

# **Professor Karen Ingham**

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Research Group: The Centre for Lens Arts and Science Interaction;  
Creative Industries Research and Innovation Centre

## **Evidence Portfolio: *Variance***

### **Output Number: 3 of 4**

Output Code: WIRAD-UWTSD-KI03

Output Type Code: M

Output Description: Exhibition

Author: Ingham, Karen

Year of Publication / Production: 2011

Location / Venue(s): Anglia Ruskin Digital Gallery and others

Media: Six photographic portraits and 3 minutes artist's film incorporating confocal and scanning electron microscopy images of brain activity; exhibitions, conference presentations and publications



Still from *Variance*, 3 minute artist's digital film

## Research Context

The Victorian polymath Francis Galton is a controversial figure yet the importance of his legacy to 21st century medical and surveillance technologies cannot be over stated, from finger prints to retinal identity scans, reproductive technologies, bioinformatics and genetics. But Galton is also of interest to those in the arts and humanities, not least because of the uneasy beauty of his photographic composite typologies. In 2010 Ingham worked with Galton curator Natasha McEnroe who gave me access to the Galton archive. With the intent of creating an interdisciplinary artwork for the 2011 Galton centenary, she focused on Galton's typologies research. With the title 'Variance', a term derived from Galton's pioneering work on statistics, the resultant practice-led research was manifested as a 3 minutes artist's film and a series of six large-scale photographic 'thought portraits'. The portraits, which Ingham refers to as neuro-scientific typologies, incorporate confocal and scanning electron microscopy images of brain activity. These were made during her Science and Art Research Fellowship with Cardiff Neuroscience Research Group, and are characteristic of a new generation of interpretively complex brain imaging 'snapshots'. Photographic portraits of Ingham's extended family were merged with these purportedly 'living thought' images, creating a visual effect similar to Galton's composites. *Variance* extends a long-standing research interest in Francis Galton.

## Research Imperatives

*Variance* is a body of work that questions the histories, philosophies and narratives of biomedical imaging in relation to identity, questioning traditional notions of portraiture by referencing those aspects of the self that reside below the surface. Thus, *Variance* is situated in the gaps between knowledge, where speculation and interpretation contest certainty. *Variance* continues Ingham's long-standing interest in Galton having studied him as part of her MPhil and PhD investigations, and the video artwork *Vanitas Seed-Head* (2005) is also based on a study of Galton's composite typologies. *Variance* extends this research and incorporates highly evocative and technologically complex brain images of live and functioning brain structures (neurons and synapses for example) made using fMRI and confocal microscopy technologies. Just as *Variance* suggests variation, difference, and departure from the norm, so too modern neuroscience is finding that despite the claims of the 'neuro-realists' the definitive answers science seeks remain stubbornly elusive and interpretative.

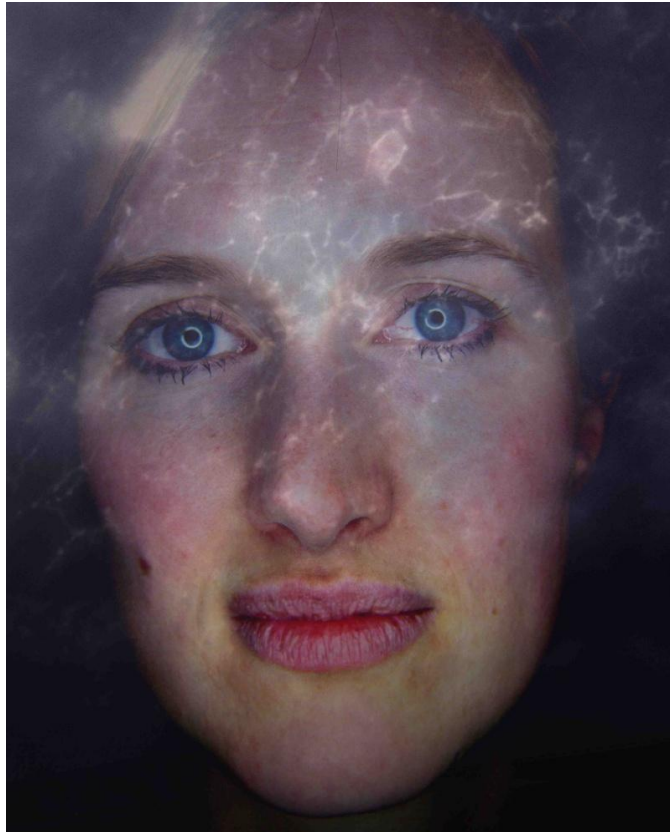
In his introductory essay to 'Wonder Chamber' (2012) Ken Arnold, Head of Public Programmes at The Wellcome Trust, suggests that *Variance* '*...tackles its eponymous idea through seemingly opposite visual suggestions. On the one hand, identifying something unique in generalised biostatistics and, on the other inserting something scientifically objective within a 'portrait'.* (2012:9)

## **Project Methods**

Although Ingham had a previous interest in Galton it was not until 2010 that she was given access to the UCL Galton archive in London in response to an invitation by Galton Curator Natasha McEnroe to create an artwork for the 2011 Galton Centenary. She researched the archive with a special focus on his composite typologies. The notion of a composite 'typology' is oxymoronic – no two individuals are the same although they may have similar characteristics. Having worked with neuroscientists for the better part of the past 10 years Ingham was also aware of the growing trend in neuroscience to make similar claims to Galton regarding the validity and accuracy of digital brain images in relation to type (a criminal type of brain imaging pattern for example). In response she created a digital film montage with voice-over using images from the archive alongside images she had made with neuroscientists at Cardiff University. This was accompanied by six large scale digital photographs of her extended family with digital brain imaging composites of 'types of thoughts' overlaid – hence 'thought portraits'.

## **Funding**

Major Creative Wales Award



*Thought-Portrait – Sam, from Variance, 2011*



*Thought-Portrait – Emily, from Variance, 2011*



Images from the Galton Collection including (left) composite typology

## Outcomes and Dissemination

Examples of dissemination include:

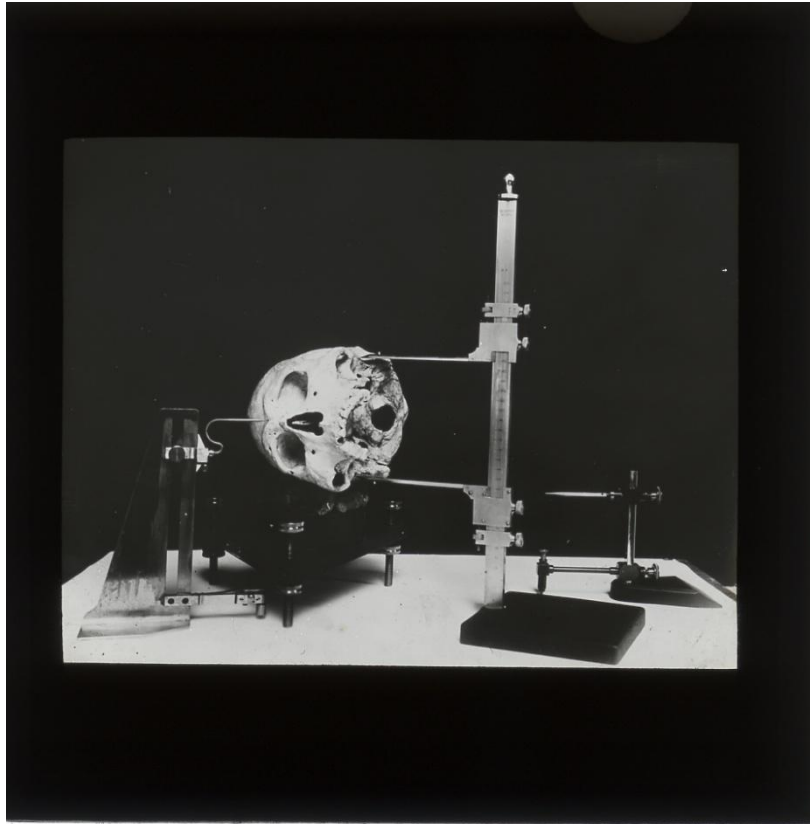
- Dec 2011- Dec 2012 Bristol Neuroscience *Art Windows*. A year long public screening outside the Dorothy Hodgkin Building where the film was shown on a loop day and night and seen by tens of thousands of passers-by.

- January 2012, Anglia Ruskin Digital Gallery (curator Bronac Ferran RCA *Visualise*) with Susan Aldworth as part of *Between* April-July 2012
- The Inigo Rooms, Somerset House East Wing and KCL as part of *Between: Embodiment and Identity* with Susan Aldworth and Andrew Carnie in collaboration with Wellcome Trust *Brains* show curators Dr. Marius Kwint and Dr. Richard Wingate, funded by KCL Cultural Quarter with an international symposium funded by HEA (June 2012)
- April 2012, as part of *Wonder Chamber*, solo exhibition and publication with Ffotogallery, Cardiff and 66 page publication distributed internationally by Cornerhouse Publications
- MOOT, AHRC Digital Transformations, London, November 2012
- December 2012 – May 2013, Casa de Cultura, Brazil with Susan Aldworth, as part of the *Between* exhibition (4 weeks) in Uberlandia, Brazil, in conjunction with the international symposium *The Body and Discourse* at the Federal University of Uberlandia where Ingham was the international keynote. Touring Brazil including May 2013 exhibition as part of the University of Campinas *Art, Technology and Society International Conference* (Ingham video keynote address)

**Reviews and publications where mentioned include:**

Studio International (2012), New Scientist (2012), The Architectural Review (2012) Interdisciplinary Science Review (2013) and (forthcoming 2014) chapter in book - Art, Science and Cultural Understanding. Publishers: CG Publishing





Left, Galton Collection; right image MRI Self-Portrait included in the film *Variance*

**BETWEEN: Embodiment & Identity**

An exhibition of the work of artists Susan Aldworth, Andrew Carnie, and Karen Ingham. Exploring how personal identity has become embedded in a new landscape of anatomical imagery.

19 April – 30 June 2012  
Monday – Saturday 1.00 – 7.00pm  
Inigo Rooms  
Somerset House East Wing  
Kings College London  
inigo@kcl.ac.uk

**Inigo Rooms** **KINGS COLLEGE LONDON**



Thought Portrait Emily from the photographic series Variance Karen Ingham 2012

Exhibiting together for the first time, and working with neurobiologist Richard Wingate from the MRC Centre for Developmental Neurobiology at KCL, artists Susan Aldworth, Andrew Carnie and Karen Ingham present works that explore emerging and enriched images of the self.

Susan Aldworth's work engages with neuroscience and philosophy to develop an understanding of human identity. Her films and *Reassembling the Self* lithograph, made in collaboration with Stanley Jones at the Curwen Studio, consider the relationship between the physical brain and our sense of self. <http://susanaldworth.com>

Andrew Carnie uses time-based media to reflect the evolving nature of our sense of self, as we construct an identity through the acquisition of knowledge and the challenges of medical disorders. *Seized* uses projection to explore how the experience of epilepsy impacts on the sense of being embodied. <http://andrewcarnie.co.uk>

Karen Ingham's works juxtapose the narratives behind scientific objects, language and images conferring new meanings onto the notion of embodiment. The films exhibited include *Narrative Remains*, made in collaboration with The Huxley Museum and *Variance* with The Francis Galton Collection. *Vanitas: Seed Head* and the *Piece of Mind Mask* were made with the assistance of the Cardiff Neuroscience Research Group. <http://kareningham.org.uk>



Reassembling the Self 4 Susan Aldworth lithograph 2012

**BETWEEN: Embodiment & Identity**

Biomedical Sciences have been transformed in the last twenty years by visualisation techniques that have harnessed optical physics and the genome to give a dramatic window into living cells and functioning systems. How much is this imagery now informing our sense of self?

Advances in imaging technology are the currency of scientific exploration and improved medical diagnosis. Our ability to manipulate, render and threshold vast volumes of data have generated a new biology in digital form. Anatomy and physiology can be visualised and modelled within the computer in four dimensional data sets that are almost tangible embodiments of what lies beneath the surface of cells and bodies.

Our new-found mastery of the genome has seen an explosion in molecular techniques through which cells and tissue are engineered to make them reveal their form and function. Genetic methods have shuffled naturally occurring biofluorescent proteins from jellyfish and coral into the microscopic domains of cell interiors. The same approaches that reveal microscopic anatomy also allow the activity of brain cells to be controlled. Together, the machinery of visualisation and the power of molecular biology have made biological tissue increasingly transparent to both examination and manipulation.

These technological interventions have altered the



Seized: Out of this World Andrew Carnie slide dissolve installation 2009

Front page, background image: Vanitas: Seed-Head Karen Ingham film 2005  
Front page, clockwise from top: Out of Body Susan Aldworth film 2009  
Piece of Mind Mask (Red) Giclee print Karen Ingham 2012  
Seized: Out of this World Andrew Carnie slide dissolve installation 2009

material stuff of biomedicine and human anatomy, from the slab of dissected material or collection of glass slides, to a three-dimensional, digital theatre of the spectacular, interpreted through computer-generated palettes of reds, purples and greens. These crafted and stylised forms are complemented by an industrialised production of online databases and digital atlases, which collectively confront us with new perspectives on biological form.

What effect does the mechanics and aesthetic of visualisation have on our sense of our own biology? Is the self embodied in the material substance of our cells and tissues, or is our identity best captured or imagined in the rendered, stripped-back and ultimately immaterial digitisations of scientific imaging? This exhibition is the manifestation of these questions, arising from science, but posed by artists, to be explored by the subject – ourselves.

Dr Richard Wingate, KCL

**THE GAP**

Susan Aldworth, Andrew Carnie and Karen Ingham draw upon the figurative traditions of Western art, whose historic task has been to make the human body meaningful. Since the body was, according to classical aesthetic theory, the main vehicle for visual communication, artists were expected to move their audiences by mastering the depiction of its expressions, poses and gestures. According to doctrines established by Renaissance theorists such as Alberti, the human

Variance in Between: Embodiment and Identity, Somerset House, London, 2012

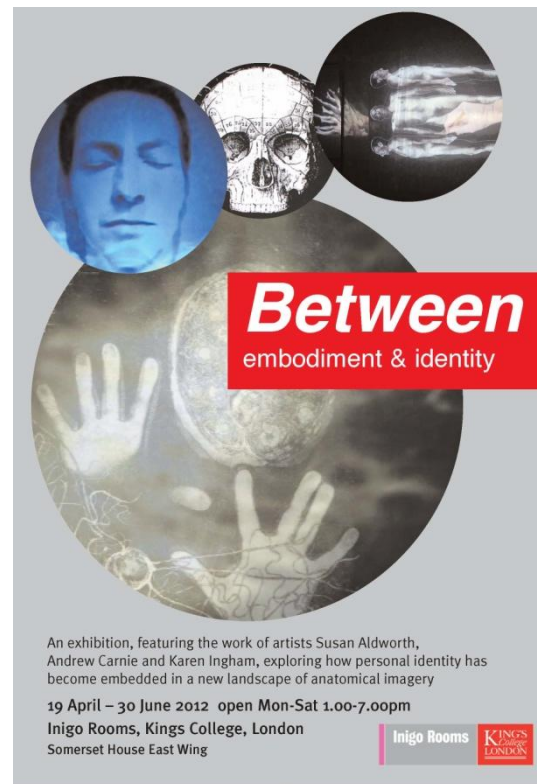


*Variance in Wonder Chamber, 2012*  
Six thought-portraits and digital film included  
in Wonder Chamber, 2012



Bristol Neuroscience 2011  
Year long public screening, Bristol

**Examples of national and international dissemination:**



In 'Between' Somerset House London and 'Passagens-Between', Campinas Brazil 2013



Four of six *Thought Portraits*