An Arts and Humanities Research Council funded project
Lincoln School of Art and Design
Faculty of Art, Architecture and Design
University of Lincoln
Lincoln, United Kingdom
The Art of Reconstruction

The Art of Reconstruction workshop was held in February 2011 and was attended by 12 consultant surgeons from a plastic surgery or general breast surgery background. The 3 day workshop was split into taught modules investigating shape, form, spatial relationships, contour and negative spaces. Initially it was a little intimidating having our limited artistic talents exposed in front of a group of respected peers, but the workshop was conducted in a very relaxed, friendly atmosphere and very quickly it became apparent that we were improving and beginning to understand a little more with each exercise. The theories developed on the first 2 days were then put into practice on the final day when we had an opportunity to sculpt both a head, and a torso. The torso models had been cast from mastectomy patients and we used the skills and knowledge gained earlier in the course to create a symmetrical breast. It was fascinating that a variety of ‘breasts’ were created which on first inspection would be considered to be very acceptable results surgically and many of us were quietly pleased with our efforts. However, on closer assessment with the course Artist, asymmetries were obvious, and we discussed the best ways to identify these. We learned to inspect the torso from various angles and studied the effects of lighting the torsos from different directions.

Post-workshop Experience in Theatre

After completing the workshop and returning to the operating theatre, I have made several adjustments to my operating procedure. Perhaps the most useful practical taught element that I learned was the importance of examining breasts from the woman’s perspective ie looking straight down between the cleavages. This really highlights differences in projection of the two breasts and most importantly, lack of lateral fullness. I have always sat the patient up on the operating table intra-operatively in order to assess breast shape, but I now use a step and stand over the top of the patients head so that I can look down between the cleavage in order to see what the
patient will see postoperatively. The second most useful taught element is that I now turn the operating theatre ‘spot lights’ off whilst assessing shape – these bright lights tend to ‘flatten’ the shape and certainly mask subtle differences. Controlling lighting and ones viewpoint was an important element of the taught workshop.

Overall, it was an excellent workshop experience and a very enjoyable 3 days, but most importantly it made a definite difference to my clinical practice. As with most courses, I feel that I probably understood and retained only a small amount of what was on offer and I would be very keen to repeat and develop in this type course at some stage in the future.

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Plastic Surgeons Who Attended the Drawing Workshop in February 2011

V Ramakrishnan
London Broomfield Hospital

Jonathan Staiano
Birmingham City Hospital

Michael Irwin
Cambridge Addenbrooke's Hospital

Sunil Thomas
Birmingham Selly Oak Hospital

Stephen McCulley
Nottingham University Hospital

Graham Offer
Leicester Royal Infirmary

Joe O'Donaghue
Newcastle Royal Victoria Infirmary

Tuabin Rasheedk
Nottingham City Hospital

Anzors Gvaramadze
Lincoln County Hospital

J S K Khoo
Charing Cross Hospital

Kenneth Graham
Merseyside Whiston Hospital
The Art of Reconstruction

A successful drawing and modelling workshop for several UK plastic surgeons took place in Lincoln School of Art and Design in February 2011. The Art of Reconstruction (AHRC) is a new research project with Professor of Drawing Mike Esson, (Professor of Drawing at University of Lincoln) who works within the College of Fine Arts (COFA) at the University of New South Wales (UNSW), Australia. The AHRC Network grant essentially brings external international networking dialogue into developing The Art of Reconstruction here in Lincoln. Professor Esson has run drawing and modelling courses for plastic surgeons in Australia for several years. The Network award also brings into the project Professor Belinda Colston from Forensics in the Faculty of Health, Life and Social Science, University of Lincoln and Guy Sterne, a member of the UK Association of Plastic, Reconstructive and Aesthetic Surgeons (BAPRA) and a distinguished plastic surgeon, who is an advisor.

Professor Michael Healey,
Professor of Art & Design,
University of Lincoln
Principal Investigator
AHRC Network Grant
Objectives

The purpose of this research grant is to bring together some key players to an international network. This project blurs the boundaries between art and medicine. The research project sits within the faculty-wide drawing research group (art, design and architecture). Professor Healey is a founder member of this faculty-wide, drawing research group, while Professor Mike Esson is the Director of the International Drawing Research Institute (IDRI) of the College of Fine Art, UNSW. Lincoln is a member of the IDRI and partners include: Glasgow School of Art, Central Academy of Fine Art, Beijing, China Lu Xun Academy of Fine Art, Shenyang, China, the Fashion Institute Dong Hua University, Shanghai, China, University of Lincoln UK, Indus Valley School of Art, Karachi (to be confirmed).

The ‘Art of Reconstruction Research Project’ is where re-skilling of plastic surgeons by artists is already in an embryonic phase. In integrating the required network of associated skills, expertise and experience, the research collaboration brings together artists within The Drawing Research Group of The Faculty of Art, Architecture and Design (AAD) and the distinguished work of Professor Mike Esson, Director, The International Drawing Research Institute (IDRI). These will be working with members of the UK Association of Plastic, Reconstructive and Aesthetic Surgeons (BAPRA) and members of the Royal College of Surgeons through a comprehensive workshop and seminar programme. Building from the success and feedback of an initial provisional workshop for surgeons in November 2009 this project is structured as a pilot study to develop a new research network that will extend the application of the visual arts in medicine enabling the development and treatise of the intersection of art and science in respect of the new practice based ideas and concepts currently formulating in plastic surgery. This pilot study represents the first "substantiation" stage within this overarching objective and 4 strategic activities are identified:
1. Design and delivery of a three day comprehensive workshop for surgeons in the field of reconstructive and cosmetic surgery; integrating both training and investigation of aesthetic principles, questioning canons of proportion and beauty, together with the introduction of practical skills through the languages of drawing and sculpture. Through established drawing and modelling disciplines and techniques surgeons will be introduced to formal aesthetic principles and strategies for dealing with interpretation of structure and space. It will provide an accessible, tactile and visual experience, the focus of which deals with proportion, negative space, contour, methods of graphic representation, and in three dimensions; notions of deconstruction and reconstruction. There will also be an investigation of the dynamic geometric solids of facial features and an understanding visual tension.

2. A two weeks public exhibition following the workshop, providing additional feedback and consultation to provide the starting point of the critical review assessment. 6 month follow up and review phase enabling a qualitative analyses of the benefits and outcomes of the thematic approaches adopted within the workshop.

3. A one day seminar, inviting all workshop participants and invited specialists and academics midway through the review phase to assess and develop the thematic research questions in respect of a roadmap for further progress and uptake.

4. This will be closely followed by a smaller workshop involving key partners and participants at the project end to further develop the thematic areas and best practice indicators against the perceived benefits.
Right to left: Dr. Lisa Mooney Smith, Director of Research, Faculty of AAD, Professor Mike Esson, Dr. Belinda Colston, Professor Mike Healey
These activities will enable many of the critical research questions to be reviewed and analysed as well as identify additional elements of importance arising that will inform and contribute to the subsequent uptake and implementation of this integrative approach throughout the UK. Questions such as:

1. Is there added value applying ‘art based’ skills to the understanding and implementation of aesthetic considerations within the operating theatre?

2. Has each specialization moved away from a common understanding of the human body?

3. On issues of symmetry and asymmetry accompany the workshop exercises can we, in the seminar, discuss and assist in cultivating an ability to identify facial and body characteristics differing from the norm?

4. Can surgeons who are introduced to a wide range of approaches further their observational and perceptual abilities to the benefit of their procedure outcomes?

5. What is “Best Practice” in terms of new ways of understanding and communicating complex visual information of service to the medical profession.

Summary

Rationale: Since Aristotle and Hippocrates in ancient Greece through Claudius Galen in the middle ages and Leonardo de Vinci in the renaissance art has been inextricably entwined with medicine. Although more often viewed in the context of illustrations, such as from Max Brodel in the early 20th century, today’s advances in modern plastic surgery now call for a far more dynamic involvement directly supporting the proficiency, and thereby outcomes, of the surgeons technical skill. 21st Century plastic surgery is as much concerned with improving the perceived quality of life as it is, over and above, essential reconstruction. This requires an aesthetic sensitivity and understanding of
art and form that is not part of a surgeon’s normal training. Building from the success and feedback of an initial provisional workshop for surgeons in November 2009 this project is structured as a pilot study to develop a new research network that will extend the application of the visual arts in medicine enabling the development and treatise of the intersection of art and science in respect of the new practice based ideas and concepts currently formulating in plastic surgery. Research considerations: In integrating the visual and representational skills of art to the reconstructive technical skills of a plastic surgeon there are a number of key issue to address. - Is there an added value applying ‘art based’ skills to the understanding and implementation of aesthetic considerations within the operating theatre? - Can we examine the intention of the value of ‘art based’ skills to the understanding of aesthetic considerations within the operating theatre? - Can we improve on NHS pre and post operative patient and surgeons perceptions of “success”? - Can we discuss and assist in cultivating an ability to identify facial and body characteristics differing from the norm? Applications and Beneficiaries: - Primary and initial beneficiaries will be participating NHS surgeons who acquire new skills enabling a more informed and confident aesthetic decision-making process; investigating formal and practical aesthetic principles to integrate into their medical practice. Surgeons who participate will also pass on the benefits to NHS colleagues. - This project will test and develop strategies that explore the relationship between differing spheres of activity through a process of reciprocal interactions reinforcing the intimately connected worlds of art and science. The benefit follow up and qualitative analysis is thus central in order to validate the approaches used and identify routes to further progress and uptake. Ultimately, the major benefit is to the patient through improved outcomes and perceived quality of life.
Impact

Outputs include: Workshops and seminars continue to develop and validate the central tenets. Academic analysis of the projects findings and best practice guidelines will be through website, film recordings, case study material, teaching material and establishment of a new and important international network for Art, Architecture, Design at University of Lincoln. Additionally, this exhibition, with supporting published catalogue, will offer wider public dissemination. Opportunities exist for peer reviewed journals as well as other journal articles. This initial network will maintain contact and extend on a sustainable basis through subsequent projects and implementation. For example, the University had a planned conference on “Drawing” in 2011 iRecto Versoî. Key players in the network project delivered papers and interrelated directly with conference delegates. In addition a skills based workshop has been run in New Zealand and Australia for surgeons. ‘The Art of Reconstruction’ pilot project has begun to disseminate and formulate development and application roadmaps relevant to the NHS medical specialist in the UK. Thus contributing to both the disciplines of medicine and the visual arts in the UK.

The main outputs of the research Journal article (refereed) Website Performance, film or recording Exhibition or installation Case Study Material Teaching Material Expertise gained through the application of research in a non-academic environment

Ethical Information

When the project began in Australia, apart from a few enthusiastic surgeons who felt the need, there was antipathy as to what someone outside the medical profession could offer their professional expertise. It was important to establish a rigorous, ethical and practical involvement where the newly acquired knowledge could be identified, tested and applied to surgical practice. Follow-up questionnaires strongly validated the project and critical feedback was used in refining both structure and content. Since 2000
approximately 70 of Australia and New Zealand’s most senior surgeons have completed a related skills course. Due to the success of the Australian project it was introduced in Melbourne in 2008 to 80 registrars. So far a course has been run in Sydney, Melbourne, Adelaide and Hobart with no ethical problem.

As per the University of Lincoln regulations, this project was submitted to the Faculty of Art, Architecture and Design ethics committee for review prior to start date and it was supported.

**Academic Beneficiaries**

The ambition of this research project is to contribute to the disciplines of medicine and visual arts in the UK which will directly benefit the research interests of Prof. Mike Esson - Director, International Drawing Research Institute COFA Australia (IDRI); Prof Michael Healey Drawing Research Group, University of Lincoln; Prof. Belinda Colston, University of Lincoln; Mr Guy Sterne, consultant plastic surgeon Spire South Bank Hospital; Dr. Baris Cakir, a cosmetic surgeon from Turkey (http://www.bariscakir.com/english/baris_cakir_kimdir.htm). All are members of the network. The benefits to the Art and Design sector and the University of Lincoln in linking with a mature and established international network are immense. The research collaboration will bring together key international players in the visual arts. Medicine: Primary beneficiaries will be the surgeons who acquire new skills enabling a more informed and confident aesthetic decision-making process. From the surgeon’s point of view, it is a genuine research opportunity to investigate formal and practical aesthetic principles to integrate into their medical practice. The development of new strategies in assessing aesthetic relationships, and the exploration of various methods of graphic representation will assist in transfer of visual knowledge to colleagues and theatre assistants. Surgeons who participated in previous courses were complimentary and pro-active in passing on the benefits to their colleagues. Surgeons gain confidence in communicating visual...
information to their patients. The results of this research experience will add to the confidence the patients feel towards the surgeons in fulfilling what is expected from a surgical procedure. Only a subjective qualitative analysis is enabled within this pilot validation study. However future research and investigations, with artist, surgeon and patient, will include clinical trials that investigate, on a quantitative basis, the comparison between the expectation and result as perceived by the patient, providing essential statistical information. Ultimately, it is of course the benefit to the patient where the real value and satisfaction is experienced through improved outcomes and perceived quality of life. Art and Design: For the artist and art educator this is an opportunity to test and develop pedagogical strategies that explore the relationship between differing spheres of activity. Drawing functions across various disciplines, not only within the visual arts, but in other areas, particularly those dependent on visual communication and understanding. For the purposes of this research, drawing and modelling are presented as ‘an art of making’ rather than the act of viewing. Teaching visual awareness to those outside artistic

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backgrounds adds insights that help the evolution of new and challenging research through practice. An increasing number of artists are inspired by the body and the proliferation of new biomedical techniques to visualize it. The project establishes the basis for further research into the benefits of ‘visual art studies’ for other professions. This goes beyond the direct value it offers the aesthetic medical specialist, and provides avenues of exploration into how other areas can complement their professional activities with the assistance of training in visual communication. Specifically, some academics and network members will have the opportunity to evaluate the ways in which this pilot workshop could be extended to professionals working in the heritage science sector.

**Impact Summary**

Network Benefits: The research project underscores the significant nexus between art and science professions in such a way that both academic collaborative practices are considerably expanded and enriched. It is appreciated that this collaboration represents an acknowledgement of shared respect for our practices, research and the associated expertise within these disciplines. Art and Design HE Education in the UK is acknowledged to be world class. Drawing functions across various disciplines and this research project establishes the basis for further research into the benefits and implications of ‘visual art studies’ for other professions. This goes beyond the direct value it offers the aesthetic medical specialist, and provides avenues to explore into how other areas can complement their professional activities with the assistance of training in visual communication and creative problem solving. For example, the development of drawing for conservation/heritage science will be piloted at Lincoln University, in the School of Natural and Applied Sciences. Impact on surgeons and patients in the UK: The benefits accrued through this project will have a direct impact on the field of reconstructive and aesthetic surgery. It is through their training that surgeons approach their activity from a formal surgical methodology but usually evaluate the results from an aesthetic point of
view. This dichotomy can present difficulties in both the expectations of surgeon and patient. Through the research project surgeons will acquire new skills enabling a more informed and confident aesthetic decision-making process for public medical practice. It is also anticipated that surgeons will continue to seek to upgrade and develop these skills (as they have done in Australia). The University will look into this provision as part the workshop outcomes. The Interactive website and future associated events will facilitate continued dialogue and communication with key players. Similarly the engagement of art and the use of life study classes within the undergraduate medical curriculum is being tentatively developed by several prestigious Medical Schools, such as the University of Nottingham. This project will further develop the rationale for such approaches. Impact on visual arts in the UK with relevant experience and track record:

The drawing research group at University of Lincoln, embedded within Art, Design and Architecture, fosters drawing as a process of reciprocal interactions reinforcing the intimately connected worlds of art and science. Drawing functions across various disciplines, not only within the visual arts, but in other areas, particularly those dependent on visual communication and understanding. Similar projects for reconstructive, cosmetic and maxillofacial surgeons have been held in Australia and New Zealand. The classes originated from drawing classes run at The Royal College of Surgeons, Edinburgh in 1993/94 when Esson was an Artist in Residence and Healey was the Head of the Design School at Glasgow School of Art. Subsequently, in Australia, the project was extended with the most prominent surgeons in the field enrolled. They expounded the value of the project experience to their colleagues. Since 2000 approximately 70 of Australia and New Zealand’s most senior surgeons have completed the evolving project. Due to the success of the course it was introduced in Melbourne in 2008 to 80 registrars with the possibility of it being adopted as a regular component. Economic Impact: The introduction and development of this project into the UK will impact on the potential for enhancement of
UK medical economic competitiveness by delivering better results for patients who are undergoing pre and post operative plastic surgery. The enhancement and development of the field of NHS cosmetic and maxillofacial surgeons would be a powerful outcome. General enhancements of quality of life, health and creative output will also follow.

Pathways to Impact Communications and Engagement

Connections between projects for reconstructive, cosmetic and maxillofacial surgeons have been held in Australia and New Zealand through Professor Esson. The workshop classes originated from drawing classes run at The Royal College of Surgeons, Edinburgh in 1993/94 when Esson was an Artist in Residence and Healey was a Head of School at Glasgow School of Art. Subsequently, in Australia, the project was extended with the most prominent surgeons in the field enrolled. They expounded the value of the project experience to their colleagues. Since 2000 approximately 70 of Australia and New Zealand’s most senior surgeons have completed the evolving project - although no follow-up academic research, debate and dissemination has been undertaken. In the UK we have engagement with: Dr Alasdair McKechnie, consultant maxillofacial surgeon and a research fellow at the University of Lincoln, and through him The British Association of Aesthetic Plastic Surgeons (BAAPS); Professor Ian Hutchinson of ‘Saving Faces’ the UK Facial Reconstruction Organisation;’ Mr Guy Sterne, consultant plastic surgeon and senior tutor at the Royal College of Physicians in London In addition, as a result of the feedback arising from the provisional training workshop in November 2009. This networking itself has provided the impetus for this project but will also provide a major dissemination vehicle - providing direct outreach to the Surgeons themselves. It is also important to realise that the ongoing dialogue with these bodies will also facilitate the direction and shape of the projects training and research activities to ensure that efficacy and applicability is integrated into the scholarly research aspects of the programme.
This exhibition is important in enabling engagement and feedback from the attendees; including the public, artists and associated media disciplines, medical practitioners as well as potential subsequent beneficiaries such as conservation and heritage science practitioners. It may provide opportunities for subsequent distance learning, e-learning and webinar presentations tailored as a result of additional feedback from the attendees and supporting organisations. As such it will contain a recording of the key workshop presentations on film together with a public exhibition of all drawings, photographs of 3D models and supporting visual research. These subsequent activities are not part of this initial pilot study but will form the basis for subsequent outreach and communication tools within ensuing projects and programmes building on the outcomes of this project.
Collaboration

An informal but dedicated outreach and exploitation team that includes University PR is established at the University comprising Healey, Esson, and Colston together with research and knowledge transfer specialists from the University’s Research Office, PR and Enterprise departments. The network team are responsible for most outreach, exploitation, engagement and dissemination activities. In respect of Intellectual property all results arising from this study will be in the public domain but noting that Professor Mike Esson, of COFA and UNSW holds ownership of the Art of Reconstruction name. The nature of the relationships between network participants are established and yet still developing and this research collaboration brings together artists within The Drawing Research Group of The Faculty of Art, Architecture and Design (AAD) and The International Drawing Research Institute (IDRI).

International Drawing Research Institute
College of Fine Art
University of New South Wales
Sydney
Australia