

**HEAD ON:
ART WITH THE BRAIN IN MIND**

**AN EXHIBITION AT THE SCIENCE MUSEUM
ORGANISED BY THE WELLCOME TRUST**

15 MARCH - 28 JULY 2002

PRESS INFORMATION

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Introduction

Head On has been developed by Dr Ken Arnold, Head of Exhibitions at the Wellcome Trust, and curator Marina Wallace (co-curator of the 'Spectacular Bodies' exhibition at the Hayward Gallery).

The exhibition, to go on show at the Science Museum, includes commissions from contemporary artists that have arisen from a structured dialogue and collaboration, lasting up to a year, between the individual artists and neuroscientists who are specialising in the precise areas to which the artists' work refers; historical scientific exhibits, relating to past research into the brain and the way the mind works drawn from public collections including that of the Wellcome Trust, and existing works of contemporary art selected to relate to the exhibition's themes.

Exhibition Themes

Three key themes run through the exhibition, and are represented both in the selected and commissioned art, and in the historical scientific exhibits:

Anatomy of the Brain

For centuries, the way that scientists researched the function and complexity of the brain was through dissecting it. *Head On* will illustrate this theme with a wide range of exhibits including 17th to 19th engravings and plates from the Wellcome Library collection illustrating brain dissection, plus an actual specimen: the left hemisphere of Charles Babbage's brain, from the Hunterian Museum at the Royal College of Surgeons. It will be displayed in *Head On* alongside wax models of the human brains of adults and babies by the British 19th century artist and wax modeller Joseph Towne, and mid-20th century images of brain sections, from the Wellcome iconographic collection.

More recently, imaging techniques have allowed scientists to view the brain in non-invasive ways. These include Electroencephalography (EEG), discovered in 1875, and used for detecting the active brain's electrical signals; Computerised Axial Tomography (CAT), invented a century later to produce images of brain structure; Positron Emission Tomography (PET) and Functional Magnetic Resonance Imaging (fMRI), both of which show blood-flow in the brain as it performs specific tasks.

Face, Form and Character

Do the outer signs of the face and the actual shape of the head inform what goes on inside? Is character visible on the outside? Artists who have engaged with portraiture have necessarily dealt with these questions. Elisabeth Frink's monumental 'Desert Quartet' head, Tony Bevan's painting 'Head Horizon', John Beard's 'Head – Self Portrait 10' and 'Head – Self Portrait 11' (2000), and Ian Breakwell's photo-diptych 'In the Wings' (1993) all refer to these issues.

The historical material supporting this section includes 60 small phrenological heads by William Bally, c. 1831, from the Science Museum Collection, and a phrenological head that belonged to the 19th century French scientist Paul Broca, complete with measuring equipment for determining the facial angle and facial triangle. First described by Joseph Gall, whose theory was widely read and adopted in the 19th century, phrenology, the reading of bumps on people's heads to detect character

and intelligence was an early attempt to define the different functions of the brain. Also on display will be three perspectives of a skull, sectioned and labelled according to an unorthodox system of phrenology, and a 19th century coloured lithograph by George E. Madeley illustrating a physiognomist whose body is entirely made up of faces, sitting at a table diagnosing people's physiognomic characteristics with the help of a book.

Contemporary brain imaging, X-rays, MRI and CT scans from the Wellcome photographic library complement the earlier material. Also, images of digitised scans show specific areas of head the including an x-ray of a skull which reveals an underlying brain tumour, a colour-enhanced CT scan of a brain in a stroke patient, a computer-generated image of the brain seen from above, electronic maps of blood flow to show Alzheimer's dementia and normal brain blood flow, and a series of extraordinary images of the brain by Heidi Cartright, from the Wellcome photographic collection.

Models of the mind

The third section of the exhibition deals with models of and metaphors for the mind. Artists, scientists and philosophers across cultures have variously referred to the mind as caverns, dictionaries, museums, halls of memory, forests, machines, dark rooms, mazes, slates... The contemporary artists' work that relates to this section includes Patrick Hughes' painting executed in reversed perspective, Richard Wentworth's dictionary, 'Twenty seven minutes, twenty two nouns, seven adjectives' and David Hockney's now famous reconstruction of a camera obscura. Among the work of the commissioned artists is the piece by Gerhard Lang that explores the brain as a 'cabinet of curiosities'

The historical material related to this section includes 16th and 17th century books, dictionaries, and treatises on various aspects of the mind, memory, human physiology and language, among them those by Jan Amos Komesky (1592-1670), Athanasius Kircher (1602-1680) and René Descartes (1596-1650). There is also the frontispiece of a book by Robert Fludd (1574-1637) on the art of memory with reference to the eye of imagination and the five mental loci, and an opening of a manuscript by Johann Lindner, 1472-74, illustrating a medieval conception of the brain.

List of Exhibiting Artists

John Beard (b. 1943)

Head – Self Portrait 10 (2000)

Head – Self Portrait 11 (2000)

Tony Bevan (b. 1951)

Head Horizon PC008, acrylic on canvas (2000)

Ian Breakwell (b. 1943)

In the Wings, two photographs mounted at right-angles to each other (1993)

Elisabeth Frink (1930-1993)

From The Desert Quartet series (1989)

David Hockney (b. 1937)

Portrait of Brad Bontems, pencil and gouache on white paper using a mirror lens (2000)

Patrick Hughes (b. 1939)

Perfectperspective, oil on board, 2001

Richard Wentworth (b. 1947)

Twenty seven minutes, twenty two nouns, seven adjectives, work in the form of a dictionary with inserts (1999)

Pat York

Neural Nexus 2/5, imbue print, 2001

List of Commissioned Artists

Osi Audu

Conscious and Unconscious Mind, pastel and wool on paper (2001)

Outer and Inner Head, acrylic and wool on canvas, graphite on canvas (2001)

The Seeing Mind, steel (2001)

Osi Audu has worked with Professor Christopher Kennard in the School of Medicine at Imperial College in London, exploring the divide between the conscious and the unconscious mind. He will be showing three works: a wall mounted animatronic eye with proximity sensor which triggers the eye to open when a spectator moves close to the work; a large canvas which causes an optical 'illusion' as the viewer transfers his or her gaze from the left to the right panel; and a large drawing inspired by the way neurons light up during MAR scanning to indicate conscious experience.

Accompanying historical material from the Science Museum Collection:

A wooden chair from the Congo (1851-1920)

Double headed wooden Ibo figure from Southern Nigeria (1870 –1930)

Wooden figure of a mother kneeling mother with three children; eyes inlaid with mirrors.

Andrew Carnie

Magic Forest, two projectors, time dissolve unit, 160 slides, gauze screens, aluminium supporting bars, two plinths

Andrew Carnie's work for the exhibition is concerned with the formation of memory and constant changes taking place in the brain. He has worked with leading centres for the study of neurology and neurobiology, particularly in London where he has worked with Dr Richard Wingate at the MRC centre for developmental neurology at King's College, and Professor Richard Crackowiak, Head of the Functional Imaging Laboratory at the Institute of Neurology, London.

Sponsored by Kodak

Andrew Carnie's work will be accompanied by two books by Santiago Ramón Cajal (1852-1934), representing early work on the neurone, from the Madrid Neurobiology Archives.

Annie Cattrell

Seeing, resin encapsulated in perspex

Hearing, resin encapsulated in perspex

Annie Cattrell's subject is the physicality of consciousness, with special reference to the five senses. As artist in residence at the Royal Institution of Great Britain, she attracted the attention of its Director, Professor Susan Greenfield, with whom she has been working. She has also collaborated with Dr Mark Lythgoe at Great Ormond Street Hospital. The works will be in the form of resin cubes each containing a three-dimensional reproduction of the brain's sensory areas whose activity has been transcribed through functional magnetic resonance imaging (fMRI) data into three dimensions. This has been achieved using laser engineering.

Annie Cattrell's work will be accompanied by three models of the brain by Joseph Towne, lent by the Gordon Museum and the Royal College of Surgeons Collections.

Wax Rapid Prototyping for Annie Cattrell's work has been sponsored by 3D Systems and Hobarts Ltd.

Katharine Dowson

Word Search, scrabble board

Word Play, junior scrabble board and wooden school desk

Dyslexics, acrylic, aluminium light box

You have 5 seconds, MDF, acrylic paint

Chromosome puzzle, acrylic

Katharine Dowson has drawn on her own experience of dyslexia in her work for Head On, exploring attitudes to the condition in the 1960s before it was widely recognised. She has collaborated with Dr Piers Cornelissen of Newcastle University and Dr Peter Hanson of Oxford University, both specialists in the relationship between language and dyslexia. The sculptures she will be showing will be based on word problems, IQ tests and an MRI scan of her own brain activity.

Katharine Dowson's work will be accompanied by historic IQ and intelligence tests from the Science Museum Collection.

Letizia Galli

Parking, video installation

Letizia Galli's video installation is concerned with anxiety disorders. Through her depiction of attempts to park a car, she explores anxiety, ranging from normal anxiety through to obsessive-compulsive disorder. She has discussed these issues, principally, with Professor Jeffrey Gray at the Institute of Psychiatry in London.

Letizia Galli's work will be accompanied by the table game 'Therapy' and the 1957 version of a test from the Science Museum Collection.

Claude Heath

Head Tilting Forward, acrylic on linen

Dust Head, acrylic, chalk dust and pigment on board

Stone Age Cranium, two drawings; ink on graph paper/mixed media on paper

Claude Heath often works blindfolded, touching but not seeing the object he aims to portray. For the Head On exhibition, he will show drawings made while looking at his subject, but with his hands and art materials concealed below the table surface. He has collaborated with Dr Emily Holmes of the Department of Clinical Psychology at University College London, and with Professor Brian Rogers of the Department of Experimental Psychology at the University of Oxford – scientists experimenting with eye movements to understand perception.

Claude Heath's work will be accompanied by an image of the medieval conception of the brain from a 15th century manuscript by Johan Lindner from the Wellcome Library; an 18th century etching of a skull from the Wellcome Collection, and a 1942 critical edition of the works of Piero della Francesca by Nicco Fasola, showing his procedure for making a drawing.

Claude Heath's work for *Head On* has been sponsored by Nikon UK.

Gerhard Lang

Imago cerebri 1, cabinet of curiosities, mixed media

Gerhard Lang's 'cabinet of curiosities', specially constructed for Head On, is an attempt to depict, through a series of objects displayed in a case, how people and their emotions may be revealed in their faces. This work continues a theme he explored for the exhibition *Spectacular Bodies*, in which he looked at the visual character of the human face and its relation to thoughts and actions. He previously referred only to 19th century scientific research, but for *Head On* he has collaborated with Professor Uta Frith at University College, London.

Gerhard Lang's work will be accompanied by two paintings by William Kurelek (1927-1977) entitled, respectively, 'The Maze' (1953) and 'Out of the Maze' (1971), from the Bethlem Royal Hospital Archives and Museum.

Tim O'Riley

Mirror, two plywood stereoscopes, pictographic prints mounted on plexiglass
Tim O'Riley is interested in illusion, space and narrative. For *Head On* he has researched and produced computer-generated pictures that structure the viewer's relationship to them – including stereoscopic and other optical illusions, anamorphic and perspective pictures. His principal concern has been with the 'virtual' space that results from a collision between actual space and mental space constructed through seeing. He has collaborated with Professor Christopher Kennard at the Imperial College School of Medicine and with Chris Frith at the Institute of Neurology, UCL, and with curators at the Science Museum.

Tim O'Riley's work is accompanied by a stereoscope and stereoscopic drawings and images from the Science Museum and Wellcome Trust Collections, and plates from the book 'The anatomy of the human eye as illustrated by enlarged stereoscopic photographs' by Arthur Thomson (1912).

Note on How the Commissions Were Developed

Head On has been built around a series of commissions from eight contemporary artists. The artists have been selected both on the quality of their work and, most importantly, for their active research interest in science.

The European Dana Alliance for the Brain suggested scientists with whom the eight artists might enter a dialogue, and provided the contacts. Those initial scientists then referred the artists to further scientists – generally those specialising in the precise fields to which the individual artists' work related. The dialogue then continued as the artists developed their commissions so that the final visual works are based on a real collaboration with the scientists. The collaborations have thus become active research on work in progress.

The curators' work has been to track the research. All the resulting data has been recorded in a log, a version of which will be included in the catalogue and in the exhibition itself.

Biographies

The Curators

Dr Ken Arnold, Head of Exhibitions at the Wellcome Trust, studied Natural Sciences at Cambridge and wrote a Ph.D. dissertation for Princeton University, on the history of English museums. He has worked in museums on both sides of the Atlantic. His arrival at the Wellcome Trust in 1992 allowed him to pursue his historical interests while presenting his findings in the form of exhibitions. Since his appointment as the Wellcome Trust's Head of Exhibitions, his department has run a variety of arts and exhibitions activities. He programmes two galleries devoted to exploring the culture of medicine (its art, science and history) and manages a range of funding initiatives aimed at promoting interaction between contemporary medical science and the arts (notably the sciart and Science on Stage & Screen initiatives). He is Project Manager and Chief Curator of a major exhibition on the Sir Henry Wellcome Collection planned for 2003. He also regularly writes and lectures on the culture of museums past and present, and on contemporary relations between the arts and sciences.

Marina Wallace is, with Professor Martin Kemp, co-director of the ArtaKT company. She is a Senior Lecturer and Head of Section at Central St Martin's College of Art and Design in London and is also an independent curator and writer. With Martin Kemp she curated the Hayward Gallery exhibition 'Spectacular Bodies: the Art and Science of the Human Body from Leonardo to Now' (2000) and in 2001 they co-curated an exhibition on Representations in Art and Science for the Museum of Modern Art (Oxford). Her recent publications include 'John Hilliard' (1999); 'Art as a Personal Profession' (1999); 'What's it called and what's it for. For an etymology of objects' (1998); 'Spectacular Bodies: the Art and Science of the Human Body from Leonardo to Now' (2000); and 'The anatomy lesson of Cornelis Troost' in 'Know Thyself' (CUP, 2001). Future plans include a pan-European exhibition on Leonardo da Vinci and an exhibition on genetics leading towards the creation of the first museum of genetics. She plans with Dr Ken Arnold to mount a parallel *Head On* exhibition at the Palazzo Strozzi in Florence.

The Artists

John Beard

Was born in Aberdare, Wales in 1943. He studied at the Royal College of Art before emigrating to Australia in 1983. He has exhibited extensively internationally including at the Whitechapel Gallery, the Royal Academy and most recently Tate St Ives in Britain, as well as in Europe, the US and Australia.

Tony Bevan

Tony Bevan was born in Bradford in 1951. He studied at Goldsmiths and the Slade. He has exhibited extensively including solo exhibitions at the National Portrait Gallery (1985), LA Louver, California (1992), Whitechapel Art Gallery (1993) and Abbot Hall (1999). Among his numerous group shows are ICA, The Serpentine, Sydney Biennial, The British Art Show, Venice Biennale, and The Israel Museum, Jerusalem.

Ian Breakwell

Ian Breakwell's works are in public collections including the Tate. Since 1993, there have been survey exhibitions of his paintings, drawings and photographic works at Ffotogallery and Oriel, Cardiff; John Hansard Gallery, Southampton; Ferens Art Gallery, Hull. His prints and publications has been shown at the V & A. His films and videos at the ICA and his Textwork 1966-99, with full colour catalogue by Loughborough University, where he was Drawing Fellow in 1998-9. In 1998, with a Sci-Art Award from the Wellcome Trust, he made a series of photographic, audio-visual and digital works on the theme of the *Dance of Death*.

Elisabeth Frink

Elisabeth Frink (1930 - 1993) studied at Guildford and at Chelsea Art Schools from 1947-53. Whilst she was still a student in London, the Tate Gallery purchased a sculpture from her first gallery show which was to mark the beginning of a long and impressive career. A language and choice of subjects, together with a large number of public commissions undertaken over the forty or so years of her working life, had assured Frink's place as one of the foremost artists of her generation. The work has been shown widely in Britain, North America and Europe, and in 1997, the Tate purchased four large sculptures, each for different and distinctive periods of her career.

David Hockney (b. 1937)

David Hockney is Britain's most celebrated living artist. He was born in 1937 in Bradford. Between 1953 and 1962 he studied at Bradford School of Art, and at the

Royal College of Art, where he met R B Kitaj and other founders of English Pop Art. In 1964 he settled in Los Angeles, painted his first swimming-pool pictures and made his first polaroids. In 1967 he travelled to Italy and France, and in 1968 to Germany and Ireland. He had a retrospective in London in 1970, also shown in Hanover and Rotterdam. Between 1973 and 1975 he lived in Paris. He designed the sets for Stravinsky's *The Rake's Progress* in 1975. In 1976 he return to Los Angeles and worked extensively with photography. In 1978 he designed the set for Stravinsky's *The Rake's Progress*, which led to many other stage design projects. In 1981 he travelled in China, following which *China Diary* with Stephen Spender was published. Most recently he has returned to his interest in the camera, and particularly research into the early use of the 'camera oscura'.

Patrick Hughes

Patrick Hughes was born in Birmingham in 1939. His work is held in numerous public collections including the Arts Council, Glasgow Museum and Art Gallery, Leeds City Art Gallery, Tate and the V&A. He has exhibited widely internationally, showing with Angela Flowers Gallery in London since its inception in 1970.

Richard Wentworth

Richard Wentworth was born in Samoa in 1947. He lives and works in London. He studied at the Royal College of Art and worked for Henry Moore in the 1960s, and taught at the Goldsmith's College between 1971-1987. He lives and works in London. He has exhibited extensively internationally including one person shows at the Serpentine Gallery, and at the Stedelijk Museum Holland, the Galleri Wang Oslo and the Musée des Beaux Arts, Calais. His other projects including Art and the Home, a collaboration between Tate and Homebase, and work with Caruso St John architects on the external public spaces for the tNew Art Gallery Walsall.

Pat York

The American artist Pat York has exhibited widely throughout Europe and the US, including at the Pittsburgh Center for the Arts, the Corcoran Museum, Washington, the Russian State Museum, St Petersburg and the Abbey St Pierre in Ghent. She began her career as a photographer, producing iconic images of celebrity subjects including David Hockney, John Cage, George Lucas, Angelica Huston and Andy Warhol. Her recent work has been developed in collaboration with Dr Marc Pick, a chiropractic neurologist specialising in dissection and anatomy, making photographs of cadavers peeled of their skin to reveal the body's subtle beauty. She lives and works in Los Angeles.

Osi Audu studied Fine Art at the University of Ife, Nigeria, and at the University of Georgia in the USA. He has exhibited extensively internationally, including in Germany, Nigeria, Austria, Greece, UK and USA. Among many group exhibitions are *AFRICAN WORLDS*, a permanent exhibition at the Horniman Museum. His work is held by public collections including The British Museum; The Horniman Museum; The National Museum of African Art; Smithsonian Institution, Washington DC, USA; the National Gallery, Lagos; the Nigerian High Commission, London. His video 'The moon is the eye of the sky' accompanies the exhibition at the Horniman Museum.

Andrew Carnie was born in London in 1957. He studied chemistry and painting at Warren Wilson College, North Carolina, zoology and psychology at Durham University before training as an artist at Goldsmiths and the Royal College of Art in London. Group shows include the Ikon Gallery, Birmingham, John Moores 16 Exhibition, Liverpool, 1989; Whitechapel Open, 1987 and 1989.

Annie Cattrell was born in 1962 in Glasgow. She studied at Glasgow School of Art, the International Glass Centre, Birmingham and at the Royal College of Art in London. Recent solo exhibitions include the Anne Faggionato Gallery, London (2001), Werner Klein Gallery, Cologne (2001), and Hockney Gallery, Royal College of Art, London (1998). She has exhibited widely including exhibitions at the Royal Institution in London, City Gallery, Leicester, the National Glass Centre, Sunderland, and the British School at Rome. In 2000-2001 she held the Arts Council of England Helen Chadwick Fellowship, based at the Ruskin School of Fine Art in Oxford and at the British School at Rome. Her work is represented in many public collections including that of Imperial College, London.

Katharine Dowson studied sculpture at Camberwell School of Art and the Royal College of Art. She has exhibited extensively at galleries including Castle Museum and Art Gallery, Nottingham, the Mappin Art Gallery, Sheffield, and the Whitworth Art Gallery, Manchester. She also participated in 'Spectacular Bodies' at the Hayward Gallery. She has received several awards including a Gulbenkian Foundation research grant for 'Spectacular Bodies', and her work is included in public collections in the UK and abroad.

Letizia Galli was born in Rome in 1957. After studying Applied Mathematics and Economics in Italy and London, she took a Diploma in Fine Arts at Guildhall University, London. In 1990 she won the Millicom Sculpture Award. As an artist she has developed a strong interest in health and science matters. She has exhibited in Milan, Bologna, Bari, Prati and Genoa and in London she has held solo exhibitions at the Museum of Installation at The Vitrine and at the Guildhall University Gallery.

Claude Heath was born in 1964. After completing a BA in Philosophy at King's College London, he gained recognition for his paintings and drawings through group exhibitions at the Saatchi Gallery (1996) and in the 1996 Whitechapel Open. He has since shown widely both in Britain and internationally. Recent exhibitions include the Jerwood Drawing Prize 2001, 'Paper Assets: Collecting Prints and Drawings 1996-2001' at the British Museum, and 'Claude Heath' at Paul Kasmin Gallery, New York. He has been included in the NatWest Art Prize (1999), the John Moores Exhibition 21 (1999) and, as first artist in residence at the Henry Moore Institute in Leeds, held an exhibition at the Henry Moore Institute in 1999. His work is held in public collections including the British Museum, the Walker Art Gallery Liverpool and the Henry Moore Institute Leeds.

Gerhard Lang was born in Germany in 1963. After studying in Kassel and at the Slade School of Fine Art in London, he was artist in residence in 1996 at Glasgow School of Art. He has exhibited widely in Europe and beyond, with recent exhibitions in Kassel, Malmo, Vilnius, Vienna, London, Edinburgh and New York. His work was included in the 'Spectacular Bodies' exhibition at the Hayward Gallery in 2000.

Tim O'Riley was born in 1965 and studied at Chelsea College of Art and Design. He has been included in group shows in the UK and abroad, including the John Moores Exhibition 20 in Liverpool. 'Signature of the Invisible' at the Atlantis Gallery in London, will travel to Geneva, Lisbon and Stockholm. He will be exhibiting at the Galerie Olivier Houg in Lyon in 2002.

Exhibition Credits

Exhibition produced by the Wellcome Trust

Curated by Caterina Albano, Ken Arnold and Marina Wallace

For the Science Museum: Mikhail Baraclough, Tim Boon, Geoff Bunn, Peter Davidson, Andrew Nahum, Ann Newmark, Helen Kingsley and Tim Molloy

Additional scientific input from The European Dana Alliance for the Brain

Designed by David Bentheim & Co