

ANTENNAE

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Insecta

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ANTENNAE

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EDITORIAL

ANTENNAE ISSUE 11

It is no secret that insects are one of *Antennae's* favourite subjects. In 2007, the publishing of our first double issue dedicated to insects firmly assessed *Antennae* as an alternative publication fierce enough to invest vast amounts of publishing space on 'underground themes'. Our 'Insect Poetics' instalments are still the most downloaded from our back catalogue. However, insects still are a difficult subject: in mass-culture they are substantially understood through the dichotomic division between 'the useful' and 'the pest'. Whilst in the field of animal-studies they suffer from neglect as great scrutiny is reserved to mammals and other animals that can return the gaze.

The emblematic moment in which Jacques Derrida, emerging from the shower, found himself being looked at by his cat (another mammal), has predominantly shaped the methodologies and approaches of most of the past and current academic speculation on animals and our relationships with them. The main questions triggered by the encounter highlighted the presence of an insurmountable communicational abyss between man and animal. From this point onward, the concept of the 'return of the gaze' has extensively contributed to the revisioning of the animal (mammals that is) from object to subject and more recently to 'becoming'.

Discussing the return of the gaze in relation to a butterfly's compound eyes seems however to reveal the limitations involved in this approach. Is the abyss here too wide and too deep? Are there productive opportunities involved in these encounters, exchanges and relationships too far removed from our basic relationality with mammals? In the attempt of bringing material forward that may be used to answering these questions, this issue of *Antennae* looks at some of the most challenging and interesting contemporary artists working with insects. The "excuse" for 'Insecta' to be released right now is *Pestival 2009*, "A festival celebrating insects in art, and the art of being an insect" which took place at London's Southbank Centre this September. *Pestival's* aim is to examine insect-human interactivity in bioscience through paradigms of contemporary art, cinema, music and comedy as well as through direct scientific demonstration and educational projects.

We closely worked with *Pestival's* Director Bridget Nicholls to interview a large number of artist involved in the event. As a result we spent our time talking to artist Tessa Farmer, whose fairies continue to bewilder international audiences. Never so much in my life, I have rubbed my eyes in front of an artist's work! Together, we went to the Natural History Museum in London to discuss insects, the infamous parasitic wasps, museum collections and displays with entomologists Andy Polaszek and Gavin Broad. There, we also met with Amoret Whitaker, a forensic entomologist and Mark Cockram, an artist/bookbinder, who together are working on a very interesting project involving paper-eating beetles.

The issue takes *Pestival* as a platform to also present the work of internationally renowned artist Maria Fernanda Cardoso, a leading Latin American artist who has built a reputation with her flea circus. 'Insecta' then takes us to the bear fields surrounding Chernobyl's nuclear power-station looking for heteroptera with Cornelia Hesse-Honegger, whose stunningly executed watercolours function as an interface between art and science playing witness to a beautiful but endangered nature whilst generating awareness of the miniscule mutations that could be symptoms of much bigger things to come. From Chernobyl to New York, Mysoon Rizk takes us through a truly fascinating investigation of the presence of insects in the work David Wojnarowicz who is recognized as one of the most potent artistic voices of his generation. Lastly, Mark Watson, who shot to 'underground fame' as founding member of the electronic music pioneers *Cabaret Voltaire* in 1971 and is now one of the most prestigious sound-recordists in the world, talked to us about the challenges and rewards of recording insects.

'Insecta' would have not been complete without an interview with Jan Fabre; one of the most eclectic artists on the contemporary art scene, who since a show at The Louvre Museum in 2008, has entered the sphere of major artists and is currently amongst those representing Belgium at the Venice Biennale 2009. In the middle of July, Julien Salaud, one of our most dedicated Global Contributors, travelled to the beautiful city of Lion in France to talk insects, metamorphosis, life and death with the artist.

Giovanni Aloï

Editor in Chief of *Antennae* Project

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Susana Soares studied at the MA Design Interactions course at the Royal College of Art in London and is a US-based designer whose work involves the studying of insects and their interactions with us. Over the past few years, she studies bees and in particular the way they can be trained to use their smell and detect almost anything including bombs and landmines.

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Chris Watson shot to 'underground fame' as founding member of the electronic music pioneers Cabaret Voltaire in 1971 and is now one of the most prestigious sound-recordists in the world. His work on film, documentaries, games and music has over the years set the bar for industry and creative standards in the field of sound recording. Here we talk to him about recording, insects and what it means to capture 'the sound of the microworld'.

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Jan Fabre is one of the most eclectic artists on the contemporary art scene. He is an artist, playwright, stage director, choreographer and designer whose work has been strongly influenced by an unconventional interest in animals and the natural world. Since a major show at The Louvre Museum in 2008, Fabre has entered the sphere of major artists and is currently amongst those representing Belgium at the Venice Biennale 2009. In the middle of July, **Julien Salaud** travelled to the beautiful Lion (France) to talk insects, metamorphosis, life and death with Jan Fabre.

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Noboru Tsubaki is an Associate Professor at Tezukayama Gakuin University, a lecturer at Kyoto College of Fine Arts, and the Director at the Inter Medium Institute in Osaka. We had the opportunity to interview the artist as he prepared his work for Pestival.

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One of the most anticipated artworks featured at Pestival 2009 is a collaboration between forensic entomologist **Amoret Whitaker** and artist/bookbinder **Mark Cockram**. This merging of art and science has produced one of the most symbolically charged pieces presented in the show.

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Bridget Nicholls is a naturalist, broadcaster and writer. She was brought up at an animal rescue sanctuary in Sussex where feeding Bengal eagle owls, finding peacocks in her bed and untangling frog-mating pile-ups were everyday occurrences. For over two years she has been planning Pestival, of which she is the Director. We met with Bridget at the Southbank Centre in London to discuss the event.

Questions by **Giovanni Aloï**

THE HORNED SKULLSHIP

It's a warm summer day in London and artist Tessa Farmer and Antennae's Editor Giovanni Aloï decided to spend the day at the Natural History Museum in London talking parasitic wasps, art, museum collections and displays with entomologists Gavin Broad and Andy Polaszek. How else would you spend one of the rare sunny days of London's summer?
Text by Tessa Farmer, Gavin Broad, Andy Polaszek and Giovanni Aloï

Tessa Farmer uses sculpture, drawing and stop motion animation to investigate a species of insect-sized skeleton fairies that have existed since 1998 (see *ANTENNAE*, issue 3, 'Insect Poetics' for further information). Using materials such as plant roots, insects, bones and taxidermied animals, her installations reveal glimpses into the world of the fairies, and investigate their ongoing evolution as their behaviour becomes increasingly complex and sophisticated. Tessa draws inspiration from the natural world, especially the incredible, often alien world of insects.

At Festival Tessa will be showing *The Horned Skullship* which has been constructed from the skull of a ram. As she explains:

"It flies thanks to the beetles, butterflies and dragonflies harnessed to the bone. It contains a wasps' nest, usurped by the fairies and now serving to hold various small insects used for food, torture and experimentation. Larger insects (unable to be wedged into the cells of the wasps' nest) are imprisoned in the eye socket of the ram skull, contained by a lattice of beetle legs and insect wings.

The Skullship is followed and surrounded by a swarm of carnivorous insects preying upon the valuable insect cargo carried by the ship. Most end up as prey themselves, speared by the fairies with hedgehog spines or caught in cobwebs stolen from spiders, now mobilised by the fairies."

In 2007 Tessa undertook a residency at The Natural History Museum in London, where she worked in the Entomology department, hoping to discover a context for the fairies, and to find out more about their life cycle and behaviour. She was drawn to the department of Hymenoptera (bees, ants, wasps and sawflies) as stinging social wasps have long been the fairies' arch-enemy. Guided by entomologists Gavin Broad and Andrew (Andy) Polaszek, both 'parasitic wasp men,' she became

fascinated by parasitic wasps and their gloriously gory life histories. Their seemingly sinister survival mechanisms informed a new stage in the development of the fairies.

Little Savages, the resulting exhibition of work created during the residency, included a taxidermied fox being ambushed by fairies. Some of the fairies had mutated and were now half fairy/half parasitic wasp, capable of laying their eggs in the fox and developing inside it, as well as laying their eggs in many more insects and animals (such as frogs and slugs).

Two years on, perpetually infected by their enthusiasm and expertise, Tessa continues to visit the department of Hymenoptera, making drawings of specimens under the microscope and becoming something of a parasite herself (although she hopes it's more of a symbiotic relationship).

Giovanni Aloï met over lunch in early July with Tessa, Andy Polaszek and Gavin Broad to find out more about the relatively unknown world of parasitic wasps and the scientists who study them. Appropriately the discussion began with a wasp, although having appeared from Gavin's pocket it was barely alive (and a surprise to him). He offered it to Tessa, who refused, but decided to stamp on it and put it out of its misery. Andy quickly jumped in with a better solution, and adeptly removed the wasp's head from its body with a credit card. The wasp was no longer suffering and was gladly accepted by Tessa, who was sure she could glue the head back on later.

Giovanni: Gavin, there's a fly on your lamb skewers.

Andy: I'd rather have a wasp on my skewer than a fly. Last night I was looking at some of the flies I captured with the Malaise trap in Mexico. They were really huge!

Tessa: Really?! Can I have them?



Tessa Farmer

Little Savages, taxidermy, insects, bones 2008 © Tessa Farmer

Andy: Yes, honestly, really huge, and no you can't! They didn't die of natural causes — you wouldn't want them. I will pass them on to the fly-people at the Museum and see if they want them.

Tessa: Where are they now?

Andy: They're in alcohol.

Giovanni: What can you do with the insects after they have been in alcohol?

Andy: Quite a few things actually, they look absolutely pristine because they were put in alcohol immediately. So one second they were flying around and the following they are preserved. It all happens really quickly.

Giovanni: How have they been collected?

Andy: Using the Malaise trap, which looks like an open-sided tent, with a lopsided roof. A jar of alcohol is placed at the highest point. Insects fly around in the fabric, up towards the highest point and then die as they are stupefied by the gas vapours coming from the jar. They then fall into the jar, ready for collection.

Tessa: Have you found many Encarsias?

Andy: Not in the Malaise trap unfortunately. They are absolutely tiny, less than a millimetre long. They are the genus that I am particularly interested in. We capture them using a special net that has an excluding screen which allows only for the smallest things to be captured. It is really effective! Bashing through the undergrowth and trees, you can really collect hundreds and hundreds of these minuscule insects.

Giovanni: Why are parasitic wasps so interesting?

Andy: Well, they are interesting because all insects are interesting.

Giovanni: Of course!

Andy: But they are also very useful because many parasitic wasps play a big role in the biological control of pest insects. They tend to live as parasites on other insects, either as direct parasitoids or parasitoids of other primary parasitoids. Some of them can have complex relationships with the original host insects.

A lot of them function as natural, biological pest-control systems and help us save millions of pounds every year in chemical pest-control. This is in a way a service we receive completely free from them. People tend to think about parasitic wasps as being



Andy Polaszek

Brachymeria lasus, microphotography © Andy Polaszek

kind of negative as they are parasites, however, the role they play in keeping the numbers of other damaging species down is rather defining.

Tessa: Worldwide?

Andy: Pretty much everywhere. Especially in the tropics but even in England.

Tessa: How was all this discovered?

Andy: In 1898 *Copidosoma floridanum* was introduced from the continental US into Hawaii against *Chrysodeixis chalcites* (a moth pest).

The most famous parasitoid wasp to be used in biological control since the 1920's is *Encarsia formosa*, against glasshouse whitefly.

10 years ago a parasitoid, *Platygaster subuliformis*, was discovered that attacks a midge pest of oil seed rape in Britain. It was not even known to occur in the UK until we identified it, and obviously has been doing an amazing job, unseen and unknown, since oil seed rape has been grown here. It prevents build-up of the midge during its first generation, thus preventing a damaging second generation to develop.

Tessa: Are you looking for new kinds of Encarsias?

Andy: I was recently in Mexico where a Russian researcher made some discoveries by collecting a large number of species of *Encarsia*, describing around 50 new species and documenting another 50. So I am really interested in acquiring some new specimens for the Museum. I also went to Mexico in order to understand the relationship between the wasps, the insects they parasitise, and the environment they live in. Of course there is a lot more to parasitic wasps than their economic impact. They are intrinsically very interesting models for looking at different aspects of biology.

Tessa: What kind of parasitic wasps do we have here in Britain?

Gavin: Lots! We have 7600 species of Hymenoptera and most of them are parasitic wasps. Maybe up to 6000.

Giovanni: What are they more likely to parasitise?

Gavin: Anything bigger than them. In Britain the most parasitised orders are Lepidoptera. Parasitic wasps are everywhere, but they are not very visible and as a consequence, they are not very popular...



Tessa Farmer

Little Savages (detail), taxidermy, insects, bones 2008 © Tessa Farmer

Giovanni: Well, I did not take much note of them myself until I started knowing Tessa and her work more. I quite frankly thought that her enthusiasm for parasitic wasps was 'rather unusual'...

Tessa: <laughs>

Andy: I think that one of the main problems with parasitic wasps is that they tend to be particularly small, so people just do not notice them.

Giovanni: Some of them, I know can indeed be very beautiful, displaying bright metallic colours. Their parasitic lives, with all that it entails, like the laying of eggs deep in the body of a live host and the emerging from that body after sucking it dry, suggest that there could be plenty of room for parasitic wasps to become very appealing to children and wider audiences alike.

Tessa: Yes, they are very much like aliens.

Gavin: Well, I started out being interested in moths and butterflies and got to know more about the wasps through their parasitism on Lepidoptera. I eventually became more interested in the wasps than in my original research subject. I guess you just find them interesting or you don't.

Giovanni: I guess that part of the problem also is that they don't translate very well into merchandise, like stuffed toys that could be sold in the Museum's shop.

What is the average life cycle of a parasitic wasp like?

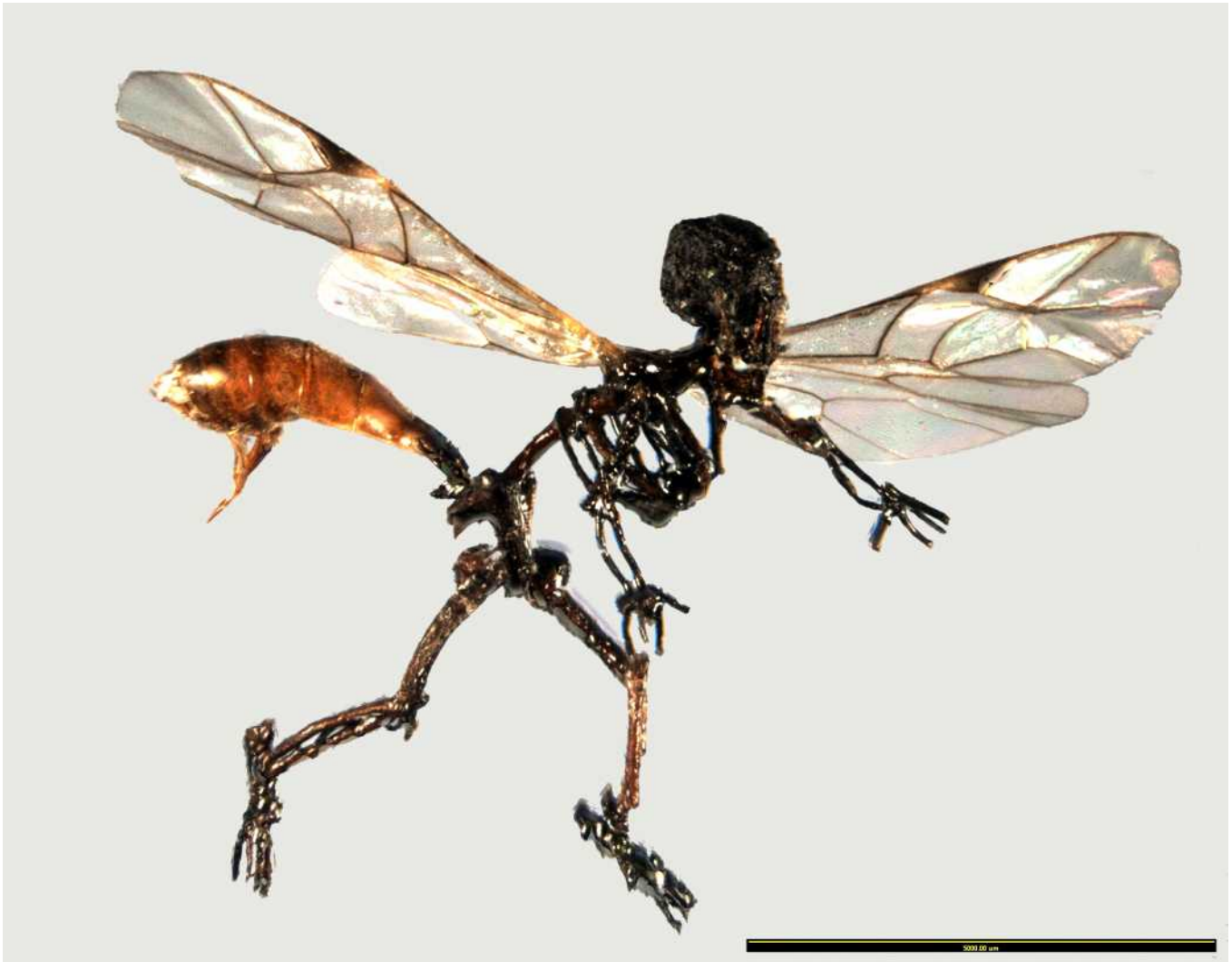
Gavin: Some of them can have very fast developments so you can have three generations of parasitic wasps within one generation of the host insect. Others can instead take years to develop...

Andy: Yes, obviously their development is bound to the life and growth of the host insect, so if the insect's life cycle slows down for some climatic reason, then the wasp's life cycle also slows down.

Gavin: Some parasitic wasps also are nocturnal and they parasitise nocturnal insects.

Giovanni: From an evolutionary perspective, what do you think made these wasps parasitic?

Andy: Well, the first primitive wasps were plant eaters and they did not look very much like the wasps of today. Then they became parasitoids and afterwards some took a completely different evolutionary turn and abandoned parasitism. All in all, parasitising offers an



Tessa Farmer

Fairy under the microscope, photograph by Andy Polaszek, Photoshop by Giovanni Aloï © Tessa Farmer

easy route to success. It means that millions of niches to exploit are available to the species. The fact that you can live off other species opens up a whole world of opportunities in terms of radiation, speciation and specialisation. With the species I work with, you can look at their historical development and you can spot moments where there was a particular radiation because a new niche was occupied in the shape of exploitation of a new host insect.

Gavin: Also, original prehistoric wasps feeding on plants were facing a much more difficult challenge in that plants and wood contain compound substances that are difficult to break down. Becoming parasitic means that you derive your food from another insect that has already broken down all those substances for you. It is rather convenient! It's cheating!

Andy: A lot of evolution also happens by mistake, so it could be that a wasp deposited eggs into a live insect by mistake instead of depositing them in a plant. That could represent a major step in the evolutionary process. However, one of the challenges involved in being a

parasitoid is that your life is then very closely bound to that of your host insect. Hosts have many ways of fighting parasitoids and many are not successful in their attempt of parasitism. Encapsulation is one of the most surprising strategies developed by some insects like caterpillars in which the host that is harbouring the larvae of the parasitic wasp generates a proteinaceous coat which eventually suffocates the eggs and does not allow them to develop.

Giovanni: What is the relationship between ants and wasps?

Gavin: Ants effectively are wasps without wings really.

Giovanni: Some ants have still preserved the ability to sting, haven't they?

Gavin: Black ants have lost the ability to sting. They are able to squirt formic acid at predators but they cannot do much else. Some ants in Australia can however give really severe stings.

Giovanni: Are parasitic wasps social insects or do they lead individual lives?

Gavin: The female lays the eggs and the adults lead independent lives afterwards.

Andy: There are some parasitic wasps that are more closely related to ants and stinging wasps and these exhibit some traits of maternal care where the female would look after the progenies for a limited period protecting them from predators.

Tessa: How do you study parasitic wasps?

Andy: Technology is bringing us much lighter and more portable microscopes that you can bring into the field. There are some now that literally are a couple of inches long and you can use them to magnify the wasps and view the images on the screen of your laptop. These technological advancements are opening up a micro-world in a way, not just to us researchers but also to worldwide audiences.

Giovanni: In light of their minute size, how can parasitic wasps be presented in displays at the Natural History Museum?

Andy: Well in the old days, they were just exhibited in entomology cabinets along with other insects. Of course they looked incredibly tiny and I am not sure what the public was able to make of such small things displayed in that fashion. However today, through technological advancements you can bring the wasps to the public through macro photography and film.

Tessa: Will there be any wasps exhibited in the Cocoon?

(The Cocoon is the main feature of the new Darwin Centre II Building that is due to be completed in September. The building provides a new home for the majority of the Entomology and Botany departments. Their collections will be housed in an impressive cocoon-like structure that spans the height of the eight-storey building. The Cocoon will also be open to the public, and contain an interactive exhibition designed to reveal the work and research that the scientists of the Natural History Museum are engaged in.)

Andy: Yes, there will be...

Gavin: Are you sure?

Andy: Well, I have given them some...

Gavin: And there also is Tessa's piece, which will be part of the display.

Giovanni: What is that going to be like?

Tessa: Well, it's documentation of the work I made



Giovanni Aloï

Gavin Broad with a display case on wasps at NHM © Giovanni Aloï

during my residency, and I believe it's amongst a display about how the collections are used by people other than scientists, and the relationships that develop.

Andy: The Cocoon will aim at involving the research aspect of the museum a bit more, so that visitors can get an idea of what is going on behind the scenes.

Giovanni: What do you think of the disappearance of the entomology cabinets in natural history museums around the world? I know that they are coming back here in the Cocoon. Is that right?

Gavin: In a very limited way...

Giovanni: I sincerely disagree with the removal of the cabinets in favour of the installations called 'Creepy Crawlies,' which I feel do not represent insects in a professional and scientific way. Don't you think that the Natural History Museum has an obligation to represent all species in an equal and scientifically relevant way?

Andy: Well, there is a general tendency now to organise exhibits around themes rather than specimens and this is probably what drives the appearance of 'Creepy Crawlies' exhibits.

Andy: I still suspect that people come to the Museum because they want to see the real thing. They want to see objects. People go to art galleries to see the actual



Giovanni Aloi

Tessa Farmer through a bag of dead flies at NHM © Giovanni Aloi

original painting and they come to the Natural History Museum to see animals or natural objects coming from faraway places that are difficult to access or that do not exist any more. People want to see the skeletons of real dinosaurs, not a recreation, a computer animation or a film of it. People need that contact with reality.

Giovanni: I am very interested in the similitude between the art gallery and the museum that you have just drawn Andy, and the expectancy for originality between those walls. How do you think parasitic wasps for example can be effectively presented in a way that avoids the loss of the original specimen?

Andy: Well, Gavin and I have been working extensively at incorporating videos and real specimens into our lectures in order to keep the link to the real thing alive. At times we have also used live parasitic wasps. Maybe that could also be used in exhibits.

Gavin: However, at times people do not want to see too much. I once gave a lecture where I had a real parasitised caterpillar and was projecting it onto the big screen, some people in the audience found it rather strong...and walked out...

Tessa: Do you think that because of your job and of what you deal with everyday, you forget how squeamish the general public can be?

interesting to see that there always are very mixed reactions. Some kids do not even want to look at the specimens; it is almost as if they pre-judge the experience and tell themselves that they are going to be disgusted by insects. So I always make a point to include some beautiful specimens with bright metallic colours to try to seduce them a bit. Unfortunately

Gavin: Yes, I think I do forget. Because you see these things everyday, you kind of become de-sensitised.

Tessa: I was hanging some fairies and insects for an exhibition a couple of weeks ago and some little girls were around. A girl came by, saw the insects and started screaming!

Giovanni: It's part of the bad press, the 'creepy crawly' idea that we embed in children even before they can discover insects for themselves...

Andy: We have groups of school children coming in to explore where we do our research and it is there are plenty of preconceptions about insects and the words 'insect' or 'wasp' are associated immediately with bad feelings which prevent children from experiencing them with new and fresh eyes. It is almost as if children have been pre-conditioned to react that way to the sight of insects.

Giovanni: It is interesting that in Italy we do not have an equivalent for the word 'bug' and neither for 'creepy crawlies,' which really seems to bear negative connotations about insects. I wonder if there is something deeper to do with this. Not that in Italy we love insects more than people do in the UK. There surely is a problem with the fact that the Museum is not representing insects in a dignified scientific manner as it personally feel short-changed by the fact that insects are represented by what seems to be a child's playground with lots of buttons to push. It would be fair to have a more serious insect display for adults who want to learn about insects in a serious way too. By displaying insects as a subject exclusive to children, the Museum quite frankly provides a serious misrepresentation and a disservice to an adult audience. My fear is that the 'Creepy Crawly' exhibits are actually damaging rather than educational, as they effectively perpetuate a misconstrued and pre-conditioned approach to insects based on the abject and the attraction/repulsion drives involved in the abject.

Tessa: Maybe the Cocoon will change all that?

Andy: I don't know. Have you seen inside it?

Tessa: Not yet. Gavin has though.



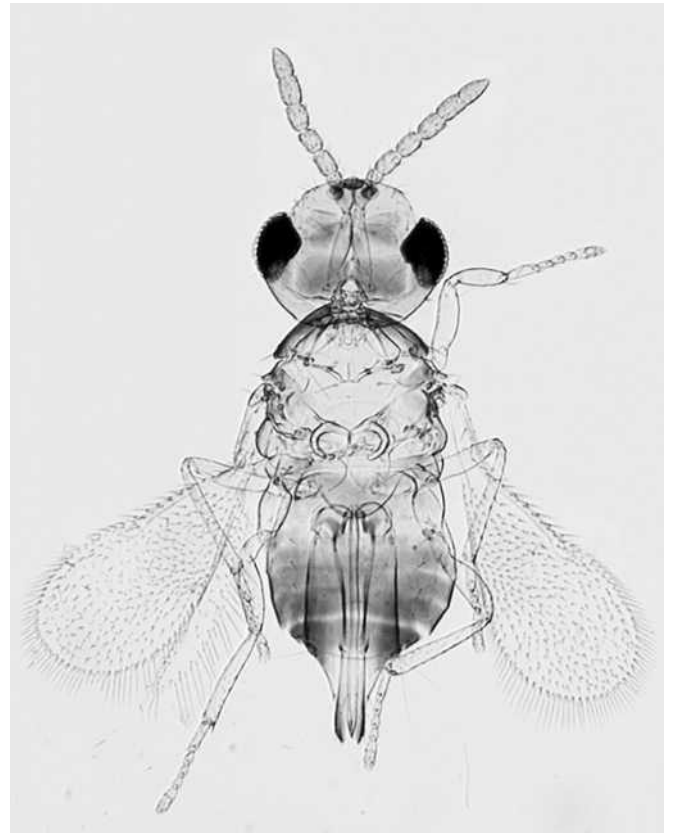
Tessa Farmer

Little Savages (top - detail), taxidermy, insects, bones 2008. *The Horned Skullship*, taxidermy, insects, bird-parts, bones, 2009 (detail- bottom)
photography Matt Welby © Tessa Farmer



Giovanni Aloï

Andy Polaszek at work at NHM © Giovanni Aloï



Andy Polaszek

Encarsia perplexa, microphotography © Andy Polaszek

Gavin: I found the exhibits to be very good, and I think that there is just enough information for a visitor to consume within a reasonable length of time.

Andy: I do believe that you have raised an important point Giovanni. People do need to change their perception of insects and the Museum surely plays a key role in encouraging that change of attitudes. I agree that children should not believe that insects are creepy crawlies and carry that perception through to adulthood translated into a complete lack of interest for the subject. I think that people like us have been lucky to be able to look at insects from a different perspective and find them interesting and fascinating. The fact that we have been able to take that into adulthood is hugely enriching.

Giovanni: My fear is that insect exhibits are being 'served' to audiences as film genres, that visitors only look for if they want to be scared or appalled, typecasting insects in a pre-digested and inappropriate box.

Gavin: Darwin Centre II and the Cocoon will contain a bio-diversity centre that will have a range of collections exhibited within a bio-diversity context making it a more mature experience. Visitors will be able to be involved through workshops in more educational and open ways. We have to remember that a lot of what we see in the

Natural History Museum in London is very outdated and that it has not been updated since the 70's.

Giovanni: With regards to the displays at the Museum, as entomologists, can you voice your discontent about what the visitors see?

Gavin: We have no say on what goes on in exhibitions.

Giovanni: Isn't that frightening?

Gavin: Well, nowadays, we approve the texts that are going to be on display. In the past even that did not happen.

Giovanni: Why is there such lack of communication between departments?

Andy: I have been here since the 80's and there has always been no consultation with regard to what happens in the exhibits. However, as researchers we care about what goes on display. The Entomology department was deeply unhappy about the 'Creepy Crawlies' display for all the reasons we mentioned earlier.

Giovanni: I still cannot help but be concerned with

the fact that we are almost presented with two separate enterprises within the walls of one museum: one that carries out highly scientific research and contributes to the discovery and understanding of the living world, and one that mainly is an entertainment centre (which is what the majority of visitors are taking home with them via the gift shop). This is however an argument that could be extended to art museums; for instance, Tate generated a lot of controversy by presenting Carsten Holler's slides in winter 2006 and was accused of becoming an entertainment centre (playground) rather than a respectable international art museum.

Andy: The question here is quite radical and revolves around the responsibility that the government has to educate individuals in a solid and consistent way generating awareness of biodiversity and the natural world. It is a fundamental moral question that you ask and it is a tricky one. Who are we catering for? We need to look at whether the balance between increasing the numbers of visitors to the museum on one hand, and the quality of their learning experience once inside on the other, should be reassessed.

Giovanni: The real issue, I believe, is that learning is not a quantifiable entity whilst the number of people through the door is. However these do not equate to the same. Figures do however equate to funding in the current state of affairs, and funding is essential to public organisations...

Gavin: Yes, it is true, and we are doing really well from that perspective... However, possibly things will change in the future and a different balance will be established.



Tessa Farmer

Little Savages (detail), taxidermy, insects, bones 2008 © Tessa Farmer

Dr. Gavin Broad is curator of Hymenoptera at the Natural History Museum, London.

Dr. Andrew Polaszek is a researcher in the department of Entomology at the Natural History Museum, London.

Tessa Farmer will be showing work in the exhibition *NewSpeak: British Art Now* (organised by the Saatchi Gallery) at the Hermitage Museum, St Petersburg, Russia, in October 2009. In April 2010 she will take part in *Extraordinary Measures* at Belsay Hall, Northumberland.

For more information:

www.tessafarmer.com

A short film about Tessa Farmer's residency at the Natural History Museum is available on the NHM website

Four way conversation between Tessa Farmer, Giovanni Aloï, Gavin Broad and Andy Polaszek took place at the Natural History Museum London in July 2009
© Antennae

ANONYMOUS DOORS

Gavin Broad opens the doors of the Natural History Museum collection and tells us how Tessa Farmer's fairies are as real as real parasitic wasps.

Text by Gavin Broad



Tessa Farmer

Snake-Tailed Skullship photographed at the *Animal Magic* exhibition at Eleven Fine Arts in London 2008 © Tessa Farmer, photograph by Suzanna

The real treasures of the Natural History Museum are behind anonymous doors, in ranks of dull grey cabinets. These are the collections - the core of the Museum. It is a great shame that the public doesn't get to see the vast majority of what is undoubtedly the most interesting part of the Museum, the massive accumulation of specimens from around the globe that tell the story of life on this planet. From wandering around the galleries you would be hard-pressed to know what goes on behind the scenes. Armies of curators and taxonomists maintain these collections and carry out research on these vast assemblages of organisms and minerals. Curators and taxonomists are an obsessive bunch, devoting much of their lives to the distinctly esoteric study of small branches of the tree of life. My area of responsibility is part of the collection of parasitic wasps, in particular one group of wasps called the Ichneumonoidea. This is a fantastically obscure group of creatures to the public at large, they don't seem to have impinged in the slightest on the public conscience. Nevertheless it is perfectly possible for many people to spend all of their lives working on this one group of insects and still not have much of an idea of their diversity and life histories, for the parasitic wasps comprise a large percentage of all insect life, and thus all animal life.

We have about four million specimens in the Hymenoptera collection at the Natural History Museum and that is but a fraction of our insect collections. The Hymenoptera is one of the major orders of insects, its species richness rivalling the Coleoptera (beetles) and Diptera (flies). We can only guess at the total number of species as many areas of the world contain huge numbers of undescribed species. To put the diversity of this group into context, there are around 6,000 hymenopteran species in Britain alone. Unfortunately, there is no English vernacular name for Hymenoptera, but the group comprises the ants, bees, wasps, sawflies and parasitic wasps. The parasitic wasps are usually mentioned last as they are the least familiar of the lot but this is unfair. The majority of Hymenoptera are parasitic wasps. Technically, these are parasitoids, in that they always kill the host and eat it almost entirely, which a parasite will often not do. One family of parasitic wasps, the Ichneumonidae, contains more species (at least 100,000) than any other family of organisms.

Parasitic wasps are found everywhere and have exploited other insects to an exquisitely successful degree. Each parasitic wasp develops at the expense of at least one other insect. All other groups of insects and some other arthropods, such as spiders, pseudoscorpions and centipedes, can be attacked. Some parasitic wasps develop in the eggs of other insects and can be amazingly small (tenths of a millimetre), many attack the larvae of other insects, some attack the pupae, a few attack adult insects. They can remain outside of the host, sucking haemolymph (blood) through a wound or can remain inside the body of the host, surrounded by food. The female wasp lays its egg in or on the body of the host, sometimes with great precision, into a particular nerve

ganglion, for instance. Others just paralyse the host and the larval wasp sits on what has become a bag of meat. A few species lay eggs on vegetation and the young larvae attach themselves to a passing insect and burrow in. Thousands of species are hyperparasitoids, only attacking other parasitic wasps. And these hyperparasitoids can have parasitoids... Some have entered into co-operations with viruses that weaken their hosts' immune defences. With so many species of wasps, with so many potential hosts to attack over many millions of years of evolution the variety of biological strategies to have evolved has been immense.

The transformation of a large, hairy caterpillar to a mass of writhing wasp larvae, emerging from the cuticle to spin their silken cocoons, can be rather alarming but grotesquely beautiful. Many a lepidopterist has been disappointed on rearing the larva of some moth or butterfly only to find that an ichneumonid wasp emerges from the pupa instead. For me, that was my introduction to parasitic wasps, collecting a small moth pupa and then an ichneumonid emerging, which was obviously far more interesting than the moth would have been. The wasps themselves are mostly elegant and often vividly coloured. We taxonomists all think our chosen organisms are the most beautiful of all (possibly even those who study nematode worms) but I am quite sure that parasitic wasps are about as beautiful as insects get and I think I would be quite happy immersing myself in their world for the next forty or so years.

The research conducted using specimens is changing all the time, with much more emphasis being placed now on molecular techniques and the imaging of specimens. But the insect collections are still central and will remain so whilst research agendas wax and wane. The reality of maintaining a huge collection like this, and maintaining its relevance, is that I spend a lot of my time sorting through the accumulated material of decades of collecting, sorting specimens into a taxonomic hierarchy and identifying them, which is where being an obsessive type is most useful.

Working with Tessa has been an enlightening experience! Most of our visitors are interested in the collections from a typological perspective – identifying specimens, recognising species from the type specimens that we have, giving names to unidentified specimens. Looking at parts of the collection with Tessa has made me think of it more as a treasure trove. As well as being functional vouchers – deposited here as physical records of their lives and identities – a drawer containing several hundred microgastrine braconids will also contain many snapshots of their world, expired caterpillars pinned with a halo of wasp cocoons around the corpse; a mummified caterpillar studded with wasp emergence holes. It's not just the insects themselves that are beautiful, their life-histories are fantastically complex and specialised and certainly not just 'gory'.

Tessa's fairies seem just as real as 'my' wasps. Insects have been collected from around the world, shipped to London, sorted and then identified and filed



Tessa Farmer

The Horned Skullship, 2008 © Tessa Farmer

away by an army of curators. Nothing is known of most of the ichneumonids that I work on. They turn up as dead specimens in traps in the furthest-flung forests and now sit in a drawer. They could as easily have been assembled as Tessa's fairies. My research has focused on the evolution of the varied lifestyles that parasitic wasps have evolved. The Hymenoptera appeared around 225 million years ago as plant feeders and quite a few have retained that lifestyle ever since. But it wasn't long (in geological terms) until the habit of parasitoidism evolved. Some abandoned this lifestyle and started bringing food to their young, instead of laying their young on the food. Some of these nesters became social and cooperatively reared young and are the familiar ants, bees and wasps. But most hymenopterans have retained their parasitoid lifestyle and it has been a spectacularly successful way of living. Tessa's fairies seem to have followed a similar evolutionary trajectory, but faster and with more ferocious cunning and I am very keen to find out what the next stage in their evolution will be.

Anonymous Doors was originally written for the catalogue to accompany the exhibition 'Little Savages' by Tessa Farmer at the Natural History Museum, London, in 2007 and is here re-printed with permission of the author. © Gavin Broa

OUR LADY OF MIMICRY

Maria Fernanda Cardoso is a leading Latin American artist who has built a reputation on her unconventional use of materials including insects in her work that involves sculpture installation, video and performances. Here, **Gary Genosko** discusses *Maria Fernanda Cardoso's* work from the perspective of his collaboration on her forthcoming show *Emu Wear* due in January 2010.

Text by **Gary Genosko**



Maria Fernanda Cardoso

El Arte de la Desaparición 1, Preserved "Dead Leaf" butterflies, glass, metal, clay, paint, vinyl, wood. (detail) 180 x 180 x 60 cm ©
Fernanda Cardoso

A few years ago I had the opportunity as guest curator of the exhibition *Bug City* (2005-6) at the Winnipeg Art Gallery of including a rather infamous piece by Maria Fernanda Cardoso, a video installation (*Cardoso Flea Circus*, made with partner Ross Rudesch Harley) of her flea circus. Later in 2006 I found myself in Sydney, Australia, and much to my delight, in the company of Maria Fernanda. Together we wore giant living stick insects on our heads and wondered about the entomological imaginaries that have possessed both of us from our early years onward. I had already discussed at length with the American photographer Catherine Chalmers, another denizen of *Bug City*, the conversion of Chalmers' studio into an incubator of life forms, the industrial provision of the lower orders (mail order ladybugs), and the staging of interspecies encounters which are evident in the photographic works of her *Food Chain* series, so I was prepared for Maria Fernanda's converted garage which was teeming with specimens, both dead and alive, of tropical stick insects, katydids, beetles and butterflies, not to mention residual mice from an earlier breeding program.

In the course of the interview with Sonja Britz which is published after this piece, Maria Fernanda dwells on the significance of insect mimicry involving leaf butterflies and stick insects:

"I worked a lot with the Kallima Inachus or Dead Leaf Butterfly to create a series of works about mimicry, invisibility, and the intelligence required by insects to mimic plants. I made the work 'El Arte de la Desaparición' (The Art of Disappearance), and a piece titled 'A Garden of Insects that Look Like Plants,' which also utilized master mimics such as stick insects and bright green Katydid to recreate branches and foliage. That body of work had many potential readings and blends formalism with behaviour, and could be read metaphorically for our desire to blend in, to camouflage or to disappear, but with the option to be loud and attractive (stick insects also have bright red wings used to scare predators). I couldn't have developed one body work without the other... so to me, as a personal metaphor, butterflies are both the possibility of beauty and visibility, or invisibility and deception, both options achieved through an excessive degree of perfection."

Whenever I listen to Maria Fernanda's frank accounts of her wonder before insect intelligence, its extravagance, and power to affect human experience, I am reminded not of anthropomorphic figures of speech but, instead, of what a remarkable legacy this approach has in radical twentieth century thought. The line I want to draw between French surrealist Roger Caillois and Mafu is that of an inverted anthropomorphism that finds in mantises, Dead Leaf butterflies and stick insects an objective lyricism whose potential to elucidate human behaviour constitutes a rich resource for poetic sensibility and the artistic imagination.

In the anti-Darwinian and anti-utilitarian thought of Caillois, the idea that nature does everything in vain is perhaps best realized in his reformulation of mimicry.

Caillois thinks through mimicry in terms relevant to both insects and humans, and insists that the three typical functions of the phenomenon — disguise (imitation of another), camouflage (blending into the background) and intimidation (appearance producing fright) — each have something to tell us about disappearance and dissipation; that is, about the struggle for inexistence and the role of biological inutility.

Disguise has little value for survival, Caillois claims, citing the phenomenon of mutual grazing among camouflaged members of the same species, and high counts of camouflaged insects in the stomachs of their predators; rather, it is a slow-moving adoption of a fashion, a kind of irrepressible love. Without causing a scientific scandal, imitation in this context neither answers to natural selection nor ensures survival. Likewise, camouflage is the desire for invisibility, loss of identity and fixed boundaries. This environmental similarity is excessive, Caillois thought, because it is dangerous and aimless. Finally, intimidation rests largely on the periodic display of abstract eye patterns, signifying terror, and affecting paralysis or flight of enemies. The problem here for Caillois is that of the mask, an accessory, quite ornamental, and deployed to dramatic effect: the strength of the weak to overwhelm or even attract the strong. Mimicry is a luxury (perfection is excessive, echoing Maria Fernanda) and a condition of deterioration, under what he called an *instinct d'abandon* (instinct of letting go).

Maria Fernanda's work crosses many species and media beyond the entomological reference. However, visual mimicry remains at the heart of her aesthetic preoccupations. Disguise and deception in birds recently found expression in her currently touring show *Emu Wear* in which feathers from the flightless national emblem of Australian fauna are used as organic materials for the construction of female fashions and accessories. Presented like an over-the-top fashion shoot in large-scale photographs of female models wearing the extravagant emu outfits, together with a video installation and one-of-a-kind pieces, these works play with the tension between disappearance, in which an animal's colouration allows it to blend in with its surroundings as an allegedly protective measure, and the heightening of appearance through display, in order to seek or even dispense rewards. On the one hand, disappearance seems protective even if it perilously slides into subjective detumescence, while the display mode mingles attraction with the intimidations of beauty. This is not Maria Fernanda's first venture into the avian world, as her *Chicken Face* photographs speak directly to fashion and fascination, the opposite of what Caillois thought of as sterile usefulness. Maria Fernanda has been using emu feathers as a sculptural material for about 5 years, developing heavy patterned hats, caps, flags, and squares during 2004-05; these heavy textiles gave way to the whimsical emu feather flowers the following year which marked a major breakthrough in lightness and glam absurdity; Australian critic and art



Maria Fernanda Cardoso

Stick insects on branch, Digital photo, Edition 1/3 + 1 AP, 2004-2008 © Fernanda Cardoso

historian Susan Best once dubbed Maria Fernanda's art "tropical Dada."

The passage from insect to human society via mimicry is embedded in the history of camouflage, for instance, in military campaigns, based on studies of colour resemblances among a variety of species (shading, counter-shading, patterning). However, another lesser known but no less fruitful route was taken by the American sexologist Alfred C. Kinsey, whose taxonomic studies and important collections of gall wasps were transferred to problems of human sexuality. Maria Fernanda, too, seems to have responded to this cue in moving into the examination in her ongoing photographic work under the electron microscope of the florid penises of insects and related creatures.

Maria Fernanda's *Butterfly Drawings*, circa 2004, made with the wings of Australasian and Peruvian species, place her firmly in a stream of international interest in the medium of colourful powdery wings in decorative context. The use of butterfly wings in toile motifs on installed wallpapers for domestic interiors was developed by American Jennifer Angus and included the 'discovery' of apocryphal new species by the artist. Angus, too, dabbled in tableaus inspired by the circus, with barbell and umbrella hoisting beetles (*Bug Circus*, 2001). After spending a few days riding up and down in an elevator that Angus had 'wallpapered' for *Bug City*, I began to experience textured insect walls everywhere, not in a menacing way as in a buggy B-movie or bad drug trip, but very much like avid collector and novelist Vladimir Nabakov must have felt when he wrote to Hugh Hefner in 1968 pointing out how much the bunny ears of the *Playboy* emblem looked like "a butterfly in shape, with an eyespot on one hind wing."

Maria Fernanda's menagerie is populated by species as diverse as piranhas, emus and walking sticks. She is like a collector in this regard — acquiring new specimens, new knowledge, and new methods of exploration. Sometimes she even puts herself in the collection, as blood host to her fleas. Her sculptural production has, over the course of her career, found a balance with photographic and video work. Glossy fashion photography mixes comfortably with scientific modes of visualization. Traces of strong graphic design and decoration pop up here and there, but in unpredictable media. Later this year I will have the opportunity to curate Maria Fernanda's emu works, but in a new hemisphere, a far northern zone where the excess of the emu fashions will signify differently against the background of Amerindian traditions of feather work. In the absence of the Aborigine myths encompassing emus, they will intersect with another zoomorphic aesthetic defined in these parts, and with exceptions, by fur rather than feathers.

Gary Genosko is Canada Research Chair in Technoculture at Lakehead University in Thunder Bay, Canada. He is guest-curating Maria Fernanda Carodoso's *Emu Wear* show beginning in January 2010 at the Rodman Hall Art Centre in St. Catharines, Ontario. *Our Lady of Mimicry* was commissioned by Antennae in Spring 2009 © Antennae



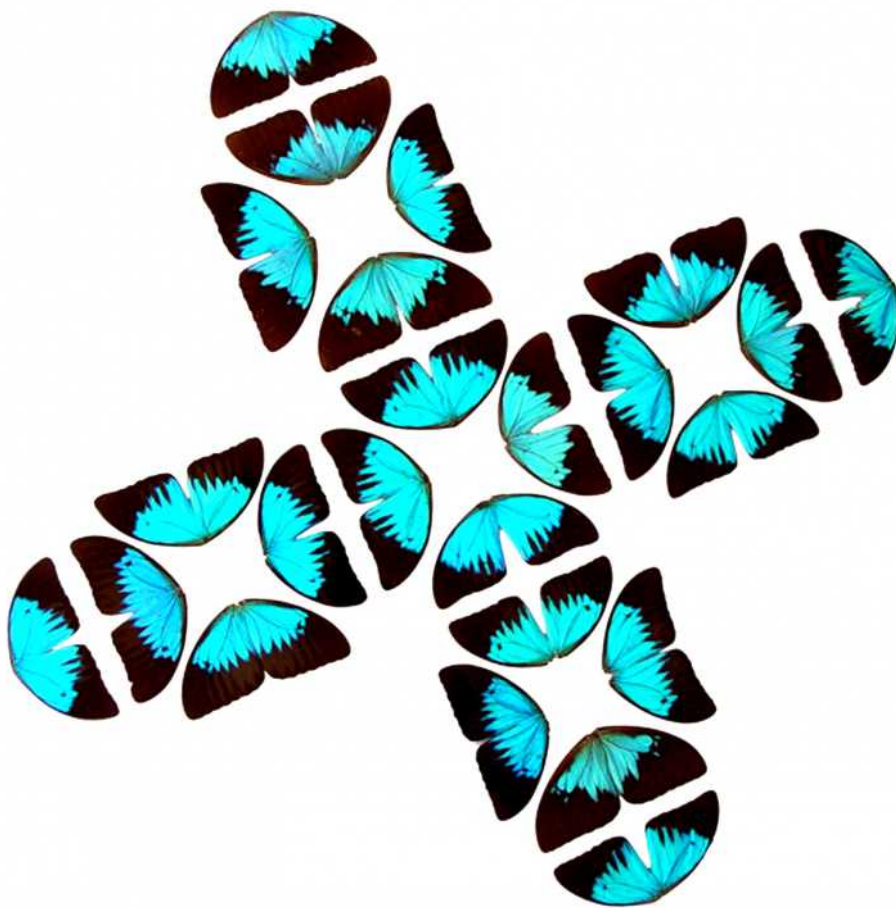
Maria Fernanda Cardoso

A Garden of Insects that Look like Plants, 180 x 180 x 60 cm, Preserved insects, glass, metal, wood, paint. 2006 © Fernanda Cardoso

A GARDEN OF INSECTS: IN CONVERSATION WITH MARIA FERNANDA CARDOSO

Colombian-born, Sydney-based artist Maria Fernanda Cardoso's work continues to attract attention around the world because of her use of unconventional natural objects. These raw materials, with their potent symbolism, create works of great beauty, which recall patterns that exist in the natural world as well as minimalist sculpture, where simple elements are repeated to create more complex forms. Her abstract compositions using insect parts often integrate references to mythical symbols in pre-Colombian culture and Cardoso's work has in the past been described as a contemporary alternative to the tradition of still-life painting.

Text by Sonja Britz



Maria Fernanda Cardoso

Dibujo de Mariposas / Butterfly Drawing. Butterflies, glue, perspex, metal. 122 x 240 x 1.4 cm 2003 © Fernanda Cardoso

Your interest and fascination with the natural world has led you to explore insects as material and sometimes as co-worker. Since insects have a very different nervous system from ours, they are generally not regarded as sentient beings. What are the ethical and moral considerations involved in using insects in your art?

Of course all living things are sentient beings. How could you eat if you did not feel hungry? How could you avoid danger if you couldn't perceive it or couldn't fear it? How can you live if you don't know what's good for you and what's to be avoided? I personally don't feel there is any difference between them and us. Insects communicate; they have language, not with words, but via chemical signals, sound, visuals; by vibration, by rhythm, complex dances, and who knows how else. Their bodies are full of sensory organs. They have an extraordinary sense of time and temperature, much better than ours. I am in awe of their capabilities.

Morally and ethically, I think it is important to work with them, rather than to avoid using them for some moralistic reason. We humans have already separated and segregated most other life forms out of our lives, and it is critical to reverse that trend.

By working with insects and other animals, it is my job to develop profound and meaningful relationships between humans and animals. I believe it is a priority to connect with other life forms, and I am a true fan of the Biophillic hypothesis by E. O. Wilson. I might sound crazy, but my job is to attempt to communicate with insects or other animals, and to create meaning out of that interaction.

Which challenges have you encountered in working with live insects?

Training fleas was one challenge after another. The first was to source human fleas (the *pulex irritans*), the traditional flea circus flea, which I failed. I never ever found them. I had to settle for cat fleas. But even getting them in was a challenge. I happened to be in Canada during the middle of winter for a 3-month residency at the Banff Centre for the Arts where I was ready to start my flea training. To my shock, there were no fleas to be found anywhere in the country. I finally had to import them from the USA (but not before trying to smuggle them and being caught at the Canadian border). Then I had to do all the necessary permits to import circus fleas and after long weeks waiting the permit was finally issued, just in time to be faxed to the Calgary airport as the fleas were landing. I had to pay 10 cents tax on my vial-sized shipment of live fleas from the USA since customs valued the fleas to be \$1 based on their own assessment. I kept the receipt because I thought it was so funny. I have already spent around \$300 alone in long distance phone calls sourcing the fleas, on top of their actual cost, plus the personal courier as they needed to be hand carried...

Then the next challenge was how to feed them! At Banff they didn't let me have a pet cat to put them on. I had read in my research that a certain Dr. Gorsky had invented the 'artificial dog.' I was very excited as I imagined it to be like a transfusion blood bag that fleas will bite and feed off. Well, Dr. Gorsky's artificial dog was over \$5,000 and required 20 hours of maintenance a week to run with its system of pumps and heaters, so that was out of the question. I had no remedy but to feed them myself, sticking my arm inside their cage and letting them feed until they were satiated, engorged with my own blood. Each feeding would take about 20 patient minutes, and I would have to do it three times a day. Eventually I weaned them to once a day, and that made it more manageable.

And of course, training fleas was a real challenge, as there was no flea trainer to learn from, so I took it upon myself to become a self-taught flea trainer. It took me years to develop and master my own techniques based on research and lots and lots of experimentation and countless hours of work. It was so hard that at my lowest point I even thought that all flea circuses in history were fakes. But I was hooked and I persevered until it became a reality. So my motto became Patience and Science. And then, the most terrifying and challenging aspect was to have to perform, on command, for an audience. I had no performance training myself and was so scared I shook so much it was hard to handle the fleas.

Conversely, by foregrounding living creatures, which would ordinarily be seen as pests and health risks, you grant fleas status and respect. It is tempting to compare your concern to that of John Donne's poem *The Flea*. In this poem the flea is both metaphor and living creature in its own right. Which aspect of the flea interests you most?

Yes, I made them stars. I think they loved it. I made them immortal! In a more serious tone, I think one of the most remarkable things about fleas is their size. They are synonymous with being small. (In Spanish, *Pulgarcito* is a children's story of a tiny boy. *Pulgar* in Spanish means the thumb or shortest finger. We have an expression, "es una pulga" (it's a flea), which means it's so small). They exist at the edge of perception, at the edge of what's visible (to us). The first microscope was called the 'flea glass' and the flea was one of the first animals to be described. If they were a little bit smaller we wouldn't see them (which is what happens with mites). Working so small is fascinating; scale is quite an interesting thing. The laws of gravity are different at that scale, therefore their capabilities are extraordinary.

How did the idea for the flea circus come about and how do audiences respond to it?

In my artwork I have always been interested in working

with 'real' animals or materials, not representations of them. Therefore my challenge was to make real such an urban myth. The idea developed in 1990 when I started to make 'animal art.' I had made it a rule to work with animals I already had a relationship with. I was going down the list of animals that were part of my childhood, and there they were, the fleas, (as all my cats had fleas). From there to the flea circus was easy, as I had already seen it in my mind, as a child, when an uncle told me about a flea circus in New York. I remembered exactly how I imagined it, all white walls as I peeked inside an arena to see a bunch of very active fleas performing all on their own. I must have been 6 or 7. So that's what I did; I recreated that vision.

There was quite a lot of interest and curiosity about the flea circus. The media loved it, and it was featured everywhere, from the *NY Times* and the *Wall Street Journal* to French and Japanese TV documentaries. When I premiered it, I even got a phone interview from South Africa! It was truly a universal legend, and because there have been several generations without a real live Flea Circus, only some old people have seen it, yet everyone had heard about it. Therefore everyone was quite intrigued by it. We had such a large audience at the San Francisco Exploratorium that the only fair way to sell the tickets was through a raffle, and we had to wire a live video of the performance to a theatre next door so the crowds could see it. That took us all by surprise as I could only cater to twenty people at a time. That pressure brought 19th century entertainment to the 21st century as we had to quickly incorporate live video technology to make it accessible to large audiences.

Jakob Johann von Uexküll in his study on ticks developed a biosemiotic theory for living creatures called umwelt, which contains signifying markers relevant only to the world of that specific creature. Which carriers of significance do you employ in the 'new' world you create for the fleas in your circuses?

You want me to tell you my secrets! I try to imagine how the fleas perceive me and the world around them, and try to re-create or use aspects of it to my advantage. I didn't know there was a word for it, their *umwelt*! Well, that's what I do; I try to use those key elements so I can induce certain behaviours. It's not that hard to do. I imagine they like heat, my heat, the heat of a warm-blooded animal (food). I know they perceive vibrations and react to them, and pupae only hatch with vibrations. (I imagine me or a dog walking past must feel like an earthquake — food is like an earthquake). So I use that. My ballerinas dance on the vibrations of a musical box, as the music vibrations activate them. Because there is music they look as if they are dancing, but they are just getting ready to jump onto their next host. I know they want to go up, either crawling or jumping, as food is always upwards. So I can make them go up a rope or climb to a mountaintop, even if they don't know it's a mountaintop or a tightrope. We do, but they don't. They



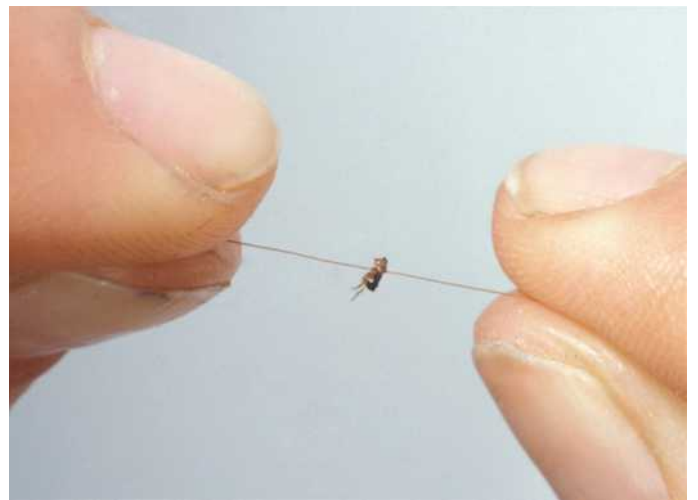
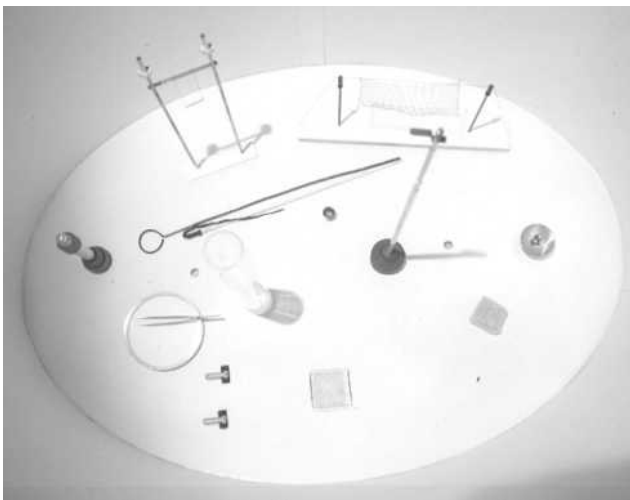
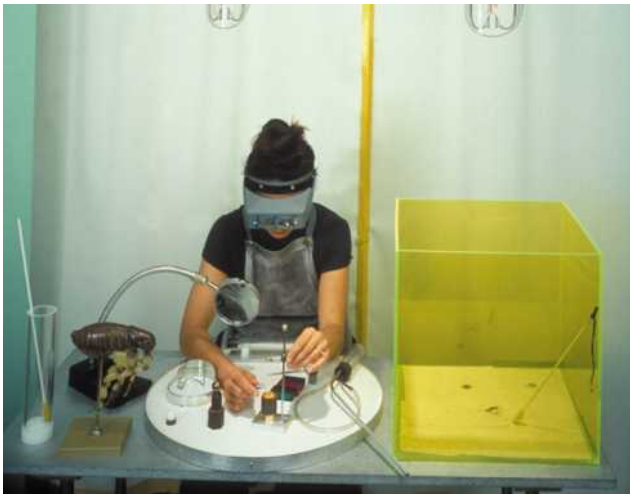
Maria Fernanda Cardoso

Maria Fernanda Cardoso as Queen of the Fleas, 1995 © Fernanda Cardoso

think they are climbing up an animal or towards an animal. I imagine they perceive shadow and light. I know they like some types of light, but I don't know why. And so on. I try to find what they like and provide it to them. Punishment doesn't work, even though I crack a tiny whip.

Temporality is a constant feature of your work: you employ both dead and alive insects and reptiles in your work. As art historical signifiers of vanitas these short-lived animals could also be seen as a reflection on the imminent violence of Colombian society. Would you agree?

Yes, it is true in the sense that I believe it's important to look at death, rather than to hide it or avoid it from our direct experience. Many Western societies are terrified of death, of animals or nature, which they fear will kill you, and go to great lengths removing all traces of life (i.e. antibacterials) or death from daily experience. My early work with dead animals was all inspired by the fact that in Colombia we face death and violence on a daily basis, and somehow we live and cope with it. It was also a reflection on the temporality



Maria Fernanda Cardoso

Top left: Professor Cardoso at the training table with breeding cage. Top right: Professor Cardoso feeding the fleas with her own blood. Bottom left: Oval Flea Circus Arena with Props, 1995, Interior view. Acrylic, nylon net, paint, metal, plastic, wood, fleas, flea circus props. 130 x 100 x 700 cm. Bottom right: Flea harnessing © Fernanda Cardoso

of life or death, as it is only a moment in time that we are witnessing. Even in preserved death there is change; not even death is permanent. As much as we can try to make something "archival," we are just slowing down a process so we have time to look and think, that is all.

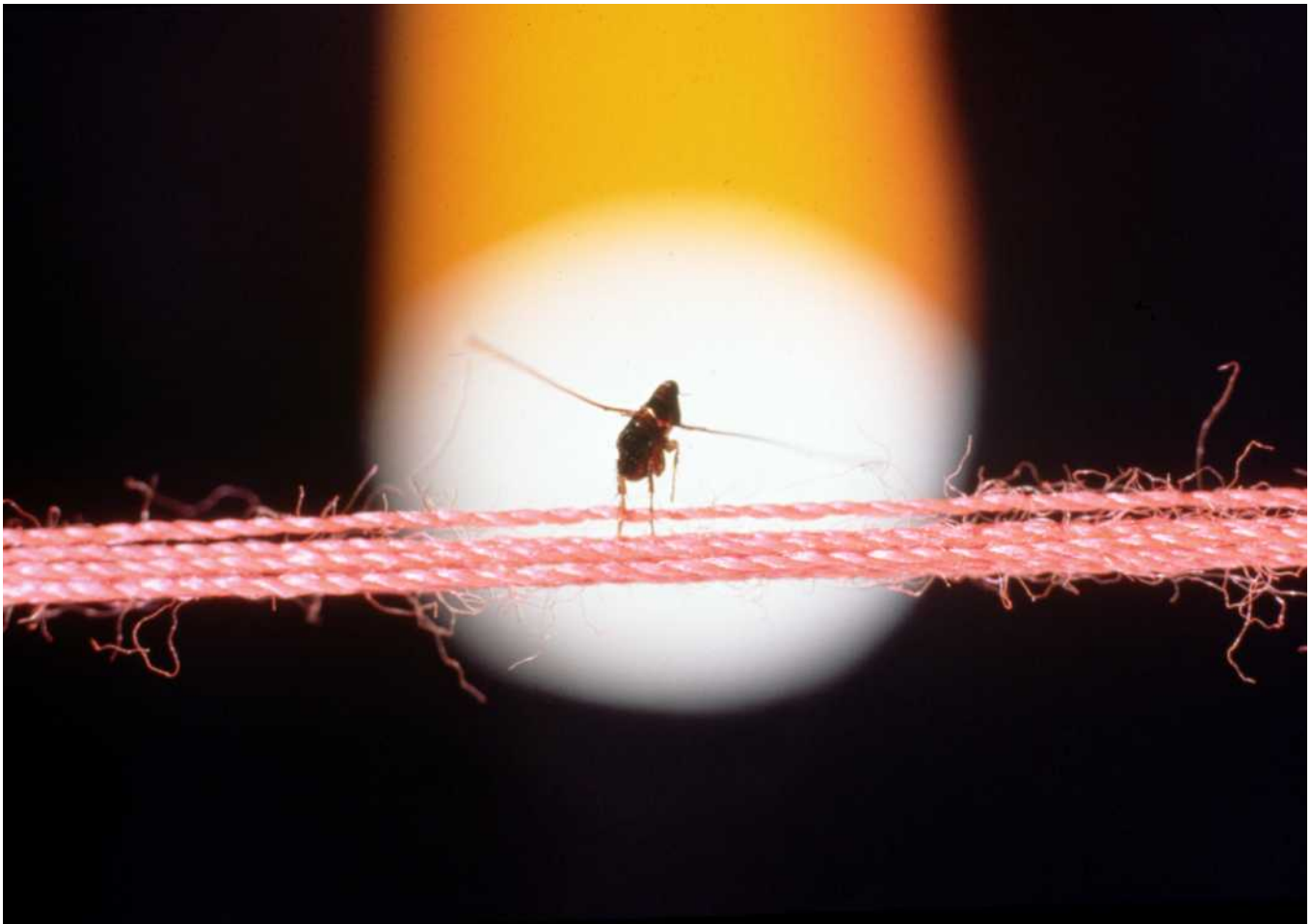
Some of your works, for example your Butterfly drawings, are inspired by Pre-Colombian cultures. Which aspects of these cultures inspired you?

Yes, a lot of my work is influenced by Pre-Colombian cultures, in particular my early work with animals (lizards, snakes, frogs). In Colombia a great part of our direct experience of art comes from archaeology museums and most of it is funerary art. In Colombia we didn't have great European style museums, but we had our Pre-Colombian heritage, as well as our colonial heritage as our firsthand experience of art. It strikes me that both cultures, the pre-Colombian and the Catholic, share an obsession with death and that is obvious in my work. I also make reference to pre-Colombian design, which

was quite refined, very stylized and geometrical, modular, even abstract. People outside our culture may not read the references, but the geometric abstraction of zoomorphic representations are explicit in a lot of my work.

Do you see any relation between the now vanished Mexican tradition of pulgas vestidas and your revival of the Victorian flea circus?

Mexicans have a great imagination and a fantastic sense for the absurd. I think both practices originated from the fact that humans used to have fleas, and the familiarity that that entails. It also has something to do with an era in which people had time to devote to such time-consuming activities, and entertainment was quite simple. I tried to dress my fleas, as I wanted to revive all these traditions, but it was hard, as even a single thread was too big for them. I managed to make tutus out of sequence, which were gigantic proportionally to the flea size, yet they were strong enough to carry them. I want to clarify that the *pulgas*



Maria Fernanda Cardoso

At the Tightrope with a Balancing Pole, 1996. photo still © Fernanda Cardoso

vestidas are not the miniature feat that the name claims. The flea itself is not actually 'dressed,' but is the head and face, on a dressed little stick. The hind legs of a flea can look like a Mexican moustache on an ugly guy. I liked the *pulgas vestidas* wedding theme, so I made my own flea wedding, and made it a circus act.

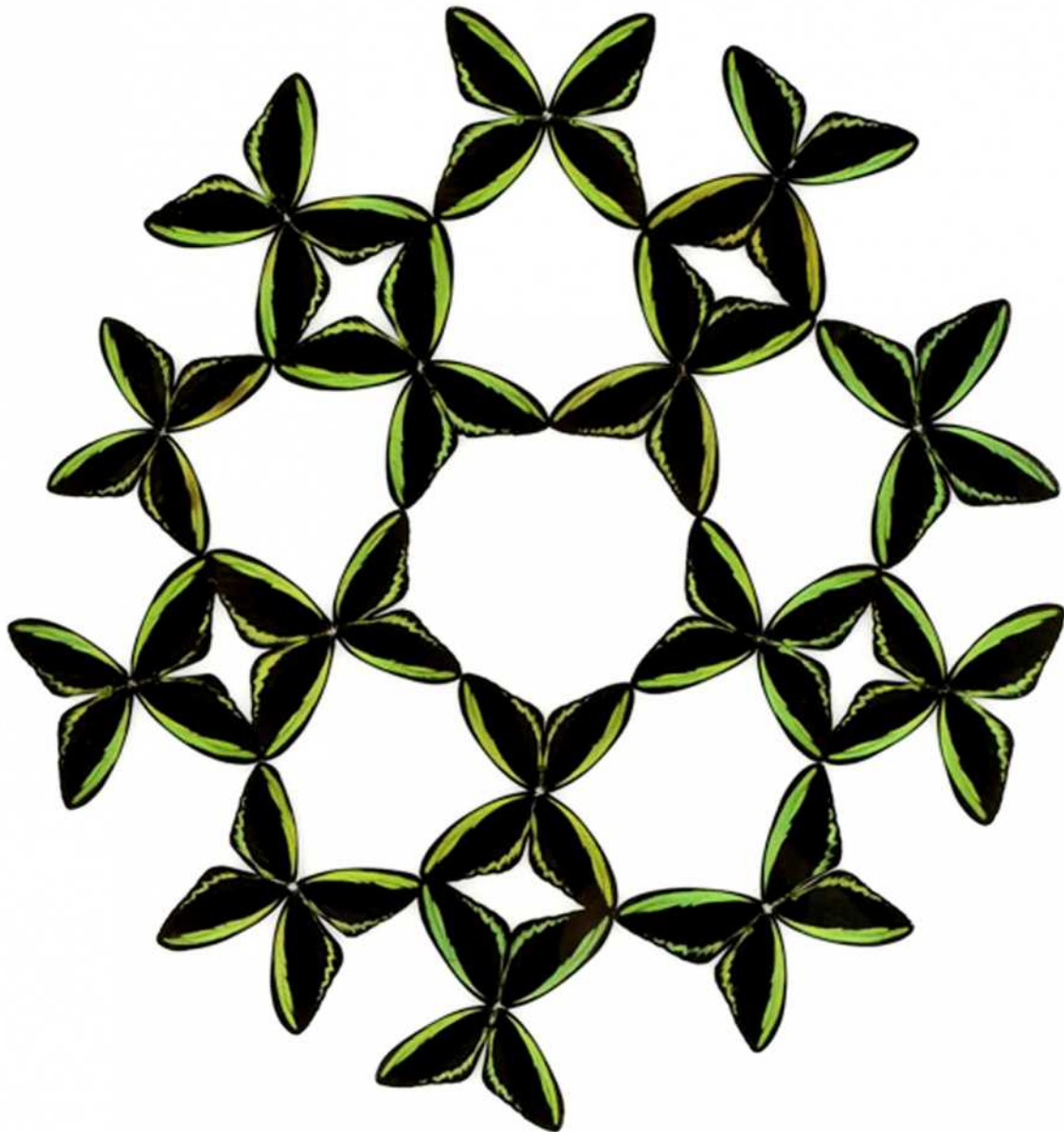
Jan Fabre's interest in insects — more specifically scarab beetles — expresses his belief in the fragility and tenuousness of human nature. At the same time he describes these insects as the oldest computers in the world because they are retainers of ancient memory. Which is your perspective on insects and what is your opinion on Fabre's approach to insects?

Not having experienced any of his work in person I find it hard to comment on his work. I don't have a sense of how it feels to confront his vast accumulations of beetles or beetle wings, but I have a sense of something colonial about it, like the gold leaf splendour and excess of the empire(s) architecture. His references to humanity might be personal metaphors, with assigned meaning rather than inherent meaning. I don't get it from the reproductions I have seen. I understand what he says about the memory of insects, but that also applies to many other living creatures that had inhabited this earth

for millions of years without much change. I agree with him that we should in fact pay more attention to that memory, as it is stored there, in all of them. It is a real treasure they still exist, and we should listen more carefully to them. I love insects; they make me happy. They are incredible complex, and what they can accomplish no larger animal can. Besides, as all invertebrates have way more body mass than all vertebrates together, they deserve much more importance than what we actually give them. We need them, and we need to get to know them better.

Damien Hirst's Butterfly paintings testify to his interests in life, death, love and uncertainty. However, he has been criticised for objectifying his subjects. Your work, although very different in other respects, shares with his an insistence on geometry and pattern. What are your thoughts on such a comparison?

Beauty, geometry and pattern are inherent to the essence of what a butterfly is, therefore some commonalities exist between his and my work. There are two ways I have worked with butterflies, and I think it would be helpful to consider them simultaneously. One is as the icon of the butterfly as a symbol of beauty and perfect geometry. By removing the butterfly



Maria Fernanda Cardoso

Dibujo de Mariposas / Butterfly drawing, Butterflies, glue, perspex, metal, 2003. 122 x 122 x 1.4 cm © Fernanda Cardoso

bodies, and utilizing only their wings, and by modular repetition, I created geometrical patterns as suggested by the designs and shapes of their wings. I called this series *Bio-Geometries*, and it is different from Hirst as the work doesn't convey any existential metaphors — it's purely visual, formal, geometrical. But if you look at the butterfly undersides, quite often they have dull colours and they are designed to mimic dead foliage and decay. I was quite intrigued by the ability of certain butterflies to be simultaneously quite colourful and attractive, with the possibility to switch in a split second into invisibility, stillness, into non-being. I worked a lot with the *Kallima inachus* or Dead Leaf butterfly to create a series of work about mimicry, about invisibility, and about the intelligence required by insects to mimic plants. I made

the works *El Arte de la Desaparición (The Art of Disappearance)*, and a piece titled *A Garden of Insects That Look Like Plants*, which also utilized master mimics such as stick insects and bright green Katydid to recreate branches and foliage. That body of work has many potential readings and blends formalism with behaviour, and could be read metaphorically for our desire to blend in, to camouflage or to disappear, but with the option to be loud and attractive (stick insects also have bright red wings used to scare predators if worse comes to worse). I couldn't have developed one body of work without the other, and all thanks to the *Kallima inachus*, or Dead Leaf butterfly. So to me, as a personal metaphor, butterflies are both, the possibility of beauty and visibility, or the possibility of invisibility

and deception, both achieved through an excessive degree of perfection. That was my true interest in them.

You often engage in rigorous practises and methods, which could be described as performative, in order to achieve your artistic aims, for example sheep shearing and flea training. This approach could almost be compared to an athlete training for a specific event. Are you interested in the emotional and physical challenges of perfectibility?

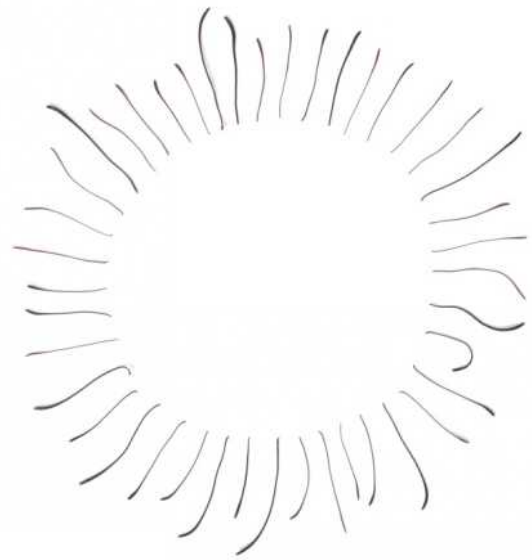
Absolutely; you hit the nail on the head. When perfection becomes the goal, the objective, the pressure is enormous. All of my work benefits and suffers from it. Perfectibility, ever present, can be a tyranny, making the process of the making and research incredibly long, endless. Yet there is satisfaction in the making, in the gathering of the data, in the rigour, and it is the process that really matters to me. Yes, perfection is my aim, although at a rational level I am aware it is unachievable, and hence it can easily transform into frustration unless there is a way out. The relentless repetition, variation, improvement of any activity becomes the essence of the work, the obsession with the activity rather than the result, as the result is only temporal, and can be improved. It can always be bigger and better, and it will be modified at the first occasion.

Yes, I agree, I think perfectionism was the essence of the flea circus project. I find the perfectionist streak in humans (including myself) quite absurd and the fleas were the perfect vehicle to expose the futility of it all. *The Cardoso Flea Circus* was not created to entertain people, it was the pursuit of a ridiculous obsession, so absurd, it was somehow redeeming. I found a respite to the tyranny of perfectibility through humour, which was the escape valve and mirror to the relentless pressure, hopefully bringing insight into our human pursuit of perfection.

Would you say there is any correlation between your fascination with the 'marvellous reality' of nature and the genre of magic realism, which is so prominent in Latin American literature?

To me, life is more interesting than fiction. And I am not thinking of human lives, but of Life. I am in awe of the strangeness and fabulous complexity of life on this earth, and I can't find any human narrative wilder than the strange behaviour of certain creatures. Yes, I guess you could compare it with the magic realism movement, as we appreciate reality and it's narratives, except that I am not interested in people or people's narratives, but in other species narratives. I even find the scientific names interesting, and make it a goal to learn them, like you would know people, as they become characters in my own narrative.

What are you currently working on?



Maria Fernanda Cardoso

Dibujo de Lenguas de Mariposa / Butterfly's tongue drawing
2005 © Fernanda Cardoso

A project called *It's Not Size That Matters, It's Shape*. For years I researched the natural history of sex with great amusement, and I have found a niche I want to explore further: it is my aim to become an expert on animal penises, and to make an animal penis museum. People are not aware of the variety and complexity of such organs, despite the fact that it's such a human obsession. Since I found it very hard for people to take me seriously in my research, I am now doing it in the context of a PhD at Sydney University, in the College of Fine Arts.

I was granted access to the Australian Museum and their electronic microscope unit and we scanned a dozen of their penises (out of many more). I am re-creating them in three-dimensional form at human size, utilizing the latest computer technologies, so it's a mixture of art, science and technology. I am also working with Graphicstudeio at University of South Florida, Tampa, where we are making a hand coloured photogravure of the electronic microscope scans of the male organ of the *Phallomedusa solida*, a non-distinct snail found in the mangroves in the Sydney area. My alter ego, Professor Cardoso, is back! Any contributions from readers as to interesting reproductive organs are very welcome!

Born in Columbia, Cardoso has lived and worked in Sydney, Australia, since 1997. She represented Columbia in the 50th Venice Biennale and created her first Public Art work in conjunction with Miami Basel 2005. Her work has been selected for major international survey exhibitions, including *Material witness*, Museum of Contemporary Art, Cleveland, United States (2003); *Modern starts: people, places, things*, Museum of Modern Art, New York, United States (1999). Maria Fernanda Cardoso was interviewed by Antennae in Summer 2009 © Antennae

CORNELIA HESSE- HONEGGER: HETEROPTERA

The watercolors of deformed insects by **Cornelia Hesse-Honegger** are an eerily beautiful reminder of the fragility of the natural world. Her work functions as an interface between art and science; it plays witness to a beautiful but endangered nature whilst generating awareness of the miniscule mutations that could be symptoms of much bigger things to come.

Questions by **Giovanni Aloï**

Text by **Cornelia Hesse-Honegger**

Insects as a class are divided in 29 well-defined orders. Within this class we find for example, the order of beetles (*Coleoptera*), butterflies (*Lepidoptera*), caddisflies (*Trichoptera*), termites (*Isoptera*).

The order *Heteroptera*, leaf bugs, are closely related to the cicada (*Auchenorrhyncha*) and the plantsuckers, aphids (*Stenomorrhyncha*). Most of them eat plants, but some bug families, such as assassin bugs, feed on small prey or carrion. The most important characteristic that these three orders have in common is the trunk-like suctorial mouthpiece. Bugs have this trunk on the ventral side of the body. It only stretches forward to draw in food. Hair-like cannulae extend from the end of the trunk and are stuck into the leaf or prey. Under a microscope one can see how the trunk is bent at a right angle. These four folded ring-shaped piercing stylets are extended and palpate the surface. Even on a hard object, such as the fruits of the lime tree, they are able to find the right spot to pierce it with their cannulae. Presumably, they find small pores which they can penetrate: Some bug types suck the plant juice directly from the leaf arteries, while others pierce between the arteries. I have asked myself whether the different rate of damage among certain types of bugs could be related to where and how they suck in plant juice. It would be necessary to find out whether bugs that draw plant juice directly from the arteries are at a higher risk from radioactive contamination, since the plant juice in the arteries rises from the roots in the contaminated soil and is therefore possibly less filtered when it reaches the bug.

The front wings of the bug are called hemelytra, because they are-which is typical for bugs-semi-hard and often brightly colored, in contrast to the area of the wing tip, which is soft and membranous

and more or less transparent.

Another characteristic of *Heteroptera* are the gland secretions which have a distinctive smell. Most people find it unpleasant, but to me it is a lovely smell. This "stinking" secretion is produced to keep other insects away, and in some cases it can dissolve the chitin of enemy species. In larvae the openings which release the secretion are on the back. In imagines, adult animals, the secretion is pressed out of openings in the lower breast. Interestingly, a bug is never harmed by its own secretion.

Bugs belong to the group of insects with an incomplete development (*Hemimetabola*). Unlike beetles and butterflies, they do not pupate. The larvae already have a structure similar to that of adult animals. The growing larvae have to molt at least five times, and each time they resemble the imago more closely. The larval period is influenced by environmental factors. It is shorter in warm weather. In most types of leaf bugs, it lasts between one and two months.

Different bug types mate in different ways. Some copulate on plants, others on the ground. Some face away from each other, fitting their rear appendages together. Lace bugs (*Tingidae*) form a right angle when they mate. The male damsel bug sits on the female, tightly holding the female with its legs. Copulation varies in duration, even within the same species, taking from a few minutes to many hours. The female lays the fertilized eggs in an appropriate place. Many types stick the eggs to plants. The females of the soft bug (*Miridae*) and a few other families have a thorn-like laying tube. They can lay the eggs on the inside of a plant stem. Caring for the brood is rare in bugs. The spotted brood bug (*Legnotlls limbosus*) watches over



Cornelia Hesse Honegger

Striped bug, Graphosoma lineatum, from Rohr, Switzerland, watercolor, 76 x 75 cm, Zurich, 1995 © Cornelia Hesse Honegger

its eggs for three weeks. The parent bug (*Elasmucha grisea*) covers its eggs and later the young larva with its body, shooing away enemies by whirling its wings.

Different types of bugs spend winter in different ways. The adult insects (imago) of several species hide in protected places, for example among fallen leaves or in the bark of trees. Others spend winter in the egg stage and hatch in the spring. A third type spends winter as larvae.

Heteroptera live in a variety of habitats. Some live in water. Water boatmen, backswimmers, water striders, and water scorpions enjoy ponds or streams. Most species, however, live on the ground. The group of flat or fungus bugs (*Aradidae*) lives under tree barks, or on fungi on trees, as its name suggests. Some groups live on the forest floor. Dry meadows and marshes contain a rich variety of *Heteroptera*, though like many other insects their numbers and variety are rapidly dwindling. Bugs can be found in parks and even in manmade environments: the common black-and-red fire bug (*Pyrrhocoris apterus*) lives on the roots of lime trees; the assassin bug (*Reduvius personatus*) lives on the walls of houses, where they hunt for other insects. The big, gray stink-bug (*Rhaphigaster nebulosa*) is often found on window sills in the center of the city, sitting in the sun.

Bugs live off plant juices, which they suck from leaves, stems, seeds, or flowers. Many species are not particularly and suck from a variety of plants. There are also specialists, however, which need the food of a particular plant. The thorn bug (*Elasmucha ferrugata*), for example, feeds on blueberries. The soft bug (*Lygocoris rhamnicola*) is dependent on the black alder tree; the stink-bug (*Pitidia pinicola*) sucks fir trees. Bugs are often predators. They hunt other arthropods and hold their prey tightly with their forelegs in order to stick their mouthpiece into the soft areas between the hard segments. I was able to observe this once under the microscope. The accuracy and aggressiveness with which the bug found the soft part of its opponent's body and pierced it without hesitation was almost frightening. Assassin bugs (*Reduviidae*), damsel bugs (*Nabidae*), shore bugs (*Saldidae*), and many kinds of water bug, as well as other families, are predators.

There are currently estimated to be 750 bug species living in Switzerland, and about 800 in Germany. They are classified into 37 families. One of the three most common families is the usually delicately built soft bug (*Miridae*) with about 270 species, of which I have so far encountered around 70. There are about 110 species of the brownish or red narrow seed bugs (*Lygaeidae*), which I rarely find in the German-speaking part of Switzerland. The shiny red knight bug (*Lygaeus equestris* and *Caenocoris nerii*) can be found on the southern side of the Alps. The rather rare and astonishingly beautiful seed bug (*Kleidocerys resedae*) with its translucent wings can be found at the edges of forests, or in clearings. I am particularly fond of the large stink-bugs (*Pentatomidae*). So far I have seen about half of the roughly 50 species living in Switzerland. The larvae are brightly colored or shine iridescently.

In my opinion, the family of the hawthorn or shield bug (*Acanthosomatidae*) is endangered in Switzerland. Since the beginning of the 1980s, they have become increasingly scarce. The squash bug (*Coreus marginatus*) is one of the most common bug species in northern Switzerland. Hundreds of these squash bugs often sit in the sun on blackberry bushes. Looking at them under the microscope in mid-summer, one can see how their heads are smeared with the juice of berries they have been nibbling. It upsets me to catch such a bug, take it from its place in the sun, and kill it. What is the justifiable minimum for an investigation? Is it 30, 60, or 70, or does one really have to kill thousands of insects to "prove," both scientifically and statistically, what anyone who is not blind can see. Earlier I used to release the healthy bugs. Killing them seemed senseless to me. But now I know that for a scientific inquiry, each animal used in my research has to be preserved in an insect box.

Except for the red *Corizus hyoscymni*, representatives of the scentless plant bug (*Rhopalidae*) can be frequently found. Stilt bugs (*Berytidae*) can be found now and then, at the edges of the forests, or in clearings. They are amazingly beautiful with their long legs and delicate filmy bodies. The four species of damsel bugs (*Nabidae*) are relatively common. The larva of the *Nabis micoides* is particularly interesting since it looks almost like an ant. Sometimes hundreds of damsel bugs, such as *Nabis rugosus*, can be found sitting in fields on blades of grass. I have encountered only few species of lace bugs (*Tingidae*), but I have never found ambush bugs (*Phymatidae*) in Switzerland, only in the United States, when I made my studies around the nuclear power plants at Three Mile Island and the Peach Bottom power plant. And I encountered them again in 1997, near nuclear test sites in Nevada and Utah, as well as during my research around Hantord, Washington State.

With the exception of the bedbug (*Cimex lectularius*), which, thanks to improved hygiene, has disappeared from most households, the native *Heteroptera* are not a hazard to human beings. Agricultural plants do not, in fact, need to be protected from bugs; only a few bug species are harmful to monocultural crops, such as the carrot bug (*Piesma quadratum*). Many bugs are useful in keeping pests under control, such as the damsel bug (*Nabidae*) or the flower bug (*Anthocoridae*). In vineyards the weeds are left growing between the vines because we know that insects living on weeds help to kill off pests that attack the vines.

Between 1993 and 1996, I collected bugs for my studies in the Swiss canton of Aargau, to study the health of leaf bugs in and around the vicinity of Swiss nuclear power plants. In all I collected 2,600 bugs.

Do you perceive yourself as an artist or as a scientific illustrator? Within your practice, is there a difference between the two?

I consider myself an artist. My world is the aesthetics of today. I am particularly interested in the visualisation of natural aesthetics, for example that presented by mutated lab flies. An artist does or should do research in the form of visualization. This means that while painting or even drawing the intricate designs presented by insects, I research in a visual sense as well as a scientific sense. The outcome of this exploration is quite open. After the picture or a series of pictures are finished, the analysis can start.

How did you get involved with scientific illustration?

I got involved in scientific illustrations when, as a 17 year old, I undertook an apprenticeship as a scientific illustrator at the Natural Museum at the University of Zürich.

In the 1960s, you produced images of fish and invertebrates by applying watercolours to exposed photographic paper. Why did you decide to use this specific process and what purpose did it serve?

Many of the marine animals, mostly the ones that are very small, have bodies with transparent parts. This mainly is the reason why I decided to use black backgrounds for this specific work; to have a good level of contrast. At the time there was no black paper to be found on which I could paint with watercolour. The only way to get black paper was to expose white photographic paper and then fix it, using traditional black and white darkroom procedures. The overall quality of the paper is not very good because of the chemicals, which stay within the layers. Later on, I found another type of black paper to paint on that could handle many different painted colours, which I used from then on.

It is well known that you highly admire the work of Maria Sibylla Merian; what about her work makes you choose her as your role model?

I admire Sibylla Merian because she brings together art and science. This is rare and even rarer in the 17th century. She carried out her own research and understood not only the life cycle of butterfly, but that all insects have host plants they depend on.

Which artists (as in artists from the History of Art book) do you think have informed your practice more than others?

Jan Vermeer was very important to me, as well as many Renaissance painters whose pictures I sketched regularly as a 15 year old when I lived in Paris. Later, modern art became important too. Piet Mondrian and the Zurich constructivists whom I knew personally, were a strong influence; Kenneth Martin and Minimal Art became very important and strong influences in my work.



Cornelia Hesse-Honegger

Fire bug, *Pyrochorys apterus* from Bernau, Switzerland, watercolor, 42 x 29.7 cm, Zurich © Cornelia Hesse-Honegger

How are your illustrations technically realised?

First I make a drawing. In one ocular of my microscope there is a ruler. With this ruler I measure the smallest details and draw in proportion. This process is very slow and can take more than a day; then, I take transparent draft paper and reduce the whole drawing to one precise line. This line is then copied on the watercolour paper by means of graphite paper. Then the watercolours are painted layer after layer in very light and transparent veils. This process can at times take more than a month for each insect.

What would you say is the most challenging aspect of your work?

Of course, the most challenging aspect is to make good paintings. However, the financial aspect also presents its challenges, since I pay for the costs involved in the research, all the travelling, and the painting time, etc. Unfortunately, it is rare that people who use my work for publication pay something and books don't really bring a lot of money either. Museums which show my work rarely pay an artist's fee. For this reason I have to work nearly full-time through the production of my works, and also because I have two sons, who are now grown-up men with their own families. For a long while I was teaching, making scientific illustrations and also working for a Zürich-based firm (fabric Frontline), designing for couture silk. A book has come out showing a good selection of the silks I designed, which



Cornelia Hesse-Honegger

Four seed bugs, Lygaeus equestris from Tubre and Santa Maria Madonna, Italy watercolor 47 x 55 cm, Zurich 1994-95
 © Cornelia Hesse-Honegger

were extremely successful. (*Art on Silk*, Scheidegger and Spiess, Zürich). So the greatest challenge was to combine everything and stay healthy and positive.

Can you tell us something about the process involved in “learning to see something by painting it?” What have you learnt about insects? Or what have you learnt about the impact our actions can have on insects?

One problem specific to our time is that children in school do not learn any more how to make a simple drawing of an object without it being an artistic task. By drawing one learns to see and to memorize. Instead we fill the brains of our children with pictures made by adults. We rob them of the chance to produce their own visual world and imagination. Our schools and universities produce adults who cannot see. They look but see nothing. I call them see-blinds. The consequence is, we cannot have a good functioning democracy with see-blinds people. They don't see the litter, the pollution, the power structure. And of course they are absolutely blind to what we do to the world of the insects, to nature and thus to our children. The deformed insects, or true bugs, visualize what we do. For this reason I created two books for teachers to work with small children on questions of form. (*Sehen lernen durch gestalten*, Elk Verlag Winterthur 2006 and 2007)

How did the work about nuclear contamination originate?

It started when I was 24 years old and made illustrations on mutated *Drosophila subobscura* flies for Professor Hans Burla. The flies were fed food contaminated with EMS. In 1995, I felt I wanted to go back and paint mutated flies, since they represented for me a kind of prototype of our actions and way of thinking towards the environment and the natural world. Just like the geneticists were more interested in genes, I was interested in phenotypes. I learned then that flies are no longer mutated by poison but by x-rays. I was drawing and painting mutated flies when the Chernobyl accident happened. In a naïve way, I was convinced that the radioactive fallout had fallen everywhere to the ground. From there it was only a small step to think about the amount of radioactivity a true bug larva would incorporate by feeding on contaminated leaves that were contaminated by the fallout from Chernobyl. I looked for areas in Western Europe which were highly contaminated and travelled to Sweden and continued to the southern part of Switzerland, the Canton Ticino. Since at that time I was already quite critical towards natural scientists who told everybody through the media that the radioactive fallout would do no harm, and nobody showed any inclination to do some studies, I had to do it, hoping scientists would follow.

In 1987, you started working with Drosophila. Can you tell us more about that project?

One year after Chernobyl, I started my studies in

Sweden and the Canton Ticino. It was autumn as I worked in the Canton Ticino; I thought I could collect *Drosophila melanogaster* and breed them in my kitchen. I needed the same bottles and food the scientists used for their studies and experiments. I borrowed some bottles with food from the zoological institute where I worked part time as a scientific illustrator, drawing and painting mostly *Drosophila* flies of all species. In the Canton Ticino, a town called Rancate was one of the most affected places from the fallout of Chernobyl in Switzerland, and I collected 3 pairs of *Drosophila melanogaster* and bred three different lines. One pair did not have any children, the others I bred up to the fourth generation. I can say that I am the only person who did such a breeding project with flies from a Chernobyl contaminated area. When I published this work, the scientists of my university were not happy at all and claimed (without having done their own research) that the fallout from Chernobyl could not possibly cause deformations, since the radioactivity was below the threshold of the background radioactivity.

In 1988, you were attacked by the media for what you had written about damaged bugs around nuclear power plants. Can you tell us what happened and how it affected your work?

Because the scientists scolded me and my work was in the media, I thought that if the radioactivity from Chernobyl was too low to cause deformations, the true bugs around the nuclear power plants should be healthy because there the radioactivity emitted by the chimneys is even lower. But I was surprised and full of sorrow when I collected deformed bugs. One has to know that the deformation on these small animals cannot be seen by the naked eye while collecting; only afterwards with a microscope can one see the anatomical alterations. When I published this work, scientists were extremely angry and for months the media was very busy discussing my work. The development of events showed, however, that the biologists had never monitored this kind of health on plants or animals in the vicinity of nuclear power plants. I felt very insecure, not about my paintings or research but about the way I was treated: a single person against hundreds of scientists who had the 'truth' on their side and who considered themselves to be the only ones entitled to carry out official research. I wanted to reassure myself and find confidence to continue my research on the environments of the nuclear reprocessing plants Sellafield in the UK, and Three Mile Island in the US.

How could you distinguish the malformation induced by human interaction from those that could naturally occur in each species?

I had started to collect bugs in Switzerland in 1968, and had never in my life seen anything like the deformed bugs from the environs of the nuclear power plants. My studies became more and more structured and I could

make out distinct deformations which I found only in the environs of nuclear installations. I could show, using geographical maps in correlation with the wind, that certain types of deformations were typical of radioactive areas. Naturally a deformation mutation rate in insects amounts to 1%. I found deformations from 2 – 23%. I think that most of the deformations are not caused by mutations, but by physiological disturbances caused by radioactivity.

Reading the evocative passages that accompany the stunning illustration of your book Heteroptera, it seems clear that your concern for environmental causes was paramount. It can be argued, in fact, that the whole book could be interpreted as a complex diaristic achievement, entwining the autobiographical and the context of the bleak events that threatened the environment from the 1960s to the end of the 1990s. Are you still concerned with environmental issues today?

I am even more concerned. The general lying about the danger of radioactivity has increased. Today we have DU (depleted uranium ammunition). The United States has bombed the south of Iraq and Bagdad with DU. Many children are born crippled or die after birth or in the womb because of this. The bombing also took place in Kosovo and Afghanistan, where many young people suffer from leukaemia. Israel contaminated the south of Lebanon with DU during the last war; this is the richest part of the country. The WHO has given the management of the illnesses caused by radioactivity in the 1950s to the International Atomic Energy Agency (IAEA). For this reason, the WHO is not helping people in the Chernobyl area, and the IAEA tells everybody who wants to listen that there are only a few victims and the rest are fake reports. The intellectuals are very quiet about the situation and young people are brainwashed by schools, media and advertisements, making them more interested in the sound of their cell-phones than in what happens in our world. The scientific world still sticks to the idea of the CO₂ free, healthy nuclear power plant, even though the waste problem is not solved and will never be solved for the next 24,000 years. Even though many studies from Belarus, Russia and Germany show the danger of low radiation, no one is really taking the situation seriously.

How did the idea for the book come about?

The editor gave me a call and asked if I was interested in making a book with 100 pictures. I was surely interested and asked if he wanted to have also something written to accompany the images. I sent him the chapter about Chernobyl and he was enthusiastic. First the book was published in German and afterwards it was translated into English.

Cornelia Hesse-Honegger

Harlequin bug, Pentatomidae from Governor's Stable near Three Mile Island, Pennsylvania, USA, watercolour, 47 x 36 cm Zurich, 1992 © Cornelia Hesse-Honegger

Although strongly grounded in science, your work has extensively been exhibited in art galleries around the world and is part of prestigious art collections. How do you find your work is received by the artistic world?

It is well received in museums and galleries where the work is exhibited within a theme revolving around mutation and catastrophes. Sometimes an art gallery produces an exhibition giving large exposure to the work. However, the drawings rarely sell. The prices are too high, since I could not take the usual path from one gallery and get myself known in the art world. Through my career, I have perhaps not been lucky enough to find a gallery that would push the work. However, I do not really mind it, as I do not produce my work for the purpose of selling. Because of the production times involved, I can only produce a few pictures per year and they are all part of my research. So I show my work in many museums but not in the big art museums, which of course would be something interesting to do. Since everybody thinks that my works are scientific illustrations, they do not ascribe them with the value art. In the eyes of curators, my chances are low, unless the curators change their minds and see my work as an output of our time like any other kind of art.

What are you currently working on?

At the moment, I am working on a project in a Swiss region in a valley called Entlebuch in the canton of Lucerne. The valley leads from north to south. 50 to 60 km north of the town Flühli there are five nuclear power plants and a research plant. I started collecting insects in places which are hit by the north wind called 'Bise' and in places which are hidden behind a mountain. This could show that in the places which are hit by the wind, the bugs are significantly more often deformed.

My pictures have become larger and are more often a combination of pencil sketches and watercolour. I have nearly stopped teaching and want to concentrate more on painting.

Cornelia Hesse-Honegger has worked for more than twenty-five years as a scientific illustrator for the Institute of Zoology at the University of Zurich, Switzerland. She is the author of *Heteroptera, The Beautiful and the Other, or Images of a Mutating World*, published by Scalo in 2001. Her most recent publication with Scalo is a book titled *Art on Silk* collecting nature-inspired patterns that reflects an extension of the artist's fascination with insects to one of the most wondrous products of that world: silk. The Swiss fashion houses Akris and fabric frontline applied her measured and meticulous drawings to their printed fabrics creating a new luxurious and tactile medium for Hesse-Honegger's delicately executed paintings. For more information please refer to <http://www.wissenskunst.ch/>

Cornelia Hesse-Honegger was interviewed by *Antennae* in November 2008 © *Antennae*

The opening text used in this piece is a fragment of chapter 2, 'Linnaeu's order made me aware of the disorder we are creating today' by Cornelia Hesse-Honegger and was reprinted with permission of the artist. Originally published on *Heteroptera*, Scalo, 2001, pp.36-39



Cornelia Hesse-Honegger

Thorn bug, *Acanthosoma haemorroidale* from Zurzach, Switzerland, watercolour 29.7 x 21 cm, Zurich 1988 © Cornelia Hesse-Honegger

TAKING THE 'S' OUT OF 'PEST'

David Wojnarowicz is recognized as one of the most potent artistic voices of his generation mainly because his singular artistic achievements place him firmly within a long-standing American tradition of the artist as visionary, rebel and public figure. Here, Mysoon Rizk looks at the presence of animals in his work; especially that of insects.

Text by Mysoon Rizk

Born in Red Bank, New Jersey, in 1954 and dying of AIDS-related illnesses in New York City, in 1992, American artist David Wojnarowicz favored animals as stand-ins to represent his experience. His best-known example, thanks to legendary Irish rock band U2, arguably serves as the artist's most charismatic substitution. In 1988-89, he appropriated the photograph *Untitled* (Buffalo) from a natural history museum diorama depicting outdated and isolated Native American hunting practices. At the height of cultural activism responding to the AIDS crisis, he called attention to the late nineteenth century's Euro-American colonization and near-obliteration of native cultures including bison, whose population of at least 30-35 million was reduced to less than 900 in a matter of decades. Yet the buffalo picture pointedly instigates comparison with jarringly different and more recent, if equally expendable, death.

Its use of silhouetted animals enhances the emblematic qualities of the image and attracts identification, as if by family-crest, aligning prior exterminations with, in this case, the late-twentieth century plight of living with and dying from HIV/AIDS. More than a century later, yet another matter of decades, but this time in a perverse reversal of loss, the trend starts in 1981 with fewer than 300 mortalities, before staggering to some 25 million overall dead. Currently, 30 million people live with HIV/AIDS, regarded today as a chronic and treatable condition. Infections declined, moreover, from a 2007 peak of over 33 million, according to the World Health Organization. Yet the millions infected still remain subject to stigmatization and retribution necessitating global policy documents based on the findings of UNAIDS and other organizations, such as *Ten Reasons to Oppose the Criminalization of HIV Exposure and Transmission* (2008), produced by the Soros Foundation. Wojnarowicz's purloined depiction of massive beasts herded over a cliff

heralds his sentiment, in the late 1980s, of getting hunted to extinction, and remains hauntingly invoked by U2's "ONE" — today, an organizational slogan for ending extreme poverty and preventable disease.

An anthem with worldwide popularity, "One" first appeared on the musical group's album *Achtung Baby* (1991). Later released as a single EP in 1992, *One's* cover art reproduced the American artist's buffalo icon. Concert T-shirts, moreover, for a subsequent 1992-93 global "Zoo TV Tour" likewise featured the Wojnarowicz buffalo. The image was accompanied by the caption, "Smell the flowers while you can," borrowed from what may at first seem like an empty sentimental platitude repeatedly intoned throughout the end of Wojnarowicz's autobiographical *Close to the Knives: A Memoir of Disintegration* (1991). As U2 bassist Adam Clayton explains, "By amplifying David's message we will heighten the spirit in all of us and, as a result, broaden our powers of communication." (Blinderman 1990b: jacket blurb) At the close of the century, for a compilation album that included "One," the band would revive the depiction of bison but rely this time on seemingly less uneven contests for survival — among one's own, rather than with other (i.e., human), species.

According to *Close to the Knives*, after his father hung himself in the late 1970s, for the first time in years Wojnarowicz returned to Jersey for the funeral, during which he learned of his adopted mother's thoughts whenever his violent alcoholic father brandished weapons against her, in one case, a loaded and cocked firearm. "I just continued to brush my hair, because I figured I was going to die. At the last minute, he turned the gun up towards the ceiling." Wojnarowicz, we come to understand, had rediscovered the bullet holes as an adult, the nauseous midnight previous to the funeral, during frequent trips to the upstairs bathroom:

"A light turned on in the room below caused illumination to pour upwards through the three or four bullet holes from the time he emptied a gun after having pointed it at my stepmother's head." (1991: 269-70)

Learning to "carry each other," as the broadly celebrated U2 ballad recommends, becomes necessary despite irrefutable differences between parties — species-related, dysfunctional, or otherwise. The fourteenth Dalai Lama purportedly helped Bono come to appreciate the necessity of tensions that instructively shape how, in the words of the chorus, "We are one ... but we're not the same." The song inspires auditors to engage experience without obliterating ruptures of difference. As if to accommodate difference, even harbor discord, while radically transforming his own perspectives on experience, Wojnarowicz would deploy animal protagonists as "underdog" surrogates. Falling buffalo herald the sentiment of getting hunted to near extinction, in this case, like the AIDS pandemic crisis, likewise resulting from "greed and indifference," -- to borrow the phrasing of anonymous AIDS activist collective Gran Fury's 1989 *Kissing Doesn't Kill* campaign.

Equally unconventional and potentially more powerful, yet far less known and presumably less charismatic, Wojnarowicz explored identification with cockroaches in the early 1980s. This includes his 1982 guerrilla action of crashing an exhibition at alternative art space P.S. 1, in the New York City (NYC) borough of Queens. In contrast with the falling bison representation, as mediated by a natural history museum diorama, Wojnarowicz's live cockroach activities come at his career's inception — before much awareness of the artist — and during the infancy of, what was then perniciously mislabeled, "GRID," or gay-related immunodeficiency syndrome. At odd with the nobilities associated with charismatic megafauna, especially after being placed at dioramic distances, live cockroaches -- "non-charismatic minifauna" -- operate as targets of human abhorrence, sentiments upon which Wojnarowicz depended for his so-called "cock-a-bunny" project.

Many members of the phylum of arthropods, but particularly cockroaches, are readily conflated with pests, vermin, and disease, in spite of fastidious grooming practices. They frequently get consigned to realms of fear and loathing. Belonging to one of the longest continuously surviving animal families, moreover, cockroaches — our "elders," as bug advocate Joanne Elizabeth Lauck would have it — have had ample opportunities to become disease vectors *par excellence*, as evidenced by 300 million year-old amber-encased and parasitized specimens. Certainly, the unwelcome order of some 4000 species remain subject to entrenched human characterization as disease transmitters even though, according to one reference book, "less than one percent of cockroach species...are significant pests." (McGavin 7) Calling for ecofeminist attitudes, honoring the "very long view" of not only cockroaches but also parasites (13), historian Marion Copeland nevertheless underscores the ambiguous status of both: "The irony is that *parasites*, perhaps the cockroach's chief rival for the title of the world's

most hated creature, have played a critical role in natural selection and the development of every species." (18; emphasis added)

Few humans would identify or acknowledge ancestral kinship with bugs, much less occupy the same spaces, let alone admire and compassionately handle, if not kiss, what most find viscerally repulsive. Wojnarowicz approached scores of arthropods, including cockroaches, desiring co-existence; granted, these were relationships that were easily unhinged by skewed power differentials. With cockroaches, admittedly, his compassion seems constrained, given dependence on pressing fellow beings into involuntary servitude — even if justified as human "culling" of home infestation. The artist took things further, moreover, undeniably causing disability, by conducting extreme makeovers involving augmentation with paper "rabbit ears" and fuzzy cottontails.

Given their predilection for tight spaces and being "touched on all sides," roaches managing to escape likely would encounter serious difficulties. (Schweid 95) The ears were of a scale, moreover, as to rival a roach's body, discouraging ascent or descent along vertical planes. Such modifications allowed the "cockroach wrangler," as friend Sophie S. Breer characterized Wojnarowicz, to more gingerly control the independently minded and speedy, if still too fragile, agents. The paper ears, Breer observes, could also "double as handles," making it easier, the artist jokes, to remove a cock-a-bunny from your cherry pie.

Breer and Wojnarowicz met in 1981, when she was a waitress and he was a busboy at Danceteria and then the Peppermint Lounge in NYC. In November of that year, Sophie rented a Betamax camera to "shoot David's 'romper room' demonstration" — alluding to the long-running children's television series for preschoolers that was franchised worldwide — "of how to make cock-a-bunnies." By converting roaches to "bunnies," the amateur videographer teasingly queries, is the artist "taking the 's' out of 'pest'?"

In not quite fourteen minutes of footage, using the cockroach "Benny" ("the Bunny"), Wojnarowicz patiently and methodically explains a laborious, and what turns out to be lethal, process to two guests — Breer's younger sister Emily and Em's boyfriend David Baillie — seated in Soph's apartment around a blue one-room school house antique desk, upon which are located provisions: a jar of roaches, rubber cement, Q-tips, scissors, paper and, making late appearance, a serving of dessert, then a roach trap. An introductory inter-title elaborates: "About ten years later," Wojnarowicz "had the idea that if we re-shot this clip in a more mainstream fashion and sent it to *America's Funniest Home Videos*, we would definitely win \$5,000," but Wojnarowicz died before that happened.

Exhibiting no inhibitions about her own bug limits, older Breer offers up facetious quips throughout, to challenge Wojnarowicz, including: "How many roaches did you come in here with? Because I'm taking



Sophie S. Breer

Figures 1-8. Stills from Waje's Cockabunnies. 1981. Directed by Sophie S. Breer.
Courtesy of Sophie S. Breer and Emily Breer

a head count before you leave!" At one point, she even urges her sister to "call out" a pesky fly, as if for comparable makeover. Meanwhile, Em vocalizes the wish for a future chapter on how to pick up roaches in the first place. Younger Breer, herself an artist and filmmaker, has since produced a rich body of work that persists in addressing human-animal relations. Her latest collaboration with Joe Gibbons, who stars in the title role, *The Tutor* (2007) documents a thirty-minute serial of landmarks in Emily's daughter Zoe's first five years. Set in the world of upstate New York, the film employs a recurring theme, of interactions with nature. Zoe endures the tutelage of Gibbons, playing a Skinner-aspiring pedagogue in search of the roots of childhood genius.

Late in *Waje's Cockabunnies*, after Wojnarowicz introduces a second modified cockroach to Benny, the older Breer comments: "Let's see if they fuck like bunnies!" Though the video is sprinkled with multiplying spurts of nervous laughter, it ends darkly. The violent expiration of a far more lively second cock-a-bunny occurs in the last minute of the abruptly ending episode. Having already survived at least one day and, according to Baillie — now based in Brisbane, Australia — "a big night," the second refurbished roach gets consumed by fumes, once Wojnarowicz produces a "roach motel," or "bunny motel," in response to Soph's wish to learn how to eradicate them. Perhaps briefly recoiling from the inevitable outcome, Sophie blames instead the "paneling" before joking about "bunnies" in massage beds and, as Baillie suggests, even ordering room service. The roach ends up bifurcated when the artist tries recovering the body from the killing chamber. Altogether outside the human trap, Benny seems catatonic and may have also met demise.

In addition to video documentation, on at least one occasion, the disguised, costumed, and (albeit briefly) animated works of art (each of whom Wojnarowicz would name), show up by invitation, at *Pet Show*, curated by Carlo McCormick at the Pyramid Club in the East Village (Lower East Side) of NYC. More notoriously, in 1982, along with the artist, they appear *uninvited* for *Beast*, a show guest-curated by Richard Flood at P.S. 1. As Erica Fudge instructively points out in her book *Pets*, a category distinguishable in part by creatures having "crossed over from outside to inside," the only other animals that "get inside are uninvited and we label them 'vermin.'" (2008: 17)

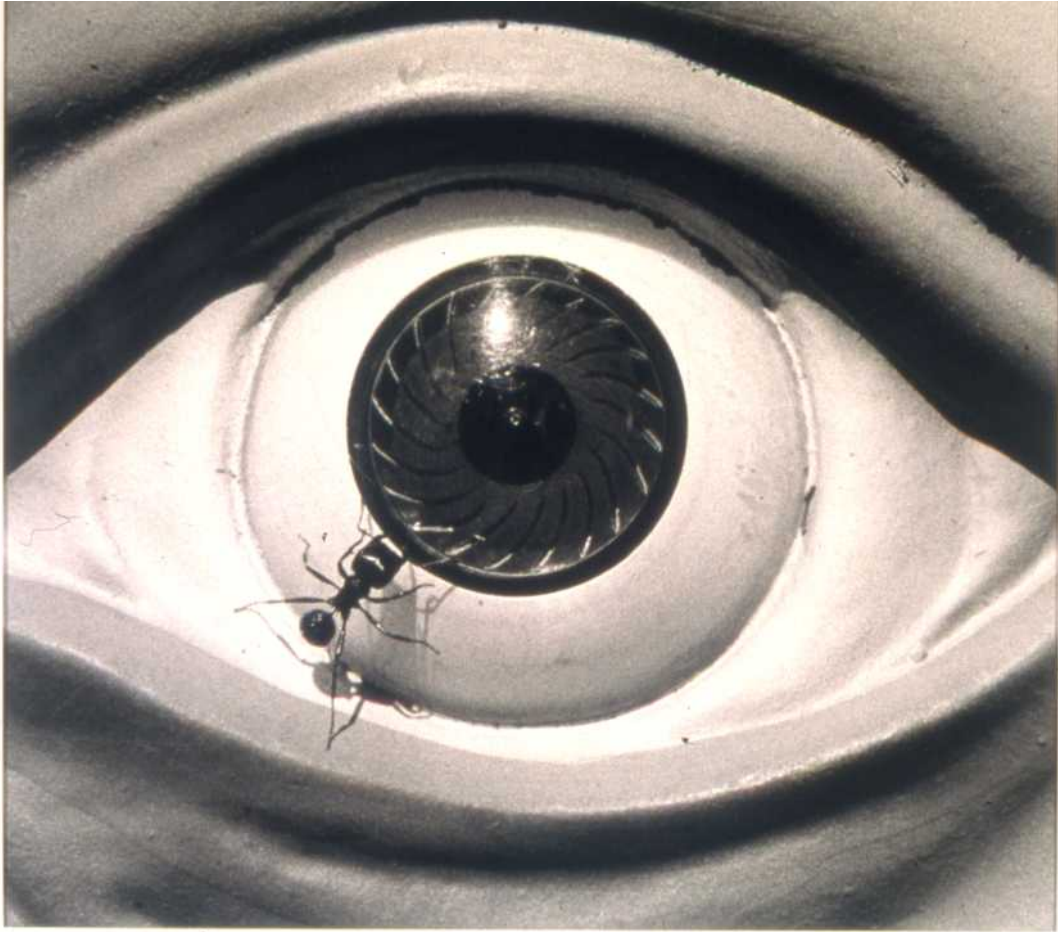
Wojnarowicz's cockroach project exceeds, as well as depends on, having to "manage," or cull, a pest population. Whatever motivation or value of converting roaches into "cock-a-bunnies," the artist undeniably participates in killing the insects that occupy his domicile — and slowly at that, debatably crueler than pesticide's rapid effects. Still, in an effort to drum up support for pests, Wojnarowicz nevertheless redresses their unwelcome status, producing appeal, desire and, if nothing else, appreciative curiosity. However regulated or temporary the roles they play, cock-a-bunnies undoubtedly demand audience and effectively hold

space. Reportedly, on the night of the well-attended opening, Wojnarowicz released several cock-a-bunnies from a clear vessel atop a pedestal. They proceeded to try and disperse, notwithstanding the outsized rabbit ears and rubber cement,— and despite the panic or sudden reactions on the part of P.S. 1's cocktail-sipping human guests—.

According to *Village Voice* art critic Richard Goldstein, this large group exhibition was early to showcase such "soon-to-be-discovered East Village artists" as Keith Haring. Yet the unprompted contribution of Wojnarowicz impressed Goldstein deeply enough that the critic would recall the experience periodically in subsequent years. In a 1999 article, moreover, celebrating "the timely resurrection of David Wojnarowicz" — signaled by several exhibitions including a posthumous retrospective that year at NYC's New Museum of Contemporary Art — Goldstein once again mentions the "roach bunnies." The *Voice* critic remembers them best "amid the green-haired glitz" at P.S. 1, especially how "every time they scurried off," the guerrilla artist "would gently pick them up in his gigantic hands and put them back" on the pedestal. Ultimately, Wojnarowicz's attempts to domesticate generations of captive roaches would meet with marginal success, insect life spans significantly reduced to a few days.

In coupling cockroach with rabbit, not to mention deliberately classifying the P.S. 1 intervention as "action," Wojnarowicz may have been paying implicit tribute to Joseph Beuys (1921-1986), who was palpably influential on the young American artist, especially after he attended the German artist's seminal 1979 retrospective at NYC's Guggenheim Museum. Specific reference to Beuys appears in several early Wojnarowicz works as well as in numerous passages of the New York-based artist's journals. Providing a critical backdrop for appreciating cock-a-bunnies, the parallel significance of rabbits, or hares, as inspiration for Beuys is also well documented. So too was his practice of keeping and raising the animals as pets or companions as well as, upon their deaths, making use of their bodies in sculpture and performance or, as he termed it, "action," as with the 1965 work *How to Explain Pictures to a Dead Hare*. Beuys specifically identified the hare as a "symbol of incarnation" and material key to accessing creativity. He further noted: "In reality, the hare does what man can only do mentally: digging inside, digging a construction. It incarnates itself in the earth." (De Domizio Durini 33-34)

Although closed to visitors, the gallery where Beuys would stage *How to Explain Pictures to a Dead Hare* offered virtual access to the affair by window, television monitor, and speaker system. For the three-hour duration of the 1965 action, Beuys gently cradled the animal's limp body while serving as docent to a show of his framed drawings, his own head covered with honey and gold leaf. Helping the lifeless mate paw the works on view, the German artist mouthed



David Wojnarowicz

Figure 9. *Untitled*, from the "Ant Series." 1988-89. Gelatin-silver print, 27-1/2" x 34". Courtesy of The Estate of David Wojnarowicz and P.P.O.W. Gallery, New York, NY

explanations and imperceptible whispers, later explaining:

"In putting honey on my head I am clearly doing something that has to do with thinking. Human ability is not to produce honey, but to think, to produce ideas. In this way the deathlike character of thinking becomes lifelike again. For honey is undoubtedly a living substance ... Everyone consciously or unconsciously recognizes the problem of explaining things, particularly where art and creative work are concerned ... The idea of explaining to an animal conveys a sense of the secrecy of the world and of existence ... Even a dead animal preserves more power of intuition than some human beings with their stubborn rationality." (Tisdall 105)

Going even further, while reflecting on *How to Explain Pictures to a Dead Hare*, Beuys insisted: *"I think [a] hare can achieve more for the political development of the world than a human being."* (Kuoni 83)

To better clarify this assertion, consider the 1966 action *Eurasia*, 34th Section of the *Siberian Symphony*, in which

Beuys' use of rabbits would also allude to not only "the split between East and West, Rome and Byzantium," but also the perceived ability of any wild animal to cut across such artificial perimeters as an international boundary. (Beuys, Tisdall 106) Non-humans, it would seem, attempt to operate as if such territorial demarcations were non-existent, especially when contrarily or spontaneously imposed upon a terrain — as with the arbitrary borders and militarized checkpoints of international junctures, or the barbed-wire fencing compartmentalizing lots of wilderness without easement — unlike, say, a river, whose boundary value is more readily acknowledged by both human and non-human. In *Eurasia*, Beuys affixed the taxidermied body of his earthbound "co-actor" (artist's term) to long, thin wooden sticks, ostensibly, according to Troels Andersen, to "indicate the meaning of space ... the sign of transitoriness, fleetingness," with the hare depicted "on the move." (Tisdall 107) The hare, for Beuys, moves earthward and inward as well as provides a figurative mediating channel, its symbolic mobility sustained through various Beuys actions while an Audience tunnels thought through it and on its behalf.

Like Beuys' burrowing and boundary-crossing hares, Wojnarowicz's cockroaches prove instructive in facilitating remarkable transitions between oppositional



David Wojnarowicz

Figure 10. *Untitled (Time/Money)*, from the "Ant Series." 1988. Gelatin-silver print, 27-1/2" x 34". Courtesy of The Estate of David Wojnarowicz and P.P.O.W. Gallery, New York, NY

domains, especially in the case of the P.S. 1 action. Given their status as indomitable vermin, for example, roaches may be understood as crossing a line from "outside" to "inside" — even if, technically speaking, the insects originally came from inside another building. Indeed, by virtue of appearing on a gallery pedestal, their too easily assigned pest-like character dissipates. Elevated to a state demanding preservation, they call attention to any misrecognition that blindly pegs such creatures as from, and belonging to, an "outside." In addition, considering Wojnarowicz's artistic obscurity at the time, the successful debut at P.S. 1 shifts reception of participants, from "outsiders" to "insiders." The diminutive actors gain entry past the canon-bestowing doors — of what would ultimately become sister museum to NYC's Museum of Modern Art — a difficult transition for either little known artist or sacrificed surrogates to negotiate alone.

Whether viewed as in camouflage, or even performing a kind of cross-dressing, *cock-a-bunnies* parade hyphenated identities. The title offers erotic male reference in its blatantly opening syllable "cock." More subtly, the neologism closes with "bunnies," alluding to Playboy bunnies, stereotypically regarded as hyper-

sexualized and female. Ambiguity in gender and species, suggested by word play, presumably depends upon the cliché that rabbits are randy and fertile, not to mention — when contrasted with, even costumed, cockroaches — cute, cuddly, and kissable. Granting similarities of costume transformation, simply by virtue of adding rabbit ears and cottontail, the artist's renovated roach subjects are also necessarily sexualized, if perversely. As with other examples of cockroach makeovers, including those applied by artist Catherine Chalmers, the metamorphosis is never satisfactory, the deception always evident. However much transformed may appear the cock-a-bunnies, notably also referred to as "caca-bunnies," they nevertheless remain roaches, still capable of triggering as much antagonism and hostility somehow justifying execution, as would unadorned peers.

The unpopular species, argues Copeland, often symbolize "the weak and downtrodden, the outsiders, those forced to survive on the underside and on the margins of dominant human culture." (11) Given his own long-time outlaw status, and especially after awareness of HIV/AIDS, Wojnarowicz would remain preoccupied with illegitimacy, closely associated with



David Wojnarowicz

Figure 11. *My Brain Is Driving Me Crazy*, from an untitled series. 1990. Gelatin-silver print, 13-1/2" x 19". Courtesy of The Estate of David Wojnarowicz and P.P.O.W. Gallery, New York, NY

being designated abject or diseased. Yet Wojnarowicz's roach actions precede the notorious years when homosexuals and prostitutes would get scape-goated as AIDS "carriers." At a critical moment of mainstream AIDS discourse regarding those who transmit disease, cultural theorist and activist Jan Zita Grover forcefully clarifies the dictionary definition of "carrier" as anyone who "has recovered" or "is immune." (21-22)

People (still) living with AIDS, or PWAs, Grover reminds readers in 1987, are *not* carriers and must be regarded as *incurable*. This remains true more than twenty years later, no matter how manageable pill regimens may seem to have become — albeit necessitating daily administration, not to mention prohibitively expensive for most of the underdeveloped world, bearing the brunt of HIV/AIDS affliction. Wojnarowicz's extraordinarily outspoken responses to the crisis would catapult him from critical "demise" to potentially securing at least consideration for a slot in the art historical canon as well as heroic role in the culture wars, including legal battles over housing discrimination against PWAs. Yet, his later body of "AIDS art" (i.e., ~1987-92) unmistakably builds on and draws from the projects of earlier years. The fluid notions of

sexuality and identity, for example, which would earn him future recognition, conceivably enter into play with many non-AIDS works, including 1981-82 "cock-a-bunny actions." As it turns out, fear of or inhibitions to touch would come to signify as much fatal cockroach interactions as unethical treatment of PWAs — "hugs and handshakes," after all, being "utterly safe activities." (Sember, Gere, and Candelario).

On whatever conscious or subconscious level, if the artist's intent were to evoke the experience of struggling as a homosexual in a normatively heterosexist world, the discomfort produced by the aberrant Ccock-a-bunnies effectively models the alienation experienced by any "undersider" to mainstream society. Likewise, the fixation on "cock" serves both to call attention to the trans-gendering of "bunnies" and to mimic the hetero-normative stereotyping of the homosexual as being oversexed, promiscuous, and contagious. Although his makeovers potentially mock the travesties of being cockroach in a roach-detesting world, especially given the sometimes excruciating events in *Waje's Cockabunnies*, the breed nevertheless attempts to endorse otherwise maligned clans of being. At the same time, the manipulated

creatures embody the poignant poetics of ontological discomfort experienced firsthand by the queer artist from Jersey.

As vicarious animal substitutes charting the artist's tenuous positions, from the beginning to the end of his career and relatively short life, both cockroach and bison highlight the stigma of association with disease and categorization as vermin. Conceived of nearly a decade apart, both projects perform leaps across violent chasms of species difference. Yet cockroaches may be even more effective in stoking the dynamics of compassion, however divergent their case from bison charisma. Especially given their precarious states of aliveness, the cock-a-bunnies perhaps perform more dramatically as subjects of empathic identification than even endangered nineteenth century cast replica ungulates, frozen in the context of a standardized natural history museum diorama. Even if Wojnarowicz comes to be regarded as a freedom-of-expression champion, this early work imagines the possibility of even more radical co-existence, however short-lived the detente, or disturbing the lapses in ethical treatment. These early roach subjects certainly invite far more sympathy than will, say, the HIV virus.

In a "Biographical Dateline" for his first retrospective exhibition catalog, before recalling a life teeming with animals yet punctuated by dysfunctional trauma, Wojnarowicz begins his first twenty-eight years with being born "to a sailor from Detroit and a very young woman from Australia." Of his second year of life, for instance, he remembers witnessing an "infestation" by "different colored ladybugs," along with horseshoe crabs on the Jersey shore, just before his parents divorce. (1990: 113) In his fourth year, after a stint at an orphanage or boarding home — where he observed a pet alligator being fed worms by a teenage resident — his father kidnapped and transported him and his siblings across state lines to "distant relatives on a chicken farm outside Detroit." (113) There, he recalls being threatened by "a dangerous black, wolf-like dog locked up 24 hours a day in the basement," that escaped once "while we ate lunch and all of us had to sit very, very still until someone with a broomstick chased it away." (113) He also mentions an uncle who "may have committed suicide with a shotgun." (113) When he was eight, moreover, back in Jersey, his father killed and served a pet rabbit at dinner "claiming it was 'new york steaks.'"

As a boy, walking to school, Wojnarowicz reports gathering crab apples in woods then cutting across a cow field: "Every day the cows would surround me and I'd feed them the apples; the cows were taller than me by a foot or so and when the apples were gone they'd get angry and huff and puff at me, then chase me to the barbed wire fence where I'd slide to narrowly escape underneath." (114) He also reports haunting memories from escapades in suburban wilderness: "looking at snakes and insects and other animals;" imagining "giant birdnests for humans;" encountering "a place where the whole earth was water and turtles all the way to the horizon;" but also, "one summer, every

day someone killed and slit open all the frogs in the ponds;" "found a colony of ants ... that had tiny bodies and giant heads ... [n]earby ... another colony with tiny heads and enormous bodies;" and another summer at a local pond, "frogs with five and six legs." (113-114) The latter phenomena, he speculates elsewhere, "may have been created by toxic dumping in that state." (1989: n.p.)

In 1963, he and his siblings went to live with their mother in Hell's Kitchen (mid-Manhattan), after which he took to stealing "turtles from Woolworth's" to "let them go in central park duck pond;" as well as "stealing lizards and snakes from pet shops," "building them homes in the corner of the apartment," — including "an old world chameleon" that reportedly died of "heart attack" after climbing into "the christmas tree while all the color bulbs were blinking." Later, as a teenage dropout, living on the streets, he would crash where he could, as with a "con-man" who "worked as a counselor at a halfway house for young ex-convicts ... lived with him for two months until he grew tired of all the animals I shoplifted and gave homes to. The breaking point was a twenty-five pound African frog I put under my arm in the coliseum animal show and walked home with. He got me admitted into the halfway house as a potential jail risk." (1990: 117)

According to Tom Rauffenbart, surviving partner and companion, himself a Jersey native, Wojnarowicz's "interest in animals started during childhood when, in an attempt to escape from his harrowing home life, he'd explore ponds and streams near his home in New Jersey." (Harris 1994: 52) In one account of Wojnarowicz's passion for sustaining the lives of animals, Rauffenbart goes on to explain:

"His respect for life was so strong that he thought nothing of putting us in danger in order to avoid squashing some creature appearing out of nowhere in front of us when we drove. Once in Mexico, he, our friend Anita, and I were on our way to visit the ruins at Coba. On one long stretch of road he insisted that I drive at a snail's pace so as not to smash into any of the thousands of butterflies swirling through the air around our car. I tried, but no matter how slowly I drove, there were casualties, and as each body hit the windshield he would groan and flinch in sympathy." (Harris 1994: 52)

In the opinion, moreover, of eminent art historian Lucy Lippard, longtime fan of the artist, his "identification with the vulnerability of animals parallels that found in much early feminist art." (Harris 1994: 12) She further refers to his "compulsion, from an early age, to record an outlaw reality that is invisible in the dominant society." (7-8) The invisibility of "outlaw reality" becomes especially evident in the lives of most animals.



David Wojnarowicz

Figure 12. *Hell Is A Place on Earth*, from an untitled series. 1990. Gelatin-silver print, 13-1/2" x 19". Courtesy of The Estate of David Wojnarowicz and P.P.O.W. Gallery, New York, NY.

Representing Earth's greatest numbers, moreover, arthropods offer extreme displays of such obfuscation, for example, remaining acceptable targets of expansive obliteration campaigns.

Based on the many anecdotes related by Wojnarowicz himself and his friends or colleagues, it seems likely that he both projected himself into animal others and regarded their corporeal beings as capable of mirroring forms of alienation — resulting from, in his words, “the forward thrust of [human] civilization” (1989: n.p.) — meanwhile, appearing to count non-human animals as more valuable than human life. Rauffenbart vividly recollects the intensity of feeling Wojnarowicz experienced in a pet store on the “last day of one of our many trips to New Orleans.” (Harris 52) Hoping to purchase red-legged tarantulas, the artist instead:

“Noticed two box turtles for sale, one of which was clearly sick. He knew which kind they were and the fact that they were an endangered species and illegal to sell. He immediately bought them both and insisted that we ... take them to the Audubon zoo for treatment. I Already late for our flight, we raced back to the zoo,

where the staff confirmed that the turtles were in very bad shape and, moved by David's concern, agreed to try to save them. Furious at the treatment given the turtles at the pet shop, he abandoned his goal of buying the tarantulas.” (52)

Even if Wojnarowicz's responses to non-human animals may seem emphatically involved with human animals, even self-focused, he could nevertheless be described as continuously aspiring to shift attention *back* to the needs and practices of the animals themselves, in this case, turtles in search of a disappearing “Louisiana Bayou.” (Harris 52) Sometimes such sentiments fail to surface in his animal representations, apparently dominated by the appropriations of ideological practices that demonize disease and its vectors. Yet the sum of his attentions show efforts toward appreciating the (very often different) lives and desires of others, as fundamentally underscored by the artist's library of countless volumes of earmarked, well-worn biological and scientific texts and references, including on arthropods.

Wojnarowicz made no secret of his wager that civilization was fast approaching cataclysmic annihilation.

Nor did he hide his lifelong fascination with natural disasters, experienced firsthand at the age of six when he was almost swept off by the torrents of a flooding river: "Some men from a lumber camp rescued me by forming a human chain and gave me hot cocoa in front of a woodstove. I was sorry when my family came to get me." (1990: 113) Natural and man-made calamities of all sorts, but especially tornados, recur in his work, in his recordings of dreams and nightmares, in his memoirs, and in interviews:

"Ever since I was a kid, anything we had no control over — natural events like tornados or floods — signalled [sic] other possibilities. That the world wasn't just the family structure or the governmental structure — that there were things in the world that could possibly change the face of what we've come to know and accept as given." (Blinderman 1990a: 58)

Wojnarowicz appears to revel in moments in which civilization seems to fall apart at the seams, whether resulting from natural or, as likely, man-made disaster. Such forces, to be understood as perhaps the last real vestige of nature in the world, were to be welcomed precisely for their wrenching control of the world and all its inhabitants out of human hands. Like the tornado — "a force of displacement in death" (1989: n.p.) — the artist appreciated any disruption of "the clockwork of civilization" (1991: 88), including animal behavior, homosexuality, and even bodily contagion, believing such events capable of propelling critical shifts in perspective and offering glimpses of those "other possibilities."

Certain Wojnarowicz works engage more directly the contortions of cross-species identifications, even if ultimately relegated to anthropocentric gestures. A late series of black-and-white photographs (1990), for example, offer close-ups of creatures amidst habitual scenery, with what may seem, at first, little evidence of human contact. Yet over each image, the artist nevertheless superimposes blatant displays of human expression. Textual passages contract into disturbing titles, presented as if to be imagined, if jarringly, as voiced by non-humans: e.g., *My Brain Is Driving Me Crazy*, by a caterpillar on a leaf; or *Hell Is A Place on Earth*, by a honeybee on a stem. A few of the series more openly disclose evidence of environmental intrusion and disruption by humanity, e.g., *When I Was A Kid* depicts a baby octopus suspended in a specimen jar resting on a window sill. A motif that pervades Wojnarowicz's work, the laboratory specimen signifies literal and symbolic incarceration.

If Wojnarowicz constantly sought out contact with varieties of fauna, and periodically staged "rescues" of pet store inmates for return back to some "wild," his work, by and large, depended upon already mediated representations of animals. In addition to natural history dioramas, he borrowed from all manner of source imagery and printed media, including kitschy postcards,

firing range targets, outdated scientific texts, and advertising posters. Regularly keeping a camera about him, however, Wojnarowicz also produced his own imagery of fellow non-human residents he would encounter, briefly as well as gently handling before releasing them back to habitat, ideally unperturbed and unharmed.

In *What's This Little Guy's Job in the World*, such a close-up involving an upward human palm features an extremely tiny yet vital amphibian that straddles gully between forefinger and thumb. The snapshot fixes the moment -- the fauna having long since hopped away. The photographically preserved animal body nevertheless gets combined with discordant human voiceover in the form of the artist's superimposed text. Wojnarowicz's title renders bizarre societal expectations that not only every animal but also, even, every human should achieve gainful employment.

Ostensibly pointing to the double-standard of expectations by humans of humans, versus non-human animals, in an interview, Wojnarowicz helpfully articulated the situation while describing yet another work — *Seeds of Industry II* (1988-89):

"I painted a monkey collecting coins in a bowl for some street vendor or street musician. You can look at this monkey sitting with its bowl of coins and think it's an unbelievably pathetic image — that the nature of this animal is reduced to collecting coins. But we won't look at ourselves collecting coins and think that...somehow it's an unnatural activity." (Blinderman 1990a: 58)

If this appears too much an emphasis on human concerns, consider that Wojnarowicz seeks to clarify the apocalyptic peculiarities of contemporary civilization. He laments societal forces that, even in the face of imminent collapse, reward power and greed while punishing the impoverished and sickly. Looking at animals makes it possible to imagine alternate realities to conditions of having to exchange labor for compensation. As with Beuys, Wojnarowicz presumes, whether correctly or not, that animal worlds appear capable of better "sense" or sensibilities than most human communities.

By a cluster of queries superimposed over the briefly encountered miniscule amphibian, the photograph *What's This Little Guy's Job in the World* pushes inquiry past fleeting fantasies of frogs with 401(k)s and high-premium health plans. Rather than rue civilization's passing, the questions accompany "end-of-days" suspicions, striking nearly gleeful, maybe hopeful, notes. In working out loss of this tiny terrestrial, Wojnarowicz wishes not for its death but for its death to matter to civilization — in advance of final impact and with enough time to cultivate healthy planetary maintenance — as if seeking, if not a mechanical governor slowing the approach to collision, or even

preemptive derailment of human control, than at least a change in perspective. Opening with the title, passage proceeds:

"If this little guy dies does the world know? Does the world feel this? Does something get displaced? If this little guy dies does the world get a little lighter? Does the planet rotate a little faster? If this little guy dies, without his body to shift the currents of air, does the air flow perceptibly faster? What shifts if this little guy dies?"

The text goes on to wonder if "people speak language a little bit differently" and concludes with what seems a hankering for tangible effects: "Does some little kid somewhere wake up with a bad dream? Does an almost imperceptible link in the chain snap? Will civilization stumble?" As if working to engender this very outcome, the photographic collage compels viewers to get invested in the outcome of a seemingly diminutive life form. Indeed, recent collapses in amphibious species populations theoretically signal trouble for the planet's ecosystems and, if rightfully so, Wojnarowicz's conjectures become rhetorical. Would that civilization stumble, the artist seems to say, as proof that the life of the "little guy" matters.

In addition to working with, learning from, and equating his experience with cockroaches and other "non-charismatic mini-fauna," Wojnarowicz frequently would engage ants, reviving the commonplace notion that our species appear to share structures of engagement: "Ants are the only insects to keep pets, use tools, make war and capture slaves." (1989: n.p.) Indeed, several late (AIDS) works, mostly photography-based, draw upon collaborations with colonies in Mexico of fire ants, known to "attack any foreign agent within their nest site." The artist typically generated out-of-scale contact between living ants and societal constructions he would introduce in their midst, including human figures of knowledge (e.g., artificial replica of an eye), time (clock face), money (any currency), spirituality (crucifix), desire (male body imagery), violence (pistol), control (toy soldier), and language (signage). Regarding ants, Wojnarowicz explained, "Using animals as a form to convey information about scale or intention is to take that power away from the human and return it to the life forms that have been abstracted into the 'other.'" The artist, significantly, also spoke of "human irritation at the sight of uncontrolled 'nature.'" (1989: n.p.)

Wojnarowicz would liken the aerial view afforded by such works to the liberating conceptual levitations he reported experiencing while regarding his own species from "miles above the earth." Indeed, in an effort to "resist and dispell [sic] the idea of perversity," Wojnarowicz constructed the eight 1988-89 photographic composites known as the *Sex Series (For Marion Scemama)*. Set against the natural disaster of a severe tornado, one collage includes six reverse portals — literally negative images representing "examination

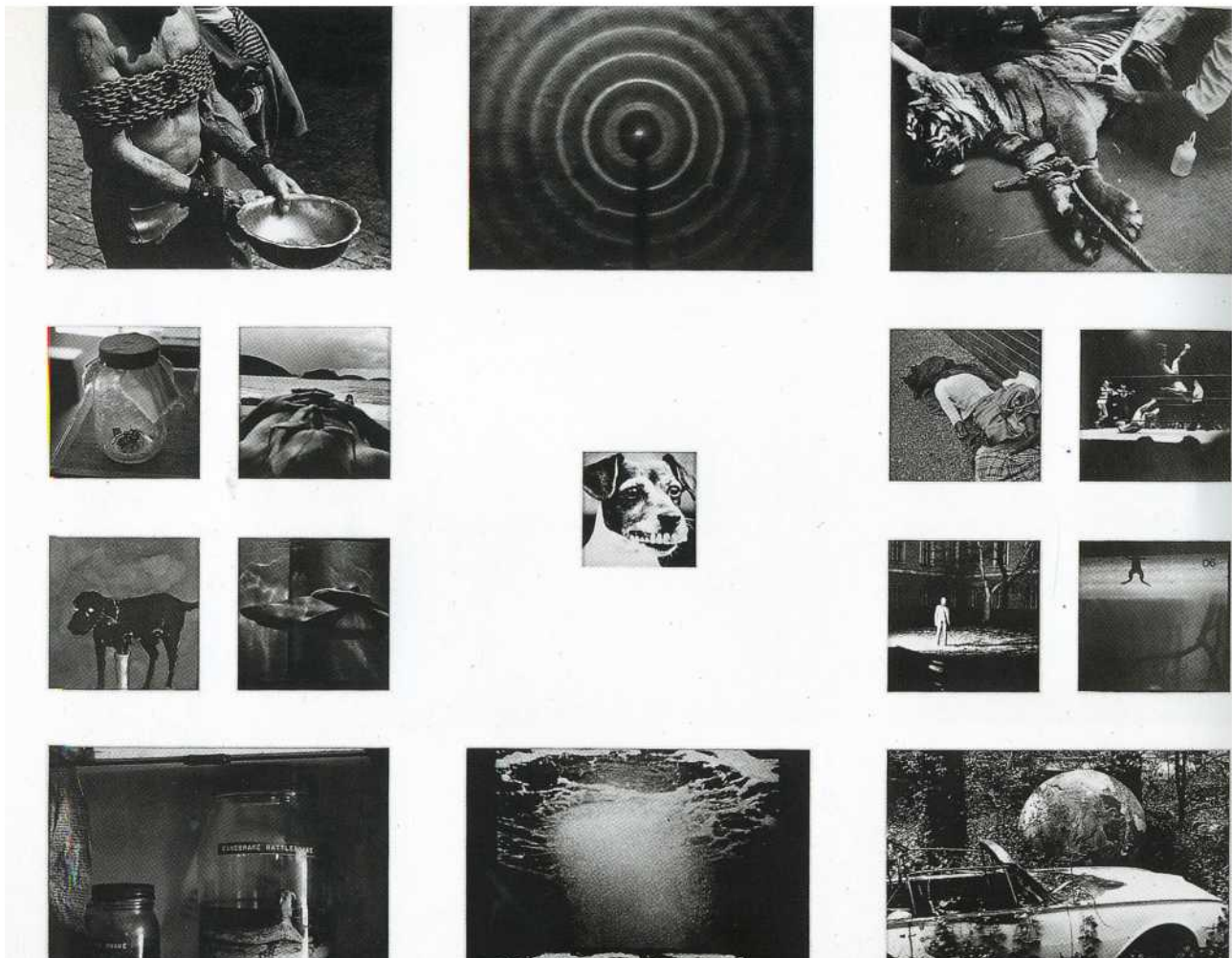
and or surveillance," featuring ants scurrying across US currency (coins and paper bills); women making love; a radio transmitter; a blood cell in danger of HIV infection; an X-ray of a baby; and the arrow-riddled torso of Saint Sebastian (patron saint of plague and, unofficially, of homosexuality). In explication, Wojnarowicz would counsel viewers: "Step back a few hundred miles into space; in the air above all this and it looks like ants in a clockwork maze of pre-invented structures." Similarly, regarding *The Weight of the Earth, Part I*, another photographic series from the time period extensively reliant upon zoological ciphers, the artist observed: "It's the simultaneous view of the scarred earth from miles above and from inches above; the people and their architecture reduced to ants uttering from their hole in the ground." (1989: n.p.)

Wojnarowicz would maintain working relations with animate arthropods throughout his life, perhaps most enduringly with a member of, according to McGavin, "the most ancient group of all arachnids," (213) a scorpion he named "Lucy" (possibly after critic Lippard) — yet another animal "liberated" from a pet store, reports friend and performance art critic Cindy Carr. "They'd kept it under a bright light, but scorpions like the dark," she relates, whereas the artist "made a cave for it" in a sand-filled terrarium. Carr further notes:

"He wonders how poisonous it is; it ran at his hand one day when he was cleaning the cage — the ungrateful unpet. He says someone asked him why he wanted such a thing, and he'd told them he wanted to own death. In an adjacent terrarium live the crickets: scorpion food. They're always singing."(293)

Intending to feature Lucy in one of his last film projects, he reported, in an interview, having discovered on the scorpion's behalf the "truth" about crickets — "they [are] cannibals" — rueful information seemingly diffusing whatever misgivings might arise in having to serve such romantic chirpers to a puny monster who supposedly "eats them like popcorn." In learning from Lucy and crickets, he concludes, "that I wouldn't trust [animals] any more than I would people," though he also contends that people prove "a lot more crafty... in the way of killing." (Lotringer 168) After Lucy died, Wojnarowicz carefully preserved the corpse within a miniature velvet-lined coffin of his own design, now a relic in the archives.

In 2003, science allowed that orangutan communities display evidence of culture, defined as patterns of behaviors particular to specific locales passed down over generations. Some now say culture and community may have been around for longer than since hominids and orangutans parted ways about fourteen million years ago. Despite the prevalent notion that culture is human by definition, in "reality,"



David Wojnarowicz

Figure 12. *Hell Is A Place on Earth*, from an untitled series. 1990. Gelatin-silver print, 13-1/2" x 19". Courtesy of The Estate of David Wojnarowicz and P.P.O.W. Gallery, New York, NY.

human-specific, language-based “culture” represents but a small portion of a broad spectrum. “We” nevertheless decree what slight percentage of non-human cultures to support. Wryly blogging about the orangutan studies, cultural theorist Crispin Sartwell suggests humans are closer to termites, perhaps even fungi, than primates. Based on rates of predicted survival, moreover, a few of us may ultimately wish for even closer links to cockroaches or some other “long-time resident,” in the words of Marion Copeland; especially, she reminds us, quoting renown entomologist May Berenbaum, given the critical roles performed by “bugs” as “the chief architects of terrestrial ecosystems.” (13) Regardless, human societies tend to privilege “hosts” and scorn “parasites.”

Regarding the historical relations between “man and microbes,” Arno Karlen argues that, “Disease is not just biological thuggery, in which one species molests another. Rather, infection is an ancient event, basic to life, and it tends to lead toward peaceful coexistence.” (16) He speaks of “the ultimate adjustment between host and parasite” as “not murder but mutuality,” describing disease as “a trauma that both, with luck, will survive.”

Elaborating further, he asserts: “Fatal or severe disease is usually a sign that host and parasite are relatively new acquaintances. That is, the parasite has until recently been more at home in other hosts.” (16) These other hosts, he explains, tend to be non-human animal species whose ecologies have been radically disrupted by human activities. Karlen raises the prospect of alternative paradigms — not only to mindless acts of global ecological compromise but also — to combative attitudes toward infection as terrorists against whom war gets waged. With symbiosis an eventual, even desirable, adaptation for newly conjoined host and parasite, Karlen invites engaging disease more inventively than with only models bent on exerted assault, elusive eradication, and oblivious cultivation of “Super Bug” mutations.

Nearly three decades into it, the AIDS crisis — that, as Gregg Bordowitz famously put it, “*is still beginning*” — provides an excellent case in point. In the first decade, ignorance and discrimination exacerbated the pandemic at the highest levels of public policy and health industry. (Semper et al.) Homosexuals were

enduringly perceived as dispensable, e.g., undeserving of federal funding for medical research. Meanwhile, people of color, heterosexual women, and lesbians — as opposed to male homosexuals — were blithely ignored as low-risk in statistics gathered by the Centers for Disease Control. Regardless, all would be denied access to life-saving information and initial forms of treatment — that is, were it not for concerted efforts by activists to raise AIDS consciousness. Although AZT, or Zidovudine, the first drug developed to fight HIV, became available in 1987, after approval “in record time,” its indications involved ingesting “one 100 mg capsule every four hours *around the clock*” while its cost, at \$10,000 a year, made it “the most expensive drug in history.” Anyone fortunate enough to gain access to AZT was as likely to be poisoned by it, at the very least, and suffer debilitating side effects, before being taken out by some opportunistic infection. After several years of collective action by PWAs demanding more humane responses, drug trials began to be “fast-tracked,” AZT manufacturers even reducing the price by 20%. (Sember et al.)

By the start of a second decade, the US Federal Food and Drug Administration initiated “accelerated approval” and, shortly after, ushered in the first protease inhibitor. (Sember et al.) Prices for anti-AIDS drugs nevertheless remained exorbitant and, more insidiously, American makers managed to preserve patents, inhibiting global distribution of life-lengthening drugs. By the third decade of the crisis, massively populated nations, like India, Brazil, and South Africa, began taking matters in hand. In 2000, an Indian drug maker, for example, offered to sell anti-AIDS drugs “at a fraction of the going rate;” eventually, the government even provided them free of charge in “high-prevalence states.” Equally demonstrative Brazilian response sought to “to break patents on commercial anti-AIDS drugs,” turning down American AIDS funding in 2005, from PEPFAR, the President’s Emergency Plan for AIDS Relief, for the plan’s condemnation of prostitution — not to mention condoms, given the “emphasis on abstinence-only prevention programs.” (Sember et al.)

As Robert Sember, David Gere, and Rosemary Candelario eloquently assert, AIDS has never been a medical crisis alone: “It is increasingly apparent that long histories of prejudice and inequality have facilitated the spread of infections and subsequently denied adequate treatment for the many millions living with AIDS.” Ending the crisis, they proclaim, “requires significant social changes that will not be accomplished by medical scientists or public health officials alone but will require the coordinated actions of us all.” Their brilliant brochure essay — produced for the group exhibition *Make Art/Stop AIDS* (2008), held at the Fowler Museum in Los Angeles, California and including the work of Wojnarowicz — observes that, for people lucky enough to secure pharmaceutical salvation, “Taking these drugs is a lifelong and life-defining process, to the point where drug and body become nearly indistinguishable.” If Wojnarowicz attests to a not-so-symbiotic relationship

with HIV/AIDS, his work makes clear that problems reside not with the retrovirus per se, however notoriously rapid the mutation of strains, but rather: greed, indifference, and, in the words of Sember, Gere, and Candelario, “how moral dogma restricts access to information and products that can most effectively protect one’s health ... the failure to share information freely” having “already caused millions of deaths.”

Wojnarowicz’s work envisions greater cooperation and geo-diversity across spectrums of scale, with mutual co-existence of difference a principal goal. Yet the queer activist artist may be described as disassembling, for him and others, territorial binds by identity, family, community, nation, and especially species. His cosmologies aspire to refashion the very human-animal divides across which, in *The Open: Man and Animal*, Giorgio Agamben suggests are “drawn and suspended ... not only theology and philosophy but also politics, ethics, and jurisprudence.” (22) One last work offering contemplation from miles above, *Globe of the United States* (1990) satirically dramatizes the alarming and homogenizing tendencies of Western geopolitical colonization, as signaled by “India ink” black ocean blanketing nearly everything. Somehow, most of the American mainland retains bright map color inside but a score of truncations — impassable boundaries in the shapes of US cookie-cutter contours. By contrast with such a monolithic sphere, insists Wojnarowicz, “there are millions of separate tribes in this illusion called AMERICA.” (1991: 153) Emphasizing heterogeneity, fragmentation, and the fragility of any planetary collective, Wojnarowicz’s animal stand-ins help contradict the “illusion of the ONE TRIBE NATION” and “Universe of the Neatly Clipped Lawn” (1991: 152-53).

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SUSANA SOARES: PAVLO'S BEES

Susana Soares studied for the MA Design Interactions course at the Royal College of Art in London and is a US-based designer whose work involves the studying of insects and their interactions with us. Over the past few years, she studies bees and in particular the way they can be trained to use their smell and detect almost anything, including bombs and landmines. Questions by Zoe Peled

In February 2009, Pecha Kucha Daily reported on a very unique project that was presented at the PechaKucha night in Trieste late last year. Portuguese designer Susana Soares used bees exceptional odour perception as part of a beautiful and strange medical sensing device establishing a brilliant human-nature collaboration that takes advantage of an untapped naturally occurring phenomenon. The artist claims that new advances in areas such as genetics, biotechnology and nanotechnology are changing our very nature, not in a way that we can perceive, not as an act of natural selection or evolution, but due to technology. How is this going to change our behaviour and what are the implications? In a near future, people could be equipped with organs that would enhance their perceptions allowing them, amongst other things, to have brushy nails that will scrap genetic information while touching. Who's going to use them and what for? In which situations do we need them?

Many artists who incorporate an element of the natural world and/or animals into their artwork trace the presence of said things to an early interest, usually realized in childhood. Was this the case for you, and if not, what was behind the foray into such fields?

Perhaps there is an obvious connection between the incorporation of the natural world in my work, since I was raised on a farm and the whole socio-cultural and economic structure were influenced by nature consistently. Some of the projects that I have been developing originate from an interest that I call 'new organs of perceptions,' which started during my degree studies and was nurtured during my MA in Design Interactions at Royal College of Art. New advances in

areas such as genetics, biotechnology and nanotechnology are changing our very own human nature, making us less dependent on natural selection or evolution than on new technologic breakthroughs. Within this perspective, I wanted to challenge the means of technology and how these are influencing the way we interact with and perceive the world by enhancing, augmenting or diminish our abilities. The idea very much was to explore different ways of bridging these areas by creating new platforms in order to generate sustainable symbiotic links where the potential of the natural systems around us can be wisely used.

Your work explores the relationship between scientific research and design, two fields that would usually be regarded in entirely different and separate manners outside of the art world. What is it about the visual arts that instigates unity of such disparate elements/entities?

The tactics employed within art and design-related disciplines encourage the pollination of blurred boundaries. These are porous spaces that facilitate unlikely collaborations, questions, reflections and outcomes — a multitude of indistinct layers surrounding science and technology — which stage sophisticated conversations and plot different paths through this cross-disciplinary space.

This unity is encouraged by not only individual artists, but events such as Festival, which aims to "forge new working relationships between disciplines, communities and species." How did you get involved with Festival, and can you speak to your participation in the event?



Susana Soares

Precise Object, 22 x 12 cm prototype 2007; borosilicate; Vilabo, Portugal © Susana Soares

I was invited to participate to Festival by Bridget Nicholls and Alistair Hadley (Director and Creative Director of Festival 2009) through my previous work on bees. My participation will focus on two projects within a larger work called *Symbiosis*: these two projects are *Bee's* and *Why me?* Both projects explore new roles of design by identifying emerging collaborative opportunities, looking at the translation of scientific technological research into new critical design proposals.

Within this ambit the designer has the endowment to capture momentous changes in technology, a lapse in time sufficient for a change to take place enabling distinctively new working methods. *Symbiosis* is based on ongoing research that enables the experiencing of previously uncharted relations with natural biological systems. We have always co-existed with these systems, but their potential and capabilities were hidden, until recent scientific and technologic research. The term technology as we understand it, is here challenged as it also can involve a wiser use of sophisticated and reliable biosensors and a better understanding of what our surroundings tell us.

BEE'S

Scientific research has demonstrated that bees have an extraordinarily acute sense of smell and can be trained to perform a health-check by detecting a specific odour in

peoples' breath. The project elaborates upon that scientific research and proposes a system where bees integrate a new model of diagnosis. They can be trained within 10 minutes using Pavlov's reflex to target a specific and wide range of natural and man-made chemical odours including the biomarkers associated with certain diseases. A series of alternative diagnostic tools are featured that use bees to diagnose accurately at an early stage a vast variety of diseases. These bees are released afterwards, and can return to the beehive after the performance. The challenge is to translate the outcome into systems and objects that people can understand and use, engendering significant adjustments in their lives.

WHY ME?

It is estimated that over 1.2 million people die from malaria, which is carried by mosquitoes, each year. Dr. James Logan and his team are exploring new research methods to develop a more efficient, reliable repellent made of natural chemicals.

They became interested in how the body odours from certain people naturally repels midges and mosquitoes, which could explain why some people are more attractive to mosquitoes than others. People who are unattractive to biting insects mask the attractive chemical odours within their own body



Susana Soares

Bee Training Object, 20 x 7 x 9 cm, prototype 2009; clear acrylic & hips © Susana Soares

odour. The idea behind *Why Me* is that people will find out, in a playful way, if their body odour is attractive or unattractive to mosquitoes. It works in a rather simple way: two people place their hands on the opposite sides of the object and in an average of 90 seconds the insects will invariably fly towards the most attractive scent.

Why are some people more attractive than others?

One theory is that this is a signal for the insect. Unattractive chemicals might be a sign that the person they are about to feed on is unsuitable due to stress caused by illness or disease. This also generates shifts in the way we perceive mosquitoes as in this case it would be a positive thing that the mosquito chooses you as it could be signifying good health.

The aim of project is to create a tool to raise awareness for this particular research and ultimately gather volunteers to find which specific chemicals the mosquitoes are attracted to.

Pestival is the only one of its kind, being an event completely devoted to exploring the relationship between human and insect. What was your immediate reaction to Pestival when

you first found out about it?

Pestival is an important event, since it approaches a subject that is not normally considered, as you highlighted in your question. Also the format of the event is very well thought out, as its intent is to engage people in a celebration that looks at this complex and rather long relationship between humans and insects from new and different perspectives.

"Insects are frequently misunderstood, reviled or, at best, ignored by the majority of the human population." Who, or what institutions, do you see being responsible for perpetuating these trends?

I believe there is not anything in the specific, an institution or people, that we can blame for our dislike of insects. The relation between insects and humans has been long studied by cultural entomologists who have revealed a complex interaction.

Despite the recognition of insects' unique evolutionary process manoeuvring between stability and diversity, an overall sense of fear seems to remain. Maybe it comes from the fact that they are not easily domesticated and controlled. Almost unnoticed they can sting, bite, buzz in our ears. Still, throughout history



Susana Soares

I am attractive? Design object, 60 cm diameter, prototype 2009; clear acrylic & petg; Talbot Designs, UK © Susana Soares

insects have managed to permeate our social, cultural, and scientific endeavours in very positive ways. However, considering the intricate ecosystem we live in, we would not survive without insects as we derive considerable benefits, including pollination and pest control from them.

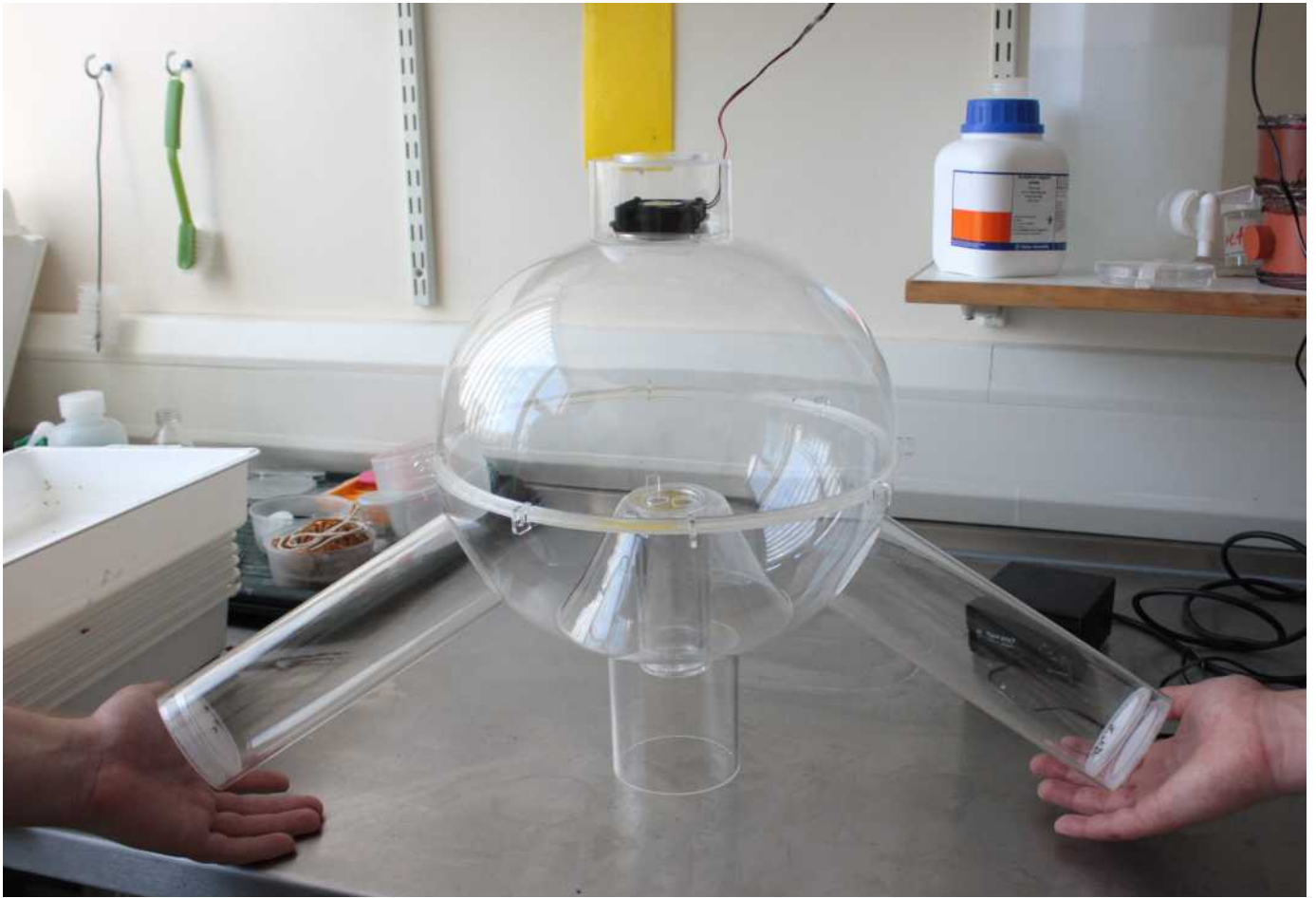
One of the first things that comes to mind for me is the entertainment industry, constantly releasing movies which feature insects as the antagonists, solely responsible for earth's demise. Do you think that the visual arts have the communicative power to surpass that of the entertainment industry, and challenge these conventions?

There are different media that use distinct platforms to generate and convey messages. As I am also working in academia, my humble aim, among others, is to facilitate tools that enable people to have an independent critical view of the world. I am interested in design as a tool to generate a consistent discourse that offers alternatives and acts as a medium to challenge assumptions and values.

“Bee’s”, one of your most well known projects, explores how we may co-habit with natural biological systems, and use their potential to

increase our perceptive abilities. Throughout this process, how do you think humans can ensure they are not taking advantage of said creatures for our own benefit?

We are all part of an interconnected biologically diverse system. As we have been experiencing, the balance between all parts depends on ensuring that one is not predominating over another. What we humans have effectively done is redesign the planet to suit how we live today. It is my impression that we seriously need to rethink the way we do things by reconsidering our values and attitudes. As Prof. Julian Vincent from the Biomimetics Centre at University of Bath said, “in technologic systems, 70% involves manipulation of energy as for in biology most important is the use and manipulation of information.” By ensuring that we use our resources in a sustainable way we could also establish a new relation with our planet. Could we say that we exploit bees when we benefit from their honey or pollination abilities? These said creatures have an incredible ability; they can perform something that we could never achieve, as we have a very dull sense of smell and our attitude towards that should act at a symbiotic level. But this is a proposal and there is little you can do to control subsequent interpretations, uses and misuses. It is also a key factor



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and intention of the project to design such a process where bees (and humans) are not harmed. After performing the diagnosis bees are sent back to the beehives. They should not be considered as devices but as a “new organ of perception” part of the same “organism.”

In general, how did you see your audience reacting to “Bee’s?” Do you think any viewers felt uncomfortable with the idea of a bee (rather, insect) detecting the state of their health?

The audience reacted very well to the project, as all the known comments were really positive. Within the events, exhibitions and workshops that I participate in or have held, some people pointed out bee phobia and insect sting allergy. Others mentioned that they would prefer to be tested by an animal rather than an electronic device or a piece of plastic. Some thought that there was something rather poetic involved in the process. The bees operate as a testing device at the very early stage of diseases, but do not necessarily replace other tests. Despite comprehensive advances, current medical procedures to detect, diagnose and evaluate diseases are often invasive and incredibly uncomfortable. As mentioned before, insects, in general, have been recognised to possess a highly refined olfactory system

that uses specific receptors to detect odour molecules and that bees are 10 to 100 times more sensitive to than humans. From this perspective, you may be right in believing that you are in the hands of the most skilled organisms to detect the state of your health.

If you had chosen to work with a familiar domesticated animal such as a cat or dog, how do you think this would have altered reactions to the project?

I am still interested in developing a whole range of projects that include dogs and even African rats (Apopo a Belgian is an organisation that is developing a project on using African rats to detect landmines in Mozambique). I did choose bees because of the challenges involved. People were very intrigued by the whole thing because it was not very straightforward and common connection.

In 2007, artist Huang Yong Ping held his retrospective at the Vancouver Art Gallery. Responses to the work were immediate, and debate ensued, pairing animal rights and artist rights on opposite sides of the conversation. Many viewers scoffed at the inclusion of animal rights, for they saw the animals as nothing more

than a few bugs. When artists use animals and insects in their work, where do you see the lines of artist rights and animal rights intersecting one another, and is it fair to compare them in the first place?

My work is situated at the fringes where design and art intertwine and where applying a clear label to things becomes difficult. My work is not very much concerned with the animal rights debate; it is rather concerned with looking into new possible interactions between humans and insects, and encouraging a readjustment of pre conceptions into mutualism not parasitism. The works are not art pieces but part of a design system. For example bees are not used in the work display, they are represented by photography, video or illustrations.

I see one of the biggest problems in the animal/insect world to be the roles that we assign to particular creatures. How did this start, and how can we attempt to slow down such a harmful labelling system?

It did start exactly through events such as Festival, where a wide range of people can engage with different perspectives related to insects. As in the *Why Me* project, if we could make people think that if they are chosen by the mosquitoes that could be a good sign, this could change the whole negative landscape related to this insects. It is true that they cause human deaths, and extermination is not a solution, since they are also vital. It is essential to understand their behaviour in order to continue this pioneering research. Hopefully the project will contribute to this new understanding of mosquitoes.

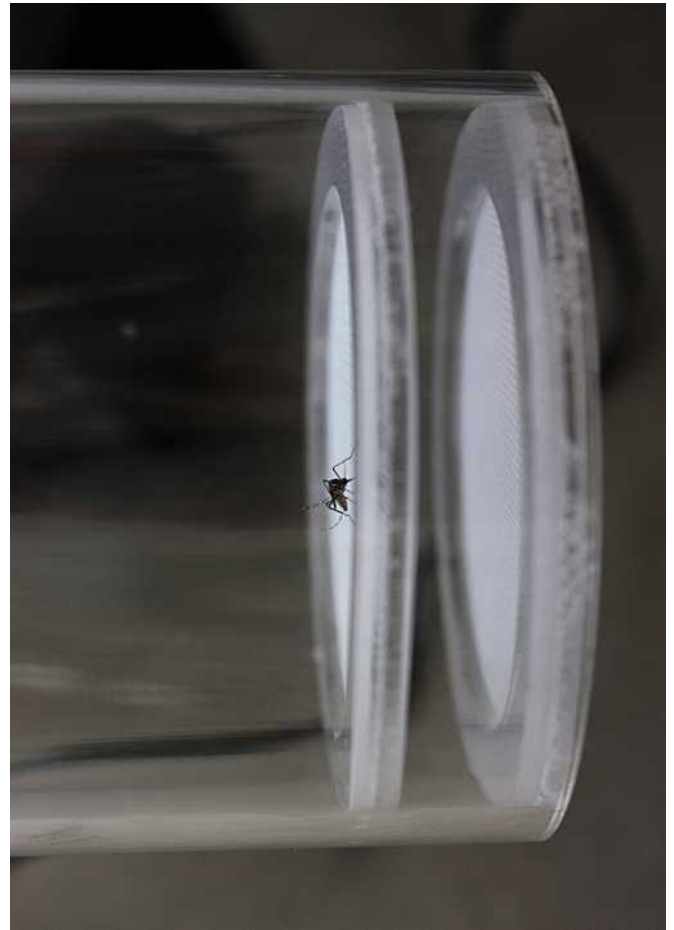
What's in store after Festival?

Apart from starting a new academic year, I will take part to a design project between the EPSRC (Engineering and Physical Sciences Research Council) and the Design Interactions Department at Royal College of Art in London. The project will look at the impact of the scientific research that EPSRC funds and will be composed by fifteen research topics distributed among fifteen designers. Each designer will collaborate with a research group, identifying possible implications and developing a piece of work.

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Bee's
Designer: Susana Soares
Year 2007 to 2009

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Susana Soares

I am attractive? (female mosquito stands on the mesh) Design object, 60 cm, prototype 2009; clear acrylic & petg; Talbot Designs, UK
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Sr. João Gomes (Vilabo)

Credits:
Susana Soares

Models:
Bernardete Fernandes
Clarie Ducruet
Margarida Martins

Am I Attractive? **'Part of Why Me?' Project at Rothamsted Research**

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Miguel Ceia

Susana Soares is a recent graduate from the MA Design Interactions course at the Royal College of Art, She is currently a researcher/lecturer at Syracuse University in Upstate New York.

Susana Soares was interviewed by Antennae in Summer 2009 © Antennae

THE SOUND OF THE MICROWORLD

Chris Watson shot to 'underground fame' as founding member of the electronic music pioneers Cabaret Voltaire in 1971 and is now one of the most prestigious sound-recordists in the world. His work on film, documentaries, games and music has over the years set the bar for industry and creative standards in the field of sound recording. Here we talk to him about recording, insects and what it means to capture 'the sound of the microworld'.

Questions by **Eric Brown and Sara Grove**



Chris Watson

Chris Watson at work © Chris Watson

Chris Watson is one of the world's leading recorders of wildlife and natural phenomena, and here he edits his field recordings into a filmic narrative. The unearthly groaning of ice in an Icelandic glacier is a classic example of, in Watson's words, putting a microphone where you can't put your ears. His 2003 album titled *Weather Report*, was this year selected by *The Guardian Newspaper* (UK) as part of their official list of *1000 Albums to Hear Before You Die*. Watson's recordings have featured in hit film *The Constant Gardener*, Playstation versions of the *Harry Potter* series, and he also contributed recordings to the new Sigur Ros movie, *Heima*, which premiered at the *Electric Proms* in London in 2007. At the *2009 Port Eliot Festival*, he'll be DJing his unique *Nature Disco* in the *Caught By The River* area down by the *Boathouse*. Watson was also a founding member of UK experimental music band, *Cabaret Voltaire*. He has won awards for his work for BBC natural history programmes by David Attenborough and others, and has been awarded an honorary doctorate from the *University of West England* for his outstanding contribution to sound recording. At *Pestival*, he will be curating an evening of experimental insect-music, featuring a gathering of homo-sapiens and the *Southbank Centre's* (London) in a serenade to the dying summer.

Much of your work seems to concentrate on soundscapes that human beings would not routinely have the chance to hear — whether because of the contamination of our sonic environments or the inhospitable conditions of the landscape itself (volcanic craters, oceanic gulfs). In what ways do you see such work altering our experience of the natural world?

Over several years I realised that in some ways open microphone techniques in open spaces simply scratched the acoustic surface of many locations. Through a process of active listening and trying to engage with the sense of place I was gradually drawn in to closer and closer perspective sounds as well as experimenting with different transducers in mediums other than air, such as hydrophones and geophones. In doing this I began to hear sounds that I found much more interesting and revealing about the sounds of that environment and the animals that live there. I began to hear things via these transducers that were very difficult or even impossible to experience directly and I was able to place them where we would not want, or be able, to put our ears. Personally I find this a fascinating and valuable technique that enables one to hear the world in perhaps a new way and so experience a sense of discovery and revelation which consequently encourages one to engage with whatever is making those sounds.

In one of your productions you describe a “mini-jungle” or “microworld,” a space that only emerges through active listening, yet one that must also be patiently unobserved for the full richness of sonic detail to develop. How would

you describe your own role as observer in these recordings? Or the processes through which the act of recording becomes a creative and artistic expression? How would you describe the effects of editorial manipulation, or the compression of time, upon the final recording?

Often on location I fix microphones into places and then cable-back and away sometimes several hundred meters to a recording position from which I can monitor and perhaps observe any behaviour or activity without disturbing the area or wildlife around my microphones. I can then choose when to record without influencing what is happening around the mikes. This is particularly useful when recording insect activity as many of these animals are sensitive to vibrations. Activity and recording can then take place over many hours or even days and, in addition to careful microphone selection and placement, choosing when to record is an important and early stage of the compositional or editorial process. The idea of 'time compression' came about for me after long hours of listening and picking up slow and almost imperceptible changes in the soundscape due to animal behaviour, elapsed time, meteorological conditions or even seasonal changes. Introducing a temporal shift in editing by reducing the time between any of these events highlights those changes and enables the listener to hear more clearly the progression or narrative created by the series and development of those events. I find this technique useful across a range of my work in CD, performance, installation and broadcast.

How much do external environmental changes — in seasons or time of day — influence your decision-making process? Are you directed more by your impulses as an artist or by the practicalities of recording? Do you begin recording with an end in sight?

I love being out on location since despite my research and observations into the appropriate animal behaviour, they just don't read the script, and frequently it's those serendipitous moments that make a recording special. However, with certain events, such as a dawn chorus, I can imagine what I may record and plan accordingly.

Is there a conservational dimension to your work? What sounds are the human race losing, or losing track of? Do you see your adventures into new worlds of sound as invasive in any way?

Sound is so personal and subjective to me that there is no overt conservational message in my work, although of course there is a thread. Listening and recording to any sound helps us to engage with that subject, and with places and habitats, that sense of engagement may lead to the notion that if the habitat or wildlife living



Chris Watson

The Weather Report, CD front cover, published by Extreme/Noise in June 2003, catalogue number: touch47 © Chris Watson

there disappears then the sounds will also vanish. When a listener considers this the argument for conservation becomes self evident.

In “Blue Grass Music and Ant Steps,” you highlight a chorus of grasshoppers, tree frogs, and cicadas. It seems that the microworld of insects is full of such choristers, perhaps to a degree of variety beyond other animal forms. What particularly strikes you about the musicality of the insect world? What makes the footfalls of ants or chirpings of crickets acoustically interesting?

Insect-sounds have really caught my imagination over the past few years as they are challenging and highly rewarding to record as well as deeply absorbing to listen to. I recognise that when we listen to most insect sounds what is mostly heard is just the bottom end, the lower registers that fall within our own rather restricted frequency range. I imagine these sounds in a very musical way, which is why I was delighted to be invited to curate the *Pestival Experimental Insect Music Night*. Many insect sounds are richly harmonic and have a strong rhythmic and musical pulse.

You have suggested that one of the downsides to close listening is a consequent inability to turn it off or tune out — the world of sound is changed irrevocably. How do you engage with those kinds of sounds and experiences in everyday life without either losing them or being overwhelmed? How do you reconcile the need for greater sensitivity with the pressures of selectivity?

We hear almost everything but rarely have the opportunity to open our ears to really listen and engage with the sounds and noise that bombard us twenty-four

hours each day. I've recently been working on a documentary for *BBC Radio 4* called *A Problem With Noise* and was amazed to discover that clinical studies have identified that exposure to noise at night, even when we are asleep, will raise blood pressure. Clearly we can't just switch off our ears and our only defence is to be selective about what we listen to and to be careful and critical about our own acoustic environment. The wider questions about noise pollution and its subsequent effects are of international concern.

Can you talk about your work with Pestival, and how it relates to what you've done previously with insects or other animal recordings?

Pestival is for me a unique opportunity to work with ideas that have fired my imagination for some time as well as being able to curate a collection of artists into a common aim, which is to interest, engage and stimulate an audience into considering the musical and artistic potential of insect sounds and afterwards, perhaps, listen to aspects of our natural world in a new way.

For *Cross Pollination*, the evening will be in three parts. Firstly, the composer and arranger Marcus Davidson is working with a choir to perform alongside an arranged track of honey bee sounds recorded, at some considerable risk, by Mike Harding of the production company Touch. This promises to be a powerful and richly dynamic musical work leading the audience through a day in the life of a honey bee from foraging for nectar in an English garden to defending the colony from alien attack before retiring inside the hive at night into a dark world of sound and vibration we can only try to imagine.

Secondly, the turntable artist Philip Jeck will perform his magical vinyl alchemy by spinning and mixing a collection of insect inspired orchestral music.

Finally, the classically trained singer Maria Jardardottir will perform two duets along with a pair of famous Japanese crickets, insects that the monks in Kyoto describe as “the voice of Buddha.” This final piece will be introduced by Atau Tanaka who will introduce and describe the culture in Japan of listening to some insect voices in a similar way to the Western culture of enjoying seasonal birdsong. My aim here is to bring the evening to a conclusion with the voices of one human and one insect singing in harmony.

Christopher Richard Watson was born in Sheffield where he attended Rowlinson School and Stannington College (now part of Sheffield College). In 1971 he was a founding member of the influential Sheffield-based experimental music group Cabaret Voltaire. His sound recording career began in 1981 when he joined Tyne Tees Television. For more information please visit: www.chriswatson.net/

Chris Watson was interviewed by Antennae in Summer 2009 © Antennae

THE ART OF METAMORPHOSIS: JAN FABRE

Jan Fabre is one of the most eclectic artists on the contemporary art scene. He also is a playwright, stage director, choreographer and designer whose work has been strongly influenced by an unconventional interest in animals and the natural world. Since a major show at The Louvre Museum in 2008, Fabre has entered the sphere of major artists and is currently amongst those representing Belgium at the Venice Biennale 2009. In the middle of July, Julien Salaud traveled to the beautiful city of Lion (France) to talk insects, metamorphosis, life and death with Jan Fabre. Questions by Julien Salaud Translation by Jeremie Fabre



Gerard Rancinan

Jan Fabre with plate of beetles © Gerard Rancinan

“Fabre evinces great admiration of animals, but he is especially fond of insects. They have served as the source of inspiration for all of his visual art and theatre works” wrote Yuka Uematsu in 2001 (1)

The importance Jan Fabre attaches to insects was already visible in 1978, when he put up “on his parents land a tent that he used for a while as a bunk, a laboratory, a workshop, a refuge.” In this private space, the Belgian artist devoted all his time to “the gloomy reality of research” consisting in “killing, pining up, conserving and classifying insects” as his great grandfather the famous entomologist Jean-Henri Fabre said. At the same time, he erected a tent dedicated to art. According to Eckhard Schneider, those primary spaces were the “germ cell of his whole work.” (2)

Indeed, the place of insects is crucial: the “auto-mechanical principle” pushing moths to run towards the light source that attract them, until exhaustion, is at the root of the particular way Jan Fabre’s draws, and also of his choreographic work. On the other hand, insects are used by the Belgian artist as “symbols of metamorphosis,” this strong image that federates those who believe humans through its animality, since the dawn of the West, from Ovid to Kafka.

In Jan Fabre’s artworks, pupation of insects turns out to be a topic conducive to think about demise. When it was exhibited a year ago in the Louvre Museum, in the same room as *Carcass of Beef* painted by Rembrandt, *Vleesklomp* [piece of meat], realized in 1997, offered to the viewers of *L’ange de la métamorphose* [The angel of metamorphosis] an example of this parallel: Hung one in front of the other, both works revealed, through their confrontation, the peculiar way the Flemish artist foresees the process of death.

The form given to *Vleesklomp* reminded one of the carcass — ready to be cut up — painted 350 years before; but the way Jan Fabre chose to represent beef was completely different from the Dutchman’s beef. On Rembrandt’s painting, we could discover a schema, a sterilized mechanism, an architectural vision of dead flesh destined for human stomachs... The painter depicted a dead body taken from any rotting process: the *Carcass of Beef* is certainly one of the first images showing a body extracted from the life cycle; the dead bullock is dispossessed of any ornament, disenchanting, deconsecrated... At least, it seems that Jan Fabre decided to work on this definite point of the masterpiece: *Vleesklomp* extracts the skinned body from the painting, and moreover the corpse is given back to the cycle of life: the scarab beetles covering it are symbolizing those insects that recycle organic matter, and Jan Fabre chose to represent them as if they were in full action. This artwork is like a carcass disappearing under a swarming of coleopteras!

By giving back the meat of the *Carcass of Beef* to the recycling process of organic matter, Jan Fabre proposed to think about insects and metabolism: carrions and necrophagous animals (like insects) are essential to life for they both generate the fertile compost necessary for its regeneration. He also may suggest that death is



Jan Fabre

Vleesklomp, scarabées sur fil de fer, Installation view : Jan Fabre au Louvre. *L’ange de la métamorphose*. (Exh. Cat.) 2008 Paris, Louvre, salles du département des Peintures, Ecoles du Nord, aile Richelieu, photography Attilio Maranzano © Angelos

only the end of a life, a sort of passage, an intermediate phase rather than a full-fledged state.

With *Zelfportret als grootsteworm van de wereld* [self-portrait as the biggest worm of the world] (2008), the artist drew a parallel between functions of insects in metabolism processes and the role of the postmodern artist. *L’ange de la métamorphose*, an imposing installation, took place in Rubens room: in the middle of a heap of granite gravestones depicting a cemetery was a long piece of latex, assemblage of a casting of the artist’s head and the feigned body of an interminable earthworm. Onto some of the gravestones were carved names of insects referring to famous thinkers of the last century like Marcel Duchamp, Francis Bacon, Sigmund Freud, etc. In this work, Jan Fabre chose the metaphor of a worm in a graveyard to define one of his artistic roles. What does comparing the way an animal recycles the organic matter to the one an artist interacts with occidental philosophy mean? Maybe ideas operate like matter in their mutations: one and the others grow on what predated them; death and recycling processes are valid for both mental and material things because they enable at the same time changes and the evolution deriving from those changes. In this artwork, life and death don’t seem to be antagonistic: the artist suggests that they actually be considered as complementary phenomena, and acts strongly against the continuing boundary which keeps



Jan Fabre

Self-portrait As The Biggest Worm In The World, silicone, hair, 470 granite gravestones, gold, synthetic grass, compressors, wood and steel, 22 x 5,5 x 1 m, Installation view : Jan Fabre au Louvre. L'ange de la métamorphose. (Exh. Cat.) 2008 Paris, Louvre, salles du département des Peintures, Ecoles du Nord, aile Richelieu, Attilio Maranzano, Tasmania, Collection Museum of Old and New Art © Angelos

distinguishing between one and the other. Moreover, the hybrid figure, half artist, half worm, proposes that spirit and body may follow the same processes all along life cycles — a second boundary against which the artist works; and at last, we can notice that Jan Fabre considers that his goal as an artist is similar to the role of insects in life evolution. He even often compares himself to his fetish animal, the dung beetle, like in *The Problem* (2001), a video showing a performance grouping together Jan Fabre, Dietmar Kamper and peter Sloterdijk, or *Bol van de mestker* (the one which we'll call *le Bousier*).

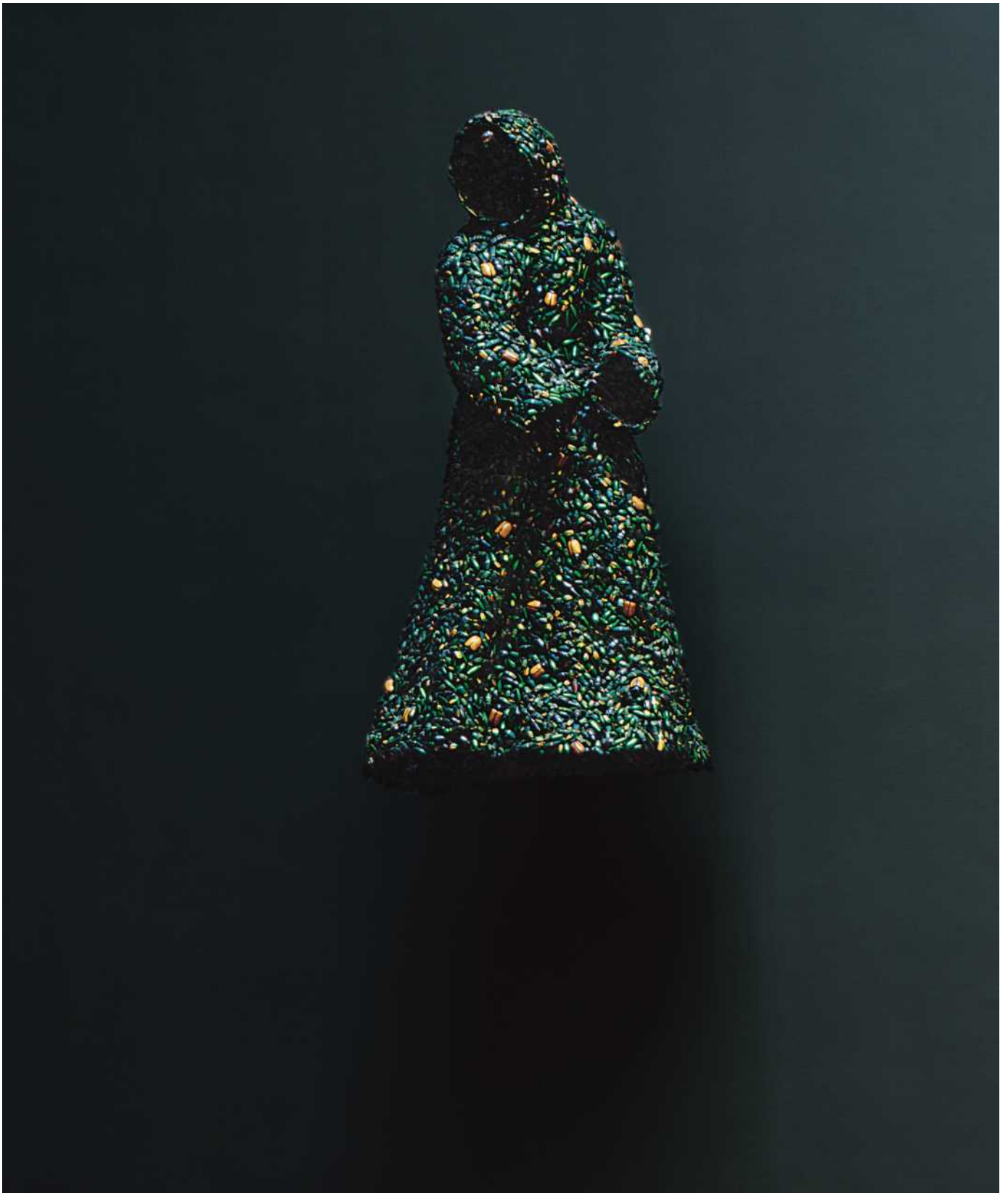
Thus, there is no doubt that Jan Fabre knows the world of insects deeply: their biology, their behaviors, and their function in the living environment. But that's not all: the postmodernist way through which he compares humans and insects is more than a simple question of natural science...

In 2001, Yuka Uematsu maintained that "Fabre's work is surely one possible answer to the question of [the] existence [of angels]," those beings "living in the time of *Ævum*...from which time and space come into existence." The Japanese curator also drew a parallel between the way angels can travel from "material reality of our world to the world of God" (3) and the metamorphosis of insects, from larva to imago, a topic close to Jan Fabre... So, are Fabre's insects part angels? And Jan Fabre himself, is he some kind of insect? Here it becomes rather difficult in the end to detect who's who? This confusion of natures and essences may transform the triad animal/artist/angels in a becoming from which we can begin a journey through Fabre's art...

In 2001, Yuka Uematsu pointed out that in order to carry out the works of your early years, you put insects on a paper sheet and followed their tracks with your pen. Did you learn from those animals a particular style we can notice in the drawings of the Blue Hour?

Yes, in a sense that is what happened at the very beginning. In late 1978, I set up a small laboratory in the garden of my parents. I was like a small Doctor Frankenstein, cutting off the wings of flies and attaching them on worms that I had previously dug from the ground. It was a way of creating a new life — a kind of metamorphosis — and a method of drawings with insects. In many ways, it is the love and the passion for the study of those insects that informed my work. By reading about them and studying them, I developed the idea to place insects on paper and follow the traces left by their trail. They almost dictated to me which line I would put on paper. Then, I produced some 2 meters long and 15 meters long papers. It became a transformation: in fact, the reverse of drawing.

Normally when drawing, you put a couple of lines on paper and you suggest something, form or volume or shadow... I reversed it: I put traces of insects on paper, about 10,000 lines which became a sort of energy field, where new drawings loomed up. I called this series of drawings the *Blue Hour*. This was based on the writings of Jean-Henri Fabre where he describes how at night, animals go to sleep and how during the day animals awake; the sublime moments



Jan Fabre

The Beekeeper, scarabées sur fil de fer, Installation view : Jan Fabre au Louvre. L'ange de la métamorphose. (Exh. Cat.) 2008 Paris, Louvre, salles du département des Peintures, Ecoles du Nord, aile Richelieu, photography Attilio Maranzano © Jan Fabre

where everything cracks open. So I gave this poetical name to this series of drawings.

How can we position the Beekeeper in relation to this series? Did bees play a special role in apparitions created by your ballpoint pen drawings?

The reason why I made this self-portrait is because the bees produce honey, within which there is a lot of knowledge, a lot of strategy, imbedded in the way it is produced. I believe there is real intelligence in those animals. Nowadays, we are going through a crisis as there is a huge shortage of bees and this can be very dangerous for us humans. This portrait as a beekeeper is also for me a "becoming god" of a universe that is



Jan Fabre

A Concilience, Natural History Museum London, 2000 © Jan Fabre

almost lost, a utopian universe from the past that, as an artist, I want to defend.

*In the catalogue of *L'ange de la métamorphose*, Eckhard Schneider emphasized the fact that insects also inspired your theatrical creations. In your choreographies, one can find the "auto-mechanical principle", according to which a moth attracted to light rushes towards a light bulb until reaching exhaustion. According to you, what are the stakes of this exhaustion — this weariness — when the human being experiences it?*

To answer this question appropriately, I think we have to bear in mind that I am a consilient artist. Consilience is a tool that I use to reinterpret things. Imagine you are studying the field of entomology, the behaviour of insects, the strategy of insects. Then you look into the behaviour of humans, into a strategy employed by humans and you find links between them. Following these links, you can give a new interpretation. So, for instance, I instruct my dancers and actors to move in a different way through the study of insects' movements and the articulation of their joints. Through the process,

they see the links between their own skeleton and the one of the insects and they will find inspiration in these similarities and differences. Therefore, they will incorporate different movements in their routines. Moreover, I sometimes use the strategies, the topographies of insects, the way they deal with space, to create my *mise-en-scène* on stage. It is all about consilience.

Going back to the moth attracted to light, it is true that in a lot of my light designs on stage, the body goes through exhaustion with the repetition of time and action. It reveals a kind of truthfulness through its biological state. In the choreography, the more the dancers become tired, the more I instruct them to move closer to the light. It works according to a timeline: when they are halfway to the light, you can notice the muscles, the sweat and the skeleton, and how everything moves. And when the body comes closer to the light, it is almost as if it is burning. It is through this excess that the body loses itself.

On the other hand, your actors/dancers embody the interest you have in the organization of insect communities. What kind of tension do you create when you confront human societies



Jan Fabre

The Cast From Orgy of Tolerance © Courtesy Frederik Heyman

with those of insects?

I give great importance to the relationship between space, the definition of space and the splitting of space. Of course, we humans learn a lot from animals and insects by studying them. The way I direct my stage is a sort of preparation for the strategy of war: I see my stage as a battlefield of love.

The anatomical structure of insects suggests similarities with assembling models, a technique you use a lot in your sculptures. From your point of view, what power does assembling have in art?

I always saw insects as the oldest computers in the world, a memory that survived everything and at the same time, a radar for human kind. Of course, what is important for me is the idea that these small creatures have an outer skeleton whereas humans have an inner one. In a lot of my sculptures, there is always a questioning revolving around the possibility for a human body of the future. How will it survive? I made a lot of sculptures in the shape of human bodies made from insects as a kind of panzer, a new skin that I call *Angels and monks*: a spiritual body, male and female, which could survive in the future with an outer skeleton. All my sculptures are about how very vulnerable human kind is

and how it will survive in a future without using biotechnology but relying on the elements of nature. For that reason, I use insects as a new skin, as an armor, or I use bones from animals and humans as an outer skeleton.

*We could notice, that in exhibitions such as *L'ange de la Métamorphose*, that you make much use of coleoptera: in addition to their quality as assembling materials, do these insects have an ornamental value?*

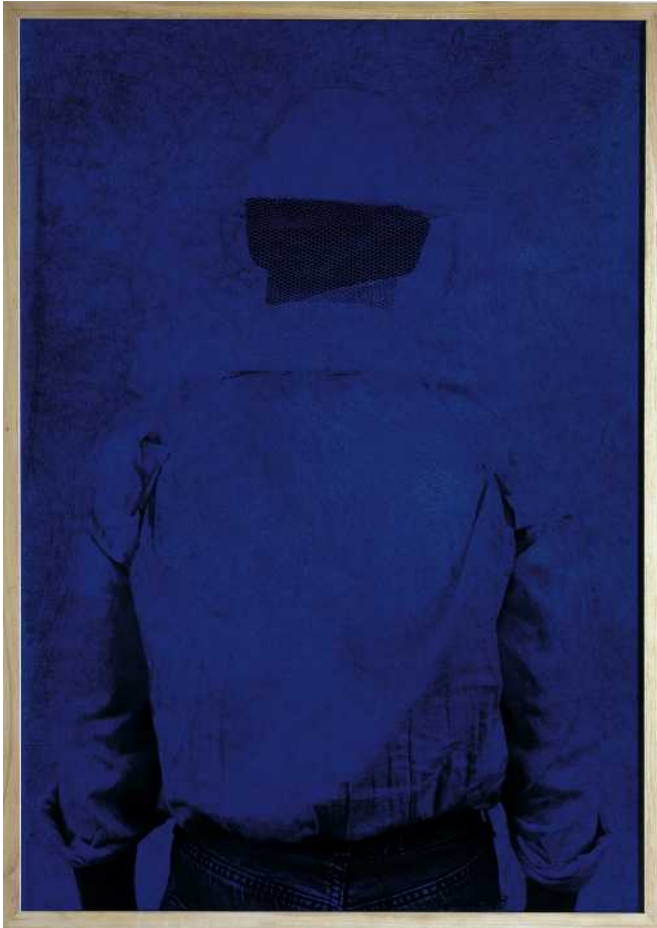
Yes, of course. Do not forget that in art history, when you look into vanity paintings or into Flemish, French, even Italian ones, every insect has a symbol related to its color, or which object it is sitting on... For example, in some of my works, I used the green jewel beetle because green represents the bridge between life and death, or the green earth becoming the sky. Other sculptures, such as *Meat pieces*, are made with carnivore scarabs, which eat meat and animal remains, cast in the shape of the meat. According to me, the ornamental aspect of insects is always an emblem, a symbol.

*In *L'ange de la Métamorphose*, the *Pièce de viande* was hung facing the *Bœuf écorché* of Rembrandt. In this confrontation, the coleoptera in your work appear within the context of their natural function of recycling, participating in the organic decaying that changes a corpse into a large number of living beings. Was the aim of the piece to show death as a transition from a specific form of life into another, more than as a definitive state?*

This is a beautiful interpretation of the work. The work also stands for a form of cannibalism and becoming. It goes from Rembrandt to Chaim Soutine and to the piece I was hanging in the Rembrandt space. It also references the tradition of the flesh and the meat, a representation of meat.

*Is it this form of continuity — applied to the field of spirit and ideas — that we could observe through the *Autoportrait en plus grand ver du monde*?*

This work is based on two small drawings I made in 1979. When I created this work, it was a sort of opposition: the artist as a worm... But why a worm? Because when you take away the worm from the earth, the earth is not good earth, it is bad earth, so the worm is an important element. The grave tombs included in this piece were important for me as cold blocks of stone represented dead people: all the gravestones refer to dead scientists, philosophers, writers... These are in a way my kind of gods, in the sense intended by Rubens; cold colors in opposition to exuberant and warm colors.



Jan Fabre

Tasmania, Collection Museum of Old and New Art, balpen op kleurenfoto, 146 x 207 cm, Studio Ghezzi, 1991 © Courtesy Frederik Heyman

The insects' ecology gives you a particular vision of death within the kingdom of the living. Now, the insects' nymphosis is also a metaphor you used about the human individual: can you explain the parallel you drew in 2000 between the will to have a worthy death, inherent to euthanasia, and the "death wish" of insects larvae preparing themselves to become imagos?

What I should explain here is that, when my father died three years ago, I was on another continent and I had to come back to Belgium for that reason; my father had a heart attack and he was already wearing the clothes he would be buried in when I arrived. He was already cold and to me he had already become a sculpture, a new imago. At the same time when I touched him, he was hard. His death kept me awake and thinking that night. I thought that an object is always dead in a sense, but you can hurt yourself when you touch this specific object. The touching keeps you awake and you can feel the death as a new imago, but in the meantime this imago keeps you alive.

The idea of metamorphosis being a form of death is particularly valuable regarding your vision of the artist. Can you explain why, as an artist, you consider yourself "alive and dead" at the same time?



Jan Fabre

The Palais Royal-Salon des Glaces-Heaven of Delight, Ceiling by Jan Fabre © Jan Fabre

A lot of what happened in my life influences me. When I was a young guy, I fell twice in a coma: this influenced my development, my work and my thinking. I was once in coma for nine days, and when I came out of it, it was almost as if I was living in a sort of borrowed time, like if you are living in a post-mortem state of life. For me, it was an incredible shock and an inspiration at the same time because every movement I made became a happening, something immense. This influenced me a lot so that in many of my works, death is always there as a celebration of life, as a cycle of life. This also inspired my performance on stage: you have to be on stage in a post-mortem state of life. It means you have to think that you were once dead, and everything you do on stage becomes something special. It becomes a happening itself. It requires an incredible state of concentration full of love and passion towards what you are doing.

From your point of view, can one consider death as a reversible process?

I am aware in a social and philosophical sense that I have already been dead for the past 25 years because I constantly give everything into my work. I live through my works of art, my writings. One of the projects I am now working on as my will is a sculpture which after my death will become my own brain. I like to talk with

the dead philosophers or artists because death, without romanticizing it, has also something victorious: it is eternal. I have always thought about Antonin Artaud's reflections about suicide as a respect and not as a disrespect for life.

In your work, is it entomology which rationalizes art or art which enchants entomology?

I am not a scientist, I am an artist. The worst I could do as an artist is become a bit scientific, and the worst a scientist could do is become a bit artistic. The good scientists that I met in my life like the idea of jumping into the unknown and I think a good artist does it as well. It is not jumping into nothingness; it is through instinct that you feel things and that you are going to research and try to fly into this void. It is a long-time process for a scientist as well as for an artist. All good scientists suppose and feel things through their instinct and then make this leap. This happens with every type of research.

It connects scientists and artists and we can learn from each other: I feel that I have already inspired scientists and a lot of them have inspired me, more than other artists have.

Notes

(1) UEMATSU Yuka, "The Schemes of Jan Fabre," in UEMATSU Yuka (dir.), *Jan Fabre: angel and warrior, strategy and tactics*, p. 141 to 148. Kagawa, Marugame Genichiro-Inokuma Museum of Contemporary Art, 2001.

(2) SCHNEIDER Eckhard « Rêver, voir et être vu, » in BERNADAC Marie-Laure (dir.), *Jan Fabre au Louvre, L'Ange de la métamorphose* p. 81 to 86. Paris, Gallimard, Musée du Louvre edition, 2008.

(3) UEMATSU Yuka, "The Schemes of Jan Fabre" in UEMATSU Yuka (dir.), *Jan Fabre: angel and warrior, strategy and tactics*, p. 141 to 148. Kagawa, Marugame Genichiro-Inokuma Museum of Contemporary Art, 2001.

Jan Fabre was interviewed by Antennae in July 2009 © Antennae



Jan Fabre

I saw a bat tonight in het Peerdsbos (The hour blue), Ballpoint pen on paper, 200 x 150 cm, collection Stedelijk Museum, Amsterdam (NL)
© Angelos

Jan Fabre has taken part in important events such as the Venice Biennial (1984, 1990 and 2003), Documenta in Kassel (1982 and 1992), the Sao Paulo Biennial (1991), the Lyon Biennial (2000), the Valencia Biennial (2001) and the Istanbul Biennial (1992 and 2001). Furthermore he had important solo exhibitions in leading museums throughout the world, a.o. at Kunsthalle Basel, Centro de Arte Moderna Lissabon, Palais des Beaux-Arts Brussels, Kunstverein Hannover, Stedelijk Museum Amsterdam, Ludwig Muzeum Budapest, Muhka Antwerp, Haggerty Museum of Art Milwaukee, Museum of Contemporary Art Warsaw, Sprengel Museum Hannover, Smak Ghent, Kunstnemes Hus Oslo, Fundacio Joan Miro Barcelona, Musée d'Art moderne et d'Art Contemporain Nice and Musée d'Art Contemporain Lyon. In 2007 there was the grand-scale Homo Faber event in Antwerp, with important exhibitions a.o. at the Muhka Museum of Contemporary Art and the Royal Museum for Fine Arts. In 2008 the Musée du Louvre in Paris presents "The Angel of Metamorphosis", a grand scale solo exhibition for which Fabre has 39 halls in the Richelieu wing at his disposal to juxtapose his works to those of the Louvre's collection.

After having presented six solo-shows by Jan Fabre between 1988 and 2006, the gallery organised his first one-man show after the Louvre, "Is the brain the most sexy part of the body?", with new works exclusively. The show was followed by a grand scale soloshow at the Kunsthau Bregenz, where Fabre transformed the building into one giant metaphorical installation, a concept based on his investigations on the human body.

WHEN INSECTS MEET MICHAEL JACKSON

Noboru Tsubaki is Associate Professor at Tezukayama Gakuin University, a lecturer at Kyoto College of Fine Arts, and the Director at the Inter Medium Institute in Osaka. We had the opportunity to interview the artist as he prepared his work for Festival.

Questions by **Ken Rinaldo**

Pestival's Artist in Residence Noboru Tsubaki is creating a unique 'Vegetable Wasp' homage to Michael Jackson at his studio in Southbank Centre (London). Inspired by Noh Theatre and insectoid manga super heroes, Tsubaki is working on a kind of cocoon-suit for Jackson to enable him to traverse the world of the living and access that of the dead. Tsubaki will wear the suit and take on the spirit of Jackson! The work also references the *totyukasou*, which is a mould that controls its insect prey and eventually destroys them, in a similar fashion to the "parasitic human insects that surrounded Michael Jackson".

Can an artist's engagement in robotics help to influence the future development of robotics and the arts?

The arts and natural sciences have been separated for a long time, and this has caused unfortunate results. As far as I know, there are only a few who have tried to re-integrate the arts and science, such as Krzysztof Wodiczko at Massachusetts Institute of Technology.

During postwar reconstruction in Japan, technological developments were emphasized as being of the utmost importance, and the roles of artists were almost forgotten. It caused the complete separation between art and the robotics world, and created the decoupling of "the traditional rubbish arts born of capitalism" as Beuys said. Therefore, unless such unfortunate diversions ends in Japan, it's impossible for artists to materialize innovative robotic ideas; it's like trying to reach a mirage.

Has your work been able to address these concerns in any way?

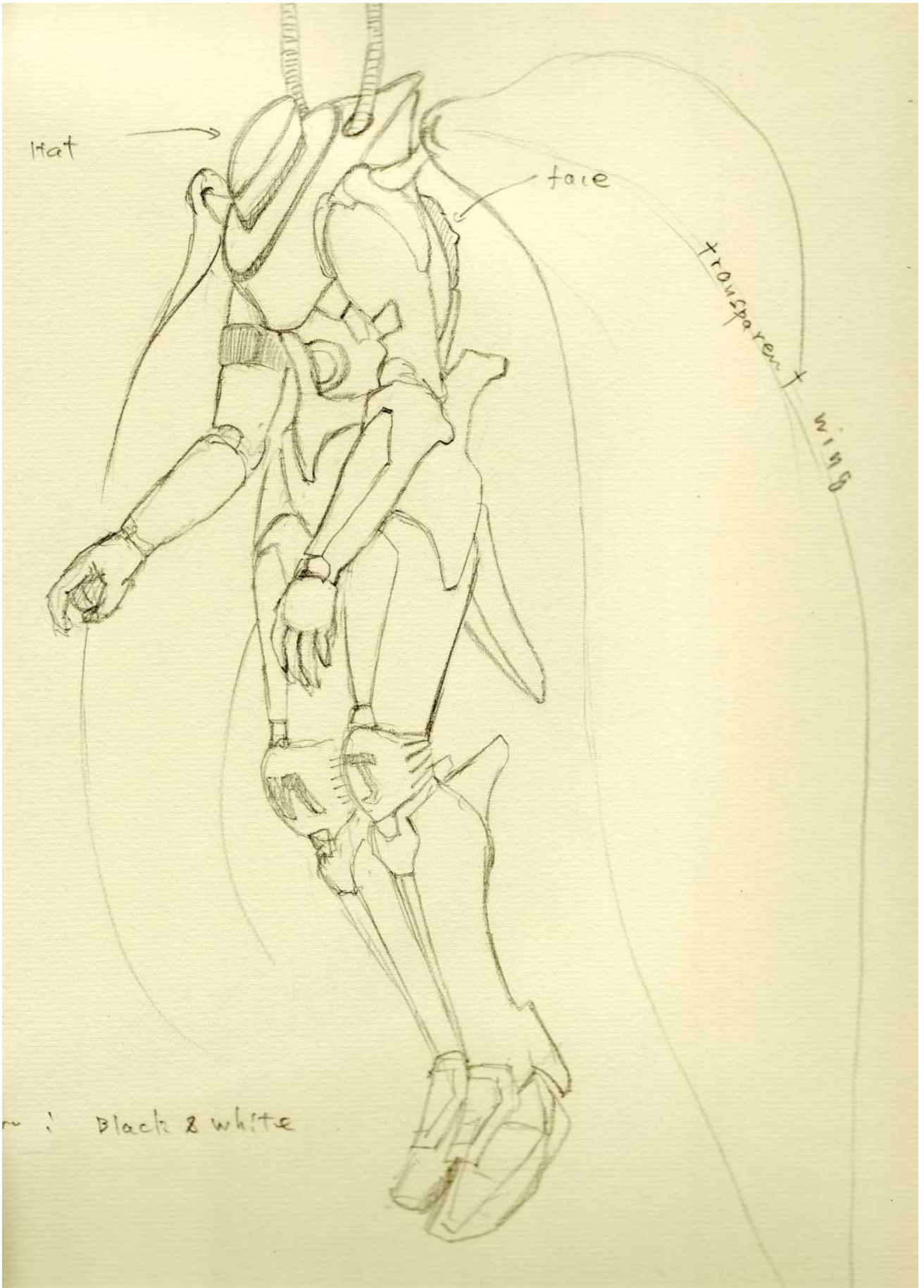
I wish I could say yes, but as I explained in the first question, the answer is no. In 2000, Japanese engineers were promoting humanoid robots which could dance, in desperation of gaining research funding from the government. On the other hand, I was busy promoting the idea of bodiless robots, formed with consciousness and information. The idea materialized as *Neurocube*, however, it was ignored by the consumers. Instead, cheap toy-robots with servomotors dominated the market. I was completely defeated.

Why are insects so prominent in your work?

The main reason is, of course, because I love the surface of insects, but I also love the systems involved in their prosperity, which is so clear that I can reflect upon it as the unsettling future of mankind.

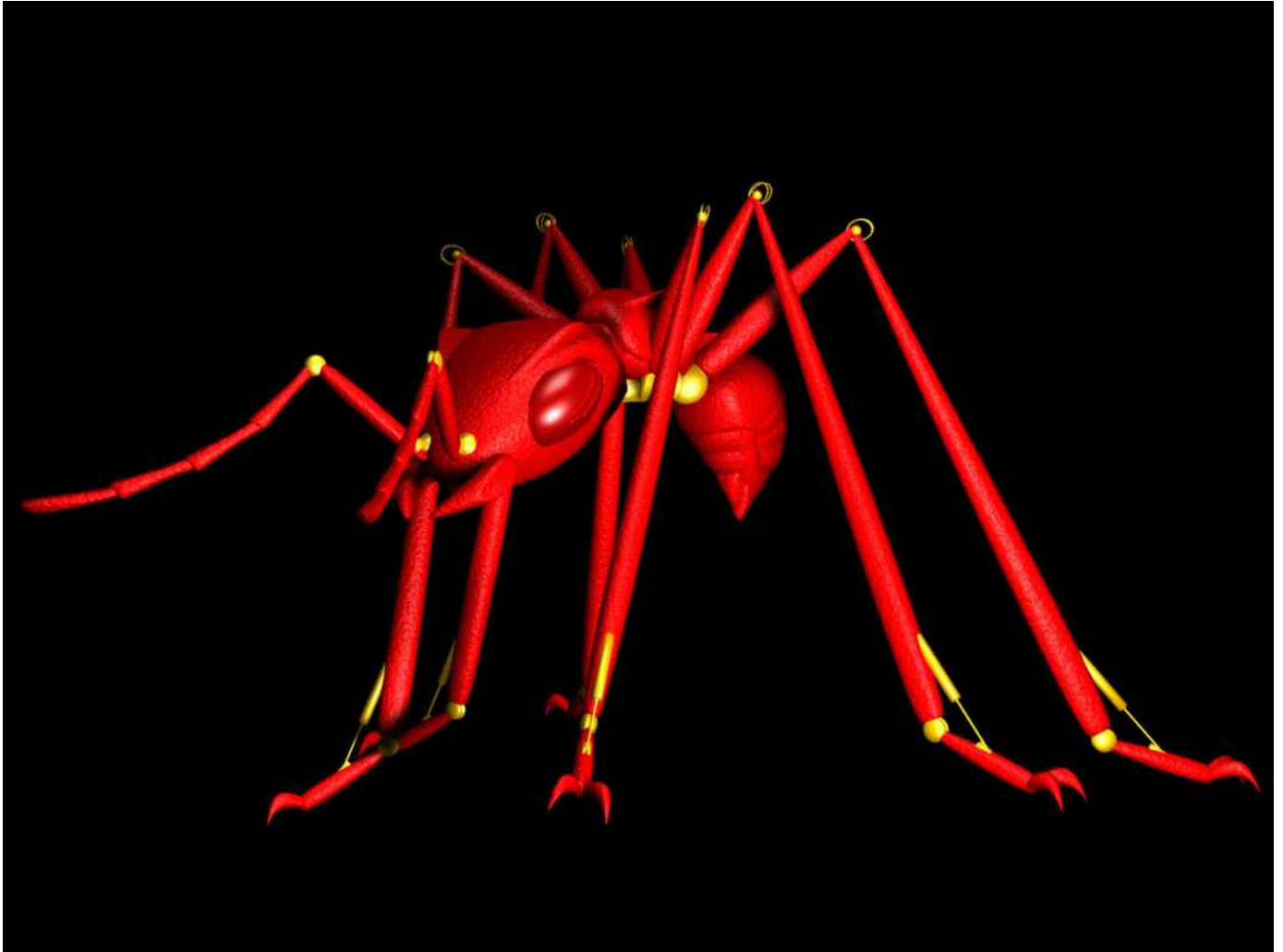
Let's talk about *Reaction and Reflex*. I am amazed that "cute characters (Kawaii)" can enter our consciousness so easily, especially in Japan. Where will human agency move on, after creating alphabets, abstractive thoughts which produced mathematics and democracy? In a few years time, printed media such as newspaper will become a part of history, and our consciousness will assimilate into that of insects.

The world's most advanced experimental cities, Tokyo and Nippon in Japan, have already been experimenting in the search for the new phase of human nature, based upon *Reaction and Reflex*. Can humans be human without relying on written words? Can we build a highly developed democracy without the cycle of bloodshed? We wear masks immediately when a pandemic alert begins, and it symbolizes the Japanese, who are constantly trying to conquer new and newer worlds, where any previous data becomes meaningless.



Noboru Tsubaki

Moonwalker, pencil on paper, 2009 © Noboru Tsubaki



Noboru Tsubaki

aTTa, computer graphics, 2008 © Noboru Tsubaki

Do you believe modernism is dead or are modernist strategies still relevant for new media artists?

That is an absolutely Western concept. Us, the Japanese, have never had to face the wall of modernism. If anything, it's the concept forged by some intellectuals who must have suffered from some bad measles during the postwar. Our paganism, which has been created in a humid climate, resembles the structuralism initiated by Saussure, and is identical to *Writing Degree Zero* by Roland Barthes, which is captured in his beloved Haiku form. However, there's a paradox in this theory, as we are forced to use the Western concept of modernism in order for us to become aware of it.

Are your mixed-media works related to your socially concerned works?

Just as my image is always shackled by language, my works are also shackled with social implications.

How did studying law help you realize your successes as a contemporary and

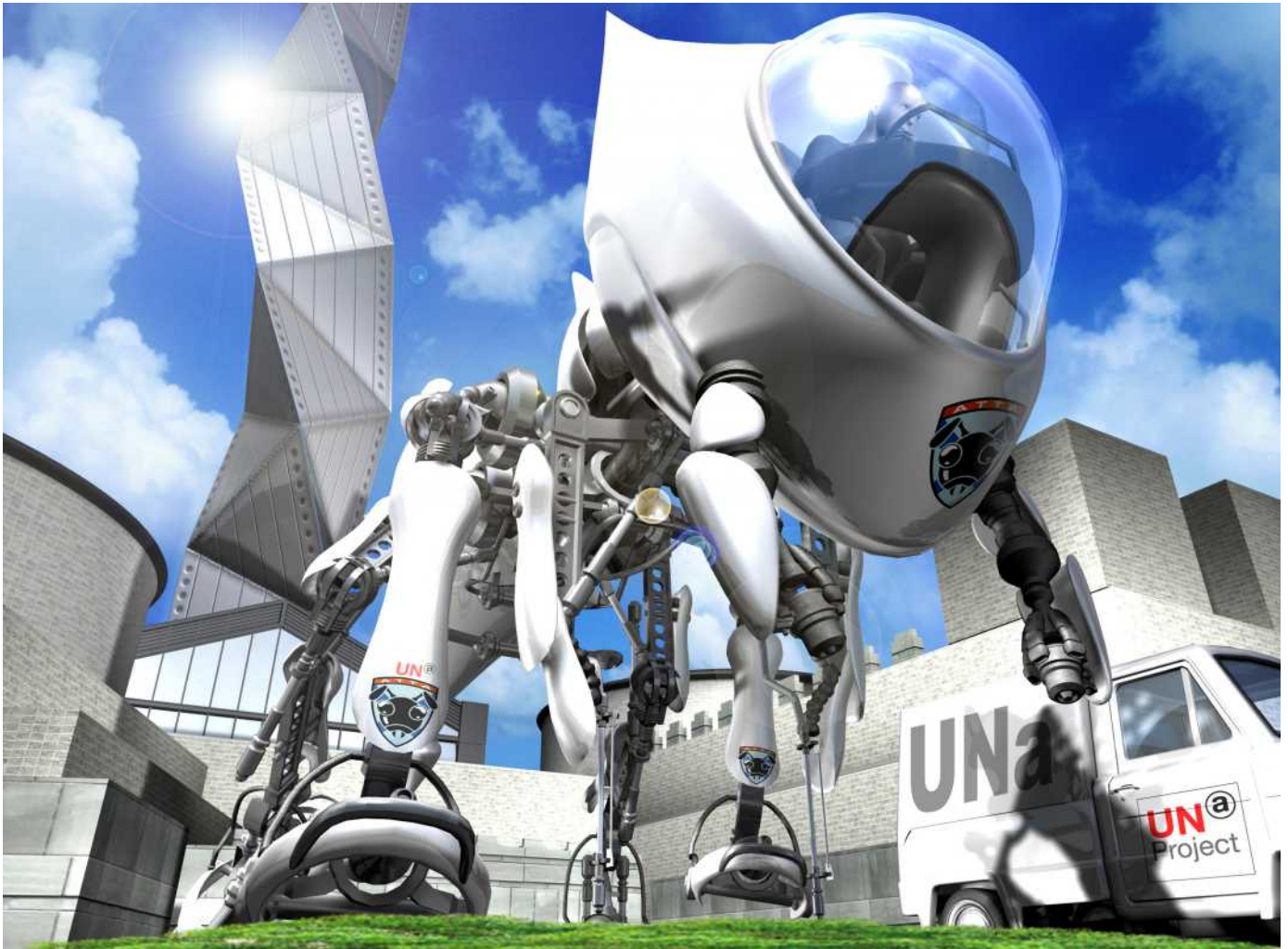
internationally recognized artist?

As well as insects, I am interested in the fungi, which resemble the concepts of Saussure. The most important factor is the platform, the place of departure, not the product itself. Just as you can see in Google or iTunes, it proves that there is no reality, nor validity given to artificial works and objects, but everything is authorized and controlled by the background networks. I originally became interested in law, as the bodiless aggregation of languages. I then had a political setback while I was studying for the law university. It was, therefore, a natural journey for me to have reached the concepts of abstract networks, a.k.a. *Social Sculpture* by Joseph Beuys.

Do you see a relation between the military industrial complex, video game themes and emerging geopolitics?

They are not only related, but they are a trinity.

Are insects 'metaphorically smaller' creatures with no voice? I'm thinking about your giant,



Noboru Tsubaki

ATTA (*UNBOY Project*), computer graphics, 2002 © Noboru Tsubaki

34-meter inflatable locust in Lamport Stadium, King West Village.

Unfortunately, I can't bring the giant locust to London this time. But if it had come, the reaction would have been amazing. The giant locust would have briefly freed people from the weight of modern life, as it would have made the city look like a tiny model.

How can art and your work in particular spur social change?

Firstly, my work offers a high-energy field blended with 'passion and questioning'. You may compare the effect with a big event such as festivals, football games or bullfights, but the big difference is that my work generates questions in people's minds. For example, more than 90% of people who saw the giant locust, regardless of their age or nationality, questioned, 'why a locust?' Lastly, I hope you'd understand that I don't use the abstract implication like Joseph Beuys has done, but deliberately use objective motifs in my works, so that I can draw out even more abstract questions from people.

Do you believe that there are alternatives to

the methods the United Nations uses in "peacekeeping?"

That was exactly my purpose in having the *UNBOY* exhibition. In 2002, the FBI supervised a lecture at UCLA which scared students and professors. I developed the plan of *UNBOY*, inspired by such perverse intervention over freedom of thought. In other words, it proved that there was no freedom in America, and a horrific state-control was going on, even in the 21st century. George W. Bush has kept a straight face on the CNN news as if nothing was happening, just as it would happen in the world of killer ants. For me, the very concept that they've tried to destroy, that of the United Nations, should be the one I protect through art and my works.

What does the word UNBOY mean to you?

It is a faithful ideological successor of 'UN,' proposed by Immanuel Kant, and a manifestation of the will which will stand against violence caused by greed in various directions. In other words, it's the statement that he will continue fighting like Don Quixote as the son of UN.



Noboru Tsubaki

Moonwalker, costume, hard urethan foam, 2009 © Noboru Tsubaki

Can you please tell us about Tetsuo and Penta?

Tetsuo is the name of the leading character in my favourite comic book *Akira*, and I referred to it as a homage. Penta comes from "Pentagon." Both names are perspectives of the world merged with the virtual and reality, such as video games and animation.

Why did you use the form of an lobster in the work *Cochineal* and did you develop unique interfaces for these works?

This is the thirteenth unit I created for a small virtual UN force, which resembles Thunderbirds. *Cochineal* is a nickname of the unit, and also the name of the colour which I used a lot when I did the oil painting. It's made from the juice of the cochineal insect, therefore the work represents the mass sacrifice of insects in the process of making the colour, not the celebration of the insect forms.

Can you give us a sense of your work-process?

All of my creations are based on concepts. These concepts are mainly inspired by natural science, such as new discoveries of cosmic physics, DNA analysis of human revolution, and new linguistic developments. I'd

like to express these concepts as codes, not as manifestations or denotations, but I often have to throw them in between codes and denotations, so that I can communicate with many people. I'm always seeking bizarre insect-like objects within a virtual space suspended between codes and denotations.

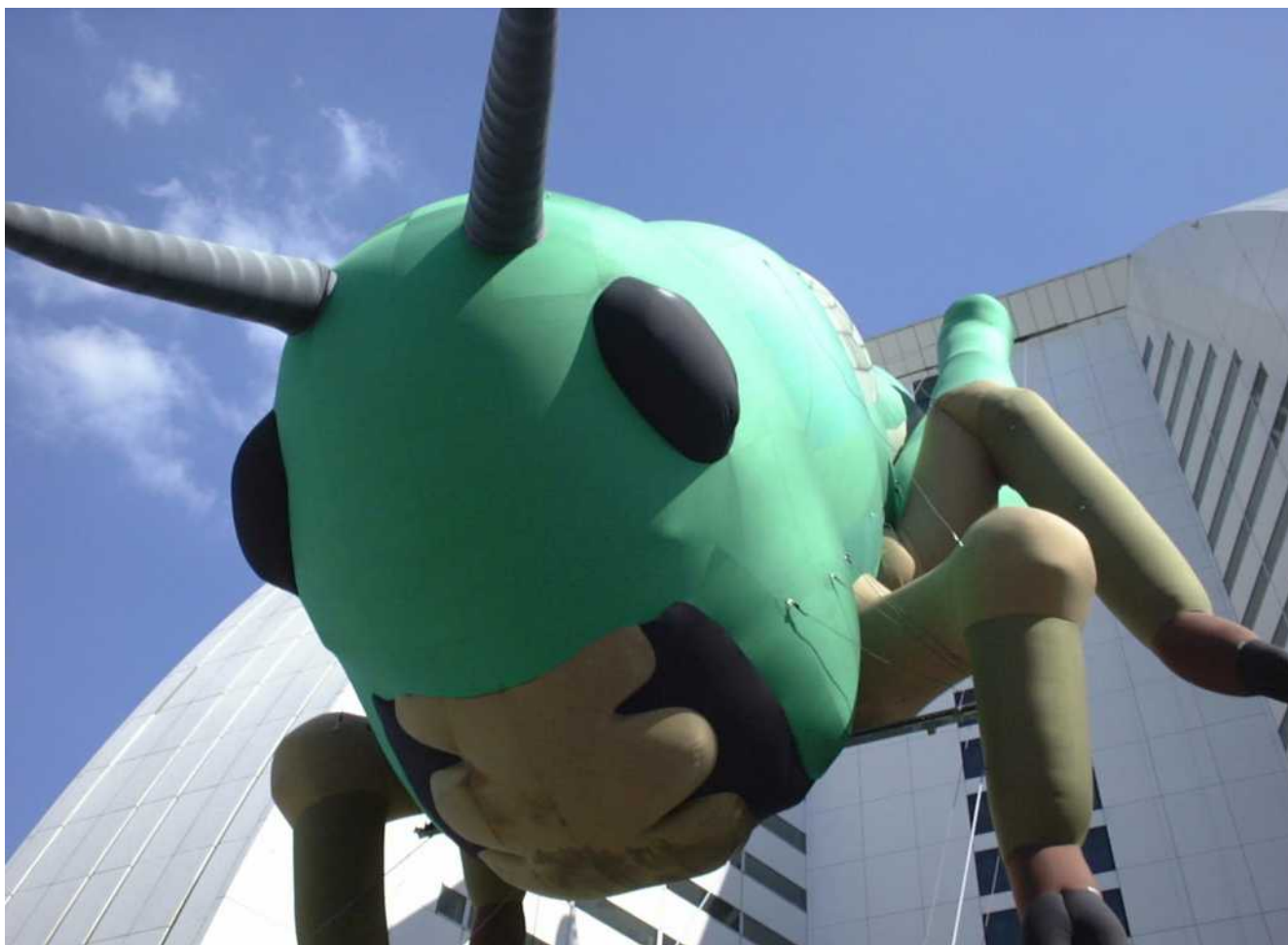
The suspended concepts, which are explained in the previous question, are often formalized when I'm taking my dog for a walk in the morning. When I was a bit younger, it used to happen under the sodium lamps on the motorway at night...

Do you do your own electronics, programming and building, or do you work with a team?

I design the plan, and engineers specialized in each field execute the programming and building.

How do you balance your successful academic career with your international career involving major shows and exhibitions?

Joseph Beuys always gives me an encouragement as a precursor. I am feeble comparing to his majesty, but I find inspiration in the unstable and problematic worlds of universities and society, just as he did. As I reached



Noboru Tsubaki

The Insect World, 50m long inflatable balloon made of cloth, 2001 © Noboru Tsubaki

my early 40s, I began to perceive them as indivisible, and found a way of expressing them in relation to society.

What will you be presenting at Festival?

I was always interested in Michael Jackson's 'self-mutation,' as well as his refusal to leave a trace of his own DNA, and the media frenzy over his extreme utopianism. Therefore, I decided to express his lunacy through my work entitled *Moonwalk*, after studying the judicial record of the Arvizo case and the footage released. In 2006, I planned to exhibit the work at Lothringer 13, a gallery in Munich but it didn't happen. Then I was asked to participate in Festival in London, where I could create the work based around insects, so I decided to use this opportunity to exhibit the work. Shortly afterward, the tour dates of Michael Jackson in London O2 were announced, therefore my idea has developed into an even more ironic work. But on 25th June 2009, he suddenly disappeared into an area that we can never reach.

After his death, I was forced to reconsider the plan. After a while, I reconstructed the idea by introducing the system of 'Mugen-Noh' ('Noh' is a classic Japanese theatrical drama, performed since the 14th

century. In 'Mugen-Noh', the stories are told by the dead). Therefore, it has been reconstructed as work incorporating various modern Japanese subcultures. For this work, the Noh-costume will be created for Michael Jackson, who will tell his story as a Noh actor come back from the other side. It's not just to 'recreate' Japanese traditions, but will incorporate modern Japanese manga culture such as Gundam and Evangelion. The costume will be made by Tsuburaya Production, famous for making the TV series *Ultraman*.

The venue has a low ceiling, therefore I had to give up the idea of using a floating helium balloon (which would have made the suit float in zero gravity). Instead, the balloon will be used as the projection screen. I'm also planning to carry out workshops, such as making the masks on the back, or an actual costume performance by people who can fit in the costume. I'm also planning to have an open studio for making the balloon as the artist in residence for Festival.

Noboru Tsubaki is the Associate Professor at the Tezukayama Gakuin University, a lecturer at the Kyoto College of Fine Arts, and the Director at the Inter Medium Institute in Osaka. He has exhibited in numerous venues, such as the 45th Venice Biennial, San Francisco MOMA, and San Diego Museum of Modern Art. He is currently the artist in residence program in New Plymouth NZ. Noboru Tsubaki was interviewed by Antennae in August 2009 © Antennae

THE BOOK EATERS

One of the most anticipated artworks featured at Festival 2009 is a collaboration between forensic entomologist **Amoret Whitaker** and artist/bookbinder **Mark Cockram**. This merging of art and science has produced one of the most symbolically charged pieces presented in the show.

Texts by *Karen Vidler, Amoret Whitaker and Mark Cockram*



Cockram/Whitaker

The Decayed Book - photograph by Marc Webb Parklight Films © Cockram/Whitaker

Insect Infestations and Conservation

Introduction by Karen Vidler

The complex relationship that conservators have with insects that damage books produces emotions in the conservators that range from frustration to admiration for their insect foes. Frustration as the damage caused to the binding and pages can be numerous and difficult to treat; admiration as during the examination of a book they see the life cycle of an insect that is being witnessed by the damage it leaves behind.

This is true for book conservators when faced with a book damaged by an insect infestation. The damage is usually small holes that can be traced as a pattern of travel by insects through the book covers and into the pages as the insect inhabits the book — moving through it seeking out the food sources offered by the materials from which the book has been constructed.

Detection

Often the book conservator will only become aware of the presence of an insect infestation after damage to the book has been done. When the insects have become adults they will emerge from the book in the summer months and can be caught leaving the book, leaving behind grazing holes that show where they fed on the book until they reached adulthood. But larvae hatched from eggs laid by adults that same summer can go undetected and will feed on the book and grow for the rest of the year, thus starting the growth cycle to adulthood for another generation of insects.

For leather bindings there are two main pests of concern for the book conservator. Hide or Leather Beetles (*Dermestes spp.*) will feed on animal protein products such as leather and animal glue used to bind the book. They can bore into the leather covering and make their way to the animal glue under the leather on the boards and spine area, leaving a pattern of holes showing the paths by which they travelled through the book. Also the Silverfish (*Lepisma saccharina*) will thrive in damp conditions to breed and reproduce and are scavengers that feed on glue and inks on paper. The grazing pattern can be recognised by ragged areas and irregularly shaped holes in paper.

Conservation

The conservation of an insect-damaged book must be considered on a case-by-case basis. The level of treatment to the damaged areas by the book conservator is based on whether the damage is minor or major. If minor it may not affect the physical or aesthetic integrity of the binding and pages. But major damage if left untreated may promote further physical damage and even loss of information or entire pages, which leads to a lessening in the historic, aesthetic and intellectual value of the book. However, another consideration is the notion that the insect infestation is significant in its own right. Insect damage is evidence of the history of the book — how it has been stored at some time in its life and its apparent importance to its owner allowing the damage



Cockram/Whitaker

Grub in paper nest © Cockram/Whitaker

to occur. To treat areas of insect infestation damage is to potentially lose evidence of the life of the book.

Mark Cockram: Insects and the Bookbinder

I am a bookbinder because I love 'the book.' Not just to read; more the art and craft of the book, the making, the physical and the sculptural. For me the book is a time capsule transporting ideas, dreams, thoughts and much more across cultures and ages.

In my everyday work, I hand-make books and it is not uncommon for me to spend in excess of 100 hours producing one book. There can be more than 30 separate processes and I endeavour to make each one perfect. The use of materials and their manipulation, the engineering and the use of the book all have to be considered.

I work with first editions, limited editions and sometimes books of historical and national importance. But I also make books for artists, photographers, designers and poets. Time permitting, I print and bind my own work. I am a bookbinder and artist and my *raison d'être* is the book. To this end I make my work and intend it to last for hundreds of years, to be cherished and valued.

For a good part of my career, when I worked in binderies, I was involved in book restoration. Repairing the damage of time and overuse and also insect infestation. Insects, or rather their young, accounted for much of my work. Conservators,



Mark Cockram

Waterbook – A fine binding © Mark Cockram – Studio 5

restorers and bookbinders do their best to halt and limit the decay that time or insects have caused. An ironic point is that the book is made from natural products. Indeed by-products of insects such as beeswax are used in the manufacture of books. The book is a habitat in waiting.

There is a side to me, though, that is an antithesis to all those things that a bookbinder should hold dear. A darker more artistic side perhaps. I realise that by repairing the damage insects cause I am in some way hiding the history of the book. The insect or their larvae do not know it is a book, for them it is a habitat which can provide food and somewhere to live for part or the whole of their life cycle.

There must be a balance. Perhaps I could work with insects to produce a book that was in itself complete. By this I mean that there is a synergy between the bookbinder and the natural world and if I made a book and made it available for insects as their habitat they could create their own story, their own sequential narrative.

The catalyst for my thoughts has been Pestival. One of the aspects of Pestival that appealed to me greatly was the collaboration between the sciences and the arts. Following a suggestion by Bridget Nicholls, the founder and director of Pestival, I contacted Amoret Whitaker at the Natural History Museum. She is a forensic entomologist and has described in this article what she does in her professional life — a million miles from my working life but absolutely fascinating. Her knowledge and expertise has proved to be invaluable

and Amoret's work and the resources she has offered via the Natural History Museum have become an intrinsic part of the overall *Decayed Book* experiment.

And that is the point; this really has been an experiment. After our initial conversation Amoret had put a sample of normal paper into the Dermestarium and the beetles were not keen at all, perhaps not surprising when they are used to meat. We then tried a sample with Marmite on it. Rather devastatingly, they did not devour this either. You either love or hate it, I guess. But after all Marmite is a yeast extract, not a beef extract.

I decided to make a number of books featuring such digestives as Marmite solution, Bovril solution and fresh liver paste (liver bought fresh from the butcher and liquidised); all of these were painted onto the paper and allowed to dry before folding and sewing the sections and carrying on to finish as books. As previously mentioned, all the materials used are of natural origin; leather, paper, even the glue is gelatine-derived from animal bones and the like. It is only recently in bookbinding history that man-made adhesives have been used.

Some of these books were sent to Amoret at the Natural History Museum to be put into the more controlled environment of the Dermestarium, whilst I decided that others should be interred in various places near my studio; inside a hollow tree trunk, in a defunct drain, under a garden shed and finally in the top soil of a local wood. This is where time moves slowly. Although I was kept busy by other bookbinding



Cockram/Whitaker

Liver paste and insect holes on book-pages © Cockram/Whitaker



projects, there were many times when I wanted to exhume the books from their resting places and examine the progress. Patience was required and is a character trait I do not possess much of.

More to the point was a nagging thought that the whole experiment might fail. In theory, I had created the perfect environment for the insects, but as any wildlife filmmaker will tell you a theory is a theory but won't necessarily produce the results you want in reality. Marc Webb of Parklight Pictures had begun to make a film about this project and the Festival entitled *The Book-Eaters*. He had already filmed me talking about my everyday work as a bookbinder and also interviewed Amoret, Bridget and Anne Bancroft, a conservator at the Victoria and Albert Museum. He returned to me to film with his able assistant Jack and it was decided to undertake the exhumation of the books. First was the book in the tree trunk — it had disappeared! This was a book covered in a liver paste solution and our best thought is that a local fox had taken a liking to it. One down, not the best start. Next was the book in the drainage pit. We had covered it in mulch and soil but found it additionally covered by many beer cans and guarded by a rather large frog or toad. Not sure.

At first it didn't look promising, it was encased in a shroud of sludge. As I peeled the sodden pages apart however it was a revelation. Grubs and larvae emerged from the pages; there were holes and beautiful markings on the whole book; part due to insect presence but also the result of being buried. Success!

Amoret advised that we freeze the book for 24 hours to halt and kill any insect infestation. Then began the slow process of letting the book dry out. As it did so, it revealed more and more treasures; a grub that had made a small nest for itself within the paper, beautiful discolouration and markings.

I am delighted with the result, which is on display along with the books from the Dermestarium at the Festival. With the success of the experiment I am

determined to continue. The process of making the book then letting nature take its course has fascinated me. My future intention is to produce a 'decayed' library — to explore an aspect of books that is often hidden and misunderstood, and to bring to light the beauty and creativity of the bookbinder and insects.

Amoret Whitaker: Insects and Decomposition

As a Forensic Entomologist I'm used to seeing things in a state of decay, but in my line of work it's usually bodies I'm dealing with, not books. So when asked to contribute to the Decaying Books exhibit, I saw it as quite a challenge.

Entomology is the study of insects, and "forensic" refers to anything in a legal context. So Forensic Entomology covers a multitude of scenarios where insects (or other arthropods such as spiders and mites) might crop up, such as cases of fraud, blackmail, wildlife poaching, illegal importation of drugs and neglect of animals or people.

The most high profile of all its applications is in the investigation of suspicious or untimely death, where a Forensic Entomologist can estimate time of death by studying the insects present on the body. This is because when a person (or animal) dies, their body starts to decompose, giving off distinct odours which are attractive to certain insects. In the very early stages of decomposition, it is mainly blowflies (also known as bluebottles and greenbottles) that are attracted to the body. They lay their eggs in the moist orifices of the body (e.g. ears, eyes, nose and mouth) and in folds of clothing or skin. The eggs hatch out into tiny larvae (or maggots), which feed and grow through two further larval stages, until they are about an inch long. These then move away from the body to pupate, during which time the larvae metamorphose into adult flies, and the life cycle is complete. So by working out how



Cockram/Whitaker

The Frozen Book and bugs on book © Cockram/Whitaker



old the insects living on the body are, this enables us to estimate a minimum time since death.

But blowflies and their larvae like moist, fresh meat to feed on. So they were not going to be in the least bit interested in consuming dried books! However, as a body decomposes, it goes through many physical changes, and the odours and chemical signals it gives off also change. The result of this is that there are a succession of different insects which are attracted to the body at different stages of decomposition. When the body becomes dried out (or mummified), it is especially attractive to certain types of beetle, both adults and their larvae. So I decided that these were the insects which would be fit for the job of consuming dried paper, i.e. books. However, as paper is not usually an animal product, it was necessary to permeate it with a meat product to make it more palatable to cadaverous insects. The next issue was where to get a colony of these beetles.

Located in the basement of the Zoology Department at the Natural History Museum is a small room, containing three innocuous-looking white chests. The sign outside the door, "Dermestarium," gives some indication of their content ... thousands of beetles, both adults and larvae, of the species *Dermestes maculates*, or the hide beetle. These beetles feed on dried animal matter, including fish, skin, fur and wool, so they do an excellent job of stripping dried animal carcasses down to the bone, leaving clean skeletons, which can then be placed in the zoology collection of the Museum.

Prior to being placed within the colony of beetles, the books were frozen for 24 hours to kill off any bacteria which might harm the colony, and once at a suitable stage of destruction, they were removed and replaced in the freezer in order to kill any beetles still on them. The beetle colonies are kept in secure tanks for two reasons: firstly, they don't like light, so they need to be kept in a dark environment, and secondly, if they were to escape, they would cause havoc with the Museum's precious collection of skins and stuffed animals!

Karen Vidler MPhil
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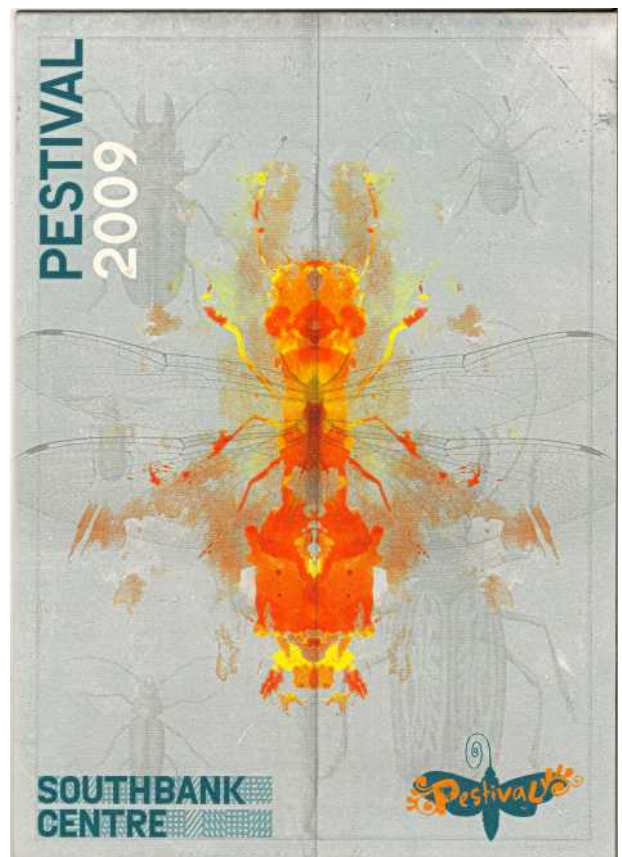
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INSECT POLITICS: TALKING TO THE QUEEN BEE

Bridget Nicholls is a naturalist, broadcaster and writer. She was brought up on an animal rescue sanctuary in Sussex where feeding Bengal eagle owls, finding peacocks in her bed and untangling frog-mating pile-ups were everyday occurrences. For over two years she has been planning Festival, of which she is the Director. We met with Bridget at the Southbank Centre in London to discuss the event.

Questions by **Giovanni Aloï**

For three buzzing days in September, swarms of 'insecterested' or the merely curious will be attracted to Southbank Centre in London like moths to a flame to experience Festival, a celebration of insect life. The festival was founded in 2006 and brings together scientists, thinkers, artists, performers and musicians to explore the insect world. The packed Festival weekend will take over the venues and spaces of Southbank Centre including the Royal Festival Hall and Queen Elizabeth Hall, which will be renamed the *Royal Festival Hall* and Queen Bee Hall for the weekend. The programme includes *The Termite Pavilion*, a large termite-inspired architectural structure in the form of a six-metre cube which will be situated on Southbank Centre Square; Festival's Artist in Residence Noburu Tsubaki's new large-scale interactive insects 'spectacle'; insect-related songs with added clicks, rubbings and hisses with Robyn Hitchcock; a night of comedy with Robyn Ince's *The Von Frisch Cabinet Of Peculiarities*; Cross Pollination – an evening of experimental insect music with Chris Watson; Film screenings; talks themed around the plight which is currently threatening bees around the world; workshops including mask-making and praying mantis Kung Fu; a Mobile Brownfield Site and Urban Insect Garden; *The Beecab* - a London Taxi in the form of a furry bumblebee with working beehive in front seat; an Insect Zoo and the *Insect Circus Museum*; a nature trail with Insect ID walks and many more.



Festival
Southbank centre programme, 2009 © Southbank Centre



Pestival

Director Bridget Nicholls and Creative Director Alistair McGowan in what will become the *Beecab*, 2008 © Pestival

Pestival is a mobile celebration of insect life running from 3-6 September 2009 in some of London's most iconic locations. The festival brings together scientists, thinkers, artists and musicians to explore the insect world, using workshops, debates, carnival, comedy, film and plays. How did the idea for Pestival come about?

I went to an insect film festival in the Pyrenees called Fifi which fascinated me as the event was staged by a small local community using basic materials. There was a very old cinema where they played some scientific films on insects and they also took over the community hall where people turned up with their insect pets, and they presented some posters and images. At some point on Sunday, the school children turned up dressed as insects and paraded around the village square. The whole thing looked very simple and down to earth and I very much liked the idea of the whole community coming together to celebrate insect life. I thought that something like it could perhaps work in London because of the range of different communities that have a similar cultural response to insects. Insects show us a route through to understanding human ecology.

There are certain disciplines that are specific to

some cultures and communities, and the opportunity to generate encounters between communities and disciplines seemed particularly interesting from a productive perspective. In the urban reality we live in, I feel that there is a real disconnection between the natural environment and culture. People either go to the Natural History Museum or the London Zoo to see real animals or they go to the Southbank at the National Theatre to see plays or ballets involving performing animals but these audiences may not necessarily mix very easily. I therefore thought that it would be brilliant to have a cultural festival which could be the kind of Glastonbury version of the insect world and celebrate how insects are our muses in film, sound, art, technology and medicine.

There also was a Pestival in 2006?

Yes, the first one was at the London Wetland Centre and it was an amazing event. 10,000 people turned up in one weekend. At one point we staged a 24-minute opera based on the life cycle of a mayfly and in the audience we had a very great mixture of different age groups and social groups watching the event and I just thought that this was exactly how it should be.

Different communities and subcultures, coming together to understand and celebrate the environments they live in and ultimately insects. The good thing about insects is that anyone can relate to them one-way or the other. They are around you when you are alive and eat you when you die. Children are also very interested in insects, which is a way to draw families to these events and expand audiences. From this perspective, the name "Pestival" works as a strange attraction point where people who do not like insects may be more inclined to come along out of curiosity. People who are into entomology are slightly opposed to the title of the event as of course, branding all insects as pest is taxonomically incorrect, but from my perspective this is just the beginning of one of the debates that the event could generate. The name itself opens up a lot of possibilities and it ultimately is fun. It is meant to be a celebration of our urban culture, invertebrates and the environment.

How is Pestival 2008 different from Pestival 2006?

It will be much bigger! The planning that went behind this edition is much more than that involved in its 2006 predecessor. We have also been paying much more attention to the quality of the experience and the vastity of the overall participation of scientists and artists. It is a much more mature venture. There is much more material to read around the site and we have tried to coordinate the creation of site-specific works in order to create a sense of continuity. We have created a site-specific *Art Nature Trail*.

It is interesting that you have brought forward the name of the event as a discussion point, as I am aware of the fact that it has already created some controversy. A couple of weeks ago, I was at the natural history museum with artist Tessa Farmer and had a very interesting conversation with Andy Polaszek and Gavin Broad, two of the entomologists working at the Natural History Museum. I asked what their opinion was on the misrepresentation of insects that the museum (like many other museums around the world) is portraying by labeling insects as 'Creepy Crawlies.' All other species, it seems to me, are treated with a different level of scientific dignity whilst insects are trivialized by the use of inappropriate typcasting labels. The name Pestival dangerously hovers around the same issues. How do you feel about it from this perspective?

The use of the word insect would be for us very inappropriate anyway because we are not only looking at insects, but we are in fact looking at invertebrates. Choosing a too-scientifically grounded name for the event would exclude great parts of potential audiences who are not scientifically engaged with the subject. So *Pestival* works as a generic umbrella that allows us to

attract a wider audience bypassing the use of scientific terminology whilst at the same time avoiding the incorrectness of classifying arachnids and others as insects. It also suggests that there is a lighthearted aspect to the event and that it could be fun to come to it. I think that ultimately, insects have very bad PR, and part of the aim that Pestival is trying to achieve is to establish a communication and turn that around.

Could you elaborate on the 'mobile' part of the project?

The mobile part has to do with the fact that Pestival is an ongoing project and in between events we continue to produce smaller events in order to keep the legacy going. So for example, we carry with us the teams of scientists and artists that have already collaborated with us, like Tessa Farmer, Amoret Whitaker, Mark Cockram, and Robyn Hitchcock, and every time they do something with us, their contributions become more elaborate and complex. In that way, we all together develop our skills and expertise on the invertebrate world and produce more innovative community-involving work. The mobile element also involves the fact that we are an international venture. We wish to go to Japan, for example, where we picked up new ideas on how to involve audiences. Our artist-in-residence Noboru Tsubaki, brings with him a real sense of bugs being larger than life in Asia and that has an effect on his work and how he interprets the insect. Stephanie Fudge, our Operations Director, comes from a tourism background but also set up the Wetland Centre, so her expertise in bridging experiences, communities and education centers within an environmental field is really solid. Alistair Hadley, the Creative Director, is an artist and maker, so he understands the artistic side of things very well and he also builds interiors, so he has very sound knowledge of exhibiting spaces and how visual, aesthetic stories work, whilst I usually hang around and talk nonsense...

I remember reading about a Beecab. What is that about?

We launched the *Beecab* at the Wellcome Trust last month, who are our main sponsors. We basically converted a London cab into a giant fluffy honeybee. Alistair and James Chaplin made it using fabrics and it is designed to create awareness of London's beekeepers and the plight of the honey bee. As you can imagine the *Beecab* is very eye catching and it works particularly well with children. It has been a big success in schools. Usually the cab arrives at a school and then the beekeeper comes out of the car and demonstrates his bee observation hive, as well as draws connections between the flowers that grow in the school green spaces, the bees and the honey that is produced by the insects. Many children have not seen bees so close up and are not aware of the fact that honey is made by insects. It is a simple and fun way of making children



Pestival

Creative Director Alistair McGowan behind the wheel (Beecab) 2009 © Pestival

interested in bees, it is informative, and memorable for them. The *Beecab* is also a great publicity tool for Pestival — literally wherever we go people take photos.

Pestival will take place on the prestigious London Southbank. How difficult was it to infiltrate an insect-based art event within the highbrow programming of the Southbank?

The Southbank is by nature a community centre as it gathers very different audiences and appeals to very different age groups. The centre has a growing community-participation department here, so they are very keen at having projects that bring people together, especially when the event aims at addressing the environment within the urban space. Of course, as Southbank is a large organization, the logistics involved are rather monumental, which can at times be exhausting. Trying to get through all that can at times be daunting. After all, Pestival will happen over 21 acres, so it is a really vast event.

Why invertebrates?

I am very keen on all animals, but find insects endlessly fascinating as they are a very large cultural part of our society, especially if you look at social insects and their organizations. Everyone has a response to insects, a 'Marmite response'

in a way. They are the little 'brown jobs' as Gerald Durrell used to say but there is so much complexity in them, which makes them an endless resource for research and discovery.

What are the challenges involved in organizing an event like Pestival?

Fund raising in the current climate has been rather challenging, but not impossible. Getting a program together that tells a story within the restrictions imposed by the site is always a challenge and keeping the enthusiasm going through the planning of the project is not easy at all times. Pestival is a very large project counting over 150 collaborators and 50 volunteers and it is rather difficult to coordinate communication amongst everyone while at the same time managing the administrative sides of the project effectively. It has been a very hectic two years so far. I think it's a mad thing to set up a festival of this proportion. We are expecting around 200,000 people on that weekend. The site already attracts around 80,000 people on a normal weekend.

What are the aims and objectives? What do you hope the audience and the artists will do?

As *Pestival* is an ongoing event, we are looking at developing ongoing professional relationships with artists as well as creating a base of visitors who will be



Chris Bagot

The Termite Pavilion, Festival, Royal Festival Hall, interior view 2009, photography Joseph Burns © Joseph Burns

interested in following us through our smaller community-based events. The majority of the projects the artists have designed are interactive and will require major visitor participation.

Festival aims to initiate a cultural shift in the way people think, moving them towards a more integrated way of looking at the natural world. What do you think the current state of affairs is with this and why?

We hope that *Festival* will instill in people a level of curiosity about invertebrates within the city. We hope it will make people realize how much insect life is there in the urban reality and possibly it will make our visitors more aware of the complex lives these small animals lead. There is something really interesting in the adaptability of insects that live around us. Ultimately, we hope to be able to transmit our enthusiasm for insects to our visitors by showing how integral to our existence invertebrates are and by doing so, to make people more interested in the subject. There will be a lot to learn about the natural world in urban places over that weekend. We want people to reconnect with their childhood wonderment of the micro world.

What is the strangest insect thing you have seen so far?

I saw an insect-based event in China that involved 'bug fighting'. It was a Goliath beetle that was used for the blood sport of fighting and of course people were betting on which insect would win. They had them in these bifurcated boxes, which kept the insects inside the same arena but divided so that they could not see each other. Each insect was getting 'fluffed up' for the fight by being rubbed with a stick to make them really angry at which point the divider would be raised to start the fight. People would get really excited. It was like being at the dogs in Walthamstow but at the back of a vibrant insect market in Shanghai!

Are you going to have that at Festival too?

No, we will not harm any insects! We also very closely work with *London Zoo*, and they would strongly disapprove!

How is the collaboration with London Zoo going?



Pestival

Interior view of Southbank Centre's Festival Hall showing works by Noboru Tsubaki and Jane Wafer, 2009 © Giovanni Aloï

They are partners in the project and they are bringing live insects to the Southbank. On the 3rd of September there will be a symposium at the zoo called "How Insects Are We?" where a number of key speakers will give a number of challenging talks on the subject. They've been really helpful and supportive.

What live invertebrates can we expect to see at Pestival?

A bit of everything really. There will be bees and termites, mosquitoes, ants and I think the zoo will bring some tarantulas and millipedes and phasmids.

Will there be any butterflies?

They will be represented through the work of Jane Wafer who has recently made large sculptures of butterfly chrysalides, which will be hanging from the ceiling. However, we really want to be exposing those invertebrates that do not usually get attention. Butterflies have the best possible PR in the insect world! They do not need our help with their PR!

What is your background and how does it inform Pestival?

I grew up at an animal sanctuary in Sussex, so I was used to dealing with other animals from a very early age. Starting your day taking care of animals has always been a normal circumstance for me. I then ended up writing comedy for quite a long time, and then I started to run a series of shows on animals on an independent radio station called *Resonancefm*. From there I made documentaries and appeared quite often on BBC Radio 3 and 4 about nature and wrote for the *Ecologist*. Ultimately, comedy is a great way of getting meaning through to people and it works really well for natural subjects. Pestival is the result of all these influences and experiences.

Is there life after Pestival? What is in store for Bridget Nicholls?

We are hopping to tour the Termite Pavilion from the show here at Southbank. It will probably go to the Life Centre in Newcastle. The work is our signature piece and is an investigation of how termites ventilate their nests. This is a very big topic in engineering and

architecture, especially under the pressure of global warming, and these issues have become of particular interest. The Termite Pavilion is a six-square-metre walk-in structure inspired by the inside of a Namibian termite mound, and will allow Festival goers unique insights into these extraordinary organic forms. This is so exciting because it's a true collaboration between disciplines: Softroom Architects, Freeform Engineering, Atelier One, the sound artist Chris Watson, lighting designers Haberdasherylondon and Festival. We are currently evaluating offers to take Festival elsewhere around the country and abroad too. But I think first I will spend some time enjoying our achievements and seeing friends and family and the great outdoors.

Bridget Nicholls is a naturalist, broadcaster and writer. Amongst others, she has worked for BBC2, The Discovery Channel, The Ecologist magazine and BBC Radio 3 and 4, for whom she developed and presented a documentary on the life of Gerald Durrell. She has appeared regularly on BBC Radio 3 live debates with the likes of David Attenborough. She has worked with many of the country's top comedians such as Alistair McGowan, Sean Hughes, Sally Phillips, Stewart Lee, Kevin Eldon and Simon Munnery (with whom she was nominated a Golden Rose and Perrier award). Bridget is the Arts and Ecology expert on the Discovery and Learning Adviser Board of the Zoological Society of London and Arts and Ecology consultant to Wetlands Link International. In this capacity she also visited China with the World Wildlife Fund.

Bridget Nicholls was interviewed by Antennae in summer 2009 © Antennae

