

# ae

**Arts & Education**

**ISSUE 2 Autumn/Winter 2011**

KJ Abbott  
Felicity Allen  
Michael Archer  
Lesley Butterworth  
Sarah Craske

Claire Gibb  
Becky Heaton  
Phil Scott  
Henry Ward

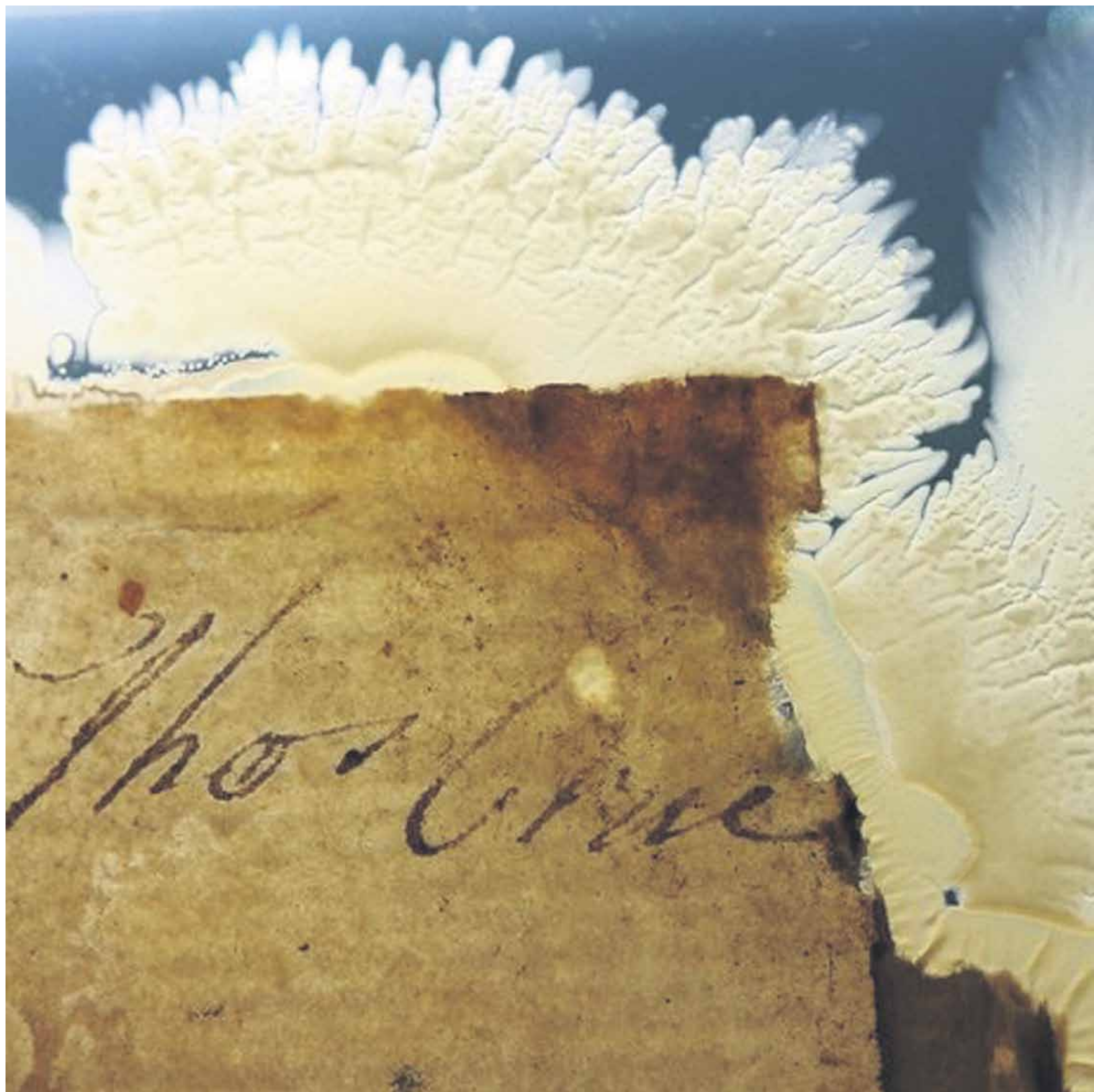
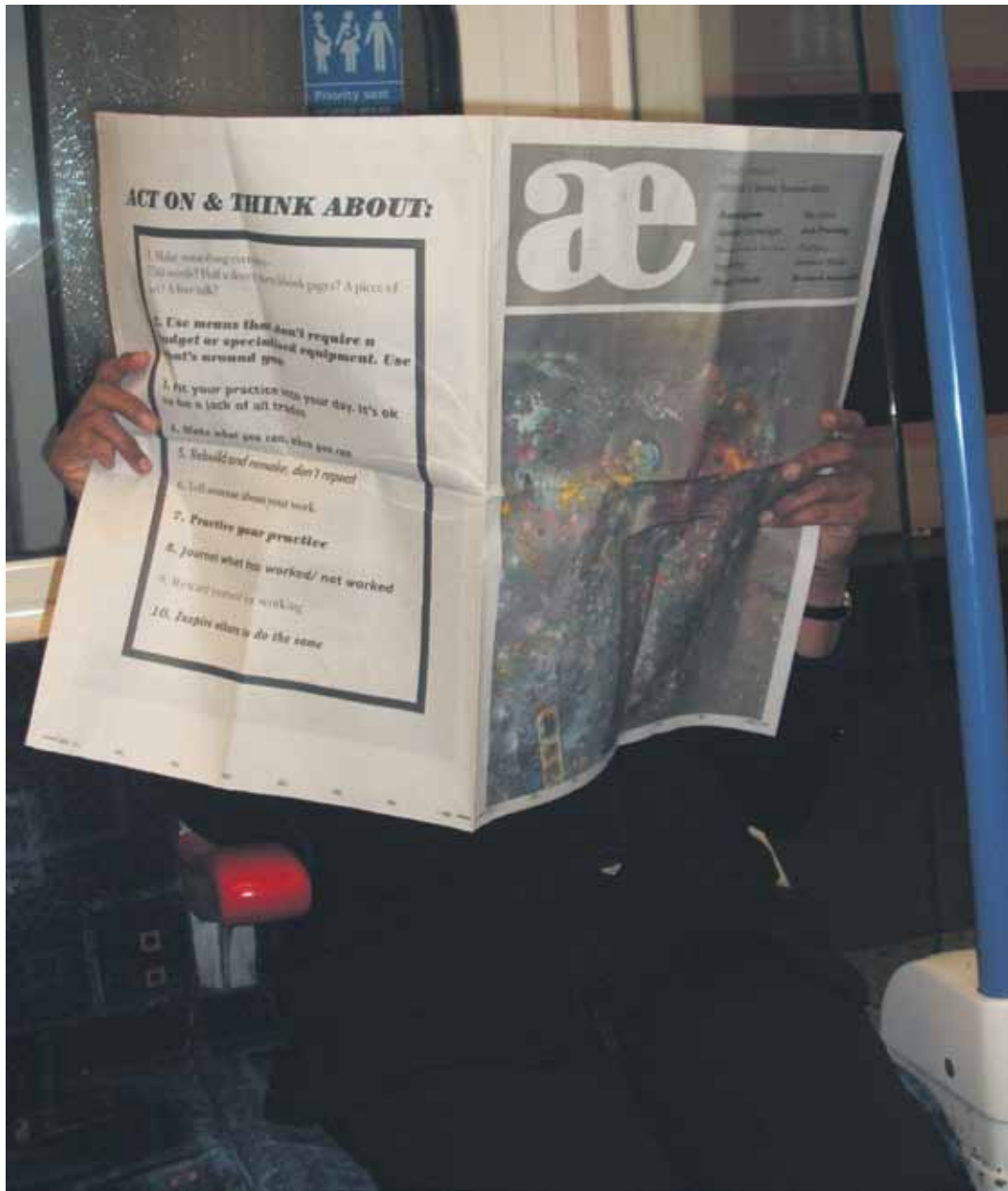


Image by Sarah Craske

**includes aTURNERtive Prize 2011  
pull-out supplement**





# Editorial Henry Ward

Welcome to issue 2. With any new venture there is always a fear that things won't turn out the way you think. Back in the spring of this year we were working on putting together a publication devoted to art and education ideas. In the summer æ was launched at the South London Gallery and copies began to work their way across London virally, being read and then left on trains and buses for others to read. In fact, things couldn't have started any better. But like that difficult 'second album' we now needed to follow this success with issue 2.

Art and science have a relationship that goes back for centuries. Leonardo da Vinci cutting up bodies to investigate the way they worked, designing machines and painting and sculpting; the involvement of lens technology in the development of perspective; through to contemporary art's seeming obsession with the scientific and medical. But despite this obvious and undoubtedly fruitful relationship the worlds of art and science are often kept very separately in educational institutions. At Welling School all this is changing. Last year we introduced a new subject to the curriculum at key stage 3: SciArt. In SciArt lessons are taken by art teachers, donning white lab coats, in art classrooms, but the topics and areas covered are taken from the Science curriculum. The project has proved an enormous success and SciArt is now embedded in the school's offer. Some of

the early reactions to this new initiative are covered in KJ Abbot's article.

Sarah Craske is an artist whose work transcends the boundaries traditionally associated with art and science, as are the artists and approaches covered in Lesley Butterworth's piece. The renowned Room 13 discuss how they have been approaching the issues surrounding Science education. Whilst this issue of æ has a focus on Science and Art other areas are covered too. Phil Scott writes about the difficulty and potential obstacle that 'drawing' might present. Becky Heaton investigates the role that games can play in the classroom and we also present an excerpt from a conversation between Felicity Allen, Michael Archer and Henry Ward that touches on several areas relevant to issues in art education today.

So here is our 'difficult' second album: issue 2. Hopefully this edition will also find itself left on tube seats for unsuspecting members of the public to peruse.



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# Artists and scientists, material noticings.

## Lesley Butterworth

My initial thoughts, on considering the long relationship of art to science, started with Leonardo da Vinci, definitive Renaissance man, scientist, artist and inventor. Moving swiftly forward I reflected on the excellent work done by the Wellcome Trust in London combining the arts and sciences, and artists and scientists working together in their exhibitions and programmes. As always, the museum and gallery sector provide inspiration and opportunity to see different disciplines and professions in collaboration.

The Exploratorium in California is a pioneering museum founded by Frank Oppenheimer who viewed art and science as complementary ways of exploring the world and wove this view into the fabric of the museum, encouraging artists and scientists to work alongside each other exploring and envisioning new ideas with a common goal of supporting a culture of experimentation and collaboration, and to inspire curiosity and understanding. Frank Oppenheimer called artists and scientists "the official 'noticers' of society," adding that "they notice things that other people either have never learned to see or have learned to ignore, and communicate those 'noticings' to others." Many museums now incorporate both art and science, but this was a revolutionary idea when the Exploratorium opened its doors in the late sixties.

From the gallery sector I began to think about boundaries, the blurring of boundaries, hybrid practices, and definitions.

A definition can be dangerous, for what it leaves out as much as what it attempts to pin down. But it can give a middle ground, a starting point, at least something to pick at and disagree with. And it makes you notice.

The British Science Council has spent the last year working out a definition of the word 'science'. They have agreed upon the following.

'Science is the pursuit of knowledge and understanding of the natural and social world following a systematic methodology based on evidence.'

I amused myself by removing the word 'science' and replacing it with the word 'art'.

'Art is the pursuit of knowledge and understanding of the natural and social world following a systematic methodology based on evidence.'

For me, that doesn't quite work any more. What about experiment? The happy accident that leads to the eureka moment? Or does it simply reflect my lack of understanding of scientific purpose?

The Arts Council is more cautious in its definition of the word 'arts' but concludes that 'art achieves a purpose not its own, and that no one can be entirely sure where art will take us.'

'Excellence in the Arts' Arts Council England 2011.

The Crafts Council are more forthright. 'Contemporary craft is about making things. It is an intellectual and physical activity where the maker explores the infinite possibilities of materials and processes to create unique objects.'

Scientists surely must also 'explore the infinite possibilities of materials and processes to create unique'....discoveries and conclusions?

Considering a definition is a helpful starting point. A definition will create a boundary between disciplines. Artists and scientists don't 'notice' boundaries much. In essence, artists and scientists are bound by curiosity, and conjecture, the need to explore a material world? Here is the work of two contemporary artists and makers who have blended and 'noticed' over the boundaries, working with science, and as scientists themselves.

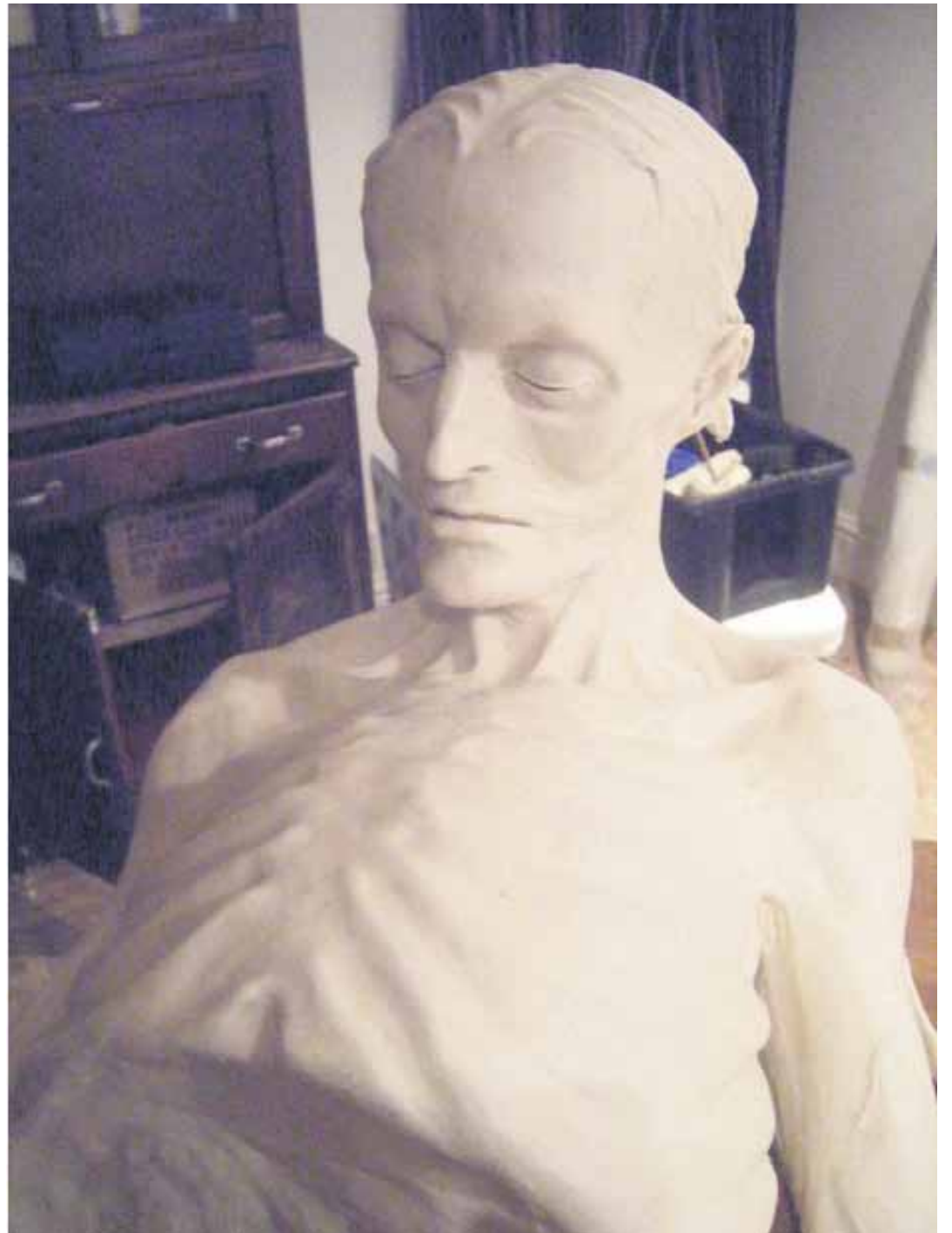
The study and implementation of knowledge of anatomy straddles both science and art. The collections of many universities and hospitals, such as the Gordon Museum of Pathology and the Hunarian Museum at the Royal College of Surgeons provide a glimpse into the work of medical illustrators and model makers supporting the work of scientists.

Working within both disciplines and with anatomy at the heart of her practice Eleanor Crook trained in sculpture at Central St Martins and the Royal Academy. Eleanor makes effigies in wax, carved wood, plastics and lifelike media and has made a special study of surgery, dermatology, pathology and anatomy that has taken her into forensic facial reconstruction modelling. Crossing a boundary between art and science Eleanor lectures to and shares her expertise with law enforcement officers in the UK, USA, Canada, Japan and Belgium. Eleanor is currently researching into animatronics, combining speech, movement and moving fluids in her figures, and has been instrumental in the development of the MA Art and Science for the University of the Arts, London. [www.eleanorcrook.com](http://www.eleanorcrook.com)

Moving from anatomy, sculpture, wax and clay into natural fibres and construction, the relationship between art and science can be reflected in biology and weave. Ann Richards is weaver who trained as a hydro biologist, and began weaving whilst working as a biology technician at Chelsea College. Following a higher diploma course at the Surrey Institute of Art and Design and a Crafts Council Setting Up Grant Ann opened a workshop in Southampton working on a variety of looms and in silk, linen and wool.

Not only does Ann use the forms and functions of living things as a source for her weaving, but also the tensions in the fibres to create moving fabrics engineered by the tensile strength and properties of the fibre and the form. Dresses that drape around your body, scarves that curl around your neck, Ann uses art and science to inform her interest in 'how things work as well as how things look and feel.'

Two very different artists, exploring with different materials, exploring towards different goals and exploring alongside scientific knowledge. Asking us to notice something differently?



Eleanor Crook  
This Fatal Subject (wax edition)  
Wax  
2008



Eleanor Crook  
This Fatal Subject  
Silicone, animatronic mechanism, hair  
2009



Bathany Kingsbury-Barker



Harry Arnold



Rachel Grey



# A Journey to the Heart

KJ Abbott

Why a journey to the heart? As Chagall wrote "If I create from the heart, nearly everything works; if from the head, almost nothing." The heart is the centre, that which is real and true comes from the heart and not solely from the heart, but from the heart and soul.

Clearly there is a tacit and intuitive aspect of the process involved in visual communication through art. That unconscious part of any art activity that allows one to forget one is learning. These imaginative moments when we are guided by what we see and feel rather than what we think can be viewed as the inarticulate part of art making, the point when one is lost in the process. These moments during intense creative work when we lose ourselves completely, may be the time we come closest to a sense of self. The question remains, is it possible to create an Art curriculum where all children connect with what has been described as their inner world. Ken Robinson believes that the inner world that is created whilst "doing", this authentic self, must be given the opportunity to develop and it is the responsibility of teachers, the curriculum and schools to harness and encourage 'the doing' and therefore 'the being' that happens in the process of creating, and should be the focus rather than, as is currently, what a child is going to 'become'.

We know that Science and Art are both in a state of constant change, and whilst this is by no means universal, perhaps we could now begin moving away from the Arts/Science split. There are many who would view collaboration between these disciplines as heresy, but some forward looking settings are recognizing that creativity need not be the preserve of the Art class, and Art can marry well with other disciplines to the benefit of all. Both are looking at how the world works and how we can use this to expand our understanding and knowledge.

This investigation took place at Welling School where in 2009/10 year 8 students embarked on a new course; SciArt, the students covered areas of the science curriculum in art classrooms, taught by art teachers wearing science lab coats. The students were studying the heart.

Here is an edited sample of the questions and student responses. I interviewed students in groups of two's and four's in the science block around a display of clay hearts created in SciArt.

Sample Questions and Student Responses:

How would you describe SciArt?

SciArt is basically combined science with art. It combines the two subjects and if you don't get what they're saying in science, and some people don't, I think it is a good way of going further into science using art. Like the first time we did SciArt, we looked into hearts and lungs and our organs and we got to cut up a lambs heart in SciArt.

What does the topic SciArt make you want to explore?

It makes you want to explore and like going further into the art of science you can refer it back, to say animals - how were they created?

Maybe like a flower like something basic but then really look deep into it something we don't do normally in science.

When you were first told about SciArt, and then you started to do it, is it how you imagined it would be?

No, I thought it would be more boring, it's like, sometimes we'd be talking about science and then one lesson we'd be doing art, but basically its just like its an art lesson but its things to do with science as well.

What do you most enjoy about SciArt?

Making all the things out of clay, and painting everything, and looking at it, and seeing how they work.

Making stuff.

Seeing how the scientists also done art as well.

Conclusively all the art teachers were very enthusiastic about teaching

SciArt. The introduction of Sci-Art at Welling, has been a visionary step. It enables students to embrace new creative opportunities provided by linking science and art.

Some of the students responses to my questions were genuinely moving and showed that enquiry and reflection, making the art work and the work they produced, helped them recognize each others' individuality and encouraged students to see things in a variety of ways. As one student said when asked how they felt while making the clay heart:

'I enjoyed it. It's fun. Like, making it look, if you think about it, it was just, like a piece of clay but you've made it into something else now, it just, like, makes you feel proud.'

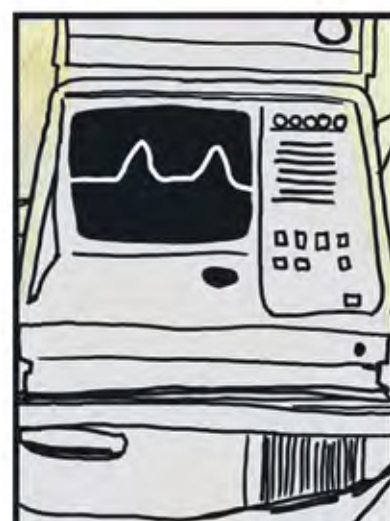
If nothing else we know that creativity teaches us to feel that sense of pride in ourselves, and can demonstrably foster a sense of enquiry in the world around us. It is a way to express the unsayable and to notice the unnoticeable. In endeavoring to find out the reflections and thoughts of year 8 students who made their clay hearts during SciArt at Welling, I made my journey to the heart.

"It is with the heart that one sees rightly, what is essential is invisible to the eye". Antoine de Saint-Exupry



# Love Letter Part 2

By Amalgum





# Drawing Blank

Phil Scott



The beauty of art as a subject is it should be accessible to everyone and anyone. Since I began teaching in 2005 I have striven to encourage student uptake of arts subjects at GCSE and A-Level. The difficulty has always been that the majority of students believe that to be successful in subjects such as Fine Art and Graphic Design; you need to be technically proficient with a pencil. By encouraging students who would normally stay well clear of the arts, they will become more inquisitive and independent as learners.

A number of incredibly successful artists have felt the need to justify their practice by stating that they could draw in a representational manner. Jean-Michel Basquiat once stated "Believe it or not, I can actually draw," and this demonstrates the epidemic nature of the problem. Drawings should be acknowledged in all walks of life from a child's frantic scribbles to a doodle when on the phone or the mark of a coffee mug stain on a newspaper, as they all communicate records, evidence of a feeling during a moment in time communicated through an invention on a piece of paper. We must challenge the concept of what a drawing is. A drawing should be a conscious decision to intervene with a space. Drawing should never be assessed entirely as a representational piece in the conventional sense, as this will discourage students to partake in their art lesson. By opening the door to the other aspects of drawing we should be able to offer students a way of translating words, thoughts and emotions into tangible marks, objects and spaces.

Artists have always used drawing as a means of recording evidence of development and experiments within the field they wish to study. This is also true of a number of other professions: Writers will document through drafts; musicians will scribble notes; even athletes will keep successive documentation of their efforts and techniques. This should be encouraged in art, but by taking the emphasis away from representation and allowing the development of documentation to be more organic, a series of communicative marks that are kept in a sketchbook as a record of progress, and noted as techniques and experimentation develops. A rain swept trip into London seemed fitting to show students the beauty of presentation and that "throw away" items could be presented as artworks within the right context. The surprisingly excellent Tracey Emin show at the Hayward Gallery, *Love is What You Want* offered students the opportunity to see a practicing artist present her life

experiences in a range of formats. Emin has always been a source of attraction for teenage art students, as she deals with issues like under age pregnancy, social tags and feelings of isolation and unconditional love from family members. The students began making notes and drawings based on her work and the trip was a success. One student declared, "I love Tracey Emin's work, because she can't draw and is an artist like me." I appreciate many of Emin's drawn works for their fragility and delicate nature, but I began to understand something different based on this concept that young students sometimes have surrounding the arts.

How many students decide at a young age that art isn't for them because of a negative experience with drawing? The majority of students pick up a pencil at a young age, and for them that tool is the intricate part of what it means to be an artist. But for those that don't feel the immediate affinity with an HB, for them the concept that art could solely be an ideas subject is an area that appears very distant at that intricate part of their creative development.

Practicing lessons at an earlier age in schools should subject students to a range of alternatives to the process of creating drawings. Using contemporary artist's projects such as Matthew Barney's *Drawing Restraint* inspire the idea of drawing as a challenge that pushes other muscles into making expressive marks. Or teaching the works of Tim Knowles, a drawing becomes the process of documenting a boring car journey by sitting with a pencil on a sketchbook page while it rocks and jumps marks on paper. Through these examples you can begin the process of encouragement to explore the idea of thought through marks, which should be accessible to every student.

Good art education should encourage the more academic students to challenge conventional subject matter and present their ideas in a format that fits the message they wish to communicate. This method has encouraged high achieving students to participate in taking an arts subject, in order to problem solve and develop concepts in a number of ways which have a relevance to their own culture/society. In a recent TED "Education Revolution" talk; Adam Roberts presented the idea that British schools are struggling to promote critical thinking. But, communications of differing ways of representing critical thought need to be looked at first. A representation of an idea can be a series of marks on

a page or equally a crumbled up ball of paper that is ready to be discarded. The two "drawings" both present ways of communicating an idea using the same materials but are read as two completely different concepts. What education needs to promote is the variety of methods of communicating and "drawing" is anything that you as the artist wish it to be. Promotion of the non-drawing "drawing" is fundamental in encouraging independent students the opportunity of evolving their lateral critical thinking in order to problem solve and become creative individuals. Art is, and should always be, viewed as an ideas subject, and any person wishing to engage in the practice of art need only have ideas that they wish to communicate to an audience.

Follow Phil on Twitter [philscott61](https://twitter.com/philscott61).

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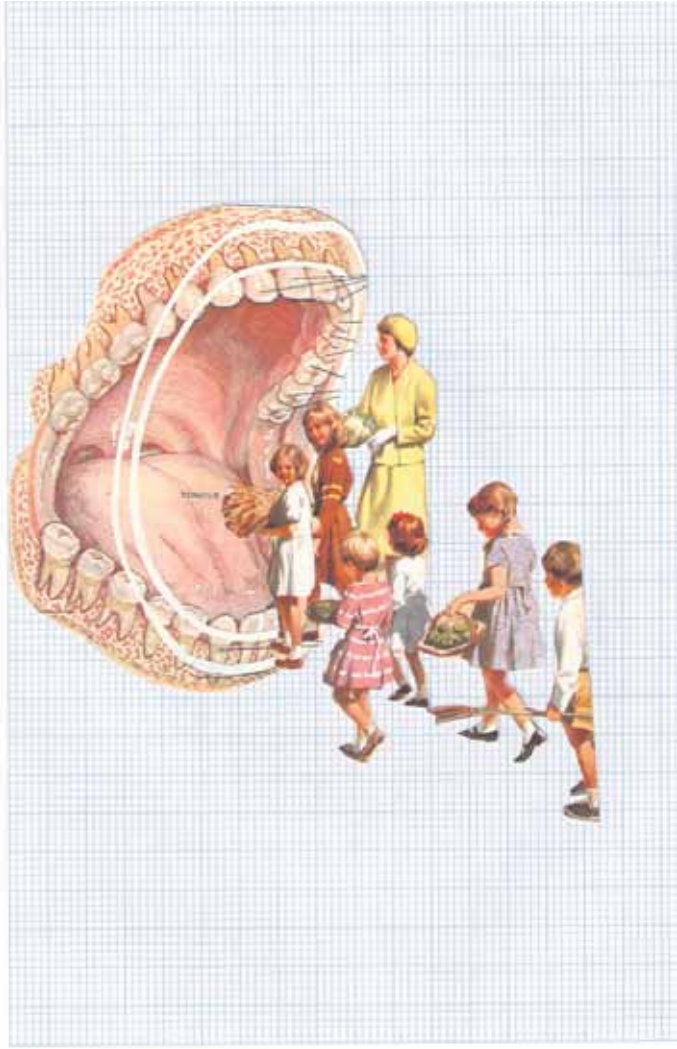


MK Gallery receives core funding from Milton Keynes Council and Arts Council England South East

Photo:  
Derek Wales

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# aTURNERtive Prize 2011

Jake Cox  
Luke French  
Holly Gibson  
Vanessa Harrison  
Emily Hills  
Megan Hughes  
Danielle Leigh  
Daisy Moore  
Paula Pleckauskaite  
Angelica Rae  
Harrington Stout  
Tiffany Webster



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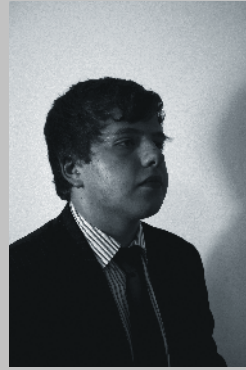
The aTURNERtive Prize was established in 2002 at Welling School. The exhibition was set up to encourage the students to engage with contemporary practice and was timed to coincide with the Turner Prize at the Tate Gallery. From humble beginnings the prize, and accompanying exhibition, has developed into an exciting annual event. The involvement of external judges and presenters, including Richard Wentworth, Hew Locke, Lucy Davis, Michael Archer, Ryan Gander, Ben Lewis and, this year, Eleanor Crook and Anna Barriball, has raised the profile of the award considerably. The aTURNERtive Prize showcases the outstandingly mature practice of the students at Welling School, where the innovative approach to teaching art results in the students operating as practising artists. This year's exhibition is another incredible example of the broad range of work going on and sees students drawing, painting, making sculpture, working with photography and video, installation and sound.





## Jake Cox

Jake is studying for A levels in Graphic Design and Photography



## Luke French

Luke is studying an A Level in Photography



Digital Photograph



Digital Photograph



## Holly Gibson

Holly is studying an A Level in Fine Art



## Vanessa Harrison

Vanessa is studying A Levels in Fine Art and Textiles



Documentation of an action



Porcelain and acrylic paint





## Emily Hills

Emily is studying an A Level in Fine Art



## Megan Hughes

Megan is studying an A Level in Fine Art



Digital Photograph



Digital Photograph



## Danielle Leigh

Danielle is studying an A Level in Fine Art



## Daisy Moore

Daisy is studying GCSEs in Fine Art and Graphics



Drawing



Collage





## Paula Pleckauskaite

Paula is studying A Levels in Photography and Graphics



## Angelica Rae

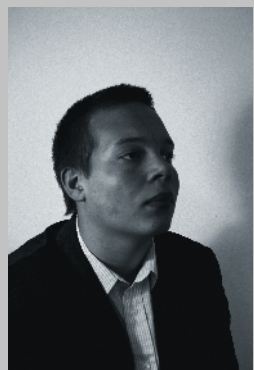
Angelica is studying an A Level in Fine Art



Digital Photograph



Video still



## Harrington Stout

Harrington is studying an A Level in Fine Art



## Tiffany Webster

Tiffany is studying an A Level in Fine Art



Screenprint



Video still









Following the “Two Words Four Talks” Arts and Education conference that took place at Welling School, Felicity Allen invited Michael Archer and Henry Ward to join her in conversation about some of the issues that had arisen. What follows is an excerpt from that conversation:

**FA:** I just wondered whether you can think about questions around technologies and social networking, but also the idea of information and how that’s impacting in terms of both your work.

**HW:** I think the information thing is interesting because obviously everything is sped up to a degree because of sharing stuff and I think there’s positive and negative things that come out of that. There’s a negative thing that certainly, I don’t know whether this is true with undergraduates, but I suspect it possibly is, but the ease in which students can access something that might be deemed relevant means that they just go for the easy access and it feels a lot like students are just skimming the surface of things – that’s of concern. There doesn’t seem to be a real understanding of going in-depth and making decisions. That sort of sharing things through social networking as well is problematic for the same reason that stuff just gets passed around very quickly and students appear to have understood things and they haven’t. But at the same time I think it’s opened up the most amazing opportunities in terms of sharing stuff and collaborating and collectively understanding things. So, I don’t know really, I feel like I’m turning into a reactionary; I feel like we should just rip all the computers out of the school and not use them at all and not have any access to that because I think it would be really interesting to see what people did when they couldn’t just tap into this massive body of irrelevance that so much of it is.

**FA:** That’s very interesting.

**HW:** I taught a bit of A level Film Studies a couple of years ago and I remember doing A level Film Studies and I was writing an essay about something to do with the French New Wave and remember reading about another essay in the book I’d got and found the book was out of print and then contacting the BFI and they had a copy, and then arranging an appointment to go to the BFI library and going up to town and going to the BFI library and going to the reading room and finding this essay and reading it and paying an extortionate amount to photocopy that little section in order that my A level essay had a quote from this other essay. That took me all day and now kids just download the essay from somewhere else and change a couple of words and have no understanding of the subject whatsoever. That does worry me.

**FA:** And what do you think if your own experience; the journey that you made on that day?

**HW:** It was brilliant because it was a genuine engagement with something. It’s a bit like that thing of wanting to find stuff that nobody else knows about. So, a band nobody else had heard of. A book nobody else has read. All of those things and it’s becoming harder and harder to do because you can go onto a radio website online and type in stuff you’re vaguely interested in and then it will spend the hour spitting out other stuff you’re going to like, of course it will do for everybody. I think that side of it, investing proper time to go off and find something for yourself, because you really wanted to, is really valuable and I think it’s a pity that that’s almost being stripped away. It’s much harder to do that now than it was.

**FA:** I think something I just want to pick up on which is about sight and the fact that you went to a place that was a building that was BFI and you knew then how to get there again.

**MA:** There are lots of things; in terms of history that you’re talking about there are certain things about that which have clearly affected the way things have developed. The appearance of some of that technology, even something like a video camera in the late sixties, an audio cassette and then more digital technologies and what you can do with those. They lead to “let’s have a painting studio, a sculpture studio and a time based art studio. Let’s call something the fourth area” and so on. Which is why I think the Goldsmiths structuring has been so important because it actually does away with all that right from the outset and says “look you’re all artists, some of you use different things, some of you work in different ways” and what’s interesting is you’re talking to one another all the time about this but you’re very clear about the specifics that your idea demand for its realisation. It does, of course, tend to mean that there is a different set of relationships between skills facilities, studios, seminar rooms, student’s tutors, technicians and so on; that certain things are not really embodied in certain people but are possible spaces of activity to which students can go or tutors can go or whatever. That does affect the way you structure the course and what actually happens in a building. There is a demand that you present your work to a lot of other people and certainly are not required to justify it but are required to engage in discourse with, and around, what other people are doing. All of those things like how you maintain a presence, what kind of force it requires, sort of self possession you need in order to so that are issues and remains something within the general conversation amongst those who are working on the course. How is it that we ensure it does not become a boy girl thing, which it can very easily do and even in a way, because the history is not actually there for all of them to continually give them access to, this is not just something that has come up today, people have tried to deal with this in all kinds of ways

for a very long time. The other thing about recent technologies is developments, social networking and so on. I think that’s something else and I quite understand what Henry is saying about this and that certainly might be the case if what we’re doing simply is thinking about this set of tools or resources that have been made available. But I think there is something else about this which I can’t experience because I’m too old and I’ve grown up without it. Too much of my life has been spent without this stuff that it’s not that it’s actually the space in which these people live, it’s where they live their lives, in a sense what’s interesting to me, for example, 5 years ago the extension of skip raiding was spending a long time on eBay. And now students don’t talk about eBay, I’m really interested in that. They don’t talk about it at all. They talked about it all the time, they’ve got YouTube and while it used to be Hannah Gordon with ‘Watercolour World’ or something on Tuesday afternoon and they all sat at home and watched that instead of doing work and now they’re just watching YouTube. But actually it’s like Leonardo staring out of the window and if I don’t recognise that that’s also what’s happening I think I’m doing them a real disservice and so what it does for me is to present me with a challenge of trying to work out how it is that I can distinguish, find where the quality is in the decision that one or other of them might make, that this is the clip that they want and they want to use that and they want to use it for this reason and that reason.

**HW:** No I think you are absolutely right; things like YouTube are a brilliant tool, it’s an amazing resource. The thing I struggle with, but again it’s an interesting challenge, are things like Facebook, where I covered a Health and Social Care lesson a few weeks before the end of term and I might as well been covering a Facebook lesson because although there’s a firewall which prevents kids from going on Facebook, I wouldn’t know how to get around it but every kid in the school knows how to. So I spent the rest of the lesson getting students back off Facebook and getting on with what they’re supposed to be doing and that’s what I did. At the end of it I was thinking I would like to time how many hours they spend on Facebook going “I’m here in Health and Social, where are you?” “I’m also in Health and Social bored. What you doing?” “I’m typing that I’m bored”, and that’s all they’re doing, when they should be doing something else which doesn’t seem to need much time to do as they all pass this course. They don’t really need two hours of Facebook every Monday morning, they could probably get away with five minutes doing the work they need to do so, what a dreadful waste of time. Of course I remember sitting at the back of the physics classroom with bits of paper and a note coming along and you’d pass it down. It’s no different really but we’re investing, maybe this is a different point, all these resources into providing all the technology, actually, which a lot of the time is then used to do what a pen and paper used to do anyway, and yet it’s costing thousands and thousands and it’s this horrible sort of technical inflation that when you buy it, a year later, it’s out of date already and you need the next thing. I don’t think we’re coming up with interesting ways of using it that perhaps we could be? Maybe that’s what you’re touching



### "Chinese Whispers" - Collaborative Drawings

This drawing exercise was, literally, dreamt up by Nick Lockyer, Welling's Visual Arts Technician, who arrived at work one morning to explain that he had dreamt about a lesson in which everyone passed on a drawing to one another in the manner of the game 'Chinese Whispers'. Henry Ward then worked with his year 10 GCSE Fine Art group to realize Nick's dream and these are some of the results. Each student began by making an observational drawing of a small object. The resulting drawing was passed to the person sitting next to them and they then made a copy. This copy was passed on and another copy was made. This process continued until every student had attempted every object. The class of eighteen produced 324 drawings over the course of the lesson.



on? This stuff is there and the students are going to use it but maybe we as educationalists aren't finding interesting ways of integrating it into what we're doing.

I'm reading the new Paul Auster at the moment, there's a lovely line in that near the beginning, I don't know if either of you have read it? It's called 'Invisible', and the protagonist is a young writer and at the beginning he meets this older couple at a party, and he's a student and they ask him what he's been doing and they say "what do you want to do in the future?" and he says "I'd like to be a writer" and they say "but you're writing, then you are already a writer, you just mean you want to carry on writing?" And that's such an important thing really isn't it? I remember a friend of mine years ago and I thought it was quite a profound thing to say, since he has no recollection of saying it, but we were talking about wanting to be painters and he said "but we are painters", and at the time he was living in a one bedroom flat and so was I and we'd have to wait for our partners to go to bed, clear everything to one side, roll out a sheet of plastic and get the paints out, and he said "but actually when we put the brush onto the canvas there's no difference between us and someone like Howard Hodgkin doing it seven days a week whenever he likes, actually we're the same." And I thought, actually that's quite a nice feeling, that makes everything alright then. And it's true, that sort of idea of working through something to a point that you can become it is wrong and just to say you are doing it. We're always learning and changing what we do because of the influences around us whether that's in a formal educational institution or something else, but having a space to do things, even if it's a small space...

**MA:** It raises for me another issue which is slightly apart from everything we've talked about before, but it really presses on me, that as it were the other side of that is what you're doing you are doing it in an environment which is essentially an educational one. Somehow the space of education becomes congruent with the space of art, which for me is a real problem. It becomes more of a problem now, I think, that we not only have Masters Courses in fine art but also these doctorates so if you've got a curating course as well then the sense of conceiving an exhibition and organising what's going to be in it becomes an academic exercise. If we have art writing courses then the production of a text of some sort happens in relation to people making art becomes an academic exercise. So the whole of art becomes academic.

**FA:** Well, what is your role because if the role is teaching then is it merely assessing?

**MA:** I think it's not just assessing, I mean it is much more to do with the engagement with a student, again there is a term that we use that is in the sector as it were, which is student centred learning, though we are not instructing them we are engaging with them on the basis of what they are doing and of course we are then asking them questions or we're having a conversation around this about their plans, the way that they've realised it, what implications come from their decisions about doing it this way instead of that way. In a way that is something you are always trying to ensure, in one way or another, to avoid it being about "Well I know these things and you don't" and I'm just drip feeding you this and that.

Obviously there might be a decision about whether to make something known that you might recognise might be crushing or something and there's no point doing that.

**HW:** I would say without wanting to sound glib the role is enthusing and facilitating and it's the combination of those two things that I think maybe where, this possible shifts slightly as you go up the educational scale, but certainly in secondary school it's what differentiates art from the other subjects because in a lot of other subjects it is about the teacher having a body of knowledge which is obviously far greater than that of the students and then revealing bits of the knowledge like the horrible OHP with a sheet of paper covering up most of it and slowly lowering each bit down. You know if you're teaching history, the conventional way of teaching history in secondary school is to not pour out every bit of knowledge you have about history, but to slowly reveal bits and for students to take them in and digest them and then another little bit and another little bit. You don't expect your students at that age to go rushing out asking difficult questions and throw up other bits of history that you may have not have understood yourself. But good art teaching at secondary level is about maybe not knowing where it's going, it's not about the teacher knowing everything. Maybe it is about the teacher knowing, for example, how to make a ceramic vessel that's not going to crack and fall apart when it goes into the kiln and that's something you can pass on but then to facilitate the student that has brought to you an idea that involves them making a vessel, so you can show them how to make it. I'm sure that changes at your level where you're probably not going "well I'll show you how to stretch a canvas properly" because that becomes a separate role for somebody to show them how to do that. So, in a way, at secondary level, the teacher's role is a combination of the pastoral side, the technical side then also that enthusing and facilitating side.

**MA:** There is a way of putting one thing next to another that seems to look right or feel right and much of what you are then doing is unpacking that or having the space in which the two of you or several of you together can think about the implications; where it might go, what actually has been assumed in coming up with this thing and why would any one else assume it, what sort of hidden potential meaning is there when we encounter with these things? So that's really what's going on there and I think also the question about enthusing is absolutely crucial and one of the ways, certainly, that that happens, in our institution, is that the people you are talking with are just doing what you're doing. So you're talking to someone who's got a show on and you have to rearrange the tutorial because she's got to go to Paris next week to install something there or whatever. It's not that you're being taught what this artist does or learning how to do stuff in the way that artist does, you're seeing this is a life that's being lived and it's entirely possible to function in this way and that the two things feed each other. I certainly always found that with the writing that I've done that it's absolutely not separable from the teaching; I can't do one without the other. What I'm writing about is what I'm talking about with the students. I find them the absolute best people to ensure nothing ever becomes cosy, nothing can ever be relied on, that anything I might want to say about anything needs to be re-worked day to day in each encounter.

**FA:** I wanted to ask you some kind of utopian question which was about if you could make it how you wanted it to be what would it look like? I was thinking about teaching art in schools as teaching art at universities or teaching art in an art school.

**HW:** I think possibly it might not be called art, I think, it would be given a lot more time in the curriculum than it's being given at the moment. Do you have to give things a title? I don't know. I think what I find most interesting about it would be allowing students the space to be investigative and play with things and to explore stuff and to ask questions and whether that leads to them making things that are art or not is almost an irrelevance because it is that thing that before entering educational institutions children just naturally do and then our system seems to beat it out of them to a point that they're terrified of doing it and I think the more space we can give back to people and allow that the better. Whether that results in them going off to be a scientist or an engineer or a shopkeeper or a plumber or an artist. I don't think it matters. But I think my utopian vision would be a huge portion of the curriculum given to playing with materials, playing with ideas, having discussions, exploring stuff, sticking things together, seeing what fits together and what doesn't...which is kind of what we're doing in the art lessons.

**MA:** It's a sort of tempting question and I wonder what my answer would be, you know like more facilities, more space, more money, more tutors, more.. I don't know. In the end I'm not entirely sure that I could give you any kind of answer. Largely what's interesting for me, anyway, about teaching in an art school is just the things that Henry's enumerated there, that there are lots of people who are curious about things, who are trying things out all the time and sometimes they are pleasantly surprised and sometimes they're slightly disappointed but usefully so or not usefully so and there is a very rich discussion around this collective activity that seems to, kind of, result in people moving, shifting direction. Part of the way in which that curiosity is productive or can be productive is because constantly it is rubbing up against the limits in the space in which it can happen and I think without those limits, without there being a set of circumstances that you can recognise as limits, nothing would happen.



# Change Your Thinking

Claire Gibb



Room 13 was set up in 1994 as an art studio run by a group of students in Caol Primary School, near Fort William in the Western Highlands of Scotland. Around this studio has grown a network of student run arts studios in schools and communities throughout the world.

Each Room 13 studio facilitates the work of young artists alongside a professional adult artist-in-residence, providing an exchange of ideas, skills and experience across the ages. Surrounding these studios is an international community of artists, educators, thinkers and other professionals who share their work and their thinking to mutual advantage.

When Sir Nicholas Serota described Room 13 as 'the most important model for artistic teaching in schools that we have in the UK' his assertion was no doubt based on the challenging quality of the artworks being produced in Room 13 by artists as young as eight. However, when compared to other areas of the curriculum the aesthetic abilities of pupils are not measured quite as keenly by educational authorities. So, how does artistic teaching translate to other subjects? What, for example, do artists have to contribute to the teaching of science and maths?

You might say that science is the process of understanding the physical world, while mathematics and arts are two different ways of interpreting it. All three are in various ways concerned with processes for explaining and interpreting complex ideas. The common root is philosophy.

Philosophical questions are the essence of what we explore as artists and it is the same spirit of enquiry which drives a person to seek knowledge and explore the world around them.

In Room 13 we embrace this process by approaching children as artists and intellectual equals. Together we engage in a very simple explorative dialogue which leads us, individually and collectively towards creative outcomes that span the whole academic spectrum and far beyond. We call it thinking about thinking.

Topics of discussion sweep with ease from the profound to the ridiculous and form constant background noise to the work going on. They occur one to one between individuals of all ages, or in fluid groups.

Artists, like children and indeed most scientists and inventors are curious individuals. In the role of educator, the artist can offer a different philosophical perspective on almost any

subject. The artist's role is not as the font of all knowledge, but to facilitate original thinking by asking questions that encourage the students to think and make connections that link what they already know, into areas they didn't even know they knew anything about. This linking process is different for everyone, because each individual has their own unique frame of reference that they are constantly building onto.

This is not dissimilar to the creative process, in which information is absorbed by the artist, interpreted and transformed into something new.

In Caol Primary School, Room 13 Artist in Residence, Richard Bracken has found that engaging the young artists in some 'structured' experimentation can aid the flow of ideas. To encourage them to think and become selective in their use of materials, he introduced a simple drawing exercise with an emphasis on experimenting with scale, varieties of paper and drawing tools to build up a knowledge of materials. As the drawings emerged, with many people working side by side, the constant challenge for originality became a game. Richard discovered that the quick-fire production of images generates lines of thought that are shared by the whole group. Soon the drawings themselves became secondary to the process by which different lines of thought began to take shape. The process is intuitive, and as one drawing follows another, imagination transforms images and objects and opens up a rich seam of possibilities.

That experimentation and the unexpected can lead to surprisingly satisfying conclusions is true for both science and art. The series of drawings: 'Banana', 'Your Banana looks more like a Boat', 'Viking Boat', 'Dragon' and 'Sea Monster'; documents one particular development of ideas within a group – a drawing of a banana that looks like a boat becomes a sea monster via Viking boats and dragons.

Drawings shown on the same row were done simultaneously, while drawings in a column are by the same artist, one after the other. This particular thread is just a part of a wide variety of images made at the same time, aided by communication and the sharing of ideas.

"If we kept on following these lines and other lines and did this forever – would we exhaust all new ideas?"

As visual artists, we naturally get excited about the artwork that flows from the exploration of ideas in the studio. For a lot of the younger studio users, what they value most is the opportunity

to open their minds to maths, language, science, politics, or anything else they care to explore.

The following text documents a discussion that took place with a Primary 5 class in Room 13 Lochyside.

"We are looking at the catalogue of Fred Tomaselli's 'Monsters of Paradise' exhibition. We are examining a picture called 'Leo' which is a photogram of blurred white dots on black, connected with pencil lines and dots of gouache. Suggestions on what it looks like along the lines of; Fireworks; a spiderweb and stars. It is set out like a diagram of constellations. As they look more closely at it, the children spontaneously call out that the shapes they can see in it: a face, a horse, a turtle etc. We discuss the fact that astronomers have been projecting imagined creatures into the stars for thousands of years, and here we are today, spontaneously doing the same thing. I turn the page to show them my favourite piece. It is a black page with hundreds of swirling coloured lines and white dots. I explain the reason I like the picture is because it looks like the way I think about the philosophical subjects we discuss. It is huge and messy and complex and colourful, with lots of lines twisting in and out from point to point. Jordan points out that, in fact, the whole picture is made up of straight lines, making invisible links between dots. I hadn't noticed this before but he is right. It is really beautifully simple. Dots. Straight lines. Colours. Everything connected. We discuss possible titles for the picture. Riot of Colour; Swirls and Twirls, Straight Line Rainbows, A Picture of Philosophy. The actual title is 'Metaactual'. We try to break down the word to figure out what it means. We look at 'lecture' and 'intellectual' and decide it might have something to do with knowledge or knowing something. Meta is harder. Mark wonders if it might have something to do with the alphabet. I think it means everything. Jordan suggests we look it up in the dictionary. Fortunately the class has a very good edition of the Oxford English dictionary with many volumes. Miss Walker helps him to find 'meta' and 'intellectual' and 'intelligence'. Meta, it is confirmed, means change. After much discussion, when the final suggestion comes from Rhiannon it is met with unanimous agreement: 'Change Your Thinking'."

For scientists, artists, explorers and inventors and educators alike, this is good advice. As to the merits of artistic teaching, the young artists of Caol and Lochyside have discovered that approaching all subjects from a base of philosophical questioning is to be open to the possibilities and potential.



# Playing Games

Becky Heaton



“All grown-ups were children once, but only a few of them remember it”

- Antoine de Saint Exupery

The Little Prince, and in particular this quote, was one of the many reasons why I became an educator. I remember being a child because I never grew up. I've always had a natural curiosity and playfulness that has led me to learn things in an investigative and playful way. At school I struggled with static subjects, by which I mean subjects that required me to sit still and read from text books. I also had a fear of looking foolish or embarrassing myself in front of my classmates because I could not immediately grasp new concepts. In particular I had difficulty with maths which continued into my further education and even my Teacher Training Skills Tests. It was only when I was asked to teach one period of maths each week that I began to look for ways to make learning it more accessible to me in order that I might be a more effective teacher of the subject. I had to reinvestigate it in a way that made sense to me, a visual learner with fidgety hands: I had to explore it physically.

I was told I had to teach equations- a subject that had almost broken my spirit at school and still filled me with dread. To get through this, I invented a game! It was a very simple board game that required students to roll a die and move pieces around a board. Certain moves triggered consequences which correlated to badges with numbers or symbols on them that students had made and been asked to wear. As the pieces moved around the board, students had to move around the room to physically make equations balance. Importantly, the fear of making mistakes in front of classmates was almost completely eroded by this and students were immediately more willing to venture suggestions where before they may have stayed quiet. This is where my fascination with teaching through games began.

I have always believed that learning, especially in the arts, can transcend the boundaries between different subjects that are so staunchly and unnecessarily imposed by some institutions. I have had the great fortune to work in an institution that has allowed me to educate in a way that can stimulate our visual, kinaesthetic, young generation through cross-curricular teaching. Over the last three years I have striven to use games as the vehicle for learning. I have also had the opportunity to teach subjects out of my specialism through games. As a child born in the Eighties, just before the electronic revolution, I have had a wealth of board and card games to glean inspiration from.

The fundamental thinking behind this is not just to make the lesson fun but to really add value to students learning and help embed the lesson objectives. The trick of successfully educating is to find ways of making students want to learn what you have in mind to teach them and to stop them worrying about making mistakes - games will almost always facilitate this.

I had a very lively group of year eight students with whom I was studying the periodic table. I loved Science and was in fact taught the periodic table through song by a very enthusiastic and inspiring teacher - thank you Mr. Pearson - however I did not feel that this played to my own strengths as a teacher. As a fidgety, visual learner, with a fear of public failure, a card game was a far more suitable tool for me to use and allowed me to channel the enthusiasm which my old science teacher had imparted all those years ago. Any parent will be able to tell you that the simple game, I affectionately refer to as 'Old Faithful' can engage children even in the longest and dreariest of car journeys. This game is Top Trumps. The idea I came up with was to create a Periodic Table version of the game. I set out some simple rules; firstly, higher atomic numbers are more powerful, secondly the lower the viscosity the better the element and finally the more reactive the elements the more powerful it was. Students designed each card with imagery that would help them remember the elements symbol. For example- Copper has an image of a policeman's helmet and Gallium a ship. By far my most rewarding experience was observing a particularly difficult student turning over his cards and exalting, 'In your face, I've got Krypton!'

Over the past 3 years I have adapted games to help me teach a variety of subjects, including the classification of plants and animals through the game 'Guess who?', studying anatomy and the human body with the game 'Operation' as well as many others. I am yet to find a topic that will allow me to adapt the game 'Hungry Hungry Hippos' but I am open to suggestions. In my experience games never fail to improve student engagement and attainment. As equally importantly I have found that games maintain my own enthusiasm levels which is key to the success of every teacher.



# Metamorphoses: The Relationship Between Art & Science

Sarah Craske



I intend to create Art and Science collaborations that bring New Forms of Life from the Real through physical representation resultant of a methodology that generates unrepeatability. I am interested in revealing the real with the intent of making work that was determined without cultural or aesthetic codes.

In the depths of a biological containment laboratory at the University of Surrey, you will be able to find a 1735 copy of Ovid's Metamorphoses nestling in a walk-in incubator set at 25 degrees. Specifically 25 degrees. This is the ideal temperature for my artwork to currently exist.

I am developing a couple of artworks with Dr Simon Park, a senior lecturer in molecular microbiology at the University of Surrey. The work that instigated the collaborative relationship was Metamorphosis. I had posted images of my work in progress on the social networking site, Facebook. The uncanny aesthetic similarity between the visual outcomes of Metamorphosis and Simon's Trichoderma and The Poison Master were brought to Simon's attention by a mutual acquaintance and Simon got in contact. Through discussion, which revealed further coincidence and the developmental issues I was discovering, Simon was able to offer both solutions and ideas to help progress the artwork.

These dialogues, led to Metamorphoses. Finding an early translation of Ovid's Metamorphoses from 1735, I am uncovering

the invisible from its pages. During its nearly 300 year old journey, like all objects it will have accumulated a hidden history. Every human touch or settling of a dust particle will have added countless bacteria and microbiology to form a unique microflora, that is unapparent to the naked eye. I am revealing, with the help of Simon, what its pages have collected over the last 276 years by laying the book on microbiological growth media and allowing what has been dormant for many years to grow once more. Currently unidentified bacteria have emerged from the pages and a time lapse film is being created, documenting the process. Due to the potential and unusual health hazard the work poses, being that there could possibly be harmful bacteria that could lead to disease that has been encouraged to re-emerge, the artwork in its living state can never leave the laboratory.

Simon pointed out that "such is the history of the book, that from its publication in 1735 it will have been around for most of the history of modern microbiology, from Louis Pasteur's work to disprove spontaneous generation (1861) and his and Robert Koch's germ theory of disease, to modern 21<sup>st</sup> century genomic microbiology".

I like revealing or reflecting on what is or may be there that we don't necessarily consider or know to exist. The beauty of this piece is the allegorical nature of the work. The metamorphoses of the book from a man made object to potentially bodily bacteria reflects the transitions that are held within its tales of Gods changing into men and vice versa.

The microscopic photographic documentation that Simon has produced, shows the bacterial and fungal growth producing undeterminable painterly images that we have no control over. Once the process has finished, I will be left with discarded material or documents left from this performative process. The film created will then be projected onto the books' remaining carcass within an installation context. Safe and observable.

The opportunity for an artist to work in the laboratory environment is inspiring, challenging and exciting. However, these collaborations are becoming increasingly frequent. Simon's laboratory could be argued to also be an artist's studio, with many works or art to be found in his fridges, incubators, store rooms and office.

It got me thinking. Art clearly benefits from science, but does science benefit equally from art?

Whilst listening to Stephen Healy's paper "Scientific Controversy: Differences of 'Fact' or Contending 'Forms of Life'", it became evident that what was needed was a total social paradigm shift to occur. The message that weekend at the Arts Catalyst's Eye of The Storm Conference, from both the arts and sciences, was that our current patterns of existence were unsustainable. What is needed is a reinvention of 'forms of life'. The concept of completely rethinking our current existence and relationship with the world meant that at present we are both irrelevant and a point of conflict. The consensus is that the only way

to achieve this is for the arts and sciences to collaborate, bringing together creativity and scientific understanding to achieve the alternative.

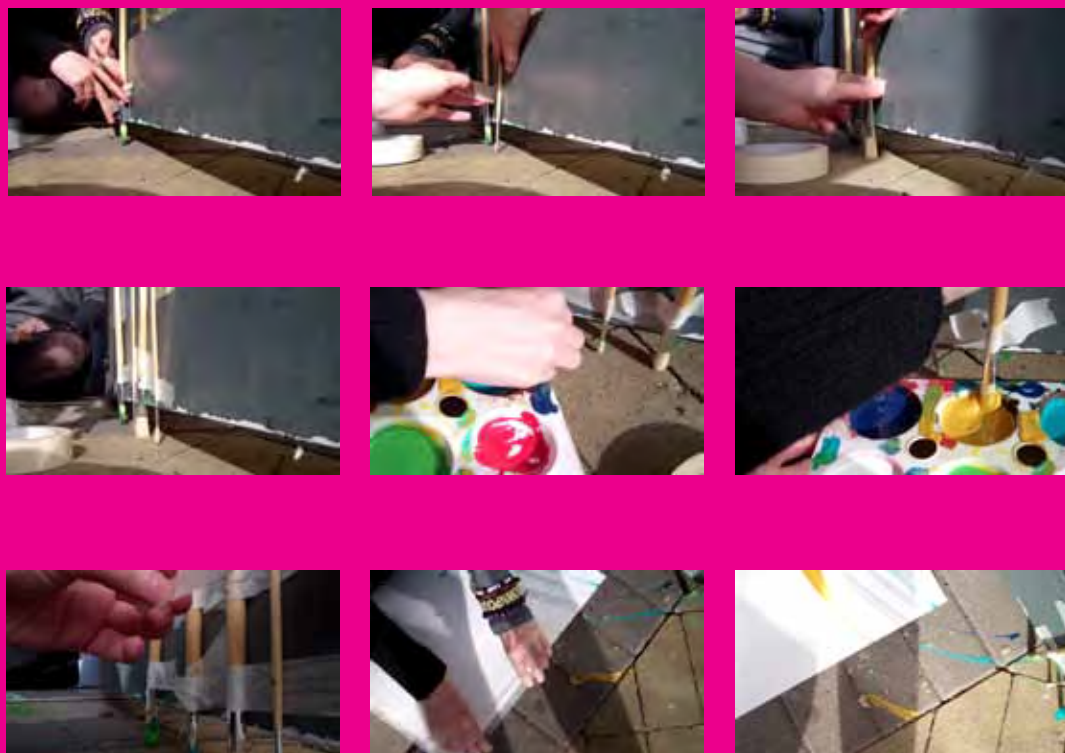
Many examples can be given where the intersection between the arts and sciences have developed ground breaking research and new ways forward. The Harrisons do this to an extent, framing their research within a new language created by their collaborative relationships with biologists, ecologists, architects, urban planners and other artists. Their project The Force Majeur concluded, "that a most profound re-invention needed for survival and wellbeing in a global warming future would have to be, in fact, the re-invention of governance itself." Dr Mark Miodownik in his article Facts not Opinions? concludes that "for multidisciplinary to thrive some things need to change". I believe that change should involve the need for greater understanding of sound art and science collaborations and the development of the aesthetics of knowledge transfer which can then be used across the two communities and then towards a wider audience.

As an artist, I wonder what I bring to the laboratory table, until those frequent moments arrive when I suggest something that seems perfectly and creatively obvious to me and Simon says excitedly 'well, I don't know, it's never been done before...lets try it!'



# Door Drawings

Sophie Francis & Amy Mordey



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BASTÓN BLANCO IS A BIENNIAL PROJECT BASED MAGAZINE BY ARTISTS, CURATORS, MUSICIANS, ARCHITECTS, POETS AND OTHERS

BASTÓN BLANCO 3

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The problem with so much Science and the way it's taught in schools and universities is that studying science can seem like memorizing a catalogue of cold, dull facts. As if the natural world were a telephone directory that some of us have to read. In fact, when you learn 'facts' you're doing the exact opposite of what scientists actually do. In order to understand the remarkable universe in which we find ourselves we need to unlearn. Why? Because many of our everyday assumptions about the world are simply wrong: the earth is a sphere, the solid floor is made from atoms that are mostly empty space, and although each of us feels like an "I", each of us is a collective of interacting cells, a "We". The art of Science is therefore about imagining the way things might work, asking clear questions of Nature through observation and experiment, and about testing and re-testing ideas. In this Science and Art are similar. Both are about ways of looking at the world afresh, and to do this well, one must learn to play with Nature and to enjoy it. When you do Science you quickly find out that you need to listen carefully to Nature's answers, because almost all the ideas you will ever have about the way things could work will turn out to be wrong. But if you ask good questions, are open enough to listen to the answer, you may be lucky enough to make a discovery about the world that is stranger than anyone else in history ever imagined.

Professor Buzz Baum. Senior Research Fellow. University College London