

THE PONTIFICAL ACADEMY OF SCIENCES

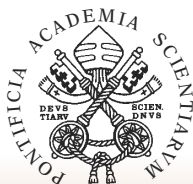
Study Day on

Nuclear Disarmament, Non-Proliferation, and Development

10 February 2010 • Casina Pio IV



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VATICAN CITY 2010

IF YOU WANT TO CULTIVATE PEACE, PROTECT CREATION

Respect for creation is of immense consequence, not least because 'creation is the beginning and the foundation of all God's works', and its preservation has now become essential for the pacific coexistence of mankind. Man's inhumanity to man has given rise to numerous threats to peace and to authentic and integral human development – wars, international and regional conflicts, acts of terrorism, and violations of human rights. Yet no less troubling are the threats arising from the neglect – if not downright misuse – of the earth and the natural goods that God has given us. For this reason, it is imperative that mankind renew and strengthen 'that covenant between human beings and the environment, which should mirror the creative love of God, from whom we come and towards whom we are journeying'.

(Benedict XVI, 'Message for the celebration of the World Day of Peace', 1 January 2010)



The Nuclear Non-Proliferation Treaty (NPT) Review Conference will be held in New York on 3-28 May 2010. Within the context of *increased public awareness of nuclear issues*, with their connected questions in the military and civil fields, and faced with the emergence of new situations such as the increased energy demand, terrorism, the nuclear 'black market', and the redefining of national and regional security doctrines, this conference is a historic opportunity for the international community to reach and promote a solid consensus on disarmament and nuclear non-proliferation. What can the success of the conference assure? Which measures should be adopted during the conference to ensure agreement among States Parties and to simultaneously reinvigorate the three pillars of the NPT: nuclear disarmament, the non-proliferation of nuclear weapons and the use of nuclear technology for peaceful purposes?

This debate is essential for the promotion of an *integral human development*. In this perspective, the international community should adopt farsighted behaviour in favour of peace and security and avoid shortsighted approaches to the problems of national and international security. This is why, as a sign of encouragement as well, the Holy See has ratified all the main disarmament conventions, including, for example, the NPT, on 25 February 1971, and the Comprehensive Nuclear-Test-Ban Treaty (CTBT), on 18 July 2001. Moreover, it should not be forgotten that the Holy See has been a founding member of the IAEA (International Atomic Energy Agency) since 1957, with which it signed the Comprehensive Safeguards Agreement on 26 June 1972 and the Additional Protocol on 24 September 1998.

The Pontifical Academy of Sciences, which issued a Statement on the consequences of the use of nuclear weapons in 1981, has thus decided to organise on 10 February 2010 a closed Study Day on 'Nuclear Disarmament, Non-Proliferation and Development', involving a limited number of experts in the field, to further the analysis of this continuing process.

The meeting will have a morning and an afternoon session, beginning with an introduction by Prof. Nicola Cabibbo, President of the Pontifical Academy of Sciences, followed by a series of keynote papers that will form the basis for a discussion among the participants. These papers will address the subject of the meeting from an interdisciplinary perspective: nuclear non-proliferation and disarmament; economics and development; energy; the environment and climate change; sociology, ethics and politics.

In this sense, the discussion could be enriched by the following strongly interdependent questions:

Nuclear disarmament and non-proliferation

Is owning nuclear weapons or threatening to use them effective and/or legal in assuring national and international *security*? Which alternatives to nuclear disarmament could nuclear-weapons States adopt to meet these security needs? Which long-term strate-

gies should be adopted in the nuclear field and how can the importance of nuclear weapons be reduced in *national/regional military doctrines*? Which factors still motivate the retention of a high alert status and how could forsaking the alert status contribute to nuclear disarmament? What are the prospects for the entering into force of the CTBT and for the reaching of an agreement on a *fissile material ban*? How can nuclear disarmament become more *transparent* and what are the most effective forms of *monitoring* and *verification*? What kind of impact can 'double standard' policies have on the future of nuclear non-proliferation and on the NPT? How can *terrorism* and the nuclear '*black market*' be countered? How should the issue of nuclear fuel be dealt with and what are the prospects for a new framework for the nuclear fuel cycle, as for instance an international control mechanism? Do the international agencies dealing with disarmament, non-proliferation and development meet the needs of the international community? Is it necessary to strengthen their roles? How?

Economics and development

Since the struggle for access to natural resources is one of the causes of various conflicts, *inter alia* in Africa, just as it is a source of permanent risk in other situations, could it give rise to new nuclear powers? What are the prospects for the relationship between human integral development and sustainable development, on the one hand, and nuclear disarmament and non-proliferation, on the other? What are the general *economic and financial* costs/benefits of nuclear disarmament and non-proliferation and what are the political and social costs/benefits? What is the relationship between poverty (and hunger) and weapons of mass destruction and how can this relationship be positively influenced? Article 26 of the United Nations Charter commits States to maintaining 'international peace and security with the least diversion for armaments of the world's human and economic resources': how can this provision be really implemented? How can the nuclear disarmament and non-proliferation process be reconciled with the '*inalienable right* of [all] the Parties [to the Treaty] to develop research, production and use of nuclear energy for peaceful purposes', recognised by art. iv.1 of the NPT? How can we guarantee the exercise of such rights and responsibilities according to international law and in a non-discriminatory way? How can we deal with the problem of the circulation and access to '*dual use*' goods and knowledge, that is, those goods and knowledge that may have a dual civil and military use?

The Environment, energy, climate: 'to cultivate peace, one must protect creation' (Benedict XVI, 'Address to the Members of the Diplomatic Corps', 11 January 2010)

Is the development and use of nuclear technology in the sectors of agriculture, medicine and energy sustainable in the *long term*? How can *international co-*

operation in this field be fostered? Where do nuclear issues stand in the debate on low-carbon emission strategies and the growing *demand for energy*? How will nuclear disarmament impact on *the environment* and on global *climate change*? How can access to nuclear energy and its technology be facilitated while, at the same time, adequately responding to the inherent challenges in the *safety* and *security* of nuclear sites? How can the problem of *radioactive waste* be dealt with responsibly in a safe, secure and environmentally-friendly way? How can the hopes of people around the world be galvanised by the conviction that to cultivate peace we must protect Creation and that our duties towards the environment are linked to our duties towards human ecology and vice versa?

Sociology, ethics and politics: 'opus iustitiae pax'
(Is 32, 17)

How can we forget Servant of God Pope John Paul II's message to the Pontifical Academy of Sciences in 1983 when he stated that 'Peace is born not only from the elimination of theatres of war. Even if all the latter were eliminated others would inevitably appear, if injustice and oppression continue to govern the world'? How can *multilateralism* be encouraged and how can a *climate of confidence* be recreated in this field? Since in the globalised world, regional confrontations and conflicts can give rise to new nuclear powers, how do nu-

clear weapons influence the *regionalisation of conflicts*? Can the cooperation model used by States, international organisations and civil society, for example in the field of anti-personnel land mines and cluster munitions, be applied to the nuclear field? What is the role of *civil society* in achieving a world without nuclear weapons and how can *public opinion* and the media contribute effectively to this process? How can the doctrine of *nuclear deterrence* be justified in relation to ethical principles, to the International Humanitarian Law, to the Declaration of Human Rights, and to the supreme value of the human person? Is this doctrine conceivable in the current international scenario, where conflicts have extended to *State and non-State actors*? How can we counteract threats to national and international security posed by the likelihood that non-State actors – who, moreover, are conceptually outside the bounds of a deterrent strategy – will gain possession of nuclear weaponry? How can we assess and promote the renunciation by certain States of their nuclear capability in exchange for development aid? How can the *criteria of the just war* be understood and applied in the current era? Which ethical and humanitarian principles, and which practical aspects, can encourage the achievement of a *world without nuclear weapons*? If the path towards a world free of nuclear weapons is gradual, which steps need to be taken in the right direction and when?

WEDNESDAY, 10 FEBRUARY 2010

8:30	<i>Introduction</i> N. Cabibbo
Session 1 • NUCLEAR DISARMAMENT AND NON-PROLIFERATION (Chair: G.F. Powers)	
8:45	<i>The Nuclear Powers and Disarmament: Prospects and Possibilities</i> W.F. Burns
9:10	<i>Discussion</i>
9:45	<i>The United Nations and the Future of Nuclear Disarmament</i> S. de Queiroz Duarte
10:10	<i>Discussion</i>
10:45	Coffee break
11:00	<i>Views on Non-Proliferation and Verification</i> O. Heinonen
11:25	<i>Discussion</i>
Session 2 • ECONOMICS AND DEVELOPMENT (Chair: Card. P. Turkson)	
12:00	<i>Disarmament and Economic Development in the Light of the Current Crisis</i> E. Gotti Tedeschi
12:25	<i>Discussion</i>
13:00	<i>Nuclear Weapons, International Prestige and Economic Development: What Cost for the Emerging Countries?</i> L.E. Derbez Bautista
13:25	<i>Discussion</i>
14:00	Lunch at the Casina Pio IV
Session 3 • THE ENVIRONMENT, ENERGY, CLIMATE (Chair: F. Calogero)	
15:30	<i>New Energies for the Future of Mankind</i> C. Rubbia
15:55	<i>Discussion</i>
16:30	<i>Nuclear Energy and Climate Change</i> M.J. Molina
16:55	<i>Discussion</i>
17:30	Coffee break
Session 4 • SOCIOLOGY, ETHICS AND POLITICS (Chair: Card. G. Cottier)	
17:45	<i>Interests, Values, and Recognition as Different Dimensions in the Efforts on Nuclear Disarmament and Non Proliferation</i> V. Hösle
18:10	<i>Discussion</i>
18:45	<i>Towards a World Free of Nuclear Weapons: More than a Noble Utopia</i> M. Grondona
19:10	<i>Discussion</i>
19:45	Dinner at the Casina Pio IV



**The Nuclear Powers and Disarmament:
Prospects and Possibilities**

WILLIAM F. BURNS

The United States and the Russian Federation, current possessors of most of the nuclear weapons now existing, owe a special responsibility for their continued safety and security. They also owe the rest of the world either justification for their continued maintenance or a plan for their reduction and eventual prohibition. Both countries have cooperated in the past, even at the height of international tensions, to reduce such weapons, even eliminating an entire class, and to set up monitoring and verification regimes to build confidence and ensure compliance. Neither side can rely on Cold War arguments. The current START negotiations, the upcoming NPT review, reexamination by both sides of the rationale for nuclear strategies, the possibility of continuing proliferation, and the danger of terrorist activity involving nuclear explosive devices suggest that it is the time to press forward toward major reductions. Both sides must work together to set the example for other nuclear powers to make use less likely, reduce the possibility of accidental use, and increase emphasis on openness and transparency. Much is left to do and progress will require the support of other states and international institutions to achieve success.

**Nuclear Weapons, International Prestige
and Economic Development:
What Cost for the Emerging Countries?**

LUIS ERNESTO DERBEZ BAUTISTA

The document will explore the false dilemma between developing a nuclear arsenal and acquiring international preeminence that many emerging countries are pondering at this time. Brazil, India, Russia, China are all examples of this temptation. Other countries are following the course such as Iran, Israel, etc. To evaluate the development of nuclear power and all its possibilities will be the center of the paper.

Views on Non-Proliferation and Verification

OLLI HEINONEN

Since its establishment in 1957 the International Atomic Energy Agency (IAEA) has worked to bring the benefits of nuclear technology to humankind, while at the same time minimizing its risks. When we look at the projections for the coming decades we see considerable growth in the use of nuclear energy and nuclear technology. While this will help to bring greater prosperity to different parts of the world, it will also carry proliferation risks. Without the appropriate control measures, States could misuse nuclear material and technology to build nuclear weapons. This, in turn, could lead to a major failure in the non-proliferation control regime – the security, social and economic consequences of which would be enormous. This paper sets out how the IAEA is going to rise to the challenge and meet the international community's expectations in this changing environment.

Nuclear Energy and Climate Change

MARIO MOLINA

Climate change is the most serious environmental challenge facing society in the 21st century. It is clear that the average temperature at the Earth's surface is increasing; this decade has been the warmest one on record in recent history. The evidence comes from direct measurements of rising surface air temperatures and subsurface ocean temperatures, from phenomena such as retreating glaciers, and from numerous changes to a variety of physical and biological systems. Furthermore, there is little doubt that the composition of the atmosphere has changed as a consequence of the emission of greenhouse gases resulting from human activities: the concentration of carbon dioxide, produced by burning fossil fuels and by deforestation, has increased more than 30% since pre-industrial times. The scientific consensus is that most of the changes in the Earth's climate in recent decades are with high probability a consequence of these changes in composition, as documented in the 2007 report of the Intergovernmental Panel on Climate Change. There is also a consensus among experts that in order to avoid dangerous anthropogenic interference with the climate system the average surface temperature increase should be limited to less than 2°C above preindustrial temperatures. To achieve this goal requires significant reductions in the emissions of greenhouse gases, and consequently very large changes in the manner in which society produces and consumes energy. There is no 'silver bullet', but there is agreement among energy experts that these changes can be accomplished at a moderate cost – of the order of one or two percent of global GDP – provided that a number of actions are simultaneously implemented in the next few decades, such as increases in energy efficiency in the transportation, building and industrial sectors, use of renewable energy sources, and carbon capture and storage in coal-fired power plants. Yet another important action is the large-scale construction and use of nuclear power plants. Problems such as safety and disposal of radioactive wastes can most likely be successfully managed; on the other hand, the potential for nuclear proliferation resulting from this action remains a daunting problem, yet to be solved. Further developments in nuclear power plant technologies designed to address this issue are urgently needed.

**The United Nations and
the Future of Nuclear Disarmament**

SERGIO DE QUEIROZ DUARTE

Disarmament and the 'regulation of armaments' are goals found in the UN Charter, and the UN organization has been working to achieve the elimination of all nuclear weapons – and other weapons of mass destruction – ever since the adoption of the General Assembly's first resolution in January 1946. This has been a goal of all Secretaries-General and an objective universally supported by all Member States, as registered both in official statements and in resolutions adopted

by the General Assembly. Yet great challenges remain in achieving the mutually reinforcing goals of achieving global nuclear disarmament and preventing the global proliferation of such weapons. A gap remains between agreed ends and concrete deeds. While disarmament requires actions by our Member States, the United Nations has both the mandate and the commitment to assist this process of achieving global nuclear disarmament. This presentation will describe what the United Nations Secretariat and the UN disarmament machinery are doing to advance this goal. It will discuss the Secretary-General's own five-point proposal for nuclear disarmament and his Action Plan for nuclear disarmament and non-proliferation. And it will look ahead to the Review Conference next May of the States parties to the Treaty on the Non-Proliferation of Nuclear Weapons and underscore the importance of a positive outcome.

New Energies for the Future of Mankind

CARLO RUBBIA

About half a century ago, the idea of 'Atoms for peace' was greeted with the greatest enthusiasm, as a way of providing a new form of cheap, abundantly available and inexhaustible energy for all people on Earth. Today the position on Nuclear Energy has been profoundly modified: nuclear power is definitely no longer viewed as it was 50 years ago. It has become clear that all existing non-proliferation agreements, the IAEA guarantees, and the whole idea of 'atoms for peace' have not proven to be sufficiently strong against the proliferation processes both for political and technological reasons. The political reason is that uninterrupted proliferation occurs as a result of the fact that five 'nuclear powers' do not want to commit to the obligations that they took upon themselves, in terms of ultimately completely destroying their nuclear arsenals. In this situation, more and more countries may decide that nuclear weapons will enhance their national security. The technological reason is the inextricable link between nuclear weapons and atomic energy – because they both generate from the same common nuclear physics principles, the same scientific and technological

research, the same chemical industry, largely the same financing and the same organizations. As it is well known, nuclear weapons can be made either from Plutonium (Nagasaki) or from Uranium (Hiroshima). The easiest nuclear weapon design is to construct a gun-type nuclear charge with Highly Enriched Uranium (HEU), that does not need to be fully tested first. Of course, even a gun-type weapon is a complicated device, but an organization that includes engineers, metal-makers, and technicians could easily produce one. HEU is available not only to the military and governmental, but also to a number of civilian organizations. There are around 2 million kg of HEU in the world and it takes only a few tens of kg to produce one gun-type nuclear weapon. For instance, the bomb dropped on Hiroshima contained U enriched up to 80% and weighed 60 kg. There is no doubt that the world's energy will continue to grow in the future, since the population is steadily growing and billions of people in the Developing Countries strive for a better life and to alleviate poverty, a condition that feeds inevitably terrorist threats. Two main natural resources have technically the capability of ensuring the long term energetic supply of mankind: (1) A new, different form of Nuclear Energy, to be used freely by all countries, severing the link between energy and the potentials of military applications. Potential candidates are Thorium (fission) and Lithium (fusion) both adequate for many thousand of years at several times the present energy consumption. (2) Solar energy. The world's primary energetic consumption is only 1/10000 of the one available on the surface of earth of sunny countries. Solar energy may be either used directly as heat or PV or indirectly through hydro, wind, biomass and so on. If adequately exploited, solar energy may provide enough energy for future generations. It is unlikely that any stable, long term development of mankind will be possible without both of them. Only with profound and urgent changes in the technologies energy, environment and climate may be ultimately reconciled with the worldwide risks of potential threats, in order to ensure peace and protect our planet. The prospects of a different nuclear energy and the ones of energy from the sun will be briefly discussed.

Memorandum

A bus will leave the Residenza Paolo VI at 8:15 for the Academy, fifteen minutes before the beginning of the session. A bus will depart from the Academy after dinner at the end of the afternoon session to take participants back to the Residenza Paolo VI. Both lunch and dinner for the participants will be served at the Academy.

Note

If you have any expenses to refund, please hand your **refund form** to the Secretariat **during the morning break** so that you can be refunded immediately.

Antoine Abi Ghanem (born in 1954 in Wata El Jawz, Lebanon) was ordained a priest in 1982 and graduated in Theology from Saint-Esprit Kaslik University (USEK). He then obtained a Diploma of Advanced Studies in Philosophy from the Sorbonne University Paris IV. He went on to study Political Philosophy at the Sorbonne and at Tübingen University. From 1980 to 1983 he managed the USEK Press Office and from 1988 to 1992 he was the Director of Studies of USEK's Pontifical Faculty of Theology, also teaching, in 1989-90 and 1993-97 respectively, Political Philosophy and Human Rights at the same university. From 1992-98 he was the Secretary General of the Maronite Lebanese Order and from 2000-02 he collaborated with the Permanent Missions of the Holy See to the UN and other international organisations. Since 2002 he has been the Attaché to the Permanent Mission of the Holy See to the UN and other international organisations in Geneva and deals with the issues of Security and Disarmament.

Ettore Balestrero (born 21 December 1966) is the current Undersecretary for the Holy See's Relations with States. After attending law school, he entered the Almo Collegio Capranica and was ordained priest on 18 September 1993 for the diocese of Rome by Camillo Cardinal Ruini. He earned a degree in theology and a doctorate in Canon Law. After serving in the Parish of Santa Maria Mater Ecclesiae al Torrino in Rome, he became a student at the Pontifical Ecclesiastical Academy. He entered the Holy See's diplomatic service in 1996, serving in Korea, Mongolia and the Netherlands. Since 2001 he has served in the Secretariat of State. On 17 August 2009 he was appointed Undersecretary for Relations with States replacing Msgr. Pietro Parolin.

Michael W. Banach (born 19 November 1962 in Worcester, Massachusetts) is the Permanent Representative of the Holy See to the Organization for Security and Cooperation in Europe, the International Atomic Energy Agency and the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization, as well as Permanent Observer of the Holy See to the other United Nations Offices in Vienna. Following graduation from Holy Cross College in May 1984, he prepared for the priesthood at the North American College and the Pontifical Gregorian University in Rome. Ordained priest on July 2, 1998, he served in parishes in the Diocese of Worcester and in 1992 was assigned to studies at the Pontifical Ecclesiastical Academy in Rome. In 1994, after completing his Doctorate in Canon Law, he entered the diplomatic service of the Holy See and served as Secretary of the Nunciatures in Bolivia and Nigeria, as well as in the Section for Relations with States of the Secretariat of State. On January 22, 2007, Pope Benedict XVI appointed him to his current post.

William F. Burns (Major General, United States Army, Retired) was director of the Arms Control and Disarmament Agency from 1988 to 1989. He served as the first U.S. special envoy to denuclearization negotiations with former Soviet countries under legislation sponsored by former Senator Sam Nunn (D-Ga.) and Sen. Richard Lugar (R-Ind.). He is a distinguished fellow at the Army War Col-

lege. He has also served as a director emeritus of the board of the Arms Control Association. His son is the Under Secretary for Political Affairs and former Ambassador to Russia, William J. Burns, who served under the Administration of President Bush and now continues to serve as part of the current Administration. General Burns is a faithful Catholic and serves as a consultant to the Committee on International Justice and Peace of the United States Conference of Catholic Bishops.

Francesco Calogero (born 6 February 1935) is a distinguished Italian physicist and active in the community of scientists concerned with nuclear disarmament. He is the son of the philosopher Guido Calogero. After his father was sentenced to national exile by fascist police, Francesco Calogero spent over one year (1942) in Scanno, a small Italian village. After World War II, Calogero graduated in Physics cum laude from 'La Sapienza' University of Rome in February 1958. He became a Professor of Theoretical Physics at the same university in 1976. His scientific publications in English include three books and over 300 papers. His main research concerns integrable many-body problems. He also formulated the Calogero hypothesis that quantum behavior is caused by stochastic gravitational radiation of a cosmic origin. Calogero served as the Secretary-General of Pugwash Conferences on Science and World Affairs 1989-1997 and Chair of the Pugwash Council (1997-2002). He has published 400 papers and several books on world affairs. He was a member of the Governing Board of SIPRI 1982-1992. He accepted the 1995 Nobel Peace Prize, jointly awarded to Pugwash and to Joseph Rotblat (Oslo, 10 December 1995).

Paolo Conversi (born 31 August 1971, Rome) graduated in Economics and Commerce from 'La Sapienza' University of Rome and in Social Sciences from the Pontifical Gregorian University. He then obtained a PhD in Social Sciences from the Pontifical Gregorian University and a PhD in Economics from 'Roma Tre' University. After taking part in development projects in Mexico, Colombia and Bosnia Herzegovina, in 1999 he became an Official of the Section for Relations with States of the Secretariat of State of the Vatican City. He has been a member of many Holy See Delegations to various international meetings, including the VI NPT Review Conference (New York, 2002). Since 2004 he has been teaching 'Human Ecology' at the Faculty of Social Sciences of the Pontifical Gregorian University.

Luis Ernesto Derbez Bautista (born 1 April 1947, Mexico City) is a Mexican politician and current rector of the Universidad de Las Américas. Upon assuming power in December 2000, President Vicente Fox chose him to serve as his Secretary of Economy. In January 2003, following the resignation of Jorge Castañeda, Derbez took over as Secretary of Foreign Affairs, a position that he held until President Vicente Fox's term ended on December 1, 2006. Since January 2007, Luis Ernesto Derbez has been the General Director of the Centre for Globalization, Competitiveness and Democracy at the Instituto Tecnológico de Monterrey, Campus Santa Fe, and Secretary for International Affairs of the PAN. Between January 2003 and De-

ember 2006, he was the Minister of Foreign Affairs of Mexico; and between December 2000 and December 2002, he was the Minister of Economy. From July to November 2000, he chaired President-elect Vicente Fox transition team, which defined Mexico's 2000-2006 economic and social programs. Prior to joining Fox's Presidential campaign team in 1997, Derbez had a distinguished professional and academic career working for the World Bank Group, the Inter-American Development Bank, Johns Hopkins University's School of Advanced International Studies and Instituto Tecnológico de Monterrey.

Tommaso Di Ruzza (born 21 April 1975, Aquino, Italy) is an Italian international lawyer, educated in Siena (jd) and Oxford (dls) and an Official of the Pontifical Council for Justice and Peace. Since 2005, as a Counsellor, he has been a Member of the Holy See Delegation to the main meetings and diplomatic conference on Disarmaments and Arms Control, Humanitarian Law. He is an author and lecturer in international law at the University of Rome 'Roma Tre'.

Ettore Gotti Tedeschi (born 3 March 1945 in Pontenure, Italy) is an Italian economist. Since 23 September 2009 he has been the President of the Vatican Bank 'Istituto per le Opere di Religione'. For the first 12 years of his professional life he worked on industrial and financial strategy (SEMA with McKinsey in Paris, Milan and London). In 1985 he began to deal with finance and in 1993 was appointed chairman for Italy of Finconsumo Banca SpA, now Santander Consumer Bank SpA, becoming the head of the Italian operations of the Spanish group Banco Santander. He was counselor of Directors of Sanpaolo IMI and the Deposits and Loans Fund. He has held many different positions in banking foundations, Venture Capital, Private Equity, etc. He teaches Ethics of Finance at the Catholic University of Milan. He is President of the Board of Trustees and member of the Advisory Board of the Centro Studi Tocqueville-Acton and is an editorialist of *L'Osservatore Romano*.

Mariano Grondona (born 19 October 1932 in Buenos Aires) is an Argentine lawyer, sociologist, political scientist, essayist and commentator. He has been a journalist for several decades, appearing in print media and on television, and has written several books. He has also taught in several universities, both in Argentina and abroad.

Olli Heinonen was appointed as the Deputy Director General, Head of the Department of Safeguards, at the International Atomic Energy Agency, in July 2005. The Department of Safeguards is responsible for verifying that nuclear material placed under safeguards is not diverted to nuclear weapons or other nuclear explosive devices and that there is no undeclared nuclear material or activities in non-nuclear weapons States party to the NPT. Before joining the International Atomic Energy Agency in 1983, Mr. Heinonen was a Senior Research Officer at the Technical Research Centre of Finland Reactor Laboratory Otakaari, Espoo, Finland. From 1999–2002, Mr. Heinonen was Director of Operations A and from 2002–2005, he was the Director of Operations B in the Department of Safeguards. Mr. Heinonen studied Radiochemistry and holds a Ph.D in Radiochemistry from the University of Helsinki, Finland.

Vittorio Hösle (born 25 June 1960, Milan, Italy) is a German philosopher. Having begun his academic career with extraordinary success, including the completion of his doctorate at age 21, he is the author of many distinguished works, including *Hegels System* (1987), *Morals and Politics* (1997, trans. 2004), and *Der philosophische Dialog* (2006). He advances an 'objective idealist' theoretical philosophy, which attempts to revitalize Platonic and Hegelian thought, while also drawing from Karl-Otto Apel. His practical philosophy is a modified Kantianism, which also draws much from Hans Jonas. Having been 'alienated by the contemporary situation of his country's university system', he has been in the United States since 1999, at the University of Notre Dame, Indiana. There he is the Paul Kimball Professor of Arts and Letters (with concurrent appointments in the Departments of German, Philosophy, and Political Science). Since 2008, he has also served as the founding Director of the Notre Dame Institute for Advanced Study.

Dominique Mamberti (born 7 March 1952) is the current Secretary for the Holy See's Relations with States. He was born in Marrakesh, Morocco. On 20 September 1981 he was ordained priest for the diocese of Ajaccio, France. On 18 May 2002 Pope John Paul II appointed him Titular Archbishop of Sagona and Apostolic Nuncio to Sudan and Apostolic Delegate to Somalia. He was consecrated bishop by the Secretary of State, Angelo Cardinal Sodano, on 3 July 2002. On 19 February 2004 he was also appointed Apostolic Nuncio to Eritrea. He was appointed Secretary for Relations with States (Foreign Minister of the Holy See) by Pope Benedict XVI on 15 September 2006.

Celestino Migliore (born in 1952, Cuneo, Italy) was ordained a priest in 1977. Having obtained his master's degree in theology, Archbishop Migliore pursued his studies at the Pontifical Lateran University, where he was awarded a Doctorate in Canon Law. In 1980, after graduating from the Pontifical Academy for Ecclesiastical Diplomacy, he joined the Holy See's diplomatic service. He served at the Apostolic Nunciatures in Angola (1980-1984), Washington, D.C. (1984-1988), Egypt (1988-1989), and Poland (1989-1992). In April 1992 he was appointed Permanent Observer of the Holy See to the Council of Europe in Strasbourg, France, and from December 1995 to October 2002 served as Under-Secretary of the Section for Relations with States of the Secretariat of State, at the Vatican. While in Rome, he also taught Ecclesiastical Diplomacy at the Pontifical Lateran University in Rome as a Visiting Professor. On 30 October 2002 he was nominated Apostolic Nuncio and Permanent Observer of the Holy See to the United Nations in New York.

José Mario Molina-Pasquel Henríquez (born 19 March 1943, Mexico City) is a Mexican-born American chemist and one of the most prominent precursors to the discovering of the Antarctic ozone hole. He was a co-recipient (along with Paul J. Crutzen and F. Sherwood Rowland) of the 1995 Nobel Prize in Chemistry for his role in elucidating the threat to the Earth's ozone layer of chlorofluorocarbon gases (or CFCs), becoming the first Mexican-born citizen to ever receive a Nobel Prize in Chemistry.

Gerard F. Powers is director of Catholic Peacebuilding Studies and coordinator of the Catholic Peacebuilding Network at the Joan B. Kroc Institute for International Peace Studies, where he has been a faculty member since 2004. From 1998-2004, he was Director of the Office of International Justice and Peace at the U.S. Conference of Catholic Bishops, and from 1987-1998 was a foreign policy advisor in the same office. He has specialized in the ethics of nuclear weapons and other uses of military force, the role of religion in conflict and peacebuilding, and religion and U.S. foreign policy. He is editor (with S. Appleby and R. Schreiter) of *Catholic Peacebuilding: Theology, Ethics and Praxis* (Orbis, forthcoming), editor (with D. Philpott) of *Strategies of Peace* (Oxford, forthcoming in 2009), and editor (with D. Christiansen and R. Hennemeyer) of *Peacemaking: Moral and Policy Challenges for a New World* (USCCB/ Georgetown, 1994).

Sergio de Queiroz Duarte (born in Rio de Janeiro, Brazil) is a Brazilian diplomat who currently serves as the United Nations High Representative for Disarmament. He was appointed by UN Secretary-General Ban Ki-moon in July 2007. A career diplomat, Duarte served the Brazilian Foreign Service for 48 years. He was the Ambassador of Brazil in a number of countries, including in Austria, Croatia, Slovakia and Slovenia concurrently (1999-2002), in China (1996-1999), in Canada (1993-1996), in Nicaragua (1986-1991), in the United States (1970-1974), in Chile (1963-1966), and in Rome (1961-1963). In addition, he has been posted as the Brazilian representative to several international organizations, focusing on disarmament issues. In 2005, he was the President of the 2005 Seventh Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons. From 2000 to 2002 he was the Governor for Brazil at the Board of Governors of the International Atomic Energy Agency (IAEA). From 1999 to 2000 he was the Chairman of the Board of Governors of the IAEA. From 1979 to 1986 he served as Alternate Representative of Brazil in the Office of the Special Representative of Brazil for Disarmament Affairs in Geneva. He was also Ambassador of Brazil in the Permanent Mission to the United Nations in Geneva from 1966 to 1968. Duarte obtained his J.D. from the Federal Fluminense University, (Niterói, Rio de Janeiro) in 1958. He holds a B.A. from the Brazilian School of Public Administration and studied at the Brazilian Diplomatic Academy from 1956 to 1957.

Silvano M. Tomasi (born in 1940, Veneto, Italy) studied Theology in New York and was ordained a priest in 1965. He holds a master's degree in social sciences and a doctorate in sociology from Fordham University in New York. He was

assistant professor of sociology at the City University of New York and at the New School of Social Research (1970-74). He carried out pastoral work in the New York area and served as Provincial Superior of his religious Congregation, the Missionaries of St. Charles – Scalabrinians. He has published books and articles related mostly to migration issues. From 1983-87 he served as first Director of the office of Pastoral Care of Migrants and Refugees (PCMR) of the United States Conference of Catholic Bishops (NCCB/USCC). From the end of 1989 to his appointment as Archbishop and Apostolic Nuncio on June 27, 1996, he served as Secretary of the Pontifical Council for the Pastoral Care of Migrants and Itinerant People. From 1996-03 Archbishop Tomasi served as Apostolic Nuncio to Ethiopia, to Eritrea and to Djibouti and as Observer to the African Union, formerly the Organization of African Unity (OAU), in Addis Ababa. In September 2003 Archbishop Tomasi began his service as Permanent Observer of the Holy See to the United Nations and Specialized Organizations in Geneva and to the World Trade Organization.

Peter Kodwo Appiah Turkson (born 11 October 1948 in Wassaw Nsuta, Ghana) was ordained a priest on 20 July 1975 and holds a doctorate in Sacred Scripture from the Pontifical Biblical Institute, Rome. From 1975-1976 and 1980-1981 he served as staff member at St Theresa's Minor Seminary, and from 1981-1987 as staff member at St Peter's Major Seminary. On 6 October 1992 he was appointed Archbishop of Cape Coast and was ordained on 27 March 1993. He was served as President of the Ghana Catholic Bishops' Conference (1997-2005) and member of the Pontifical Commission for Methodist-Catholic Dialogue; Chancellor of the Catholic University College of Ghana; member of the National Sustainable Development, Ministry of Environment; member of the Board of Directors of the *Central Regional Development Committee* and treasurer of the Symposium of Episcopal Conferences of Africa and Madagascar (SECAM). General Relator of the 2nd Special Assembly for Africa of the Synod of Bishops, 'The Church in Africa, at the Service of Reconciliation, Justice and Peace. "You are the salt of the earth, ... you are the light of the world"' (4-25 October 2009). Elevated to the cardinalate by John Paul II in the Consistory of 21 October 2003, he received the Title of S. Liborio. Member of the Congregation for Divine Worship and the Discipline of the Sacraments; member of the Pontifical Councils for Promoting Christian Unity, the Pontifical Commission for the Cultural Heritage of the Church and XII Ordinary Council of the Secretariat General of the Synod of Bishops. He is the current President of the Pontifical Council for Justice and Peace since his appointment by Pope Benedict XVI on 24 October 2009.



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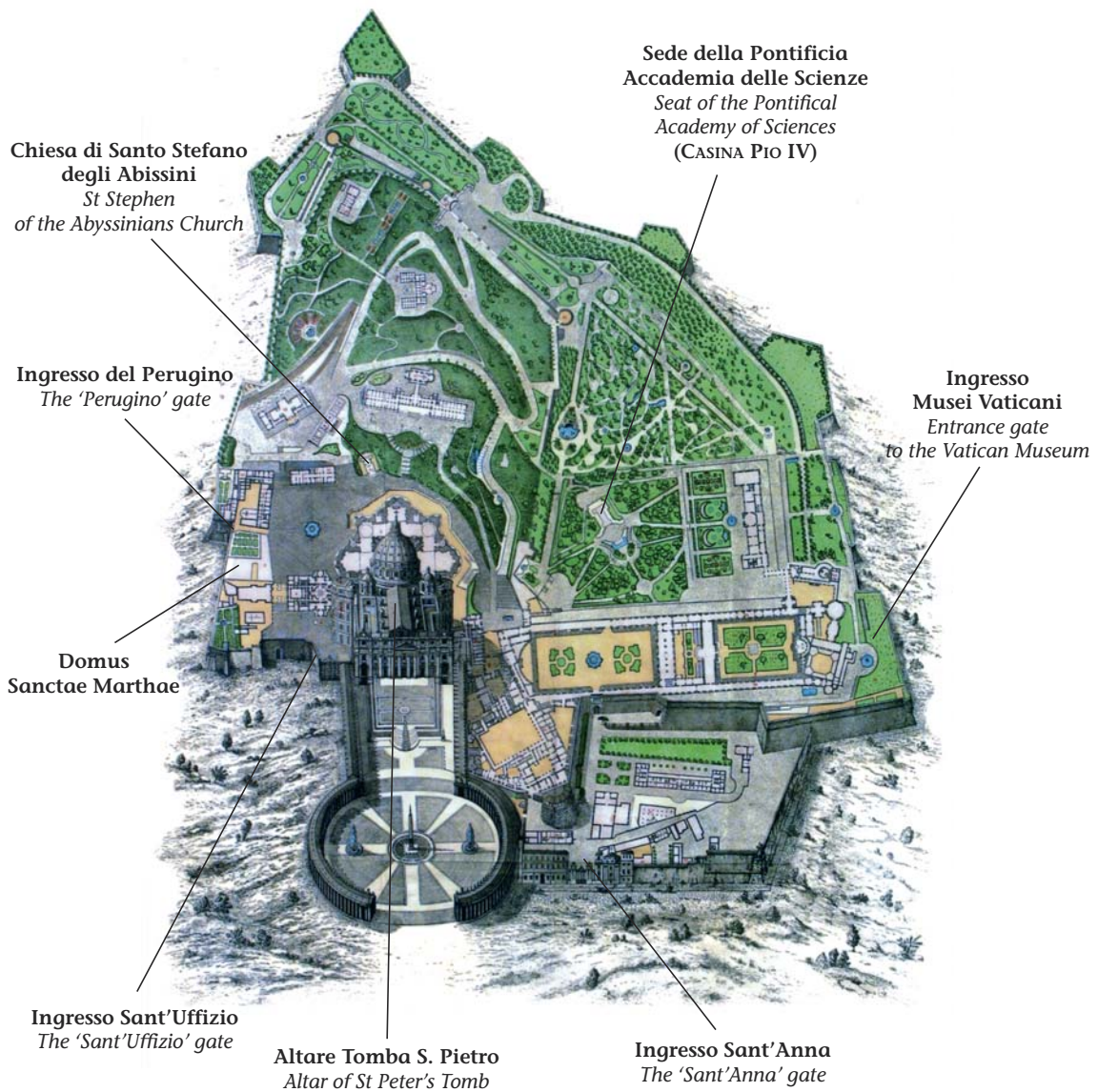
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FRONT COVER: Pablo Picasso,
 Scarf to commemorate
 the World Festival of Youth
 and Students for Peace, Berlin, August 1951,