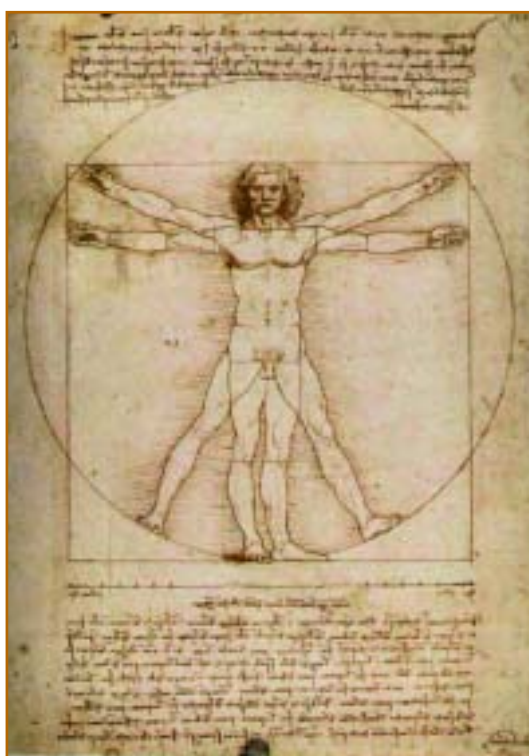


THE PONTIFICAL ACADEMY OF SCIENCES

Working Group on

WHAT IS OUR REAL KNOWLEDGE ABOUT THE HUMAN BEING?

4-6 May 2006



Introduction p. **3** Programme p. **4**
List of Participants p. **6** Biographies of the Participants p. **7** Memorandum p. **11**



VATICAN CITY 2006



The great Galileo said that God wrote the book of nature in the form of mathematical language. He was convinced that God gave us the gift of two books: that of the Sacred Scriptures and that of nature. And the language of nature – thus was his conviction – is mathematics, therefore it is a language of God, of the Creator. Now let's see what maths is: per se, it is an abstract system, an invention of the human spirit and does not exist as such in its pure form. It is always realised approximately but – as such – it is an intellectual system, it is a great, ingenious invention of the human spirit. What is surprising is that this invention of our human mind really is the key to understanding nature, that nature is really structured in a mathematical way and that our maths, invented by our spirit, is really the instrument to be able to work with nature, to put it to our service, to exploit it by means of technical knowledge.

It seems to me almost incredible that an invention of the human intellect and the structure of the universe should coincide: that the mathematics invented by us really gives us access to the nature of the universe and makes it usable for us. Thus the intellectual structure of the human subject and the objective structure of reality coincide: subjective reason and reason objectified in nature are identical. I think this coincidence between something we have thought and how nature works and behaves, are a great enigma and challenge, because we see that, in the end, there is 'one' reason that connects them both: our reason could not discover this other one if both did not originate from a single identical reason.

Benedict XVI replies off the cuff to the questions of the young people of the Diocese of Rome, St. Peter's Square, 6 April 2006.

What Is Our Real Knowledge about the Human Being?

INTRODUCTION

✠ MARCELO SANCHEZ SORONDO • *Chancellor of the Pontifical Academy of Sciences*

The Working Group on ‘What is our Real Knowledge about the Human Being?’ will reconsider this perennial question, which was formulated by King David when he asked: ‘Yahweh, what is man, that you care for him?’ (*Ps* 144:3). Science does not provide the sole answer to this question and we believe that in this scientific age a dialogue between science and the humanistic tradition is required for its effective exploration.

In the interest of a balanced quest, which can lead to a fuller understanding of the critical issues that currently confront us as regards our real knowledge about the human being, we need to re-examine the historical relationship between philosophy and science, and more specifically between the humanistic tradition (which has its roots in philosophy) and the scientific tradition. Today, it seems, there is a great need for reconciliation between these two traditions. Indeed, ever since Galileo launched the modern scientific revolution these two traditions have become progressively detached from one another and appear, as science has grown ever more specialised and complex, to have reached a point of inflection which offers a new horizon of mutual comprehension. In this endeavour it is helpful to revisit the thought of Greek (Plato and Aristotle) and medieval (St Thomas Aquinas) philosophers, as well as that of modern philosophers (Hume, Kant, Hegel), on the one hand, and the thought of modern scientists, on the other, for the light this philosophic and scientific background sheds on the identity of human beings, who share their bodies with nature but also emerge from nature (as the philosopher Anaxagoras was the first to observe when he argued that intellect is not mixed with matter). We can then turn our attention to some central problems presented by science today, as well as to the opportunities provided by science for rethinking philosophical and theological views on human beings and their place within the Creation. The

issues being probed by cognitive science, with its new language of neurons and synapses, in relation to the classic language of intellect, desire and emotion, are central to our topic. So, too, are the ongoing discoveries about our genetic inheritance, which pose questions about free will and the connection between evolution and creation. Lastly, there are anthropological (and moral) questions that relate to the time before a person’s birth and to the state of death. It is our hope to forge, through a profound and interdisciplinary discussion, greater understanding of these three clusters of issues as we use them to clarify our central question: what is our real knowledge about the human being?

This colloquium is a joint meeting and has been organised by the John Templeton Foundation’s ‘Humble Approach Initiative’ and the Pontifical Academy of Sciences. The choice of the meeting place, the Academy’s headquarters at the Casina Pio IV in the Vatican gardens, given its illustrious scientific history, reflects our wish to contribute to the creation of a new relationship between these traditions, and prompts us to ponder what role religion can play in achieving such a synthesis, in particular in relation to the anthropological question. This villa, which in the sixteenth century was a summer residence of Pope Pius IV and a meeting place of great scholars, in 1923 became the seat of the Pontifical Academy of Sciences, whose origins date to the founding of the Academy of the Lynceans, the world’s first scientific academy, by Prince Federico Cesi in 1603. Galileo, the father of modern science, was a founding member and its acknowledged leader.

As can be seen from the list of participants, science, philosophy and theology are well represented at this joint meeting, and it is thus our hope that this colloquium, which is based upon an interdisciplinary approach, will constitute an important contribution to answering today’s central anthropological question: what is our real knowledge about the human being?

PROGRAMME

What Is Our Real Knowledge about the Human Being?

THURSDAY, 4 MAY 2006

19:30	Cocktails at the Cortile Ovale • Casina Pio IV
20:00	Dinner at the Casina Pio IV

FRIDAY, 5 MAY 2006

9:00	<i>Welcome</i> Nicola Cabibbo , President of the Pontifical Academy of Sciences
9:05	<i>Greetings</i> Mary Ann Meyers , Senior Fellow of the John Templeton Foundation
9:10	<i>Opening Remarks</i> Marcelo Sánchez Sorondo , Chancellor of the Pontifical Academy of Sciences
<i>Session I</i> PERSPECTIVES FROM HISTORY Chairperson: H.E. Msgr. Marcelo Sánchez Sorondo	
9:15	Felipe Fernández-Armesto <i>Being Human: A Historical Approach</i>
9:45	Fernando Vidal <i>Person and Brain: A Historical Perspective from within the Christian Tradition</i>
10:15	Coffee Break
10:30	General Discussion
<i>Session II</i> PERSPECTIVES FROM ANTHROPOLOGY Chairperson: Janet Martin Soskice	
11:00	Berhane Asfaw <i>The Origin of Humans: The Record from the Afar of Ethiopia</i>
11:30	Alison Brooks <i>What is a Human? Archaeological Perspectives on the Origins of Humanness</i>
12:00	General Discussion
12:30	Lunch at the Casina Pio IV
<i>Session III</i> PERSPECTIVES FROM SCIENCE Chairperson: Jürgen Mittelstrass	
13:45	Malcolm Jeeves <i>Soul-Searching and Mind-Reading: Issues Raised by Twenty-First Century Neuropsychology and Evolutionary Psychology</i>
14:15	Jean-Didier Vincent <i>The Need for Others</i>
14:45	Antonio Battro <i>Homo Educabilis: A Neurocognitive Approach</i>



15:15	Tea Break
15:30	Hideaki Koizumi <i>A New Science of Humanity: A Trial for the Integration of Natural Sciences and the Humanities towards Human Security and Well-Being</i>
16:00	General Discussion
19:30	Cocktails at the Cortile Ovale • Casina Pio IV
20:00	Dinner at the Casina Pio IV

SUNDAY, 6 MAY 2006

<i>Session IV</i> PERSPECTIVES FROM PHILOSOPHY Chairperson: Antonio Battro	
9:00	Evandro Agazzi <i>The Scientific Images and the Global Knowledge of the Human Being</i>
9:30	Enrico Berti <i>Is DNA Range a Sufficient Definition of Human Nature? Aristotle vs. Thomas Aquinas and Jacques Maritain</i>
10:00	Franco Chiereghin <i>A Solely Human Aspect of Existence: The Experience of Beauty</i>
10:30	Coffee Break
10:45	Thomas Nagel <i>Science and the Mind-Body Problem</i>
11:15	Jürgen Mittelstrass <i>Science and the Search for a New Anthropology</i>
11:45	General Discussion
13:00	Lunch at the Casina Pio IV
<i>Session V</i> PERSPECTIVES FROM PHILOSOPHICAL THEOLOGY Chairperson: Enrico Berti	
14:15	Peter van Inwagen <i>Our Deepest Beliefs about Ourselves</i>
14:45	Janet Soskice <i>Imago Dei and Sexual Difference</i>
15:15	Marcelo Sánchez Sorondo <i>The Knowledge of Ourselves in Dialogue with Science</i>
15:45	Tea Break
16:00	General Discussion
16:45	Summary and Discussion of Next Steps
19:30	Cocktails at the Cortile Ovale • Casina Pio IV
20:00	Dinner at the Casina Pio IV



What Is Our Real Knowledge about the Human Being?

LIST OF PARTICIPANTS

Speakers	NAME AND TITLE	NAT.	DISCIPLINE AND CHARGE	PAPER
	Dr. Evandro Agazzi	I Genoa	University of Genoa Department of Philosophy	<i>The Scientific Images and the Global Knowledge of the Human Being</i>
	Dr. Berhane Asfaw	ETH Addis Ababa	Rift Valley Research Service	<i>The Origin of Humans: The Record from the Afar of Ethiopia</i>
	Dr. Allison Brooks	USA Washington DC	Department of Anthropology The George Washington University	<i>What is a Human? Archaeological Perspectives on the Origins of Humanness</i>
	Dr. Franco Chiereghin	I Padua	Professor of Philosophy University of Padua	<i>A Solely Human Aspect of Existence: The Experience of Beauty</i>
	Dr. Felipe Fernández-Armesto	UK London	Prince Astorius Professor of History Tufts University - Queen Mary University of London	<i>Being Human: A Historical Approach</i>
	Dr. Malcolm A. Jeeves	UK St Andrews	Honorary Research Professor St. Andrews University, St. Andrews, UK	<i>Soul-Searching and Mind-Reading: Issues Raised by Twenty-First Century Neuropsychology and Evolutionary Psychology</i>
	Dr. Hideaki Koizumi	J Saytama	Chief Scientist and Director, Hitachi, Ltd. and Director, Center for Research on Brain Science and Society Research Institute of Science and Technology for Society (RISTEX)	<i>A New Science of Humanity: A Trial for the Integration of Natural Sciences and the Humanities towards Human Security and Well-Being</i>
	Dr. Mary Ann Meyers	USA PA	John Templeton Foundation	<i>Greetings</i>
	Dr. Thomas Nagel	USA New York	Professor of Philosophy and Law New York University	<i>Science and the Mind-Body Problem</i>
	Prof. Janet M. Soskice	UK Cambridge	Jesus College, Cambridge, UK	<i>Imago Dei and Sexual Difference</i>
Academicians	Dr. Peter van Inwagen	USA IN	Department of Philosophy University of Notre Dame	<i>Our Deepest Beliefs about Ourselves</i>
	Dr. Fernando Vidal	D Berlin	Max Planck Institute for the History of Science	<i>Person and Brain: A Historical Perspective from within the Christian Tradition</i>
	Prof. Jean-Didier Vincent	F Gif-Sur-Yvette	C.N.R.S. Institut de Neurobiologie Alfred Fessard	<i>The Need for Others</i>
	Prof. Antonio M. Battro	RA Buenos Aires	Battro & Denham, Consultores	<i>Homo Educabilis: A Neurocognitive Approach</i>
	Prof. Nicola Cabibbo, President	I Rome	The Pontifical Academy of Sciences and University of Rome 'La Sapienza', Dipartimento di Fisica	<i>Welcome</i>
	Prof. Enrico Berti	I Padua	Professor of the History of Philosophy, University of Padua	<i>Is DNA Range a Sufficient Definition of Human Nature? Aristotle vs. Thomas Aquinas and Jacques Maritain</i>
Academicians	Prof. Jürgen Mittelstrass	D Konstanz	Universität Konstanz Fachbereich Philosophie und Zentrum Philosophie und Wissenschaftstheorie	<i>Science and the Search for a New Anthropology</i>
	H.E. Msgr. Marcelo Sánchez Sorondo	V Vatican City	LUMSA University, Rome, Chancellor of the Pontifical Academy of Sciences	<i>The Knowledge of Ourselves in Dialogue with Science</i>

BIOGRAPHIES OF THE PARTICIPANTS

What Is Our Real Knowledge about the Human Being?

Prof. Evandro Agazzi (born 23 Oct. 1934) studied philosophy at the Catholic University of Milan and physics at the state university of the same city. He then engaged in postgraduate studies at the Universities of Oxford, Marburg and Münster. Since 1970 he has been full professor of the philosophy of science at the University of Genoa and since 1979 he has held the chair of philosophical anthropology, the philosophy of nature and the philosophy of science at the University of Fribourg in Switzerland. He is President of the International Academy of Philosophy of Science (Brussels) and a member of the Italian National Bioethics Committee. He has published over sixty books and is the author or editor of more than six hundred papers and articles.

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Dr. Berhane Asfaw (born 22 August 1954) studied at the University of Addis Ababa and then at the University of California, Berkeley. After holding a series of academic positions and engaging in various research projects, he is currently manager of the Rift Valley Research Service. He is the author of a number of articles on cultural anthropology and paleontology.

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Dr. Alison Brooks (born 15 October 1944) engaged in undergraduate and postgraduate studies at Harvard University and is presently Professor of Anthropology at the George Washington University and Fellow of the American Academy of Arts and Sciences. She has been highly active in research and fieldwork and is the author of a large number of scholarly articles in the field of cultural anthropology.

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Prof. Franco Chiereghin, born in Chioggia (Venice) in 1937, has been professor of history of philosophy from 1973 to 1993 and since then of theoretical philosophy at the University of Padua. He has devoted his research to the thought of Plato, Augustinus, Spinoza and to the philosophy of German Idealism – in particular of Kant and Hegel – and to the thought of Nietzsche and of Heidegger, in the meantime editing the translation and comment of texts of Plato, Augustinus and Hegel. On the theoretical field his research has been devoted to the concepts of Being and Truth, of Space and Time and to their importance both scientific and philosophical, to the relationship between Time and History, to the possibilities and limits of human behaviour, to the relationship between perception and thought, with a particular attention to the contribution of cognitive sciences and neurophysiology. He has contributed to philosophical international meetings in France, Germany and Spain on subjects concerning his competence. He has been national and local coordinator of university programmes of research on German classical philosophy.

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Dr. Felipe Fernández-Armesto (born 6 December 1950) engaged in undergraduate and postgraduate studies at the University of Oxford and is currently Prince of Asturias Professor of Spanish Culture and Civilisation at Tufts University and Fellow of the Royal Society of Arts. He has written extensively on European imperial history, Asian history and the history of civilisations, and is a regular contributor to international scholarly journals.

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Malcolm Jeeves is a past president of the Royal Society of Edinburgh, Scotland's National Academy of Science and Letters. He is a Fellow of the Academy Medical Sciences in Britain and of the British Psychological Society. A Cambridge graduate in natural sciences, he has received honorary degrees from Edinburgh, St Andrews, and Stirling

Universities. He is emeritus professor of psychology at St. Andrews University and was formerly editor-in-chief of the international journal *Neuropsychologia* and is a past chairman of the International Psychological Symposium. In 1992 he was made a Commander of the Order of the British Empire for his services to science and psychology in Britain. A neuropsychologist, his major research interest for more than three decades was in neural plasticity as evidenced by the behavioural and cognitive functioning of a very small group of patients born without the corpus callosum, the major commissure connecting the two cerebral hemispheres. Books edited and with contributions from him include, *Callosal Agenesis – A Natural Split Brain?* (With Maryse Lassonde), Plenum Press, 1994; *From Cells to Souls and Beyond*, Eerdmans, 2004; *Human Nature*, Royal Society of Edinburgh publication, 2006. Books authored by him include, *Mind Fields-Reflections on the Science of Mind and Brain*, Lancer, and Baker 1993; *Psychology Through the Eyes of Faith* (with David Myers), Harper, 1987 and 2004; *Human Nature at the Millennium*, Baker 1997, to be republished by Templeton Press, Autumn, 2006.

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Hideaki Koizumi graduated in 1971 from the Department of Pure and Applied Sciences, College of Arts and Sciences, of the University of Tokyo and, after joining Naka Works, Instrument Division, Hitachi Ltd, obtained a PhD in Physics from the same University for the discovery of the principle of polarized Zeeman atomic absorption. From 1976 onwards he was first Guest Worker at the National Bureau of Standards, US Department of Commerce, and then Guest Research Physicist at the University of California. In 1983 he became Senior Researcher and then Senior Research Scientist at Hitachi's Central Research Laboratory. In 1995 he was appointed Professor (Adj.) at the Research Institute for Electronic Science at Hokkaido University and in 1998 Professor (Adj.) at the University of Tokyo, Graduate School of Arts and Sciences. In 1999 he was promoted General Manager and then Chief Scientist of the Advanced Research Laboratory at Hitachi Ltd. In 2001 he was appointed Director of the Brain-Science & Education Program at the Japan Science and Technology Agency, a post he still holds. He is currently also Fellow (Corporate Chief Scientist, Corporate Director) at Hitachi, Ltd., Director of the Center for Research on Brain-Science & Society, Research Institute of Science and Technology for Society (RISTEX), Japan Science and Technology Agency (JST), and Director of the Japan Children's

Study (JCS) at the same institute. In 2004 he was elected President of The Japan Society for Analytical Chemistry, a position to be occupied in 2006. He is also a member and director of many Academic Societies, National Councils and Commissions and Foundations. His major awards include: Ohkohchi Memorial Prizes (three times), including the Grand Prize; twice awarded Science and Technology Minister's Prizes; twice awarded the World's 100 Best Research and Development Projects of the Year Prize. Among his major works are the discovery and development of polarized Zeeman atomic absorption spectrometry (PZAA) (with over 9,000 polarized Zeeman atomic absorption spectrometers shipped to 25 countries); the discovery and development of tunable atomic line molecular spectrometry (TALMS); the discovery and development of sonic spray ionization mass spectrometry (SSI-MS); the discovery and development of magnetic resonance angiography (MRA); the first superconducting-magnet-type magnetic resonance imager (SCM-MRI) to have been produced in Japan; the first experiments on functional MRI (fMRI) in Japan; the discovery and development of optical topography (optical topography was nominated as one of four breakthrough technologies in 2003 by the MIT); the concept of brain-science and education.

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Mary Ann Meyers is a writer and the Senior Fellow at the John Templeton Foundation. For more than a decade she served as Secretary of the University of Pennsylvania, where throughout her tenure she taught an American civilization course in the History of Religion in America. She was subsequently President of The Annenberg Foundation and Vice President for External Affairs at Moore College of Art and Design. Earlier in her career, she was an assistant to Penn's President (and now President Emeritus) Martin Meyerson. She also served as Director of College Relations at Haverford College, where she taught in the Freshman Seminar Program and edited the college's alumni magazine. Dr. Meyers is the author of *Art, Education and African-American Culture: Albert Barnes and the Science of Philanthropy* (2004), *A New World Jerusalem: The Swedenborgian Experience in Community Construction* (1983), a co-author of *Religion in American Life* (1987), *Coping With Serious Illness* (1977), and *Death in America* (1975), as well as contributor to *Gladly Learn and Gladly Teach: Franklin*

and His Heirs at the University of Pennsylvania (1978). Her work has appeared in academic journals, general interest magazines, and newspapers. For many years, she was a contributing editor of *The Pennsylvania Gazette*. Her articles for the Penn alumni magazine won a variety of prizes, including the Newsweek-CASE Award for Public Affairs Reporting and a Silver Medal in the CASE Competition for the Best Article of the Year, as well as awards from Women in Communications. Currently secretary and a director of the American Academy of Political and Social Science and a member of the board of advisors of the Peter Gruber Foundation, Dr. Meyers has previously served as a trustee of both the World Affairs Council of Philadelphia and the University of Pennsylvania Press, an overseer of Penn's School of Arts and Sciences, and a member of the boards of advisors of its Department of Biology and Annenberg Center, among other professional and civic activities. A *magna cum laude* graduate of Syracuse University, where she was elected to Phi Beta Kappa, Dr. Meyers earned a Ph.D. in American civilization at the University of Pennsylvania. She heads the Humble Approach Initiative, a Templeton program that brings together.

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Thomas Nagel was trained in philosophy, first at Cornell (B.A. 1958), then at Oxford, (B. Phil. 1960), and then at Harvard (Ph.D. 1963). He taught at Berkeley, 1963-66, and Princeton, 1966-80, and is now University Professor at NYU, in the philosophy department and the School of Law. Nagel is the author of a number of books; most of his interests are treated in *The View From Nowhere*, which explores the subjective/objective opposition in a number of areas of philosophy, from the mind-body problem and the theory of knowledge to free will, ethics, the meaning of life, and the significance of death. He is a Fellow of the American Academy of Arts and Sciences, a Corresponding Fellow of the British Academy, and an Honorary Fellow of Corpus Christi College, Oxford. He has held fellowships from the National Science Foundation, the National Endowment for the Humanities, and the Guggenheim Foundation, and has delivered the John Locke Lectures at Oxford, the Alfred North Whitehead Lectures at Harvard, and the Storrs Lectures at Yale.

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Dr. Janet Martin Soskice was born in 1951 in British Columbia, Canada and received her B.A. from Cornell University in 1973, an M.A. with distinction in Biblical Studies from Sheffield University (1974), and a doctorate from Oxford University in the philosophy of religion in 1982. She is currently University Reader in Philosophical Theology at the University of Cambridge and a Fellow of Jesus College. Dr. Soskice is a former ecumenical advisor to two Archbishops of Canterbury, member of the English 'Anglican-Roman Catholic Commission, and a past-President of the Catholic Theological Association of Great Britain. She has participated in research projects on medical ethics (Oxford and Tübingen), science and religion (Heidelberg and Princeton), and faith and reason (Princeton). She has been a visiting Professor in Victoria, Calgary, and Uppsala and in 1997 was McCarthy Visiting Professor in Fundamental Theology at the Gregorian University. In 2000-2 she was a British Academy Senior Research Fellow and more recently Woods-Gumbel Fellow at Tantur Ecumenical Institute in Jerusalem (2005). She is a regular participant in the Castelli Colloquia in the Philosophy of Religion in Rome (La Sapienza). Dr. Soskice has published widely on question of religious language and symbolism, science and religion and on Christian theology and anthropology, and is a frequent broadcaster in the United Kingdom. Her written, edited and co-edited works include *Metaphor and Religious Language* (Oxford, 1984); *Medicine and Moral Reasoning*, ed. with Fulford and Gillett, (Cambridge, 1994), and *Feminism and Theology* (ed. with Diana Lipton) (Oxford, 2003).

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Peter van Inwagen was born on September 21st, 1942 in Rochester, N.Y., USA. He received a B.S. from Rensselaer Polytechnic Institute in 1965 and a Ph.D. in philosophy from the University of Rochester in 1969. He taught at Syracuse University for many years, and, since 1995, has been the John Cardinal O'Hara Professor of Philosophy at the University of Notre Dame. His books include: *An Essay on Free Will*, *Material Beings*, *Metaphysics*, *God, Knowledge, and Mystery: Essays in Philosophical Theology*, and *Ontology, Identity, and Modality: Essays in Metaphysics*. He is the author of about one hundred and twenty papers and critical studies. He has lectured at many universities and academic meetings in the United States, Canada, Britain, Ireland, Holland, Austria, Germany, Switzerland, Slovenia, Italy, Peru, and China. He has delivered the Maurice Lectures at King's College, London, the Wilde Lectures on Natural Religion at Oxford University, and the

Stewart Lectures at Princeton University. In 2003, he delivered the Gifford Lectures at St Andrews University. His Gifford Lectures will be published in 2006 under the title *The Problem of Evil*. He was elected to the American Academy of Arts and Sciences in 2005. He is at work on a book called *Being: A Study in Ontology*.

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Dr. Fernando Vidal was born in Buenos Aires, studied psychology and the history and philosophy of the science at the universities of Harvard, Paris and Geneva, and is now Senior Research Scholar at the Max Planck Institute for the History of Science. His work concerns the history of systems of knowledge and representations of man. His book *Piaget Before Piaget*, a biography of the Swiss psychologist Jean Piaget, focuses on the interplay of his religious, political, philosophical, and scientific concerns in the young Piaget. In his most recent book, *Les Sciences de l'âme, XVIe-XVIIe siècle*, F. Vidal studies the transformation of the 'sciences of the soul' between the invention of the word 'psychology' and the emergence of 'empirical psychology' in the Enlightenment. F. Vidal has also worked on such topics as sexuality in the 18th century, psychoanalysis and psychiatry in the early 20th century, and the progressive education movement in the interwar years. In addition to research on miracles as 'epistemic things', he currently studies the history of the relations between notions of bodily continuity and personal identity, with a focus on the emergence of the belief that the brain is the only part of the body that we need, and that must be ours, in order for each of us to be herself or himself.

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Prof. Jean-Didier Vincent was born in Libourn Gironde, France. After being the Director of INSERM and of the Sciences du Vivant CNRS, he is currently a Researcher and a Professor at the University of Paris XI. His research centres on the dopaminergic system, hormonal phenomena triggered by behavioural events and neurophysiological mechanisms. He was the first to stress the modulatory action of certain hormones on brain activity and on the nervous mechanisms of functions such as the balance of water and salt in the body, hunger, thirst, reproduction, sleep, etc. He was also the first to show that cerebral osmoreceptors were not located in the neurosecretory cores but in the anterior region of the hypothalamus in contact with the ventricular wall. His latest research concerns the mechanisms of integration of the olfactory message in the olfactory bulb, showing the role of permanent neurogenesis of the gabaergic neurons in sensory discrimination. He is a member of the French Académie des Sciences and of the French Académie Nationale de Médecine. For his merits he was also received in the Légion d'honneur (Officier) and the Palmes Académiques (Officier). He has written numerous scientific publications and also many successful books for the general public.

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For the biographies of the Academicians cfr. Pontificia
Academia Scientiarum, *Year Book* (Vatican City, 2004), p. 15 ff.

Memorandum

1) The Meeting will begin with a cocktail in the Cortile Ovale of the Casina Pio IV on Thursday 4 May 2006, followed by dinner. Transportation for the participants will be provided from their hotels (h. 19.10) and back (h. 22.00).

2) On Friday 5 and Saturday 6 May participants will be picked up from the Domus Sanctae Marthae and the Hotel Columbus at 8.40, in order to reach the Academy in time for the morning session at 9.00. Participants will then be reaccompanied to their hotels at the end of the afternoon session (h. 17.00). Transportation will be also provided to pick up (h. 19.10) and take back (h. 21.30) participants for the dinners that will be served at the Casina Pio IV on both days.

Note:

Please give your form for the refunding of expenses to the secretariat at least one day before departure so that you can be refunded immediately.

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For further information please visit:
http://www.vatican.va/roman_curia/pontifical_academies/acdscien/index.htm

FRONT COVER: Leonardo da Vinci,
Vitruvian Man,
1490, pen, ink, watercolour
and metalpoint on paper,
Gallerie dell'Accademia, Venice



THE PONTIFICAL ACADEMY OF SCIENCES

Working Group on

WHAT IS OUR REAL KNOWLEDGE ABOUT THE HUMAN BEING?

4-6 May 2006

