Neurocartographies

An art@hbm exhibition in conjunction with the Brain-Art Competition
www.neurobureau.org/BrainArt/neurocartographies/

Loggia, Centre des congrès de Québec, Québec City, 6.26-30, 2011
Musée national des beaux-arts du Québec, 8pm, 6.28

Curated by Daniel Margulies, Cameron Craddock, Pierre Bellec

A group show with work by

Nicky Broekhuysen  Vincent Lorgé
Giovanni Casu    Rebecca Partridge
Meaghan Evans    Nathalie Regard
Munro Ferguson    Marjorie Taylor
Emilio Garcia    Eva Teppe
Elizabeth Jameson    Nuno Vicente

Organized by:  Sponsored by:

With additional support from:

Exhibition space provided by:
To investigate the brain is to probe an inherently spatial object. As neuroscientists, we work with various methodologies aimed at its description — ranging from the literal to the abstract — as we aim to transfer knowledge about an object that is rarely itself directly seen. And as we inevitably result in visual descriptions, we find ourselves face-to-face with the same spatial modality confronted by the arts.

In the spirit of interdisciplinary approaches to our collective endeavor of mapping the human brain, The Neuro Bureau presents *Neurocartographies* for the 2011 conference for Organization for Human Brain Mapping. With the recent publications such as *Portraits of the Mind: Visualizing the Brain from Antiquity to the 21st Century*, the New York-based art exhibition *BrainWaves* in 2008, and the founding of organizations such as the Association of Neuroesthetics, we are aiming in *Neurocartographies* to bring this increased interest between the arts and neurosciences to the heart of our research community.

*Neurocartographies* aims to initiate a dialogue with artists through the common subject matter of the brain. How do we map the mind? How do we visualize the brain? While neuroscience relies on proscribed conventions of data visualization, the arts, being outside such constraints, allow for a freedom of exploration worthy of our attention. Each contribution to *Neurocartographies* offers a commentary on mapping the human brain from a unique conceptual position:

Using a more visually exploratory approach, the work of Elizabeth Jameson and Marjorie Taylor play with the aesthetics of how brain images can be rendered. However, their creative media couldn’t be further away from one another: Jameson, using digital coloring and collage, evokes a silken texture from austere black-and-white medical images; while Taylor maintains a direct visual correspondence in her woven fabrics to the original images, bringing a vibrancy that comes across in the revelation of the media itself. Stretching the depth of three-dimensionality back into a digital space is achieved in the video animation of Munro Ferguson. In *The Brain Demo*, he brings to life standard renderings of the neuroimaging community through the use of state-of-the-art animation technologies.

Nicky Broekhuysen transforms an MRI of her own brain into a constellation of hand-printed ones and zeros, creating a bridge between the literal depiction and the universality of information. The brain, just as binary numbers, she writes, is “an engine and vessel for meaning.” Bruekhuysen’s hand-made *Open State Of Potential*, created for the current exhibition, is a remarkable depiction of the complexity exploding from the form of the brain. Through its form, media, and process of production, it offers numerous readings on our own work and tools as we map the workings of the brain.

The sculptural works of Meaghan Evans and Vincent Lorgé draw from the
lexicon of contemporary neuroscience, which they superimpose onto the physical space of the brain. Connectivity lies at the core of both pieces, but while Lorgé reaches to the metaphor of the internet, Evans depicts the linguistic brain through the use of plasma-cut sheet metal letters. Emilio Garcia takes a more humorous approach to depicting the symbolic power of the brain in his sculptural work: fMRI Jumping Brain.

Nathalie Regard investigates the realms of dream and reality in an installation created for Neurocartographies. Undergoing electroencephalography while asleep, she continues here a long trajectory of artistic research into the recesses of the symbolic in her own mental life alongside the symbolic of brain imaging technologies.

Giovanni Casu and Rebecca Partridge further investigate the symbolic elements of the mind in their respective painting and video work. Casu’s Caravaggio in Wedding Dyptic uses the motifs of surrealism to present the duality of the physical to the mental, the biological to the subjective. While Partridge’s No Beginning No End reaches to her dreams of childhood to show us true ‘images of the mind’. Her hand-drawn video, like an old home movie, calls into question what it means to visually represent mental life.

In another reference to childhood imagination, Nuno Vicente makes use of a View-Master in 7 places for consciousness. Here, the superposition of body and cosmos create an intimate reflection on self-other perception in the world. In another evocative piece that transforms the audience into participant, Half Awake Half Asleep by Eva Teppe lulls us into an unfamiliar and pristine mental space as we join in the slow-motion free fall of a base jumper. We, the viewers, thus become the subject of her exploration of the mind.

As this stands as a first instantiation of an art exhibition during the conference of the Organization for Human Brain Mapping, we aimed to juggle numerous objectives in creating a space of dialogue with related art. Towards that aim, the Brain-Art Competition 2011 has been initiated as a forum to bring together neuroscientists striving for new arenas in the visualization of information. While these two initiatives have remained distinct as of the writing of this introduction, we look forward to the conversations and crosstalk we hope they will engender as they coalesce at the onset of our upcoming conference.

We are deeply grateful to the Child Mind Institute for providing the lion’s share of support for both the exhibition and the accompanying Brain-Art Competition. In addition, these events would have been unimaginable without the multifaceted contributions and efforts of Dr. Harold S. Koplewicz, Brooke Garber Neidich, Caroline Axelrod and Dr. Michael Milham of the Child Mind Institute. We are also deeply appreciative of support from the Max Planck Institute for Human Cognitive and Brain Sciences, Montreal Neurological Institute, Unité de Neuroimagerie Fonctionnelle, Centre de recherche de l’institut universitaire de gériatrie de Montréal, International Neuroimaging Data-Sharing Initiative (INDI) and 1000 Functional Connectomes Project. Finally, we could not have created this exhibition without the accommodation of the Organization for Human Brain Mapping, who generously donated the space for it to take place throughout the duration of the conference.

It is our hope to initiate a dialogue that will be able to continue at meetings of the Organization for Human Brain Mapping in years to come. We hope you enjoy this first incarnation of Neurocartographies, and look forward to hearing your thoughts and reflections for the future.

Daniel Margulies, Cameron Craddock, Pierre Bellec
The Neuro Bureau
June 2011
I use binary numbers as a metaphorical representation of everything and the potential for everything. Depending on how you order the 1’s and 0’s you create meaning. This meaning is always in a state of flux as it can be shifted and continually recoded using the simple elements 1 and 0. This means that the potential for everything and of everything exists within these two opposing numbers – one being something and zero being nothing. Similar to the First Law of Thermodynamics which states that energy can neither be created nor destroyed, the energy can be seen as meaning continually shifting and evolving.

I find the brain an interesting addition within the context of my work as the brain itself is an engine and vessel for meaning just like the binary numbers. The duality of the conscious and subconscious mind and how we create meaning within the overlapping of these two states is also relevant within the context of the binary numbers.

Although my work communicates through the digital language of binary it is not produced digitally. Each work is hand-made with every number stamped individually on to paper.
Caravaggio in Wedding Dyptic (detail)
2009; mix media/oil on canvas
100 × 320 cm

Caravaggio in Wedding Diptych is part of the Room-diptych series (Berlin 2009) which explores the neuroscientific and philosophical “hard problem of consciousness.” Here the relation of physical-biological to mental-subjective is related to surrealistic visualization (in art, dreams, symbols, visions, shamanic hallucination, mystic visions etc.) and its own biological support: the human brain. The second half of the diptych (shown above) represents a psychological theatre-inside; a sort of photo of ‘what going on inside the brain’ from the perspective of active imagination theory.

By symbolic grammar the “rooms” are invaded by figurative structures that represent an architecture of a state of mind, during a time (T), described precisely when possible. This architecture is based on a dynamic system that represent the biological structures of the brain that work together to build self, consciousness, imagination etc.

Giovanni Casu

www.giovannicasuart.blogspot.com
www.box-32.com
giovannicasu@hotmail.fr

Giovanni Casu is Born in Sardinia in 1975. His work mixes new media (photoshop, digital print) and classical oil painting on canvas. He started exhibiting his work in 1994. After obtaining a Political Science degree in Italy, he moved to Paris where he lived and exhibited his work for 7 years. In 2008 Giovanni moved to Berlin F’hain, where he currently lives and works. He created the W.I.R. Gallery Project in Berlin for contemporary art (2009). In 2010 he founded the Ecke Gallery project to explores the relationships between art and neuroscience.

In order to propose a neural model for the spontaneous emergence of symbolic imagery, the Ecke Gallery proposes a comparative research study - a multidisciplinary approach - to improve our understanding of how the brain produces mental imagery from unconscious activity. Particularly during dreams, vision and creative processes. This research builds on Stephen Kosslyn and Oliver Sachs theories in mental visualization, A. Damasio, C. Koch and Baars’s neuroscientific research results in consciousness and perception, Seki and Ramachandran studies in neuroaesthetic and C.G. Jung’s comparative research in historical consciousness representation.
Meaghan Evans
meaghan_evans@hotmail.com

Meaghan Evans is a 23-year old emerging artist based in Montréal, Québec. Her preferred mediums are acrylic on canvas or charcoal on paper, though she enjoys experimenting with mixed 2-D media. Her work revolves around expanding, abstracting and referencing different aspects and details of nature, human psychology and sociology, and our interaction with others and the surrounding environment. In her work, Meaghan frequently exploits the use of layering and translucency, as well as the juxtaposition of focused versus hazy passages and figurative versus abstracted elements, to convey both subtle and more obvious facets of the idea behind the piece. She's done some limited sculpture work to date, but has always explored and enjoyed various mediums of artistic expression. This interest was encouraged and expanded during her time in the Dawson Fine Arts Program, and later as a painting and drawing major in Concordia University’s Fine Arts Program. She continues to develop her style, and aims to draw inspiration from life’s experiences, seeking to integrate new perspective and knowledge of material into her future body of work.

“The Linguistic Brain”
2007, steel (rod and sheet), mirror
60 × 24 × 20.5 cm

This piece is a free-standing metal sculpture composed of plasma-cut sheet metal letters, and sculpted into the rough anatomical shape of the human brain. The dense and varied placement of the letters evokes a sense of the seemingly chaotic, yet organized, language capabilities of the human brain. The brain seems to float on a delicate stylized metal spinal column, reflected in the mirrored base, which seemed an appropriate reference to the body’s strangely fragile support system for its most impressive and important component. The sculpture represents the brain’s complex and gracefully endless connections, particularly the way our brains process language. The piece explores language as the foundation of communication, and consequently the essence of humanity.
Munro Ferguson

www.nfb.ca

A former science cartoonist, Munro Ferguson has made several animated films at the NFB. His film “Falling in Love Again” won the Genie award for best Canadian animated short in 2004.

The Brain demo
2011, stereoscopic 3D
6 min.

Demonstration for a 3D animated documentary about the brain, produced by the National Film Board of Canada.
Emilo Garcia

http://www.emiliogarcia.org
contact@emiliogarcia.org

Emilo Garcia has a long career trajectory as illustrator, designer, creative and visual artist. Since 1999 he has worked with important international companies like Berlitz Kids, Hitachi, Diesel, Inditex, Metro, Vans or The North Face.

As a first independent project, he presents us a new collectible concept: The Jumping Brain.

This simple idea with a clean design has positioned him in the eye of the most select collectors. Completely manufactured by himself at the Secret Lapo Laboratories, the Jumping Brain has overcome Emilio’s more optimistic expectations; receiving mass worldwide coverage in several media, including press and TV and overflowing production previsions.

Now Emilio’s work is currently being exhibited in art galleries and museums throughout North America, Europe and Asia. His art is a blend of Brains, Street Art and Urban Surrealism.

fMRI Jumping Brain
2011; airbrushed acrylic on resin figure
8.5 × 17 × 13.3 in

Emilio Garcia and Black Square Gallery presents the celebrated Jumping Brain in a massive brand new XL format. Just a brain with frog legs in full activity fMRI map. This piece is an exclusive unique Artist Proof, hand painted by Emilio Garcia himself. Signed certificate of authenticity and a few extra goodies included.
Elizabeth Jameson

www.jamesonfineart.com
ejameson@sbcglobal.net

I am both a public interest legal advocate and a public interest artist. My journey in art follows a 30-year career representing poor and vulnerable children with chronic illnesses and disabilities in their efforts to obtain medically necessary health care.

In 1991 I was diagnosed with Multiple Sclerosis. My MS inspires me to create images that provide new insights into the brain and, at the same time, make medical imaging and its representative humanity more accessible to both medical professionals and others who view these revealing pictures.

I create portraits of myself and others through the use of magnetic resonance images (MRIs). Over the 20-year course of my disease, I have undergone numerous brain scans. These images provide critical clinical understanding of a brain’s structure and, for an MS patient, disease progression.

But these scans produce images of a brain that are naked and without emotional context, without passion or sadness, without all the frailties, humor, and idiosyncrasies that make us who we are. My focus is to saturate these cold, two-dimensional MRI pixels with the numerous colors and emotions that comprise the landscape of a life. The brain -- even a brain with disease -- is beautiful, complex and intriguing. Rather than turn away from what brings discomfort, my goal as an artist is to encourage viewers to contemplate this amazing biological structure, with all of its powers to change, adapt and confound.

Ms. Jameson’s work has been exhibited in major neuroscience centers throughout the country, including the University of California at San Francisco Medical School, the Helen Wills Neuroscience Institute at the University of California at Berkeley, the Department of Psychological and Brain Sciences at Johns Hopkins University, and the Center for the Mind and Brain at the University of California at Davis, as well as the Center for Brain Science at Harvard University.
Vincent Lorgé is a young French artist. He first studied architect design in Paris and then chose to study Fine Arts in Grenoble. Whether with complex installations, sculptures, videos, or paintings, Vincent enjoys playing with norms, references, or shapes, approaching everything with irony and a great sensitivity.

For 2 months, the artist Vincent Lorgé collaborated with the neurophilosophy lab at McGill University. During his work, his attention was drawn to the various ways scientists used to represent the brain with an accumulation of colored squares. It appears to him that the brain was made of stratums that made up a whole. The connection with his everyday life was then natural. In this piece, Vincent Lorgé wanted to show that the way researchers approach the brain might be similar to the way we approach internet. As a scientist would dissect an organ, Vincent Lorgé dissected internet, opening windows and creating stratums which constitute an accumulation of images, a ‘brain’. The images chosen were following the main research theme of the neurophilosophy lab: ‘brain and trust’. Our brain accumulates images that our environment creates like internet accumulates images that we create.
Rebecca Partridge

www.rebeccapartridge.com

Rebecca Partridge is a painter originally from the UK and now living in Berlin, where she has her studio, and works as a visiting lecturer at several UK universities. She gained an MA in Fine Art from the Royal Academy Schools, London in 2007, having attended Bath Spa University in the 1990’s. Since then she has exhibited internationally, showing both watercolours and oil paintings on traditional supports. This is her first hand made film, recently screened at the British Shorts Film Festival in Berlin. She has recently had solo shows at Adular Gallery, Sweden, Art First, London and has forthcoming solo shows at CCA Andratx, Mallorca, Hay Hill Gallery, London and Newcastle University in UK amongst numerous group exhibitions. She has undertaken artist residencies in France, India and Hungary, Mallorca and Iceland during which she explored the landscape in search of both the vast open landscapes and abstractions in nature which appear throughout her work. The structures of these works, she believes, are another aspect of the visual language of synaesthesia.

No Beginning No End

hand painted ink on 36mm clear film (transferred to DVD)

When I was very young I had synaesthetic dreams. I dreamt of white spaces in which there were these simple, bright geometric forms moving round a centre point that dissolved into a dark chaos...... Apparently it’s very common in synaesthetics to have this alphabet of forms and patterns, vortexes and spirals, particularly in early childhood. Now, I find them everywhere...... At one end of it is the bigger picture, the macro ... dealing with huge, vast spaces and evoking a sense of awe and fear that is thought of as 'sublime'. Then there is the micro, the point of origin from which this vastness has expanded, which is represented in the ordered precise geometry of Indian mandalas. They may appear very different, but actually they're dealing with the same thing. They have a connection, a sense of continuum.

No Beginning No End is a 30 second abstract work based on the experience described above, made up of 720 individually painted frames. It uses the language of synaesthetic visual phenomena to also explore fundamental phenomenological tensions and polarities which run throughout my work. The slow, focused, miniature, meditative practice when run as film results in a fast, vibrating large scale image.
The Previous Dream: Artist Book
1993-1998, hand written dream diary, ink and collages
38 × 29 cm

I stay aware of my dreams. When traveling, searching what was Stored within my unconscious, faces, events, desires that my trade allows me to restore features, signs, folds of my experience. In the dream, we live what we see. Submitted to travel to the past from the present -transformed by craft - in order to paranoiacally reconstruct the scene of the previous dream. In that way I'm inhabiting the support of the book, from the manipulation of memory and rescued by the collage. To the extent that the narratives are polluted with tangible materials: pen, ink, glue, magazines, photos, scissors, concrete materials and work tools, that are fixed in my memory after sleep and are held in its original form as a ritual, the previous dream is used as a toolbox to build a relationship. It is an implement to criticize the immediacy of the world that advertising photography has carried into obscenity. The re-treatment I propose goes beyond the similarity of mirror-self, to see or be seen "as is" to be a fragment of reality imbued with the history of the senses. The structure of the book regains its full potential when the viewer, by combining these images at random, builds new forms or images from a conscious and reasoned state.

OTHER WORK
The Gost Dream Symposium: Poster
2011, installation, various materials, artist book, print on paper, video projections
180 x 140 cm
Eva Teppe

Eva Teppe is based in Berlin. She conducted graduate studies in Media Arts at the State University of Design, Media Arts Karlsruhe, where she received a diploma in Media Art. She has also studied at the State Academy of Art and Design in Stuttgart.


Eva has previously been involved in the following projects and talks: lecture at Johannes Gutenberg Universität Mainz (2010), Artist Talk at Hara Museum of Contemporary Art Tokyo, Japan (2007), ARS Electronica Festival Linz, Video Visualization for the Composition Dialogue of the American composer Elliott Carter, performed by the Bruckner Orchestra Linz; Conductor: Dennis Russell Davis, Piano: Maki Namekawa (2005), Live Video & Sound Performance together with Jürgen Palmtag, Kunstverein Neuhausen (2005), Videoproduction for the Performance Festival ExitNo1-7, Stuttgart (2003).

She has participated in the numerous festivals, including: ARS Electronica Linz, Transmediale Berlin, Emaf Osnabrück, IFFR Rotterdam, Viper Basel, Stuttgarter Filmwinter, Kasseler Dokumentarfilm- und Video festival, Recontres Internationales Paris, Filmfest Max Ophüls, Pulsar International Festival Caracas, Venezuela, Onion City Experimental Film Video Festival Chicago, Talent Campus Berlin, and others.

Half Awake Half Asleep
2006, video projection, DVD, 11’21” in loop
Soundtrack by Mika Vainio

The work is based on found footage material of so-called Base Jumpers. The footage shows a base jumper performing his skydive, which is officially banned. The material is worked with various modes of, at times, extremely decelerated motion. The changing colors of the video image - according to the colors of the rainbow - reflects this unstable state of mind between sleep and awakening. The sound has been conceived to further condense the dreamlike atmosphere.
Marjorie Taylor
http://neuroscienceart.org
mtaylor@uoregon.edu

I am a professor of Developmental Psychology at the University of Oregon who studies imagination and creativity in children. I'm the editor of the forthcoming Oxford handbook The Development of Imagination, the author of Imaginary Companions and the Children Who Create Them, and I make fabric brain art on the side. My first pieces were quilts inspired by single neuron recording, PET scans and EEG. These pieces incorporate a range of fabrics (silk, tulle, velvet, brocade, cotton, and organza), embellishments (metallic threads, beads, electronic parts, mirrors, core memory, and ribbon) and techniques (piecing, appliqué, free style machine quilting, embroidery, couching, beading, and hand quilting). After the University of Oregon acquired a 3T scanner, I turned to fMRI for inspiration. fabricMRI: Bill’s Brain is my first attempt to portray MRI images in a hooked rug.

Several of Dr. Taylor’s art pieces are on display at The Museum of Scientifically Accurate Fabric Brain Art, which, is curated by her husband, Dr. William Harbaugh.

fabricMRI: Bill’s Brain (detail)
2009; a rug hooked with wool fabric strips
5 × 6 ft

Hooked rugs are a traditional craft in my native province of Nova Scotia. They often portray subjects such as flowers, cats, and lighthouses. This rug depicts axial slices of an MRI scan, as the images are typically shown with fMRI analysis software. Hooked rugs produce digital images because they use loose-weave fabric as a grid base for the wool fabric strips. They have a pixilated look that reminded me of the discrete voxels that are output by current MRI technology. I used the drawings from the Talairach Atlas and an MRI of my husband's brain as guides for the anatomy.
Nuno Vicente

www.nuno-vicente.com

Nuno Vicente is a multimedia artist highly influenced by the arte povera and the conceptual art from the 60’s. The later research of the artist is made on a consideration of time inside a more permanent relation with matter as part of an inscription process. He studied painting and visual art at the Caldas de Rainha (ESTGAD) School of Fine Arts in Portugal. Nuno has completed a one-year residency in the atelier program at the Museum Antonio Duarte. During this time he was selected by the Millenium Anteciparte Portugese artist awards to present his work in the Museum of Natural History in Lisbon (2007). Since then, his work has been shown in solo and group exhibitions in Brazil, Spain, France, Portugal, USA, and Germany. Nuno currently lives and works in Berlin.

7 places for consciousness.  
2011; installation of a view-master; wire and perforated 3D film dimensions variable

A View-Master is a device for viewing seven 3-D images (also called stereo images) on a paper disk. Although the View-Master is now considered a children’s toy, it was originally marketed as a way for viewers to enjoy stereograms of colorful and picturesque tourist attractions. The artist has here adapted the object into a visual exploitation aiming to define 7 places for consciousness.