the local government to restore order.

Transatlantic Relations

An analysis of transatlantic relations should start with an observation on U.S. self-perception: Since when has it been bad for the United States to be number one? It seems highly unlikely that anyone on Earth could convince the Americans that it is better for them not

to be number one. And since when has it been bad for Europe that the United States remains number one? To adapt Churchill's statement about democracy, the pax Americana is a lousy form of world order — aside from all others. Recall how already in the 1950s and 1960s, under the impression of rising Soviet power and increasing U.S. vulnerability, Europeans came to question the credibility of U.S. (nuclear) security guarantees. We had a serious and almost never-ending “decoupling” debate. Those questions were not raised during the times of clear U.S. superiority and the relative invulnerability of the U.S. homeland. More importantly, despite all the anti-U.S. sentiment, scarcely anybody in Europe wants a Chinese or Islamic or even a German or French world order. But almost everybody can live with the United States as a benevolent hegemon (or, hopefully, more and more, an intelligent networking power). Everyone can agree with Washington, or can agree to disagree. Europe would have needed to invent the United States if it did not exist already — in its valuable role as a European power outside of Europe. There will not be a united Europe behind British, French, or German leadership. But all of Europe can unite behind U.S. leadership or disagree with it. Hence, as a point of reference, the United States is necessary.

The United States is committed to remaining number one and the country will spend what is necessary to maintain

that position. This is all the more reason for European partners to seek cooperation with the United States instead of heading for some sort of “strategic autonomy.” Such autonomy remains totally out of reach if not backed up with significant resources. However, there is little indication that the Europeans would do enough — even for their own defense. What is not out of reach, however, is making the Europeans a more interesting partner to the United States, since Europe has become more powerful and relevant. It has often been said that the United States is not too strong, but that Europe is too weak. The United States has decided to go for full-spectrum dominance in all operational environments, i.e. land, sea, air, and space. This certainly also applies to cyber space. Europe should not be all too surprised about repercussions that they neither fully appreciate nor always like. In any case, Europeans profit significantly from the United States doing things that Europeans officially reject or claim not to be able to do domestically for legal reasons.

Dependencies on information technology mostly create vulnerabilities — reducing dependencies and increasing resilience will be essential. Historically, if you have a choice to either weaken the attacker or to strengthen the defense, experience shows you should strengthen the defense. The attacker is likely to surprise you, be stronger than anticipated, have allies you did not think

of, and use technology you did not know it has, doing things you never thought it might do. As such, it is better to concentrate on defense, which also provides the basis for offensive options in the sense of offering room for maneuver. As hacker attacks cannot be prevented, Atlantic partners must learn to live with them and systematically build-up resilience. Fighting dogs is not just dangerous because they can bite, but because even if you inflict great pain to them, they will still bite. Boxers and fighting dogs know how to absorb strikes. How many strikes, and of what kind, can our societies absorb?

Security and defense of common interest requires both the United States of America and the “Less United States of Europe” to maintain a close strategic alliance. The problems of this planet are too big to be solved by one continent alone. Security and freedom are not necessarily in a tradeoff relationship (or if so, only in extremis). Without security there is little freedom. Europe understands this well when it comes to social security and in the area of security in the streets. The freedom of choice for the people in the World Trade Center was to either jump out of the window or to die in the flames. This is not the freedom we mean. Without a certain degree of security, we are not free. This is what needs to be debated within the Atlantic Alliance, but only when based on the understanding that we share basically all values and only argue about matters of degree and emphasis.

Surveillance Technology



About the Author

Another area where technology can bring more costs than benefits is in government surveillance. The apathy that most people feel about being watched by their own governments comes from their ignorance of its extent, and from a feeling that if they are doing nothing wrong, then it doesn't matter.

However, governments or staff can abuse private information, hackers can steal it, or it might get you flagged as a terrorist by automated software.

Is it possible to avoid Orwellian intrusion in an age when information is so readily available? To what extent should surveillance by corporations be legal?

SPI Fellow Elliot Cohen contributes this excerpt from his 2014 book, *The Technology of Oppression*, which analyzes the root causes of permissive surveillance laws and proposes specific public policy changes to return citizens to the dignity of privacy and to limit government overreach.

[Dr. Elliot Cohen](#) received his Ph.D. from Brown University, and is one of the principal founders of “philosophical counseling” in the United States. He is also founder and editor of the International Journal of Applied Philosophy and the International Journal of Philosophical Practice, as well as the



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ethics editor of Free Inquiry Magazine. He co-founded and is Executive Director for the National Philosophical Counseling Association (NPCA), and he is the President of the Institute of Critical Thinking.

Dr. Cohen has written twenty-five books and numerous articles in philosophical counseling, applied philosophy, and applied ethics. He has also published six books on various aspects of mass media ethics—most recently, two political science books on mass surveillance.

This book excerpt article is reprinted from *Technology of Oppression: Preserving Freedom and Dignity in an Age of Mass Warrantless Surveillance* with permission of Palgrave Macmillan.

Contact Elliot Cohen through [the Secular Policy Institute](#).

Mass Warrantless Surveillance and the Problem of “False Positives”

Elliot Cohen

Introduction

The public perception of the National Security Agency (NSA) surveillance program, the one promulgated by government, has largely been that of a set of protocol finely tuned to the task of preventing terrorist attacks. However, less is known about the true nature of NSA data searches, their limitations, faults of the technology, and the comparative value of less high-tech investigative techniques....

The question of how efficient the Mass Warrantless Surveillance Network (MWSN) is, or how well its technologies work, can be understood in terms of how accurate it is, which, in this context, means what percentage of the time it correctly identifies someone as a terrorist. However, for every such “true positive” the system returns, there can also be a vast number of “false positives,” that is, numerous cases of falsely identifying someone as a terrorist. This is the problem of false positives and it permeates the entire MWSN. One salient instance of the problem is the use of pattern matching

searches with UPSTREAM programs⁷ to identify terrorists.

Pattern Matching Searches

This particular type of search involves construction of algorithms that search for behavior patterns associated with a specific target group. In commercial advertising, this involves creating a profile of prospective consumers who are most likely to be interested in a product that is being marketed. For example, a magazine about hunting would attempt to target a demographic population that would most likely be interested in going hunting. Thus, according to a 2011 report of the Fishing and Wildlife Service, the most likely hunter would be white males between the ages of 55 and 64, living in rural regions of the southeast, with incomes between \$50K and \$100K. Given that only 5.7 percent of the U.S. population hunts, targeting this group would make it more likely to reach prospective subscribers. But even so, such bulk behavioral advertising tends to have a relatively low, single digit positive response rate. This means that the false positives range in the 90% range. However, it is not as easy to create a demographic of prospective terrorists as it is of prospective hunters. Indeed, in contrast to individuals who go hunting, there have been relatively few terrorist

⁷ These are programs that intercept and upload domestic and international telephone and internet traffic at switches inside telecommunication companies while it is in the process of being routed to and from servers throughout the world.

attacks on the U.S. that enable construction of a terrorist demographic.

Consequently, the pattern searches for prospective terrorists typically take an indirect approach. This involves looking for anomalous internet communication patterns, that is, cyber behavior that does not match the cyber behavior of average internet users, for example, atypical internet searches, sites visits, email exchanges, and credit card purchases. Unfortunately, the assumption that an unusual set of behaviors makes one a prospective terrorist is a questionable assumption, which has not been proven by the success of the MWSN to stop terrorist attacks. On the contrary, it appears that conventional means of investigating possible terrorist attacks such as the use of informants, community tips, routine law enforcement, suspicious activity reports, and other non-NSA intelligence have been the most fruitful means of preventing such attacks.

Conventional Investigations

According to a 2014 report titled, "Do NSA's Bulk Surveillance Programs Stop Terrorists?" prepared by the New American Foundation, a non-profit, non-partisan, public policy institute, the majority of the terrorism cases that occurred after September 11, 2001 have been identified by these more conventional modes of investigation, and the contributions made by the NSA's MWSN toward identifying terrorist

plots before they happen have been "minimal." Further, the report states, "our review of the government's claims about the role that NSA "bulk" surveillance of phone and email communications records has had in keeping the United States safe from terrorism shows that these claims are overblown and even misleading."

Based on its investigation of 225 individuals charged in the U.S. with terrorism since September 11, 2001, the report concluded that the NSA's bulk telephone metadata program, operating pursuant to Section 215 of the U.S. Patriot Act, played an identifiable role in initiating no more than 1.8 percent of such cases; and its other surveillance programs operating pursuant to Section 702 of the Foreign Intelligence Surveillance Act (FISA) Amendments Act, played some role in only 4.8 percent of these cases. According to the report, 60% of the cases were initiated by conventional investigative methods such as undercover informants, family member tips, traditional law enforcement methods, or CIA or FBI intelligence. In 5 percent of the cases, a violent incident preceded prevention, and in 28 percent of the cases the methods used to initiate the investigation could not be determined from available court or public records.

Section 702 Investigations

The report does not mention the millions of false positives that were probably generated by using the MWSN in order

to identify (or help to identify) the relatively small number of true positives the government attributes to this bulk surveillance network. Consider just the Section 702 investigations, which are supposed to target only non-U.S. persons outside of the U.S. In order to identify the said 4.8% of the 225 terrorists (=11 terrorists), the system had to search through a database containing the documents of millions of non-terrorists. According to the Foreign Intelligence Surveillance (FIS) Court, the “NSA acquires more than two hundred fifty million Internet communications each year pursuant to Section 702.” Since the minimization standards used by the NSA permits records to be kept up to 5 years, it is not unreasonable to suppose that the Section 702 database has had considerably more than 250 million records in the years 2009 through 2012, which is the span of time in which the cases used by the government to justify its Section 702 program occurred. So it is safe to assume that it has had *at least* 250 million communications at any time during this period.

According to the New American Foundation report, there were 12 plots that were “not prevented prior to incident.” Five of these plots involved six Non-U.S. persons who would have been subject to Section 702 surveillance. The remaining plots appear to have involved “homegrown” terrorist attacks, which excludes them from Section 702 pursuant to the 2008 FISA Amendments Act. This suggests 17 true terrorists (11

+ 6) that Section 702 surveillance programs might have identified. Since the U.S. government has claimed that these programs identified 11 of the 17 terrorists, it will be assumed here that they had an accuracy rate of 65% (and therefore an inaccuracy rate of 35%). Thus, there were presumably 17 true terrorists in the Section 702 databases, six of which the filters did not catch. This, in turn, means the system must have generated at least 87,500,000 false positives (250 million minus the 17 true terrorists, multiplied by 35%). This means that at least 87,500,000 people (including U.S. and non-U.S. persons) were falsely identified as terrorists. To be clear, this estimate has been constructed from data that may be incomplete, so it is an estimate only, although a modest one. Given the extremely high rate of false positives, the results generated by the MWSN cannot be regarded as actionable intelligence.

In fact, the at least 87,500,000 false positives (plus the 11 true positives) have all presented as veridical, leaving it to the analysts to sort out the false positives from the 11 true positives. Finding this proverbially needle in a haystack requires more data. Inasmuch as the MWSN has played some role in identifying only 7% of the 225 terrorists identified since September 11, 2001, it is reasonable to think that it was more conventional methods of investigation that helped to screen out these needles from the haystack. That is, the conventional methods such as using

informants, community tips, routine law enforcement, suspicious activity reports, and following up on other non-NSA outside leads are probably what directed attention to specific “positives” returned by the MWSN.

An example is the 2009 foiled plot by Najibullah Zazi and two co-conspirators to bomb the New York City subway system. While the government has claimed the case as an NSA bulk surveillance success, conventional means of investigation supported the use of bulk surveillance. Allegedly, the case was initiated by British intelligence, which used a conventional targeted investigation to obtain an email address of an al-Qaeda operative in Pakistan with which Zazi was communicating. British intelligence, in turn, shared the address with U.S. intelligence, which then chose to use this email address as a selector in the NSA Section 702 surveillance system to conduct warrantless surveillance of Zazi’s email exchanges. Hence, it was due to a conventional investigation that the NSA was able, in the first place, to use the MWSN to thwart a potential terrorist plot. However, as the New American Report makes clear, U.S. intelligence could also have chosen to use conventional means of investigation such as an individual FISA or criminal warrant to place Zazi’s email exchanges under surveillance.

There is an old computer adage that appears to be relevant in this context, namely, “Junk in, junk out.” That is,

ordinarily, to construct an intelligent inquiry, information is needed, which is typically gleaned from sources outside the MWSN. Algorithms used to look for terrorist plots are not much help because they produce too many false positives. Useful queries are more often driven by metadata such as phone numbers, e-mail addresses, names, and other “strong selectors.” But in order to know what specific metadata to enter, an analyst must already have some outside leads. So, in order for the MSNW to be of any genuine use as an adjunct in terrorism investigations, more conventional investigative means need ordinarily to be employed first. Otherwise, in conducting pattern matching searches based on anomalous behavior patterns encapsulated in complex algorithms, analysts are inundated with false positives and are left without a reliable way of distinguishing the true from the false positives.

The point can be put in terms of a dilemma. Either the NSA’s Section 702 programs (as well as other mass warrantless programs) rely on conventional investigative means or they do not. If they do rely on such conventional means, then these programs are not necessary in the first place (as the Zazi case suggests) to identify terrorists. On the other hand, if they don’t rely on such conventional means, then they lead to an unmanageable amount of false positives, making it virtually impossible to identify the true positives. Therefore,

either these programs are not necessary in the first place (because conventional means can be used instead) or they are not useful in identifying terrorists (because they are inundated with millions of false positives). In either case, it may be argued, relying on such bulk mass, warrantless programs have little or no value to offset the violations of privacy they produce. So what value, if any, does the MWSN have?

Clearly, the MWSN is capable of using “strong selectors” to find corroborative evidence *after* a conventional investigation turns up some data that may be used as selectors. This is not an indispensable use because conventional means could also be used, as the Zazi case suggests. Nevertheless, having such a massive system of data along with its search engines on hand still may be more expedient in the sense that it is likely to be faster than going forward using conventional investigative means. The question of justifying the existence and use of such technology is whether the expedience of gaining access to information quicker is worth the investment of billions of dollars and the

cost to human privacy. The affirmative response is that time is of the essence when it comes to the possibility of thwarting potential terrorist attacks.

But this does not preclude requiring that the Attorney General or his or her designee go before the FIS Court with the preliminary data gleaned from conventional investigative means to get a warrant to search this system when the names, email addresses, phone numbers or other metadata of U.S. persons is being used in the search. If an emergency exists, then the petitioner can always file the authorization within 24 hours of implementing the search pursuant to the 1978 FISA or within 7 days according to the 2008 FISA Amendments Act.

Here lies the strong argument for requiring search warrants based on probable cause pursuant to the Fourth Amendment before the massive data system can be searched. If the system is useful only if strong indicators are used, then standard search warrants can still be used, thus assuring judicial oversight without defeating any useful function of the system.

Religion vs. Health



About the Author

Faith healing and other superstitious health practices have given religion a bad name when it comes to wellbeing. However, some limited types of faith-based treatment may have positive outcomes that are measurable and should be acknowledged by science. For example, the placebo effect is a distraction from pain. This essay by Patrik Lindenfors focuses on the part of religion's healing power that really does work, providing insights for policymakers about the role of religion in healthcare.

[Dr. Patrik Lindenfors](#) is an Associate Professor (Docent) at the Centre for the Study of Cultural Evolution and the Department of Zoology, Stockholm University.

At the Centre for the Study of Cultural Evolution, Lindenfors's explorations have mainly concerned the potential for applying methods from research in biological evolution to cultural evolution. His main empirical investigations have thus far been on the evolution of democracy and cultural competency, but he is now turning his attention to the evolution of religion. In zoology, Patrik has focused his investigations on the evolution of sexual size dimorphism and primate brain evolution, using comparative analyses.



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Lindenfors has authored three books. The first, *God Probably Doesn't Exist*, advocates a nonreligious worldview for teenagers and has been translated into eight languages. The second, *Samarbete* ("Cooperation") concerns the biological and cultural evolution of cooperation. The third, *Sekulär Humanism*, is an introduction to secular humanism for school children. (The last two books are only available in Swedish.) He also writes frequently about science and religion in the press..

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Divine Placebo

Patrik Lindenfors

*Religion may be good for your health –
if you think it is, or follow the rules*

Abstract

Religion may affect personal health in at least two ways. First, religious prescriptions concerning matters such as diet, waste, sexual relationships and social support networks may have actual health consequences. Second, religious healing practices may induce placebo and nocebo responses. Through such mechanisms, religion can result in both positive and negative health effects, depending on prescriptions and rituals involved. Contingent on magnitude, health effects may constitute an underestimated component in understanding the prevalence and persistence of religions in human societies. Health aspects of religion may have become important in human societies through natural selection of susceptibility to placebo responses from religious healing rituals, or through cultural selection of components of religions that involve functioning health advice or that have piggy-backed on practices invoking placebo responses. What exact significance health effects have for understanding the persistence and ubiquity of religions remains to be thoroughly investigated, however.

History and Background

On June 20th 2013, Monsignor Giovanni Giudici, Bishop of Pavia, officially confirmed the latest miracle to occur at Lourdes: a tumor that had plagued 67-year old Danila Castelli for several years had disappeared. It is the 69th Lourdes-healing to be confirmed as miraculous by a catholic bishop.

Danila Castelli fell ill at age 34, diagnosed with a right para-uterine mass and a fibromatous uterus. In an attempt to cure her, doctors removed Danila's uterus, fallopian tubes and ovaries, and later also the pancreas, but her condition persisted. A scintigraphy revealed a tumor in the rectal bladder and vaginal region. More surgeries followed, but no improvement could be noted. So Danila went to Lourdes.

The healing powers of Lourdes are mediated via the holy waters of a local spring. As Danila emerged from immersion in the waters, she experienced an "extraordinary feeling of wellbeing". Later medical examination revealed that the tumor had receded. Shortly afterwards she reported her instantaneous cure to the Lourdes Office of Medical Observations who unanimously confirmed it as miraculous: "Mrs Castelli was cured, in a complete and lasting way, from the date of her pilgrimage to Lourdes – 21 years ago – of the syndrome she had suffered and with *no relation with the treatments and the surgeries she received*"⁸ (my italics).

⁸ <http://en.lourdes-france.org/deepen/cures-and-miracles/danila-castelli>

Every year, about six million people pay visit to Lourdes. According to the Sanctuary of Our-Lady of Lourdes information page⁹, about 350 000 of the six million also make use of the healing baths, a tradition stretching back to the middle of the 19th century when a young girl by the name Bernadette Soubirous saw an apparition of the Virgin Mary in a grotto. About 7000 instances of healing have been reported to the archives of the Lourdes International Medical Committee, but the committee have confirmed only 69 as miraculous.

There are several points to be gathered from this. First, many people are even today prepared to shun scientifically based medicine to seek miraculous cures for their ailments. The methods employed at Lourdes are only bathing and praying – there are no active treatments involved. Second, many thousands believe that they have been miraculously cured, to the degree that they find it worthwhile to report their healing to the medical committee. Finally, only a marginal part of all people seeking a miraculous cure actually get one – 69 out of 350 000 is a rate of only 0.019%, or approximately one out of every 5000 people; a much lower success rate than for example the estimated rate of spontaneous remission of basal cell carcinoma and breast cancer, reportedly being about 20% (Printz 2001). This low success rate may, however, more be a testament

to the diligence of the review committee than a truthful estimate of actual miraculous healing events.

If millions of Catholics flock to Lourdes, how many more flock to other, similar sites around the world? How many people have historically indulged in similar healings, getting treatments that contain no active ingredient, doesn't target the afflicted area or disease agent, and sometimes does not even involve the patient? In fact, history and anthropology are filled with reports of analogous healing practices (McLenon 2002).

Consider, for example, the Ifugao living in the mountainous inner regions of the island Luzon in the Philippines. According to the beliefs of the Ifugao, illnesses are caused by spirits that reside in stones, trees or rivers. To cure illnesses, sacrificial animals are chosen depending on *who* is causing the illness – not *what*. The chosen animals, commonly chickens or pigs, are then killed and offered to appease the spirits in a ritual termed Ayag that also involves chanting and dancing.¹⁰ One thing that is *not* involved in the healing ritual is any ingredient or action involving the ill person. The curative actions are completely focused on appeasing extrinsic spiritual evil-doers. Similarly, in the San-culture healing may famously be carried out through spirit appeasement during 'healing dances', where the healer – not the patient –

<http://www.ibtimes.co.uk/lourdes-miracle-cure-castelli-pope-francis-vatican-493857>
⁹ <http://en.lourdes-france.org/> (retrieved 2015-03-16)

¹⁰ <http://www.stuartxchange.com/Cordillera.html>
(retrieved 2015-03-16)

dances him- or herself into a state of trance (Keeney 2003).

Many traditional healing practices are in a similar way intrinsically interwoven with spiritual customs and beliefs (McClenon 2002). Instead of combating agents causing the disease – unknown to traditional practitioners – medicine men and shamans perform elaborate rituals or sacrifices to negotiate with and satisfy ill-causing spirits. At times the patient is reduced to being a mere bystander, neither touched nor medicated by the healer (Littlewood & Dein 2001).

Spiritual healing practices represent a large segment of the history of humanity's search for cures, a search that has gone down many dead ends. For example, one of the world's oldest surviving medicinal manuscript, the Ebers papyrus, contains recipes of over 700 magical formulas and remedies – almost all ineffectual – where many incantations are aimed at turning away ill-causing demons. On the other hand, traditional Chinese medicine treatments are aimed at restoring harmony to the interaction between the body's functional entities and the outside world. In traditional Indian and Greek medicine the theory is that bodily fluids need to be in balance, and treatments – such as blood-letting, which was very common in medieval European medicine – were aimed at this restoration (Wooton 2007).

In fact, traditional theories of the causes of illness were practically all factually incorrect. Modern evidence-based

medicine has instead shown that the agents causing disease are microorganisms such as bacteria, viruses or parasites, and medicines are consequentially aimed at killing these. Most traditional treatments are therefore not active, but their effects – if any – are indirect. From this we should expect that religiosity and spirituality have negligible health effects.

Context

Contrary to such expectations, there are many reports of health benefits from religion. For example, in two large (Templeton-financed) meta-analyses from 2001 and 2012, Harold Koenig reported that religious involvement, as measured by factors such as self-reported religiosity or church attendance, provided benefits for a number of ailments: better immune and endocrine function, lower mortality in cancer, lower blood pressure, less heart disease, lower cholesterol, less smoking, more exercising and lower mortality. However, there are several methodological flaws in these meta-analyses and scant evidence for a 'faith factor' (Sloan et al, 1999; Sloan 2006), but there still remain many reported, apparently sound correlations between religiosity and health. Why?

One hint lies in the fact that most ailments that seem to be affected by religiosity are disorders that can be affected by a healthier life-style. For example, Koenig reports more frequent exercise and less smoking among

people who self-report as religious. Broken bones don't mend better, cancers don't regress more often, amputations don't grow out, but ailments that respond positively to a healthier life-style improve. If one examines religious teachings, there may be entirely natural reasons behind this observation. Islam forbids the use of alcohol, Hinduism advocates vegetarianism (for some casts), many religions advocate sexual moderation (minimizing the spread of STDs in traditional settings), and so on.

Another type of relationship between health and religiosity is captured in a study by Green & Elliott (2010) who interviewed 4510 Americans of their outlook on life and religiosity and reported that 'People who identify as religious tend to report better health and happiness, regardless of religious affiliation, religious activities, work and family, social support, or financial status.' Thus, self-reported view of life is positively related to the degree of religiosity. In part, this can be due to a reporting bias in that religious people may complain less, or have different expectations concerning life's ups and downs, but it may also be another hint to the link between spirituality and healing in so many cultures – the placebo effect.

The placebo effect is the observation that there exist beneficial health effects just from believing that a treatment will work. For example, if an experimenter tells a group of patients that a (passive) pill will decrease pain, a majority of patients will report that their

pain has diminished after taking the pill. There is also a mirror effect – the *nocebo* effect – where there are detrimental effects from beliefs (though this is much less well-researched due to ethical problems in experimenting with *nocebo*). For example, if an experimenter tells patients that the pill they are taking will increase their pain, it will.

Basically, a placebo works best when patients *know* they are getting a treatment, *believe* that the treatment will help them and thus *expect* the treatment to work (Humphrey 2002). These factors together result in improvement either by activating the body's capacity for self-healing or by shifting the patients' perception of the situation, or both.

Placebos have measurably different consequences depending on cues provided with the treatment. For example, marketing matters: branded aspirin works better than unbranded aspirin which works better than branded placebo which works better than unbranded placebo (Branthwaite & Cooper 1981). More expensive medicine (\$ 2:50) works better than cheap medicine (\$ 0:10) (Waber et al. 2008). You can even get addicted to placebo – a study on a group of women receiving hormone replacement therapy or placebo showed that while 63% got withdrawal symptoms from ending hormone treatment, 40% got withdrawal symptoms from quitting the placebo (Ockene et al. 2005).

That sham medicine can induce improvement was first scientifically summarized in 1955 when Henry Beecher reviewed 15 studies that quantified the effectiveness of placebo. Beecher found that sham medicines provided effective comfort in 35 % of patients for ailments of such variety as 'wound pain, the pain of angina pectoris, headache, nausea, phenomena related to cough and to drug-induced mood changes, anxiety and tension, and finally the common cold (Beecher 1955).

Probable futures

As there are many ailments with differing psychological and physiological causes, placebo researchers stress that there is no single 'placebo effect', but many 'placebo responses' (Benedetti 2009). Whereas placebo *effects* are any outcomes that happen after the administration of a placebo, placebo *responses* are outcomes that are not due to other factors besides actual psychological or physiological reactions caused by the placebo. Thus, misattribution may be termed a placebo *effect* (though it makes more sense to just call it misattribution), but not a placebo *response*. For example, Beecher reported placebo effects in the treatment of common cold; however, colds typically subside after a few days no matter what.

Actual placebo responses have been reported for a number of ailments, such as pain relief, Parkinson's disease, sleep disorders, sexual dysfunction,

depression, anxiety, dementia, addiction, as well as cardiovascular, respiratory, gastrointestinal and genitourinary disorders, and from sham surgery (Benedetti 2009).

There are two main pathways through which placebos can have an effect. The first is that the placebo can *change the experience of symptoms*. The second is that placebos can *change physiological states in the body*. Another way to phrase this is that the former alter *subjective measurements of disease* while the latter alter *objective measurements of disease*. Note that even for subjective experiences such as pain, brain scans may reveal measurable changes in several brain regions that inhibit pain transmission. Thus, patients not only *experience* less pain – their experiences actually *are* less painful. (Though this last statement makes sense only in a context where 'pain' means something more than 'experience of pain'.)

Other placebo responses can be attributed to conditioning. The most famous case of conditioning is also the first described: 'Pavlov's dog'. For his experiment, Pavlov measured salivation in a dog, and could record increase in salivation when he presented meat powder in the dog's mouth. He then started ringing a bell before placing the meat powder. After a few repetitions, Pavlov could demonstrate that his dog salivated from just hearing the bell ring. This involuntary physiological reaction to

a stimuli is termed a conditioned response.

An example of a conditioned placebo response is to repeatedly associate ‘something’ with an active pain killer. After the body has been conditioned to expect pain relief, the pain killer can be removed. The ‘something’ can be such stimuli as pills of a certain color, brand, shape, but also hospitals, doctors, nurses, white coats, stethoscopes, syringes, etc. Thus, if you give a placebo before associating it with a drug it can have lower effect than if you give it after associating it with the drug (Amanzio & Benedetti 1999). This effect may come about through a conditioned release of endorphins, as blocking opioid receptors can lower the placebo response (Levine et al. 1978).

Similarly, negative diagnosis can lead to a greater reporting of pain, as can distrust of medical personnel and diagnoses (Barsky et al. 2002). Negative expectations can even change the effect from alleviating pain to increasing the reported pain experience (Dworkin et al. 1983). Reports in mass media can also have this effect, as is indicated through reports of headaches from mobile phone use (Ofstedal et al. 2007). Also, just the fear of pain can lead to the worsening of pain (Leeuw et al. 2007).

There are many ways to induce placebo responses, e.g. through suggestion, authority figures, expectations, conditioning, etc. Many of these techniques are also present in religious

healing practices, such as at Lourdes and the healing rituals of the Ifugao and San, as described above. A few studies investigating a direct link between religion and placebo have been carried out. For example, research has shown that expectations contribute to reduced pain levels during prayer in highly religious participants (Jegindø et al. 2013a), that pain can be modulated through religious rituals during religious piercing (Jegindø et al. 2013b) and that there exists synchronized arousal in participants in fire-walking rituals (Konvalinka et al. 2011). There are also quite a few studies on praying, showing that prayer may work personally in a coping context, but not when praying for others (e.g. Masters & Spielmanns 2007; Roberts et al. 2009) – i.e. exactly what should be expected if prayer works through inducing placebo responses.

Importantly, when placebo responses are in play, both promises and threats made in the name of religion are *actual* promises and threats, with *real* health effects. Through this stick and carrot-like mechanism, positive and negative effects may have sustained and favored religion in human populations. It has consequently been suggested by anthropologist James McClenon (2002) that there may have been natural selection for susceptibility to treatment during human evolution. Another option is cultural rather than biological evolution; that religion may have evolved in response to human predispositions to respond to placebos and prefer good health advice to bad,

rather than biological evolution in response to religion. In this latter scenario, religion would be a by-product of human predispositions.

In the academic study of the evolution of religions, a similar type of by-product perspective is dominant within what is termed the 'cognitive science of religion'. Basically, religious phenomena, beliefs, practices and social organization are here explained as result of a selective process on religious cultural traits where those most compatible with human evolved psychological dispositions will be maintained and propagated. Psychological dispositions that give rise to religious phenomena are no different than the dispositions that are active in everyday cognition; mainly concept formation, categorization and inferences. The widespread beliefs in superhuman agents (gods, spirits, etc.) are made possible through an evolved 'theory of mind' together with a set of specialized mental systems such as a proposed 'hypersensitive agency detection device' (HADD) (e.g. Atran 2002; Barrett 2004; 2012; Boyer 2001; McCauley 2012).

Another perspective is to view religious phenomena as adaptations in themselves. This approach tends instead to focus on the function of religions in relation to social cohesion, cooperation and norm enforcement through, for example, providing shared ethnic markers or a common unifying cause (Wade 2010; Johnson 2005; Bulbulia 2004). Better

group cohesion is good for the group, but also good for the individuals (and consequently the genes of those individuals) who benefit from being part of a tighter cooperative network, and finally also beneficial for the beliefs and practices themselves due to the better survival and reproduction chances of the carriers (see also Blume 2009).

The idea that health effects may be important for explaining the prevalence and persistence of religion belongs in both these categories. In a cultural evolutionary scenario, religions that have had health effects should persist longer and spread more effectively through populations than those that do not, whereas in the religion-as-an-adaptation scenario, people susceptible to placebo treatments would have had a survival advantage. However, how important health effects really are for understanding the perseverance and omnipresence of religion remains to be thoroughly researched.

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Witness Testimony



About the Author

The memories of the parties involved in a legal case, given through testimony, are essential to the legal system, but there are reasons to discount or even eliminate such “evidence” in a courtroom. Even when witnesses are telling the truth, uncoerced by plea deals or intimidation, scientists now can tell lawmakers that memories are faulty.

Science has learned a great deal about how memories are formed, and how neuroimaging can even play a role in distinguishing false and true ones.

In this essay, SPI Fellow Elizabeth Loftus, with co-author Daniel Schacter, explores the neural basis for memories and whether the use neuroscience and cognitive psychology can rescue the dwindling status of eye witnesses. This affects the future of legal policy.

[Dr. Elizabeth Loftus](#) is a cognitive psychologist and expert on human memory, best known for her groundbreaking work on the misinformation effect and eyewitness memory, and the creation and nature of false memories. She has been heavily involved in applying her research to legal settings; she has consulted or provided expert witness testimony for hundreds of cases. Loftus has been recognized throughout the world for her work, receiving numerous awards



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and honorary degrees. In 2002, Loftus was ranked 58th in the Review of General Psychology's list of the 100 most influential psychological researchers of the 20th century. She is a Fellow of the Committee for Skeptical Inquiry's Executive Council. Loftus has been President of the Association for Psychological Science (1998–99), the Western Psychological Association (1984, 2004-5), and the American Psychology-Law Society. She was on the governing board of the Psychonomic Society (1990-1995) and the board of directors for the Institute for the Study of the Trial (1979-81).

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Memory and Law: What Can Cognitive Neuroscience Contribute?

Daniel L Schacter & Elizabeth F Loftus

A recent decision in the United States by the New Jersey Supreme Court has led to improved jury instructions that incorporate psychological research showing that memory does not operate like a video recording. Here we consider how cognitive neuroscience could contribute to addressing memory in the courtroom. We discuss conditions in which neuroimaging can distinguish true and false memories in the laboratory and note reasons to be skeptical about its use in courtroom cases. We also discuss neuroscience research concerning false and imagined memories, misinformation effects and reconsolidation phenomena that may enhance understanding of why memory does not operate like a video recording.

Introduction

In November 2003, Larry Henderson was accused of holding a gun on James Womble while another man shot Rodney Harper to death in a Camden, New Jersey apartment on New Year's Day of that year. Almost 2 weeks after the murder, Womble identified Henderson from a photo array. Womble again identified Henderson at trial, and Henderson was easily convicted of reckless manslaughter and aggravated assault, among other charges. An open and

shut case? Turns out not so. There were problems with Womble's seemingly convincing evidence: for instance, Womble failed to identify Henderson at the initial photo array until the investigating officers intervened and exerted 'pressure' or 'nudging', and Womble had ingested crack cocaine and copious amounts of wine and champagne on the day of the murder.

Eventually this case (and a companion case) reached the New Jersey Supreme Court, which issued a ruling in 2011 that garnered wide public attention¹. The decision showed a sophisticated appreciation of the problem of eyewitness memory and put in place a bold new solution. The case changed the legal standard for assessing eyewitness evidence to produce a better one - one that will more successfully deter inappropriate conduct by law enforcement and will help jurors to better evaluate evidence based on eyewitness memory. As a result of the Henderson case, defendants who can show some evidence of suggestive influences are entitled to a hearing in which all factors that might have a bearing on the eyewitness evidence are explored and weighed. If, after weighing the evidence presented at the hearing, the judge decides to admit the eyewitness evidence into trial, then the judge will provide appropriate, tailored jury instructions that will guide jurors on how to evaluate the eyewitness evidence. The new framework was created to serve the aim of not only protecting the government's interest in being able to present crucial evidence

at trial but also the defendant's interest in being able to have the tools necessary to mount an effective defense.

Henderson's initial trial might have ended differently for him if he had this new legal standard in place at the time. He would have easily succeeded in showing suggestive influence, and if the judge decided to admit the eyewitness testimony despite the showing of suggestiveness, then Henderson's trial jury would have received "appropriate, tailored jury instructions" that contained critical information about the nature of human memory.

The tailored jury instructions² were drafted over the next year and made public on 19 July 2012. From a scientific point of view, they are a vast improvement over any previous jury instructions on eyewitness evidence. The instruction concerning eyewitnesses, coming from the judge, tells jurors that "human memory is not foolproof. Research has shown that human memory is not at all like a video recording that a witness need only replay to remember what happened. Human memory is far more complex." Later on, the instructions urge jurors to consider various factors that could affect the eyewitness testimony, and provide explicit information on how to think about those factors. For example, in cases involving the identification of a stranger of a different race, the instructions state: "You should consider that in ordinary human experience, people may have greater difficulty in accurately identifying

members of a different race." As another example, in cases involving a great deal of stress or fright on the part of an eyewitness, the instructions state: "Even under the best viewing conditions, high levels of stress can reduce an eyewitness's ability to recall and make an accurate identification."

What is impressive about these instructions is that, unlike past ones, which might have told jurors that they could take into account the state of mind of the witness or the cross-racial nature of the identification, the new instructions educate the juror about how to take these factors into account. The jurors were previously left to their intuitions about the factors, and many of those intuitions are unsupported or even contradicted by scientific evidence^{3,4}. Many jurors will thus enter the deliberations with the erroneous belief that stress makes memory exceptionally accurate or that cross-race identifications are just as accurate as same-race ones³. But in New Jersey they'll be educated before making decisions that affect someone's liberty.

Cognitive Psychology, Neuroscience and the Legal System

The New Jersey court's decision relied on, and receives strong support from, decades of research from cognitive psychology showing that human memory does not work like a video recording; it is prone to various kinds of errors, distortions and illusions (for recent reviews, see refs. 5–9). Such cognitive studies have established that

eyewitnesses sometimes report confident but inaccurate memories and that post-event suggestions or misinformation can easily taint eyewitness memory¹⁰⁻¹². There is also evidence that identifying members of a different race is typically more difficult than identifying members of the same race¹³ and that high levels of stress can impair the accuracy of eyewitness memory¹⁴. Highlighting the relevance of these findings to the courtroom, faulty eyewitness testimony was a factor in more than three-quarters of the first 250 cases nationwide in which DNA evidence exonerated individuals after conviction for crimes they did not commit¹⁵. Thus, in our view the New Jersey court devised its new jury instructions based on strong evidence from cognitive psychology that is clearly relevant to issues of pressing concern in the courtroom.

At the same time that cognitive studies have documented various kinds of memory errors and illuminated the conditions in which eyewitnesses are prone to them, neuroscience based research has made considerable progress in unraveling the neural basis of memory. However, reference to such research is notably absent in the New Jersey court's decision. We do not believe that this omission reflects any divergence between the broad view of human memory emerging from cognitive psychology on the one hand and cognitive neuroscience on the other. Although neuroscientists have tended to focus less on memory distortions and illusions than have cognitive psychologists, many neuroscience-based approaches to

memory have embraced the idea that, far from operating like a video recorder, memory is a constructive, dynamic process that is sometimes prone to error¹⁶⁻¹⁹. Despite this broad agreement from the two approaches, attempts to identify and understand the brain mechanisms underlying memory, which are so central to cognitive neuroscience, are less directly related to the concerns of the court - which is charged with assessing the behavioral output of the memory system - than is work from cognitive psychology. While it is thus unsurprising that the New Jersey court did not cite neuroscience evidence in its decision and formulation of the new jury instructions, we think that it is important to consider the relation between memory as studied by neuroscience and memory in the legal context: what - if anything - can neuroscience-based research on memory and the brain contribute to grappling with issues pertaining to memory in the courtroom? Does cognitive neuroscience have anything useful to tell jurors or other participants in the legal system about the likely accuracy of an eyewitness account, or about why "human memory is not at all like a video recording that a witness need only replay to remember what happened"?

Distinguishing True and False Memories with Neuroimaging

One way in which cognitive neuroscience research might inform the courts about memory concerns the

difficult problem of distinguishing between true or accurate memories and false or inaccurate ones. Even though psychologists generally acknowledge that eyewitness memory is sometimes accurate and sometimes not, no definitive cognitivebehavioral methods exist for distinguishing true from false memories²⁰. Thus, an exciting possibility is that neuroscientists could use brain imaging techniques, such as functional magnetic resonance imaging (fMRI) or event-related potentials, to provide a clear answer as to whether a witness to a crime is recounting a true or a false memory.

During the past 15 years a growing number of studies have shown that neuroimaging techniques, including fMRI and event-related potentials, can sometimes help distinguish true memories from false ones under laboratory conditions (for detailed reviews, see refs. 21–23). Many neuroimaging studies have used experiments in which participants initially study lists of semantically associated words or perceptually similar visual shapes. Later, experimenters scan the participants as they attempt to recognize as old or new three different kinds of item: old items that appeared earlier in the list, semantically or perceptually related new items that did not appear previously, or unrelated new items that did not appear previously. Participants in these experiments typically classify the old items as old much more frequently than they classify the new, unrelated items as old, which constitutes evidence for true or

veridical memory. The critical result is that participants also classify new but related items as old much more frequently than new and unrelated items; these incorrect responses to the related items constitute evidence for false memories (for example refs. 24–27). Other neuroimaging studies have examined false memories that result from confusing perception and imagination^{28,29}. For example, after seeing pictures of some objects (for example, a photo of a car) and imagining others in response to a verbal cue (for example, “imagine a ball”), participants sometimes falsely remember that they saw a picture of an item that they only imagined (a ball). Still other neuroimaging studies have examined false memories that result from the presentation of misinformation after viewing an everyday event^{30–32}. For example, after watching a man steal a woman's wallet and receiving misinformation about what actually happened (for example, the woman's arm was hurt during the robbery, rather than her neck), some subjects later remember the misinformation as part of the original event.

Such studies have typically shown that many of the same brain regions are active for true memories (that is, “old” responses to old items) and false memories (“old” responses to related, imagined or suggested items), but they have also documented some differences. For example, several studies have reported that brain regions involved in encoding or retrieving sensory-perceptual information tend to be more active

during retrieval of true than false memories (for example, refs. 24–27,29,32). Although the precise regions that distinguish true from false memories vary from study to study, the results are generally in line with the sensory reactivation hypothesis that emerged from earlier behavioral studies showing that true memories tend to be associated with retrieval of greater sensory and perceptual detail than false memories³³. However, neuroimaging evidence for sensory reactivation comes from studies where researchers test memory shortly after exposure to target information. Given the tendency for recollection of sensory details to fade over time^{5,8}, such effects would presumably be more difficult to detect at longer delays (weeks or months). Evidence also exists that regions in anterior prefrontal cortex, especially in the right hemisphere, tend to be preferentially activated for false as compared with true memories, perhaps signaling a role for anterior prefrontal cortex in memory monitoring or evaluation^{26,27,34,35}.

In light of these and related findings^{21–23}, it is tempting to imagine that the legal system could rely on neuroimaging to help determine whether an eyewitness is remembering accurately or not. However, there are several reasons to be skeptical about the use of neuroimaging evidence concerning true versus false memories in the courtroom. First, laboratory studies have generally used simple and easy-to-control materials, such as words and pictures, but it is unclear whether

results from these studies generalize to the kinds of complex everyday events that are more typically encountered in the courtroom; indeed, a recent literature review reveals notable differences in the patterns of brain activity that are evident when people remember information presented in the laboratory versus autobiographical recollections of rich everyday experiences³⁶. Second, neuroimaging studies of true versus false memories typically use healthy young adult participants, whereas the courtroom typically includes more diverse populations. Third, as we noted above, such studies have involved relatively brief delays between study and test, whereas courtroom cases usually involve much longer delays, and we do not yet know whether neuroimaging can distinguish true and false memories over delays that may involve months or more. Fourth, neuroimaging evidence for true/false memory differences comes from studies in which experimenters average brain activity across subjects and events, reflecting the fact that it is difficult to detect meaningful memory-related activity on single trials in individual subjects with techniques such as fMRI - yet that is precisely what courtroom cases demand. Researchers have made some progress in this regard by using pattern classifiers to analyze brain activity. In one study using such multivoxel pattern analysis³⁷, participants studied faces of unfamiliar people and 1 hour later made old/new recognition judgments about previously studied faces, as well as new faces that had not been

previously studied. A classifier determined reliably whether individual participants subjectively experienced a face as old or new. But the classifier could not reliably determine the objective status of the face - that is, whether it is in fact old or new - which would be critically important in a courtroom setting. Similarly, neuroimaging studies that have examined the neural correlates of subjective confidence in memory have generally found that fMRI responses in various memory-related regions are heavily influenced by subjective confidence signals and less so by objective accuracy (for review, see ref. 38). Fifth, even if neuroimaging develops to a point where it can provide reliable discrimination between true and false memories in individual cases, researchers would have to develop procedures to detect countermeasures that individuals might use to 'beat the test', yet we are not aware of any such procedures (for further discussion of this point and related concerns, see ref. 22). Although we expect that future advances in neuroimaging technology and analysis will eventually address these and other problems, they are presently significant ones that warrant a cautionary stance concerning the potential application of neuroimaging approaches to adjudicating questions about true versus false memories in the courtroom.

Several authors have expressed similar concerns regarding the potential use of neuroimaging techniques for detecting intentional deception in legal cases (for reviews,

see refs. 39,40). Some laboratory studies have shown that regions in the prefrontal cortex tend to be more active when participants are lying than when they are telling the truth, likely reflecting the involvement of frontally based executive processes during the manipulation and monitoring of information that is used to construct a lie⁴¹. One recent laboratory fMRI study showed that activity patterns in specific prefrontal regions can distinguish lies from truth telling with great accuracy in individual subjects⁴². However, that same study showed that when experimenters instructed participants to use countermeasures designed to beat the test, there is a dramatic reduction in the ability of fMRI responses to distinguish lies from truth. Because countermeasures are a significant concern in real-world settings, the authors of this study advised caution in applying fMRI-based lie detection outside the laboratory. This view is in line with previous cautionary arguments concerning the application of neural lie detection procedures to the courtroom, which point to such problems as the use of artificial laboratory tasks, inconsistent results across laboratories, lack of diversity in the subject populations tested (mainly healthy young adults) and an absence of evidence for the efficacy of neural lie detection procedures in real-world contexts³⁹.

Understanding the Neural Basis of True and False Memories

There is another way in which neuroscience research could potentially inform the legal system: by providing information about the neural mechanisms of memory errors and distortions that can enhance understanding of why it is that “human memory is not at all like a video recording.” We noted earlier that neuroimaging studies have typically shown that many of the same brain areas are active during retrieval of true and false memories, including regions in prefrontal, parietal and medial temporal cortices²¹⁻²³. This finding could be useful for policy makers and judges in determining how to properly instruct juries about the reasons why false memories can be subjectively compelling: some of the same processes contribute to both true and false memories^{8,9,21-23}.

A nice example comes from the finding⁴³ that many of the same brain regions are active when participants accurately recognize visual shapes they viewed earlier and when they falsely recognize related (that is, perceptually similar) shapes that they did not see earlier - but there is virtually no overlap in brain activity during accurate recognition of previously viewed shapes and false recognition of new, unrelated (that is, perceptually dissimilar) shapes. The overlapping brain activity during true recognition of studied shapes and false recognition of related shapes likely reflects shared underlying processes. Participants respond “old” in these cases on the basis of visual similarity or ‘gist’ information, which in this experimental protocol refers to

visual features that the studied shapes and the related lure share (for example, similar line configurations, contours and colors). Other studies have revealed that false memories sometimes result from relying on semantic or conceptual gist information^{5,6,8,9}, such as when an individual inaccurately remembers studying a word (for example, gold) that did not appear earlier but is semantically related to items that did appear earlier (for example, bronze, silver, brass)³⁵. Neuroimaging data indicate that brain regions involved in semantic or conceptual processing can contribute to both true and false memories that are based on semantic information^{9,24,35}. Such findings could be useful in guiding the crafting of jury instructions that could explain some of the reasons why false memories can occur.

Consider next the well-established finding that people sometimes confuse memory with imagination. Cognitive studies have shown, for example, that simply imagining an event that might have occurred in one's personal past can increase confidence or belief that the event actually occurred⁴⁴, lead individuals to claim that they performed actions that they in fact only imagined⁴⁵ or result in the production of specific and detailed false memories of events that never actually happened⁷. Recent findings that have revealed striking neural overlap between memory and imagination can provide insight into the basis of such false memories. A growing number of neuroimaging studies (for example, ref. 46) have shown that instructing

people to remember actual past events from their personal pasts and imagine hypothetical events that might occur in their personal futures recruits a common core network comprising medial temporal lobes - hippocampus, medial prefrontal and medial parietal regions, including retrosplenial cortex and posterior cingulate - and lateral temporal and lateral parietal regions. Moreover, neuroimaging studies have also shown that cognitive confusions between imagination and memory sometimes reflect increased activity in regions associated with visual imagery during memory encoding or retrieval^{28,29}. These findings provide information concerning the neural basis of imagination and memory that could be helpful in further developing jury instructions that explain how and why the former can be mistaken for the latter.

Misinformation Effects and Memory Reconsolidation

Similar considerations may apply to the well-established misinformation effect, which occurs when misleading suggestions or inaccurate information presented after an event result in distorted memory of the original event (for review, see ref. 11). Neuroimaging studies have added to our understanding of the misinformation effect by revealing that the effect reflects, in part, the degree or strength of the encoding of the original event versus degree of encoding of the subsequent misinformation. For example, in one study³¹ experimenters

scanned participants while they viewed an initial event - a vignette consisting of a sequence of photographs - and also during a subsequent misinformation phase when they viewed the same vignette but with several details altered from the original. The results showed that encoding-related activity in several brain regions during the original and misinformation phases, most notably in the left hippocampus and perirhinal cortex, predicts subsequent true or false memory: greater activity in these regions during the original event sequence is associated with accurate subsequent memory, whereas greater activity in these regions during the misinformation phase is associated with inaccurate subsequent memory (see ref. 30 for similar results).

In an interesting recent twist on the standard misinformation protocol that emphasizes social influences on memory accuracy⁴⁷, participants who receive misinformation from other individuals who witnessed a movie with them sometimes commit memory errors despite warnings that the information that the others present is untrustworthy. Crucially, the effect is associated with increased recruitment of, and connectivity between, hippocampus and amygdala during encoding of the misinformation. In a non-social control experiment in which a computer algorithm presents the misinformation rather than other people, the hippocampal effect is again observed but the amygdala effect is not, suggesting that the latter may reflect specifically social influences on memory. These and the

aforementioned neuroimaging findings complement and extend the results of behavioral studies of the misinformation effect¹¹ and thus are of potential relevance to those attempting to instruct jurors concerning the nature and basis of misinformation effects.

As a final example of how neuroscience based research might be relevant to understanding memory accuracy in legal settings, consider the phenomenon of reconsolidation, where reactivated memories enter a transient state of instability in which they are prone to disruption or change. Evidence for reconsolidation has come mainly from studies of nonhuman animals, where infusion of a protein synthesis inhibitor such as anisomycin into the lateral and basal amygdala during reactivation of an already consolidated auditory fear conditioning memory disrupts subsequent long term retention of the auditory fear memory (for reviews, see refs. 16,17,48). Although experiments have demonstrated reconsolidation for various kinds of memories, they have also established boundary conditions on the phenomenon; for example, some evidence indicates that older memories are less susceptible to reconsolidation than are recent ones⁴⁸. There are also some findings consistent with reconsolidation in humans (for example, refs. 49–51). In one study⁵¹ researchers induced fear conditioning by pairing a picture of a colored square with an electrical shock, such that presentation of the square eventually elicited a physiological fear response. A day later, reactivating the fear memory by

presenting the colored square without shock 10 min before a series of extinction trials that repeatedly present the square without shock - an interval that falls within the time window in which researchers think that reconsolidation processes exert an effect - results in a long-lasting reduction of fear responses to the square, suggesting an effective rewriting of the original memory. By contrast, reactivating the fear memory 6 hours before the extinction procedure - a time interval that falls outside the reconsolidation window - does not result in a long-lasting effect on fear reduction.

Reconsolidation may be a mechanism for updating memories with current information to keep them relevant^{17,48}. In so doing, however, this updating mechanism may also contribute to changes and distortions in memory over time as a consequence of memory reactivation^{9,16,17}. Recent behavioral evidence is consistent with this view, showing that reactivation can increase both true and false memories⁵². A similar updating account may apply to the misinformation effect¹¹, and there has been discussion of possible links between reconsolidation mechanisms and the misinformation effect¹⁷. Thus, although much work remains to be done to document and understand the neural basis of reconsolidation in humans, neuroscience-based research on reconsolidation potentially provides a foundation for understanding how memories can change over time. This phenomenon is clearly relevant to the legal system, especially in situations

where suggestive questioning during the investigative process may introduce misinformation into a witness's memory. Consequently, research on reconsolidation could potentially add to work on misinformation in determining how to properly instruct juries concerning the nature of memory.

Concluding Comments

Will modern neuroscience generally, and brain scans more particularly, enter the courtroom anytime soon? They already have, in several ways. For example, some attorneys have used this type of evidence to mitigate the responsibility of defendants who commit crimes, arguing to the effect that 'a bad brain made him do it'⁵³. In one Florida murder case, where brain images of the defendant were introduced as evidence, jurors voted for a sentence of life without parole rather than the death penalty⁵⁴.

But given the relatively short life of scientific explorations of neuroimaging and complex memories that might be true and might be false, we believe that it is wise to be skeptical now of efforts to introduce neuroimaging data into the courtroom arena as evidence in individual cases where memory accuracy is at issue (see also ref. 55). We have suggested that evidence from neuroscience, including neuroimaging studies, is consistent with and can broaden our understanding of evidence from cognitive psychology in showing that memory is a dynamic, constructive process that is sometimes prone to

error and distortion. Thus, neuroscientific evidence concerning memory, together with evidence from cognitive psychology, could help in educating jurors and other participants in the legal system generally about the nature of memory.

However, we draw a distinction between such a general educational role and the application of neuroimaging data to individual cases. If the prosecution seeks to introduce fMRI evidence from a 'memory truth detection' procedure to substantiate their claims that a witness is accurately remembering, or the defense wants to introduce other fMRI evidence to substantiate claims that a witness has a false memory, the court should apply the standards for admission of scientific evidence that apply in that jurisdiction, usually either the so-called Daubert or Frye standard as well as other evidentiary rules, to determine whether the evidence should reach the jurors. This is not only because of the uncertainties concerning the interpretation and reliability of fMRI evidence concerning true and false memories in individual cases that we discussed earlier, but also because people in general, and jurors in particular, are sometimes impressed with evidence from brain imaging and may be unduly influenced by it^{56,57}. For example, presentation of fMRI images may increase judgments of the scientific credibility of actual and hypothetical findings even when the information that the images provide is largely redundant with text⁵⁶. In another study, mock jurors received trial information that included evidence

that the defendant was lying about having committed a crime. When accompanied by brain scans, the lie detection evidence produces more guilty verdicts than when accompanied by other evidence such as polygraph or thermal facial imaging⁵⁷. Although effects of brain scans on juror decision making are not always observed⁵⁸, it is nonetheless noteworthy that in a recent murder case in which the defense sought to introduce fMRI evidence from a lie detection procedure to substantiate their claims that the defendant was telling the truth, the court did not allow the evidence after hearing expert testimony from both sides⁵⁹.

Looking to the future, there may come a time where neuroscience evidence will be better developed and will more often see its day in court. When that happens, the legal system may want to take a lesson from *New Jersey v. Henderson* and put in place a bold new solution. If it mirrors *Henderson*, then any showing that the neuroscience evidence might be problematic could lead to a hearing and, if admitted, would be accompanied by “appropriate, tailored jury instructions” that contain critical information about, for example, neuroimaging evidence and how jurors ought to think about it. In a case where the neuroimaging evidence pertains to distinguishing between true and false memories, we would hope that concerns such as those we raised earlier would be brought to the attention of the jurors. Finding ways to educate jurors before they make decisions that affect someone's liberty,

and more generally doing all that we can do to increase the chances of a just verdict, is an effort that deserves our sustained attention.

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Education



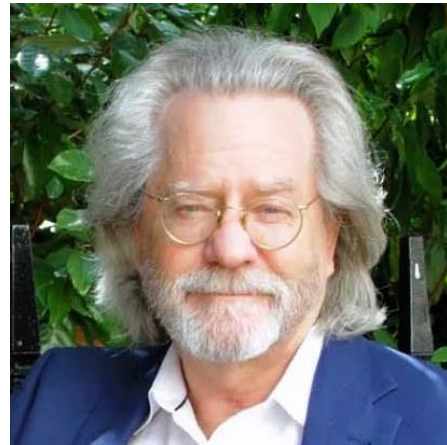
About the Author

How much does religion, where taking something on faith means accepting authority and not asking questions, impact a school's ability to teach free thinking? Does religion tend to shut youthful minds from accepting scientific consensus as real, and wanting to go beyond knowing things to knowing *how* we know them?

Professor A. C. Grayling explores these topics in this next essay on how to shape the right kind of education.

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The Right Kind of Education

AC Grayling

There is no question in the mind of any reflective person but that the future safety of humankind, and the planet it occupies, depends upon education. So does the welfare and well-being of individual members of humankind, each in his or her own life.

But obviously it depends on the 'right kind' of education. What is the right kind of education? From the different experiments in educational methods and subject-matter of the two and a half millennia since classical antiquity, one can infer an answer. Putting that answer into practice has proved to be difficult, because of two major barriers, one cultural and the other economic: but where it has been applied it has promised and sometimes achieved success.

Before outlining what education should be, and explaining the barriers that lie in the way of its proper realisation, it is useful to note the scale of the problem that faces the world in terms of educational deficit.

According to UNESCO's Institute for Statistics, nearly one in five of the world population is illiterate, and two thirds of them are women. More than 120 million of the world's youth are illiterate, with girls again constituting two thirds of the number. At the last count, some two years ago, there were 65 million children not in school at all. Literacy rates are indeed rising, fastest

for youths under the age of 24 and fastest still among girls and young women in that age group; but the daunting scale of the literacy problem remains. In Arab states the male literacy rate is 85%, the female rate 65%. In south and west Asia the male rate is 74%, the female rate 52%. In Sub-Saharan Africa the male rate is 68% and the female rate 50%.

Note the figures for female illiteracy: half the girls and women in these regions are illiterate. The impact on their lives and the lives of their children has been well reported by the UN and other agencies, who note that if girls and women have at least the elementary capacity to read, write, add and subtract, their lives are transformed; they have fewer and healthier children, and they have some control over their own affairs instead of being the property of fathers and husbands. But think too of their access to newspapers and books, their ability to read to their children, the enhancement therefore of their own and their childrens' lives.

It is of the first importance to note that measures of literacy are not measures of educational attainment or even provision. Literacy is a necessary condition for education, but it is not a necessary condition for many kinds of training in practical and economically productive skills. Neither is it a precondition for wisdom, which no doubt many illiterate people possess in greater abundance than those stupefied by an overload of nothing but book-learning and theory. It matters to register these points because some of

the fundamentals of flourishing lives cannot be learned in the classroom or library alone, if at all.

That said, the chances of individual and social flourishing are hugely enhanced by education which results in reflective, rational, well-informed, open-minded and socially alert people capable of understanding points of view not their own, who know something of how nature works, of geography and history, of human diversity, of society, culture and politics, of how to get information when they need it, of how to evaluate and apply that information, and generally who are able to reason and question to good effect. These desiderata are not the automatic outcome of literacy by itself; they are the outcome of what literacy makes possible, namely, education.

In what I say about the best kind of education below, one significant point has to be borne in mind: that education requires resources. In developing countries where the battle for education is hardest fought, the question of resources is sometimes a dismayingly elementary one. Absence of the following are among the major barriers to education there: a privacy-ensuring toilet at school for the simplest hygiene needs of pubescent girls, the availability of a light source at home in the evening for homework and study, an adequate diet for concentration, a reasonable distance between school and home for relative ease of access between them, books, paper and pencils, trained teachers, and internet access.

In developed countries almost none of these are a problem, apart from the lack of adequate diet for children in the poorest families. Here instead one of the two major barriers is weight of numbers. The expense of a publicly funded universal education system requires mass-production techniques: same-age cohorts of children are therefore taught in large classes for a nation-wide examination system taken at fixed age stages, the same curriculum taught in similar ways and assessed by a single set of standards across the board. Merely mentioning these facts immediately demonstrates the problem. It is difficult to educate to the fullest extent and to the highest ideals in a mass system. The expense of doing it in ways that respect how different individuals learn, at what speeds and in what ways, and what constitutes a genuine assessment of their attainment and capacities as a result, means that such ideals can be approached only in schools more than sufficiently resourced to provide an individually-tailored education. In practice this has almost always meant private schools which charge fees reflecting the expense of such an education.

The barrier that all education systems face, whether in poor or rich economies, and whether there is universal education or education only for those who can get access to it, is cultural. And here one must bite the bullet and acknowledge that the chief part of the cultural barrier to education is religion. The effect of religious traditions on education is felt in two principal ways.

One is the disadvantage it confers on girls and women in many societies by excluding them from education or limiting their access to it. Religious traditions typically embody views about the role and function of women, and their status in comparison to males, which influences the way they are treated in education, if they are given access to it at all. The result, again typically, is to compromise the educational opportunity for girls, either because the perceived lower relevance of education to women causes them to be taken out of schooling early, or because they are denied it altogether, or because they are taught certain subjects (cooking, sewing) in preference to others (mathematics, chemistry) on the grounds of the supposed greater utility of domestic subjects to their future roles as wives and mothers.

This channeling of girls into educational pathways determined by social expectation was still a feature of education in Britain when I was at school; in traditional societies it remains the norm. But problems of a cognate kind remain even in the advanced economies of the world; here the battle is to defend girls against sometimes unconscious sexist biases against their studying certain subjects, especially the sciences, or unconscious biases in the treatment they receive by teachers in the classroom, for example in privileging boys over girls in taking questions or in the length and detail of answers to questions.

The other principal way that the effect of religious traditions on education is felt is that religious dogma is by its nature bound to colour and at its worst to distort, falsify or conceal subject-matters which an education should contain. The classic view of an evangelical Christian or a devout Muslim is that religion contains the final truth of things, the documents of the religion are a final source of epistemic authority, and whenever there is a competition between religious truths and other ways of seeing or understanding things, the former trumps the latter. Hostility to the teaching of biological evolution in some bible-belt US schools and the madrassas of Muslim-majority countries is a prime example of the deleterious effect of dogma on education.

There is a more general and insidious effect of the epistemic authority accorded to religious teaching. Religious doctrine is to be believed, not questioned or challenged. Faith – holding certain beliefs to be true in the face of all and any countervailing evidence – is regarded as a high religious virtue. In Christianity for much of its history, and in Islam still today, failure to accept and act on this view is a serious crime. In the former religion it was, and in the latter it still is, a crime punishable by death. In the presence of such coercive attitudes regarding the primacy of religious truth over all over forms of knowledge and enquiry, the cultivation of open, questioning, critical minds which require responsible persuasion and good evidence before they accept a

proposition or theory, is greatly more difficult.

Indeed it is a puzzle how reflection on the educational system of (say) England can tolerate the paradox that the school day is by law supposed to begin with an 'act of worship' addressed to a subject-matter requiring 'faith' for the acceptance of its tenets, followed by experiments in the chemistry laboratory, discussions of how to test historical evidence, and the application of rigorous reasoning in working a mathematical proof. The inconsistency is striking.

And not just striking, but inimical to good education. If the utterances in the 'act of worship' and their putative meaning were subjected to the same scrutiny as in the chemistry lab or the history discussion group, the educational purpose – one chief part of which is to encourage clear independent thought – would be served. I am told that in many 'Religious Education' classes this indeed happens. It is easily doubted that it happens in every madrassa in a Muslim-majority country.

Even the concept of 'religious education' represents a problem, for religion is just one thread in a richer tapestry of the history of ideas in human civilisations, which in addition to religion include mythologies, philosophies, and the rise of the natural and social sciences. Fileting out one thread in this development and focusing upon it gives it an importance – and a survivability – which it does not deserve. Put into the context of the wider study of how humanity's efforts

to understand itself and its world have evolved, and the nature of religion's claims would be much more appropriately evaluated.

Religion is not the only cultural barrier to education properly worth the name. In a publicly funded mass education system, the political desire too often is to secure a return on investment for that funding. In practice this means ensuring that the school system produces people who can contribute to the economic life of the country. Literacy and numeracy are stressed because participation in economic activity requires both as minimums, and great encouragement is given to STEM subjects because the national economy requires technically trained and competent workers.

But notice that the overriding purpose of promoting literacy, numeracy and STEM subjects is their hoped-for contribution to GDP and therefore the return thus represented on education expenditure. The idea of flourishing individuals, good neighbours, thoughtful voters, successful parents, sensitive travellers, readers, life-long learners, people whose experience of life encompasses far more just the question of how they earn a living, is the idea of educated people – *educated*, not merely equipped to serve in an economic role.

Indeed, there is a tension between educating people and equipping them to take a place in the ranks of the employed. Educated people might be critical, might not accept that an individual human being is, from the viewpoint of the economy, merely a

unit in a profit-evaluated process. Educated people might be disruptive. A trained and docile work-force, if considerations of GDP are all that matter, is a more useful thing than a bolshie well-read questioning set of individuals who do not agree with the imperatives of the 'bottom line' in business. Yet in the ideal this latter is what education should promote.

Implicit in much of what has already been said in the foregoing is the outline of an approach to education genuinely worth the name. Already registered there are these themes: a distinction between training and education; the desirability of educating the individual as an individual and not as a member of an age-cohort passing through a set series of age-specific stages; a focus on the development of critical and evaluatory abilities; the encouragement of individual capacity to flourish in all aspects of life, and not just in employment.

To this, and crucially, should be added the high desirability of two things: an intelligent appreciation of the great conversation that humankind has had with itself, and continues to have with itself, about everything that matters to it, and not just *knowledge* but *understanding* of what is at stake in that conversation – for understanding is the step beyond knowledge, and is the final and highest target of the educational enterprise.

I take each of these points in more detail.

The distinction between training and education might seem to be an

obvious one at first. Athletes are trained, apprenticeships consist in a training in a set of skills specific to a trade (plumbing, carpentry, electrics), whereas education connotes more reflective insight into the past, the present, the nature of physical reality, the human condition, and the processes of reflection, enquiry and discovery themselves. This is true; but the point is that the educational process requires a good deal of training to get it started. Training in the basics of literacy and numeracy are the obvious starting point. Rote learning as a method in the past – of multiplication tables, orthography, historical dates, capital cities – was rejected in favour of techniques of discovery rather than imposed knowledge. Theory relating to how pupils could own the skills and insight they acquire emphasizes their responsibility in that acquisition process, and opposes what can be the disempowering activity of memorization sometimes without understanding.

The swing from one to the other is a classic case of jumping too far, throwing the baby out with the bath water, missing the point: choose your cliché. Multiplication tables and spellings are perfect examples of where rote learning is of the highest value. The same might be said for dates and capital cities. Now of course the process of schooling must aim at helping pupils to become reflective about learning itself; to think about how enquiry works, and what underlies the corpus of information regarded as basic in any of the pursuits – from

physics to history –they are introduced to at school. But this is for the more advanced stages of the process, once a basic equipment of skills and a framework of knowledge are in place on which reflection can operate. At the elementary level, equipping pupils with the basic literacy and numeracy skills which allow them to take matters further in due course is as much a matter of training as of encouraging them to master the skills themselves.

This first point, then, is that schooling has to be premised on a franker view about how the elements of literacy and numeracy are acquired. Multiplication and spelling chants are a classic example. They are never forgotten; they become automatic; and once acquired they free up capacity for more interesting and productive endeavours. They therefore have a place at the elementary level.

As education generalizes across the sciences, literature, history and geography, each requires a framework. The good intentions behind (say) teaching history by asking fifteen year olds to compare census returns for the same street in the same city ten years apart to determine the socio-economic and demographic changes perceivable in the data, are palpable; but without a more general framework and context, neither the purpose nor the significance of this activity is likely to manifest itself to the pupils unaided. This suggests that education has to be genuinely cumulative.

But this prompts concerns. Anxiety over teaching (say) the history of Britain from Roman times to the

present is premised on the fact that any one historical account is by its nature an interpretation, perhaps tendentious; and anyway potentially open to manipulation according to cultural and even political points of view, for example in aiming to give children a sense of (say) national pride or a Whiggish view of the growth and triumph of socially local values. (This was the stated aim for a history curriculum proposed by a recent Secretary of State for Education in the United Kingdom.)

Because this would be no different from religious indoctrination in deliberately skewing the understanding of a given subject-matter, educational theory has shied away from a narrative framework in history to a more critical approach to historical enquiry itself. Here we see the opposing tensions of providing a framework on which more mature reflection can later operate, and not selling a partisan view of a subject matter from the outset. For my part I do not see the tension as irreducible. A framework can be presented with caveats, and can be revisited critically at a stage where pupils are more apt for the task, and with grist to their mill for doing so.

The point is that without a framework of skills and overviews, ranging from literacy and numeracy to the fundamentals of science, history and geography, pupils are not well placed to develop the intellectual skills that come from revisiting these subject-matters to question the methods used in them, the assumptions underlying them, the partisan interests they might

serve, and the alternative viewpoints and different interpretations and applications that are possible. Of course with physics, chemistry and biology the case is different: here at school level the aim is to provide pupils with a grasp of foundations so that if they choose to further their study and eventually to participate in the enterprise of advancing scientific knowledge, they will have the vocabulary, methods and fundamental concepts to hand. This does not mean that moral and political questions about the applications of science (stem cell research, nuclear weapons, and the like) should be omitted from the reflective enterprise that the higher reaches of education consist in; very far from it. Given the immense importance of science and its applications to our world, just such reflection and debate is an essential.

Much of this might command widespread agreement. What will be more contentious is the next claim. This is that the mass-production model of education involving step-wise cohorts of children and young people between the ages of five and twenty-one is in itself an obstacle to education. In the ideal – and it is an expensive ideal, which is why it is considered impracticable – each individual child and young person would be educated according to his or her abilities. Some learn faster than others, some are perfectly capable of mastering a given subject-matter if they are led to it by methods other than standard ones; some forms of assessment more accurately reflect attainment of individuals than others.

For example: one generalization that tends to survive challenge is that girls do better with continuous assessment than boys, who do better with year-end or course-end examinations, at which girls are less good. The solution is to assess both girls and boys by both methods, and to award the best marks attained. That is fairer and more sensitive to gender differences and maturation rates than to examine together girls and boys of the same age (but at greatly different stages of development personally and biologically), and by the same methods.

In his autobiographical account of his own education, which was a notable failure, Winston Churchill offered the view that children should be trained in the basic skills of literacy and numeracy to about the age of nine, and should then be put to work in the fields, because – he claimed – those who really wished to learn would soon demand to do so, and would do it far more quickly and effectively than those subjected to a course of study which they had not chosen and of which, at their current level of ignorance and immaturity, they could not see the point. This rather drastic view – apart from anything else, agricultural labour seems an improbable option – nevertheless has a certain resonance: which is that chosen study, desired study, is far more effective than imposed study.

What this suggests is not just that education should start from the assumption that individuals are different and need to be helped to

achieve their own individual route to knowledge and understanding, but that the military-style organization of the young into age-cohorts is wasteful and expensive of human talent. Education should be available to people when they are ready for it, at any age or stage. It is already becoming better understood that the regimentation of education into office-hour formats is a mistake for the adolescent hormonal profile: school should start much later in the day and finish later.

I had the privilege of teaching for many years at one of the UK's great institutions, Birkbeck College in the University of London, where mature students study in the evenings, choosing to attempt higher education having not had the opportunity beforehand to venture it, or in many cases returning to it in order to study something of greater interest to themselves than their first studies offered. The effectiveness of these students and the added value to them of the process was remarkable, bearing out the point sometimes dramatized in the saying 'education is wasted on the young' – an untruth which alas captures one small insight, which is that unless the young are inspired, motivated and captivated by excellent teaching, they are in danger of losing the advantages that education at all its levels brings.

This final point is perhaps the most crucial. It was once the case that teaching was a high status profession. In the Victorian provincial community the doctor, the vicar and the schoolmaster were the local

aristocracy – not always to the good of the community, it has to be said; but none of those professions (the first and third were genuinely regarded as vocations – the second was too often merely a sinecure for younger sons) was then highly paid – not even the country general practitioner would expect to grow rich on the sovereigns he earned from applying the few resources that medicine then possessed beyond a soothing bedside manner. Medicine is now a far more lucrative calling, but teaching has not advanced in that respect – but rather has lost its traditional high status, chiefly because in our more banal age the status of occupations is calibrated according to what income attaches to them rather than by their value to society.

But teaching remains a vocation; it is a tough and demanding job; and it is one of the most important jobs in the world. A good teacher has an incalculably positive impact on scores of human lives. A bad teacher – and one shudders to think of the harm such do – can make a pupil averse to a subject, can lose the world an asset thereby, can blight confidence, can turn a human being aside from a more flourishing life entirely. How does one ensure therefore that education is stocked with good teachers? By honouring them, rewarding them properly, allowing them time to prepare, mark, think about their pupils, and find ways to engage with each one individually; and by giving them a much larger degree of freedom to teach as they are inspired to teach, rather than demanding of them

bureaucratic conformity to national curriculum requirements and limited timetables.

There are of course practical problems in freeing both the timetable and curriculum requirements to allow for greater liberty in teaching, for individual treatment of pupils, and for a sensitive variety of assessment practices tailored to them as individuals. The chief is the obvious one of expense both of money and time – not that these are independent variables.

A society that sees its human resources as its greatest asset, and a sympathetic, open, constantly innovating education system as the means to enhancing the value of that asset both to itself as a whole and in the separate interests of each of its members, is a society more likely to make the investment required. And it is a considerable investment: it demands real willingness from tax-payers to support a properly-funded system whose outputs are long-term, not immediate. Most advanced economies are back-pedaling from the ideal of universal free education at all levels, by transferring the burden for tertiary education progressively from tax-payers to the direct beneficiaries. At the primary and secondary levels state provision remains (at least to age sixteen in most places), but controlling the expense – the imperative for all finance ministers everywhere – has an immediate impact on teachers, class sizes, and the degrees of freedom that schools can operate in seeking to do the best by their pupils.

In elite education – top private schools, top universities – the differentiating factor is the quality of teaching staff, and the availability of time for individual attention to students. Such institutions remain bound by the artificialities of nationally-imposed curriculum requirements and public examinations, and by the expected ages at which pupils will pass through one stage or another and go to university or leave school. But many private schools achieve greater time flexibility by being boarding institutions. The ancillary activities that provide a framework for academic study, and the deeper knowledge that teaching staff have of individuals and how they can be helped and encouraged, are major factors in enhancing the educational experience.

I am not suggesting that schooling should be residential; that is neither practicable nor in many cases desirable. Rather, the lesson here is that the school day has to have more flexibility in it for the kinds of activities which help both teachers and pupils find the right path for individual pupils, and for different methods and techniques to be applied accordingly. Project-based learning, pupil to pupil mentoring, one-to-one tuition, the mutual education that comes through discussion in seminars, greater freedom of choice of subjects, and liberation from teaching to set public examination constraints (something that wastes an enormous amount of time at school and narrows the educational provision drastically): these are some of the things that become more possible with greater

freedom in individual schools, and genuinely adequate resources.

Education needs to be liberated. That is the chief desideratum. And for the world at large – here thinking of the millions who have no chance of an education, or very little such chance,

the majority of them girls, which is a great human injustice – liberated and liberal education needs to be championed as a prime social good and human right, and as a necessity for the future of the world and its people.

Climate Change



About the Author

Climate change is a danger, but governments around the world have so many urgent, visceral problems that it's hard to prioritize something whose main benefit is in the far future. Also, because blame for carbon emission is spread across the world, it's harder for individual politicians to feel responsible for taking the first step. So scientists face a higher standard of argument. They must go further to quantify and demonstrate the hazards of the future.

Professor Silvian Ionescu analyzes the Paris climate talks and gives his recommendations.

[Silvian Ionescu](#) served as an intelligence officer at the beginning of his career. Recently he was awarded with the highest official title of the Romanian revolution from 1989, that of "Significant fighter for the victory of the Romanian revolution against communism." (Official Monitor of Romania, decision 99/26.11.2015)

He is an economist who holds two PhD titles, in engineering and in management of waste, and invented a new plastic material, [Polibest](#), that can neutralize asbestos in its structure.

He is a teacher in environmental protection for various Romanian universities. He is also a writer and an author of numerous articles and documents on this matter.



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PhD Silvian Ionescu has served in the Romanian Government, as a deputy minister for environment in several cabinets, for more than 6 years. In this capacity, he led various Romanian panels, notably those in the 2007 Conference of the Parties in Paris, organized by President Jacques Chirac and the panel in 2011 conference in Copenhagen, both on the topic of climate change. He therefore knows intimately the mechanisms of bilateral and multilateral negotiations on the topic of environmental protection.

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Climate Change

by Prof. Silvian Ionescu, PhD

A Short Review of the Phenomenon

I am mainly trying to explain the climate change phenomenon, its amplitude, the importance it has been granted since 1990 and, particularly, the validity of the reasons serving as grounds for the political actions taken in the name of the climate change, both to myself and my readers.

It is obvious that, at the North Pole, the ice cap has been quickly thinning during the past quarter of century. Alaska and Greenland represent obvious such signs. However, the statement according to which the winters are growing harsher and harsher in Antarctica and, therefore, the ice cap at the South Pole is thickening, compensating for the phenomenon occurring in the North Pole, is just as justified.

Just as real is the fact that, in the past two centuries, humanity has exponentially increased the carbon emissions at a dizzying pace. The so-called “fossil” fuels have been heavily used: at first by the industrial society of America and Europe, until the middle of the last century, and now by China, India and other countries with high economic growth rates. The carbon dioxide production, resulted from the thermal power stations, exhaust

emissions and other current human activities, is ever increasing at an extraordinary speed.

The reasons above represent sufficient reasons for the world leaders to have major concerns and act towards improving our living conditions.

Thus, the first Conference of the Parties took place in 1992, in Rio, featuring major commitments on the part of certain attendants for reducing or compensating the carbon dioxide emissions. Many others followed, in Montreal, Tokyo, Paris, Copenhagen, representing benchmarks in the evolution of the world leaders' political concerns regarding the fight against the climate change and the reduction of carbon emissions. So far 20 Conferences of the Parties have taken place and, these days, the 21st Conference of the Parties is taking place in Paris. It represents a major mobilization of state and government leaders that have all stated, prior to this event, that we cannot go on with an economic development whose effect is the emission of greenhouse gases at the current level.

At the same, the scientific world is attempting to provide grounds for the political concerns, to find the inextricable scientific correlations between the industrial production and CC, to provide the reasons required for implementing development policies different from the ones that were in force at the end of the previous century. International boards and workgroups are appointed and

scientific demonstrations are attempted in order to substantiate the new policies for the environment protection against pollution. Even the atmosphere pollution paradigm is established as equal to the planetary-scale increase in the carbon dioxide emissions, which, beneath the ozone layer, retain more heat from the sunrays and, therefore, increase the planet's temperature. This leads to major climate changes, the melting of glaciers and the risk of the rise in the sea level with meters or even dozens of meters, which would cause catastrophic changes in many places on Earth. Florida would be one of the areas most exposed to complete flooding, alongside the shores of the Mediterranean, South-East Asia and the total disappearance of certain archipelagos in the Pacific.

However, all these scenarios are only suppositions and cannot be scientifically certified. Some of the reasons for this are that the civilized humankind has only been around for 5-6,000 years and that the statistical climate data have been recorded during the past approximately 150 years, at best. Therefore, the effects of the glacial periods, phenomena that occurred between 10,000 and 30,000 B.C., are only vaguely known and at a general level. This is why serious doubts have arisen in relation to certain major decisions affecting our everyday lives, decisions already taken by the politicians and which come with a cost for all of us. Of course, the explanation is that if we were to avoid making these sacrifices now, later on it would be too

late and we would have already severely affected the subsistence of the generations following our own.

But is this true?

The Most Notable Actions

We generalized the automobile pollution prevention rules by investing enormously in the industry, creating stages and generations of vehicles with carbon dioxide gram weight per driven kilometers, mandatory rules and regulations. However, we are not doing the same with the aviation industry. The air transport developed over the last 50 years with an annual average rhythm of over 10%, as the number of airplanes, flown kilometers and emission gases have increased rampantly. There have been some attempts: the EU even has a European directive for the computation and penalty for air polluters, but it is not applied! The reason and the time during which the air transport domain will remain a privileged one are important question marks. For mobility reasons we look away when it comes to air pollution and so, today, its weight is almost equal to that of automobile pollution.

The situation is not much better even in the case of ship engines. We do not enforce strict regulations because we need the great maritime routes, as fast as ever and ever-growing, with higher and higher capacities.

In the field of energy, the US and the EU have crossed to the drastic drop in the production of energy from fossil

sources, stimulating the energy produced from renewable sources. Unavoidably, this leads to the increase in the costs of kW/hour. Furthermore, in the past 10-15 years, countries such as Germany decided on the famous policy of "Energie wende" (energy change); the change is represented by the total relinquishing of the nuclear energy, not for pollution-related reasons, but for plant security reasons, a policy that Mrs. Merkel enforced following the accident in Japan, at the Fukushima plant. Of course, Germany's current energy policy involves the construction of a much more diversified distribution network and not only on German territory, but across Europe as well, in order to compensate for the highly centralized production in the nuclear power plants that they had disassembled with smaller productions from alternative sources and with ever-increasing imports from France, Poland, Austria, etc. This policy enforced by Germany overlaps the other European efforts for relinquishing the production of fossil fuels.

However, at the same time and in complete opposition, China starts operating a coal-fired thermal power station every week, while India is reaching at similar rhythm; therefore, even if the developed countries undergo such efforts, the overall level of the energy production emissions is increasing. In the energy field, the Chinese reasoning is hard to beat: they claim that the westerners polluted for more than 100 years and have thus reached their current level of

development and they ask for the countries undergoing development to be allowed to reach the same economic level, as afterwards they will also apply control measures for CO₂ emissions.

However, it is just as true that the atmosphere pollution, the one responsible for the climate change, is owed to other factors as well, not just the production of energy.

The desertification and the dust that the desert puts into the atmosphere on areas wider and wider across the globe also represent a cumulative phenomenon. Recently, a red code for atmosphere pollution was temporarily set in Beijing, announcing values exceeding the risk threshold of 625 ppm/m³ of air, by comparison to the normal level of 25 ppm, resulted from the CO₂ emissions and the dust in the atmosphere, which is in fact the effect of the desertification phenomenon.

For several years we all had to bear the consequences of the Mount St. Helena volcano eruption and the tremendous quantities of released ash, CO₂ and gases, which were felt at planetary level through the increase in the atmosphere concentration of particles. And this does not involve only one volcano. There are approximately 100 active volcanos, whose emissions contribute to the atmosphere pollution.

We may also count other polluting factors that harden our lives:

- The famous pesticide in the 50s and 60s, the DDT or HCH still floats in the atmosphere, in quantities exceeding 250 million tons, as the product is not soluble; it is a dry product that gathers in the air, returns to the soil alongside the rain and then rises again; the DDT is also a factor adding to the global warming and it has been around for only about 50-60 years;
- For several decades now, the urban population has exceeded the rural one at planetary level. In the cities the environment temperature is 5-6 degrees higher, due to the central heating and the concentration of various factors that release heat. Although the urban area represents only about 2% of the total planet surface, this factor also has a certain importance in the average temperature increase;
- The uncontrolled deforestations, particularly in the tropical areas, in the Amazon, India, Indonesia, have also led to a decrease in the rainforest and, thus, to a lower absorption of the CO₂ in the atmosphere.
- Agricultural cattle breeding, that through its phases of production creates a massive quantity of CO₂ all over the world.

In view of the above, the governments of the developed countries adopted or are adopting measures for environment protection policies, which represent an important part of their budgets. Such an

example is the “energie wende” in Germany, mentioned above.

However, the implementation plan for the production of energy from renewable sources is extremely expensive. The wind and solar power, implemented in either Europe or America, are great investments, sometimes hard to understand for the taxpayers.

For example, in the past 7 years, my country, Romania, reached an installed power of 2700 kW from wind sources, starting from 3 kW, in a system that is based on green certificates paid by the government for each kWh of power introduced in the grid. Without going into details, the last adjusted calculations confirm the fact that the average investment costs are recovered after approximately 30 years. Except that a wind turbine has a maximum lifespan of 25 years!

The enormous investments performed today, anywhere, in microhydro power plants have no economic justification.

These are but a few of the many examples that support our doubts in assessing the effort/effect ratio.

The major political, populist measures, taken in a hurry in the name of the environment protection, are turning against the taxpayer's pocket as a boomerang. If you were shown the map of investments for the production of solar energy, you would be shocked to find out that most of these investments are performed in areas with a temperate

climate and not at the tropics or Equator, as it should be.

If, as certain national agencies attempt to propose to their governments, the consumed energy were invoiced separate from the amortization of the installed power it produces, we would get a clear picture of the paradoxes we reached. This is something valid for all “clean” energy types, including the nuclear one.

A Hope for the Future

We are definitely missing a lot of data in term of energy, its transformation into matter and vice versa. The quantum physics is the field expected to solve the future thirst for energy of a human kind that keeps growing in numbers. This is the science that will definitely provide us with valid energy alternatives.

However, this does not mean that we must expect wonders from the future of science!

I am not denying the possibility that the human action is a destabilization factor for the planet’s sensitive climate balance. The climate phenomena exist, are real. But are they essential grounds for important investment policies applied by the developed countries?

This brings to mind a quote from Ronald Reagan: “Government’s first duty is to protect the people, not to run their lives.” And I suspect that the will to protect its citizens has led our governments to test all possible solutions for preventing a

climate-related catastrophe. This must have been the reason for which the French president Hollande called for the 21st Conference of the Parties, that was finalized these days in Paris. The entire planet sent its leaders to Paris in order to discuss the issues related to the climate change and take action.

The final decision, signed on 12 December in Paris declares a volunteer limit of all 196 signatory states to act in the future for not damaging through their economic actions more than 2 degrees Celsius as compared to the situation from the beginning of the Industrial Revolution times. This decision, however, is not compulsory for the parties and will sum up the voluntary commitments of the signatory states and record them as such. In addition, there will be no sanctions applied should these not be observed and no control mechanism has been set in place. It is not a very binding statement. If they were strictly observed, by 2050 these commitments would maintain the current tendency in the carbon dioxide emissions. But this is too little.

Prior to the 21st COP in Paris, it was foreseen that a significant increase would take place in the unilateral commitments of the parties, alongside their undertaking at unilateral level and, obviously, a control system for fulfilling the commitments and even sanctions for the violation thereof. A wiser goal of 21st COP was considered to be only 1,5 degrees Celsius increase of the global temperature, so a total renunciation on

fossil fuel would have been necessary from 2030 on.

Now it is certain that the unilateral commitments will not increase, that they will not be imperatively undertaken and that, although it will not be the failure like the meeting in 2011, in Copenhagen, the 21st COP in Paris will not be a success either. The positive declarations of presidents Obama and Hollande are only natural as long as they have been the main voices to summon the Conference. More scientifically based is the declaration of Professor James Hansen after the signing of the final act, when he disclosed his disappointment on the final form, strongly denouncing the document as a “fraud”.

I believe that most of the lack of enthusiasm displayed by most political figures in Paris is owed, on one hand, to their lack of confidence in the arguments that science has made available by the present time and, on the other hand, to the desire to get all the opportunities for an accelerated development in the near future. In other words, most political leaders believe that increasing the GDP of each country is more important for their temporary presence at the top than protecting their citizens from a danger that is not yet well-defined.

Climate change crosses borders, hence they do not depend on the action of a certain state, they are not proved by science and they are not the responsibility of a particular leader.

In other words, in the thoughts of most world leaders, “protect citizens”, as Ronald Reagan said, means a better development, a faster reach of a level of well-being and not the investments involved by the reduction in the CO2 emissions.

THE WORLD FUTURE GUIDE 2016

**A Public Policy Report
from the Secular Policy Institute**

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