

LOVE

THE ULTIMATE NATURE *of* REALITY: COSMOLOGY, FREEDOM and the THEOLOGY OF KENŌSIS

A Symposium
Queens' College, Cambridge
1 and 2 October 1998

Chaired by
The Revd. Dr. John Charlton Polkinghorne, K.B.E., F.R.S.

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PURPOSE



Meeting at the ancient university that was home to Isaac Newton, James Clerk Maxwell, Ernest Rutherford, and, in more recent times, Francis Crick and Stephen Hawking, eleven scientists and theologians gather to probe two interlocking mysteries - the love of God and the nature of the universe He made. The Greek verb *kenosis*, used by St. Paul in Philippians 2:7 to describe the Incarnation as God's emptying of himself, has suggested to some scholars that when the eternal Word became flesh, it renounced divine power and knowledge. The implications of the possibility that God shares in finite experience, having been "born in the likeness of men and women" and "obediently accept[ed] even death, death on a cross," are profound. To consider what divine restraint may mean for us, as truly free creatures, and what it signifies for natural history, the evolving structure of space, and our cosmic destiny is the purpose of the conversation among the leading thinkers from disparate disciplines assembled at Queens' College, Cambridge, under the aegis of the John Templeton Foundation.



CHAIR

The distinguished particle physicist and author **John Charlton**



Polkinghorne was ordained a priest in the Church of England in 1982. He took up his new vocation in mid life after playing a role in the discovery of the *quark*, the smallest elementary particle of matter. A graduate of Cambridge University, where he was a fellow at Trinity College and earned a Ph.D. in theoretical physics in 1955, Dr. Polkinghorne was forty-eight years old when he resigned his Cambridge professorship of mathematical physics to begin studies at Westcott House, an Anglican seminary in

Cambridge. He went on to serve as a curate in a working-class parish in South Bristol and as vicar of Blean, a village outside of Canterbury. In 1986 he accepted a call to return to Cambridge as dean of the chapel at Trinity Hall, and in 1989, he was named president of Queens' College, a position he held until his retirement in 1996. A Fellow of the Royal Society and a member of the Society of Ordained Scientists, Dr. Polkinghorne was granted a Sc.D. by Cambridge in 1974 in recognition of his contributions to research and has received honorary degrees from the University of Kent, the University of Exeter, and the University of Leicester. He was knighted by Queen Elizabeth II in 1997 and is currently a fellow of Queens' and Canon Theologian of Liverpool. In addition to an extensive body of writing on theoretical elementary particle physics, he is the author of eight books on the interrelationship of science and theology in which he explores questions about God's action in creation. His latest study, composed of his Terry Lectures, is *Belief in God in An Age of Science* (Yale University Press, 1998).



PARTICIPANTS



Ian G. Barbour has been writing about science and religion, with a deep understanding of both cultures, for more than forty years. Born in Peking, China to missionary parents, he graduated from Swarthmore College and received his Ph.D. in physics from the University of Chicago in 1950. His initial research focused on cosmic ray *mesons*. He began his teaching career at Kalamazoo College and rose from assistant professor to professor and chair of the physics department. Taking a leave of absence, he enrolled in the Yale Divinity School where he earned a B.D. in 1956.

The year before he had accepted an appointment at Carleton College, teaching both physics and religion, and in 1974 he was promoted to professor of religion and named director of Carleton's Program in Science, Technology, and Public Policy. Dr. Barbour became the Winifred and Atherton Bean Professor of Science, Technology, and Society in 1981, a chair he held until his retirement in 1986. A member of Phi Beta Kappa and Sigma Xi, he has won many honors over the course of his career, including a Ford Faculty Fellowship, an American Council of Learned Societies Fellowship, a Guggenheim Fellowship, a Fullbright Fellowship, a National Endowment for the Humanities Fellowship, the Danforth Foundation's Harbison Award for Distinguished Teaching, and the American Academy of Religion's Annual Book Award. He was Lilly Visiting Professor of Science, Theology, and Human Values at Purdue University in 1973-74 and a Fellow of the National Humanities Center in 1980-81. Dr. Barbour has served on the editorial boards of *Process Studies*, *Zygon*, *Research in Philosophy and Technology*, and *Environmental Ethics*. The most recent of his dozen books is *Religion and Science: Historical and Contemporary Issues* (Harper Collins, 1997 and SCM Press, 1998).



As widely respected for his anti-apartheid Quaker activism as for his contributions to cosmology, **George F. Rayner Ellis** was born in Johannesburg, South Africa and educated in Natal and Cape Town. He received his Ph.D. in applied mathematics and theoretical physics from Cambridge University in 1964 and has taught in both fields on three continents. For the past decade, he has been a professor of applied mathematics at the University of Cape Town while lecturing throughout the world. Dr. Ellis has served as president of the Royal Society of South Africa and of the International Society of General Relativity and Gravitation. His scientific work on the mathematical foundations of general relativity and cosmology is recognized for its depth, originality, and wit. He studies fundamental questions like the geometrical structure of the universe and is not afraid to challenge conventional assumptions about how our universe

began and is built. In his alternative model to the violent Big Bang, the Whimper model, all starts with Quaker gentleness. In the bleak South Africa of the 1970's and 1980's, Dr. Ellis used knowledge both as a weapon and a shield against violence and injustice. During the past decade, he has been deeply involved in race relations, housing policy, and the future of the scientific enterprise of his country. He is a Fellow of the Royal Astronomical Society and the Institute of Mathematics and its Applications, and among the prizes he has won are the Herschel Medal of the Royal Society of South Africa, the Claude Harris Leon Foundation Achievement Award, and the Gold Medal of the South African Association for the Advancement of Science. He holds an honorary degree from Haverford College. Co-author with Stephen W. Hawking of *The Large Scale Structure of Space Time* (1973), his more than 200 scientific papers and eight major books reflect the rigor of his mind and the depth of his moral understanding. His latest studies are: (with Peter Coles) *Is the Universe Open or Closed? The Density of Matter in the Universe* (Cambridge University Press, 1996) and (with Nancey Murphy) *On the Moral Nature of the Universe* (Fortress Press, 1996).



Theologian **Paul S. Fiddes** is principal of Regent's Park College, Oxford University, and holds the title of University research lecturer. A graduate of Oxford, where he took first-class honors degrees in English language and literature and in theology, he went on to earn an Oxford D.Phil. in theology in 1975. After post-doctoral work at the University of Tübingen, he returned to Oxford as a fellow and tutor in Christian doctrine at Regent's Park. In 1979 he was also appointed a lecturer in theology at St. Peter's College, Oxford, a position he held for six years. A member of the board of the Faculty of Theology at Oxford since 1989, he served as chairman from 1996 to 1998. Dr. Fiddes is an ordained minister in the Baptist Union of Great Britain. He has served as a member of ecumenical study commissions of the British Council of Churches and Churches Together in England, as chairman of the Doctrine and Worship Committee of the Baptist Union of Great Britain, and as convenor of the Division for Theology and Education of the European Baptist Federation. Since 1995 he has been vice chair of the Baptist Doctrine and Inter-Church Cooperation Study Commission of the Baptist World Alliance. His books include studies of atonement and the relationship between Christian doctrine and literature. In *The Creative Suffering of God* (1988), he surveys recent thought about a central theme in Christian faith and explores what it may mean to claim that God has freely chosen to be vulnerable to hurt from His world. Dr. Fiddes's most recent work is a study of salvation in the series *Edinburgh Studies in Constructive Theology* (forthcoming, Edinburgh University Press).



Malcolm A. Jeeves, an eminent neuropsychologist, is the president of the Royal Society of Edinburgh, Scotland's National Academy of Science and Letters. Currently Honorary Research Professor at St. Andrews University, he was Foundation Professor of Psychology there from 1969 to 1993 and established the university's acclaimed psychology department. His own research has focused on brain mechanisms and neuroplasticity. Educated at Cambridge University, where he received his Ph.D. in psychology in 1956, he also did graduate work at Harvard University. Before joining the St. Andrews faculty, he was a lecturer at Leeds University and Foundation Professor of Psychology at Adelaide University in South Australia. He served as vice principal of St. Andrews from 1981 to 1985 and as director of the Medical Research Council's Cognitive Neuroscience Research Group at St. Andrews from 1981 to 1986. A past member of three of Scotland's most active research bodies, the Science and Engineering Research Council, the Neuroscience and Mental Health Board of the Medical Research Council, and the Manpower Sub-Committee of the Advisory Board for the Research Councils, Dr. Jeeves was formerly chairman of the International Neuropsychology Symposium and editor-in-chief of *Neuropsychologia*. He was made a Commander of the British Empire by Queen Elizabeth II in 1992. He is the author of more than one hundred scientific papers and eleven books, including six related to science and faith. His most recent studies are *Human Nature at the Millennium* (Baker, 1997) and (with R.J. Berry) *Science, Life and Christian Belief* (Apollos, 1998). Dr. Jeeves served as an acting company commander with the 1st Battalion Sherwood Foresters in Germany at the end of World War II. He is honorary sheriff of Fife and Tayside in Scotland.



A twenty-year old prisoner of war interned in England when he began his study of theology and philosophy, **Jürgen Moltmann** has become one of the most respected theologians of our time. For the past thirty years, he has been engaged in a profound exploration of the meaning of divine suffering and the unique role of the Cross in disclosing the nature of God. His work draws not only on the great theological tradition of Luther and Barth, but also on his experience as a pastor in post-war Germany. After completing his doctorate in theology at Göttingen University, he served the Protestant Church in Bremen for five years. In 1958 he became a professor of theology in a Protestant seminary in the Rhineland city of Wuppertal, and in 1963 he accepted the chairmanship of the department of systematic theology and social ethics at the University of Bonn. Since 1967 Dr. Moltmann has been a professor of systematic theology on the Protestant Faculty of the University of Tübingen. As a visiting professor, he has taught all over the world. He holds honorary degrees from Raday College in Budapest, St. Andrews University, the University of Louvain, and the University of Iasi in Rumania, as well as Emory University, Duke University, Bethlehem Theological Seminary, and Kalamazoo College in the United States. In addition to his monumental study, *The Crucified God* (1974), Dr. Moltmann's most influential works include his reflections on eschatology (*Theology of Hope*, 1967) and on a Trinity deeply involved in and affected by the world (*The Trinity and the Kingdom of God*, 1981). His latest book is *The Coming of God* (Augsburg Fortress, 1996).



Arthur Peacocke devoted the first twenty-five years of his career to teaching and research in the field of physical chemistry, specializing in biological macromolecules and making significant contributions to our understanding of the structure of DNA. His principal interest during the past twenty-five years has been in exploring the relation of science to theology. After going up to Oxford, where he was a scholarship student at Exeter College, he worked in the Physical Chemistry Laboratory, with Nobel laureate Sir Cyril Hinshelwood, and earned a D.Phil. in physical biochemistry in 1948. For the next eleven years, he taught at the University of Birmingham and then returned to Oxford as a fellow and tutor at St. Peter's College from 1959 to 1973. In addition to publishing more than 125 papers and three books in his field, he served as editor of *Biopolymers*, the *Biochemical Journal*, and a series of monographs on physical biochemistry published by Oxford University Press. While lecturing at Birmingham, Dr. Peacocke also had studied theology, and he was ordained a priest in the Church of England in 1971. He went on to serve as dean, and as a fellow, of Clare College, Cambridge, for eleven years. He became founding director of the Ian Ramsey Centre at St. Cross College, Oxford, in 1985, a position he held until 1988. In 1995, he resumed the directorship of the Centre, which studies issues in the relation of theology to science, to oversee the administration of a grant from the John Templeton Foundation. A founder of the Science and Religion Forum in the United Kingdom, of the corresponding European society (ESSSAT), and of the Society of Ordained Scientists, a new dispersed religious order, he was honorary chaplain of Christ Church Cathedral, Oxford, from 1989 to 1996 and is now an honorary canon. Dr. Peacocke has been awarded the senior degree of D.Sc. as well as a D.D. by Oxford and honorary degrees from Georgetown University and De Pauw University in the United States. He was made a member of the Order of the British Empire by Queen Elizabeth II in 1993. The author of nine books exploring the relationship between science and religion, his most recent studies are *From DNA to Dean: Reflections and Explorations of a Priest-Scientist* (Canterbury Press, 1996) and *God and Science: A Quest for Christian Credibility* (SCM Press, 1996).



One of the world's leading environmental ethicists, **Holmes Rolston III** has devoted his career to interpreting the natural world from a philosophical perspective. His work is unusually accessible to a wide audience, and he has been a pioneer in the application of ethical theory to actual environmental problems through consultancies with conservation and policy groups, including a Presidential commission and the United States Congress. A graduate of Davidson College, where he majored in physics and was elected to Phi Beta Kappa, he earned a B.D. from Union Theological Seminary in Richmond, Virginia, and a Ph.D. in theology from the University of Edinburgh before spending nearly a decade as a Presbyterian pastor in rural southwest Virginia. He learned the natural history of his surroundings in splendid detail and became an activist on local environmental issues. In his search for a philosophy of nature to complement his love for and curiosity about nature, he entered the philosophy program at the University of Pittsburgh and

received a master's degree in the philosophy of science in 1968. He then embarked on a teaching career at Colorado State University where he was named University Distinguished Professor of Philosophy in 1992. Over the past three decades, he has served as a visiting scholar and lecturer at universities throughout the world. President of the Rocky Mountains-Great Plains Region of the American Academy of Religion and past president of the International Society for *Environmental Ethics*, Dr. Rolston is a founder of the influential academic journal *Environmental Ethics* and a member of the editorial boards of *Zygon*, *Public Affairs Quarterly*, and *Conservation Biology*. He is the author of numerous professional papers and six books, including the groundbreaking *Environmental Ethics: Values in and Duties to the Natural World* (1988), a systematic presentation of his developed views that provides a philosophical defense of policies aimed at preserving wild species and wilderness. His latest study is *Conserving Natural Value* (Columbia University Press, 1994). A new work, *Genes, Genesis and God*, will be published by Cambridge University Press next year.



William H. Vanstone is a theologian who has been an Anglican priest for nearly half a century. A 1948 graduate of Oxford University, which subsequently awarded him a master of arts degree, he also holds both a B.A. and M.A. from Cambridge University. He studied theology at Westcott House, Cambridge, and was ordained in 1950. Turning aside from the possibility of an academic career, he committed himself unreservedly to parish work in the north of England. Curate at St. Thomas' Hall in Halliwell and then curate-in-charge of the Kirkhold Conventional District, he was appointed vicar of Hattersley in 1977 and, the following year, canon of Chester Cathedral, a position he held until 1990. Named to the ancient office of Six Preacher at Canterbury Cathedral in 1983, he was awarded a Lambeth doctor of divinity degree by the Archbishop of Canterbury in 1988. Canon Vanstone is the author of several theological studies, including the prize-winning *Love's Endeavor, Love's Expense: The Response of Being to the Love of God* (1977). Published in the United States as *The Risk of Love*, it explores the nature and cost of authentic love, distinguishing it from destructive imitations, and ponders the precarious activity of God in creation, the "sublime self-giving, which is the ground and source and origin of the universe" and requires the Creator to wait upon the response of His creation. Canon Vanstone's most recent book is *Fare Well in Christ* (Darton, Longman and Todd, 1997).



Regius Professor of Divinity at Oxford University, Keith Ward is one of Britain's foremost writers on Christian belief and doctrine in the light of modern scientific discoveries and in the context of other faith traditions. He has explored the tensions between the classical tradition of natural theology, with its atemporal and self-sufficient God, and the Biblical idea of a creative and responsive God, critically examined recent secular theories of human nature that have led to what he perceives as a subtly misconceived attack on the idea of the soul, compared the place of revelation and concept of creation in the major world religions, and sketched a revised Christian vision that looks to a convergent global spirituality. A graduate of the University of Wales, where he took a first-class honors degree in 1962, he holds a B.Litt. from Oxford and an M.A. and doctorate in divinity from both Oxford and Cambridge universities. He has been a lecturer at the University of Glasgow, St. Andrews University, and King's College, London. Elected a fellow and named dean and director of studies in philosophy and in theology at Trinity Hall, Cambridge, in 1976, he was appointed F. D. Maurice Professor of Moral and Social Theology at the University of London in 1986 and subsequently professor of the history and philosophy of religion, a position he held for five years before returning to Oxford in 1991. He has been a visiting professor at Drake University and at the Claremont Graduate School and lectured in India and New Zealand as well as throughout the United Kingdom. Ordained a priest in the Church of England in 1972, he has been canon of Christ Church, Oxford, for the past seven years and is a member of the Council of the Institute of Philosophy and of the Academic Advisory Board of the Oxford Centre for Islamic Studies. Professor Ward formerly served as joint editor of *Religious Studies*. The author of numerous works on theology and philosophy, he is in the middle of a four-volume series of comparative theology. His latest book is *Religion and Human Nature* (Clarendon Press, 1998).



Michael Welker is a philosopher and a theologian who works through the biblical traditions to address questions of contemporary culture. Warning against a reductionist systematics that can block thought, he has focused on the interplay among religious, legal, moral, scientific, and other cultural codes that shape the ethos of the postmodern world. His work is exceptionally wide ranging, and he has recently considered the inner texture of pluralism and central questions of pneumatology and Christology. Professor and chair of systematic theology at the Theological Faculty of the University of Heidelberg, he has been director of the university's *Internationales Wissenschaftsforum* since 1996. Dr. Welker is a graduate of the University of Tübingen where he studied with Jürgen Moltmann and earned a doctorate in theology in 1973. Ordained in the *Evangelische Kirche der Pfalz*, he received a Ph.D. from Heidelberg in 1978. He was professor of systematic theology at the Theological Faculty of the University of Tübingen from 1983 to 1987 and, for the next four years, professor and chair of Reformed theology at the Theological Faculty of the University of Münster. He has held an honorary research fellowship at the Institute for the Advanced Study of Religion of the University of Chicago Divinity School and been a visiting professor at McMaster University in Hamilton, Ontario, Canada, and, several times, at Princeton Theological Seminary. A member of the Consultation on Science and Religion of Princeton's Center of Theological Inquiry since 1993, he has published more than one hundred papers and been the author or editor of nineteen books, including *God the Spirit* (1995) and *Creation and Reality* (1998). His most recent study is *What Happens in the Lord's Supper?* (Eerdmans, 1999).



QUEENS' COLLEGE

Queens' was founded in 1448 by Queen Margaret of Anjou, wife of King Henry VI. Seventeen years later, Queen Elizabeth Woodville became its second foundress hence the position of the apostrophe in the college name. In 1511 a much sought-after scholar from the Continent joined the Queens' faculty at the invitation of its president, St. John Fisher. Erasmus of Rotterdam, the most cosmopolitan Christian humanist of his age, taught at the college for several years while working on a new Latin New Testament based on his critical reading of the original Greek.



A HYMN TO THE CREATOR

by William H. Vanstone

*Morning glory, starlit sky,
Leaves in springtime, swallows' flight,
Autumn gales, tremendous seas,
Sounds and scents of summer night;*

*Soaring music, tow'ring words,
Art's perfection, scholar's truth,
Joy supreme of human love,
Memory's treasure, grace of youth;*

*Open, Lord, are these, Thy gifts,
Gifts of love to mind and sense;
Hidden is love's agony,
Love's endeavour, love's expense.*

Love that gives gives ever more,

*Gives with zeal, with eager hands,
Spares not, keeps not, all outpours,
Ventures all, its all expends.*

*Drained is love in making full;
Bound in setting others free;
Poor in making many rich;
Weak in giving power to be.*

*Therefore He Who Thee reveals
Hangs, O Father, on that Tree
Helpless; and the nails and thorns
Tell of what Thy love must be.*

*Thou art God; no monarch Thou
Thron'd in easy state to reign;
Thou art God, Whose arms of love
Aching, spent, the world sustain.*



The Humble Approach Initiative
Contact Mary ann Meyers, Ph.D., Senior Fellow

A Program of the John Templeton Foundation
300 Conshohocken State Road, Suite 500
West Conshohocken, PA 19428
610.941.2828 Fax 610.825.1730

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