NOT YOUR GRANDMOTHER'S CHAIR

challenges in the conservation of contemporary decorative and applied arts

The historic Klosterneuburg Abbey, Vienna

September 12, 2012

IIC 2012 Vienna Congress The Decorative

Introduction

Jerry Podany, IIC President

An unprecedented wave of material experimentation is underway in the production of decorative arts and products of the "applied arts". Important to the world's creative heritage this body of work presents to the conservation profession new challenges and is raising questions about sustainable preservation practice. What are the conservation questions raised by vases made from wax, chairs made of folded paper, tables made of recycled clothing, interactive wall coverings incorporating electronic sensor, or cutlery made of recycled cans? What preservation challenges will conservators face when works are created using industrial waste, living organisms, exotic hybrid materials, or incorporating acoustic output, light and all manner of sensory stimulators? And what is the role of conservators in the artistic process? What should the conservator's relationship be with living artists and designers? As creativity heightens so must the collaboration between artists, designers, curators, technologists and conservators if these cultural products are not to be lost, or at least so that we might enjoy…and use them…for as long as possible.

IIC has brought together seven exceptional individuals (conservators, authors, artists, and curators) to explore these issues in this, the latest roundtable discussion in IIC's ***Dialogues for the New Century*** initiative (http://www.iiconservation.org/dialogues). Let's get started!

Panel members

Carl Aigner: Director of the State Museum of Lower Austria. Past President of the ICOM Austria

Tim Bechthold: Head of Conservation of Die Neue Sammlung, The International Design Museum Munich, Germany

Denise Domergue: Director, Conservation of Paintings, Ltd., specializing in modern and contemporary art, author of "Artists Design Furniture", United States.

Ginger Gregg Duggan: Curator, curatorsquared (c2), United States

Tomáš Gabzdil Libertíny: an award winning Slovakian-born designer now based in the Netherlands

Dr. Friederike Waentig: Professor, Conservation of Wooden Artefacts and Modern Materials, University of Applied Sciences Cologne

Roger Griffith *(moderator)*: Sculpture Conservator, Museum of Modern Art, New York, United States

Presentations

Denise Domergue: First, a disclaimer: I am a conservator of contemporary paintings, and I do not treat contemporary furniture. However, disciplines in contemporary conservation increasingly overlap, and together we will, no doubt, be puzzling out the appropriate treatment of the unorthodox and uniquely challenging materials being incorporated more and more into the creative work of today.

I would like to illustrate my point with some examples of what constitutes a growing world-wide trend in contemporary design. It is wildly innovative and experimental. It is design that ventures into the territory of art due to its conceptual underpinnings and modus operandi. This work makes pointed statements precisely by virtue of the choice of materials. It is through the language of materials that it speaks not only about formal issues, but about politics, social conditioning, the environment (both urban and natural), and about the glut of mass production and overconsumption. It is often playful and irreverent as well. By dint of the fact that this work is mostly handcrafted, sometimes painstakingly, the pieces are unique or of limited production.

This work has become the highlight of the international furniture fairs of the last decade. It is highly prized and highly collectible, but at the same time, let us not lose sight of the fact that is also functional. It will be used. It will endure unforeseeable exposure and degrees of wear and tear. Consequently, conservators of the decorative and applied arts will someday, no doubt, be grappling with processes of inherent vice and degradation, technical malfunction, simple breakage and other unprecedented conundrums never before encountered.

You will see (and I reiterate) in the following examples how the choice of materials is the point of the work and therefore largely non-negotiable. Materials are approached in a spirit of discovery: possibilities and limitations are illuminated in the handling of them, and the fashioning of the end product is the result of this process. As far as longevity is concerned, on many levels there is a Darwinian principle at work here. At this point, the best we can do is stand by while the survivability of these ideas and these choices reveal themselves over time. Who knows what some of us will be learning from the behavior of these unlikely adaptations of "stuff"...?

"Throne for an African King, 2007
Goncalo Maputo, Mozambique

This chair is made of deactivated armaments from Mozambique's civil war of 1975-1992. These guns and other armaments were buried and dug up after the war by ordinary people who mostly stumbled upon them by accident while working in their fields. They were donated to a church which disassembled them. In an effort to heal the psyche of his people, this artist transformed the weapons formerly used to kill, into design. To "keep the materials authentic", no protective coating or sealant is applied to the rusty metal components.

"Noodle Chair", 2001
Lisa Iwamoto and Craig Scott, San Francisco, California

Foam swimming pool "noodles" are held together with a perforated plastic inner rack, resembling a six-pack can holder. In the words of the designers: "The design investigates the potential of a bundle of repetitive modules of primary geometry transformed by a single cut."

"Stranger Chair," 2005
Jonathan Junker (Graypants), Seattle, Washington

"The newspaper chair," says Junker, "is made entirely of Seattle's weekly newspaper, 'The Stranger'. Although a prototype, we were able to get it to a point where it was structurally sound and quite comfortable! It sold as an art piece." Junker calls himself "a pillager of trash who creates elegant, useful products."

"Red Blue Lego Chair", 2004
Minale and Maeda/Droog, Amsterdam

This version of the 1917 iconic Red-blue de Stijl chair by Gerrit Rietveld is 6% bigger than the original and comes with an aluminum frame. Rietveld intended the original for a wide public, but copyright laws prevented this Lego version from being mass-produced. Thus, only five exist in a limited edition.

"Champagne Cork Chair", 2005
Gabriel Wiese, Saalfeld/Thuringia, Germany

Wiese likes the idea of the cork and its history, "which began possibly as a part of an old tree in Portugal where it was anonymously plucked and pressed into the neck of a bottle, perhaps in St. Emilion, then sniffed. And now it is a chair!"

"Thronfolger-Sitzobjek", 2010
Florian Borkenhagen, Hamburg, Germany

Borkenhagen's work is a continuation of the "arte povera" tradition in which the banal becomes art, where the simplest materials evoke a deeper meaning. He often uses religious iconography and in this work he means to give the traveling cleric a customized portable church. It is his way of poking artistic fun at the recycling trend while layering new meaning on objects in our immediate surroundings.

"Mississippi Mud Chair", 2007-2008
James Davis, in collaboration with Critz Campbell, Elizabeth City, North Carolina

60 different soil samples taken from various farms throughout Mississippi were cast in fiberglass and resin. Davis says that the chair is a homage to Mississippi farmers, its soil, the variety of its agriculture, its history, and its cultural roots, all seldom seen or appreciated from outside the state.

"Hanger Chair" 2007
Vanessa Marie Robinson, Brooklyn, New York

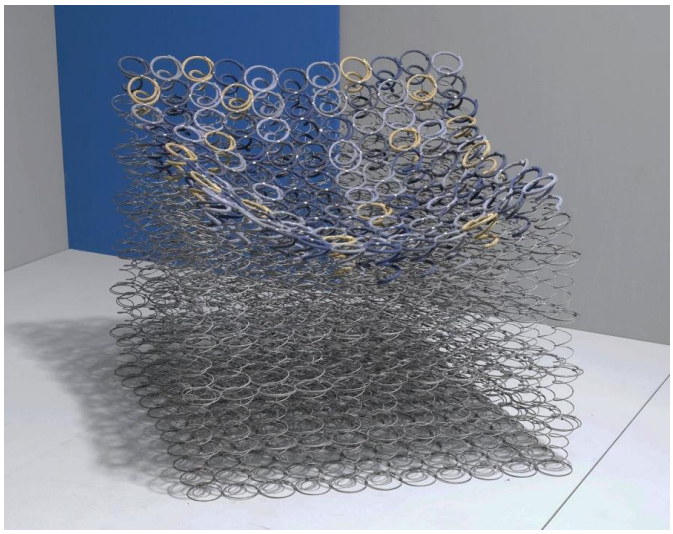
This chair is made of a steel frame and sixty-one dry cleaning coat hangers by a young designer. She describes her work as assigning new value to "deprecated function."

”Refuge/Refuse Chaise”, 2003
Marcia Stuermer, San Francisco, California

Made from street trash found within a two block radius of the artist's studio, this piece strives to be both compelling and repelling, and to present the vast disparities within our society.

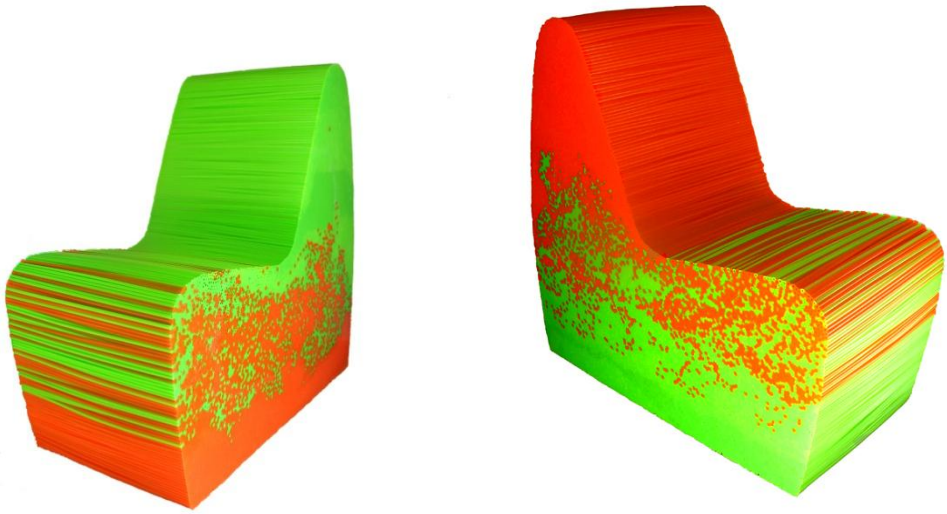
“The Savage Chair”, 2012
Sae Jung Oh, Korean, lives in New York City

Here, says the artist, ”manufactured objects are conspicuously transformed into unexpected new forms, making a strong statement about our current cultural condition of abundance.”



"Springtime", 2009
Frank Winnubst, Eindhoven, The Netherlands

The designer researched various springs for optimum seating comfort. In an effort to be as light and as minimal as possible, he eliminated upholstery, instead knitting colorful covers for the top springs.(He is currently at work on his next project, researching complicated flexible mold systems, i.e. epoxy poured into balloons.)



"Sturdy Straw", 2003
Tal Gur, Israel

The artist built a mold in which 15,000 plastic drinking straws were placed. He warmed up two sides with heated metal sheets which melted and bound the straws together. This chair is a reference to a local tradition of broom-making in Israel.

"Pop Top Chairs," 2005
Clare Graham, Highland Park, California

These chairs are made of recycled chair frames and countless pull tabs from aluminum soda cans. Graham's last job was as senior art director for Disney's global network of theme parks. He says:"My work is about simple processes done to the nth degree until the accumulation is significant. What I produce is an artifact or byproduct of a process, not a declarative statement on its own.

"Nickel Couch", circa 2005
Johnny Swing, Brookline, Vermont

This chair is made of 7000 American nickels, welded together with 35,000 welds. It took two months to make. There are twenty-two in existence.

Bathtub Couch", 2007
Max McMurdo, (Reestore), London

This is a reconfigured vintage cast-iron bathtub.

"Cioccolato Bianco", 2008
Kwangho Lee, Seoul, Korea

This piece is a Styrofoam block sculpted into a chair with a hot wire. It is part of the designer's experimentation with raw materials where he focuses on the possibilities of shifting their intended role. All his work is hand-crafted and he works for a long time to exploit the properties and potential of his chosen material.

from “Obsession Series”, 2010
Kwangho Lee, Seoul, Korea

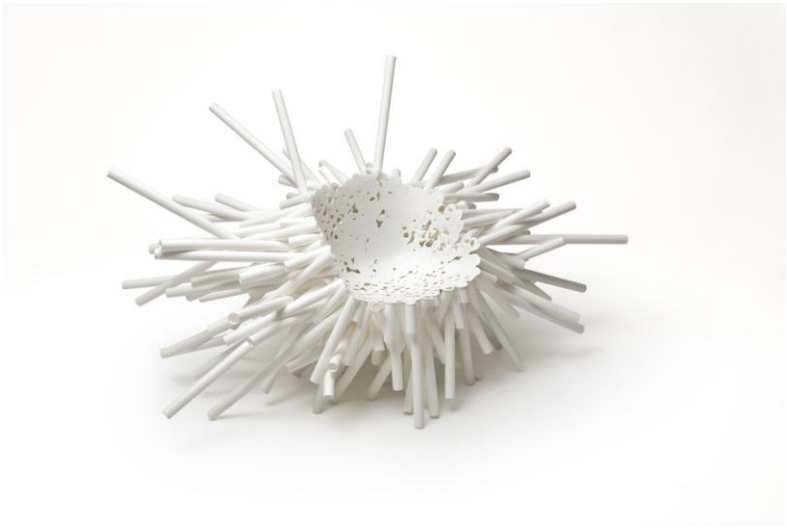
Knit by hand: “I wanted to see how far I could go with knitting but only made a few due to the time it took me and the physical pain.”

“T.V. Tank”, 1998
Ada Tolla and Giuseppe Lignano (Lot-Ek) , New York and Naples, Italy

“Sought for their potential, the ready-made banal objects of the man-made landscape are 'upcycled' by either enhancing their inherent qualities or by radically counter-programming their use. We find a tough beauty in violent precision, remembering pioneering incisions and displacements by Matta-Clark and others with a feeling for steel, air, and the sharpest imaginary knife.”

"Miss Gana Ottoman", circa 2007
Karin Wittman Wilsmann (Gueto Design), Rio Grande del Sul, Brazil

Colorful ethylene vinyl acetate remnants from a flipflop factory (SULJET), the goal here is to design products from petroleum byproducts along with an indigenous community. They are the result of an association with Petrobas (an oil company) and Sebrae, an agency that supports entrepreneurship.



"Meltdown Chair", 2008
Tom Price, London

Price bundles plastic products (always only one), then uses a heated seat-shaped metal former to melt the plastic into a comfortable seat. He likes to think of himself as working in collaboration with the material.

"Copper Oil Bulb Chandelier",
Rodney Allen Trice, Brooklyn, NY

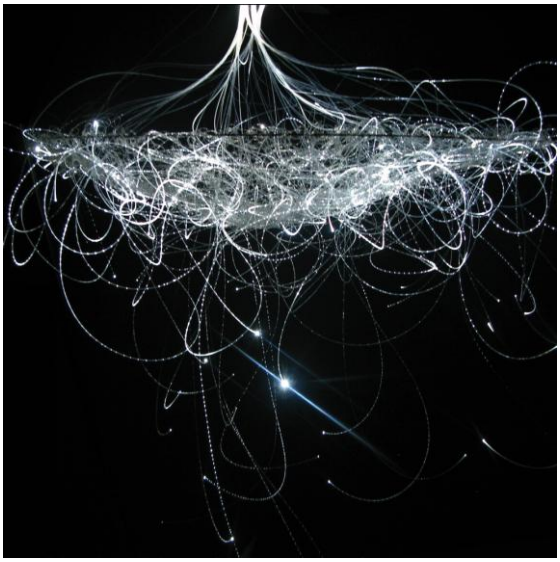
"Simplicity is paramount and fidelity to mid-century esthetics and the original object's first identity are a must."

"Galaxie Lamp," 2009
Regis-R, Paris

Regis calls himself “The Prince of Plastics”. He likes to use “poor” materials to make things of universal appeal. He makes bourgeois archetypes that express decline, but in the spirit of cabinets of curiosity.

“Gummy Bear Chandelier”, 2005
Yaya Chou, Taiwanese living in Los Angeles, California

Gummy bears, beads, monofilament, plastic, metal and CFL bulbs “I did not coat the candy in the first several pieces because in the Los Angeles climate, they remain fresh, even after six years, except the green color faded into yellow after about five years. Now I coat them with clear gloss acrylic spray.”

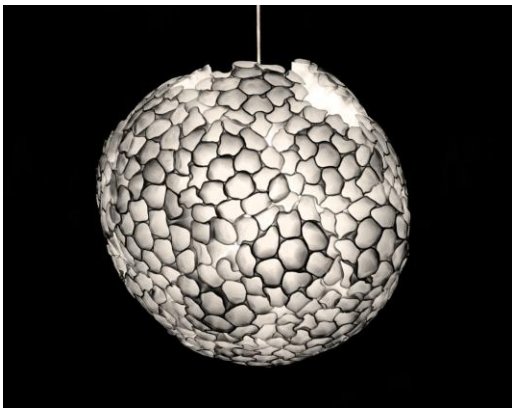


“Morph Chandelier”,2011
Alicja Wasielewska, Polish living in Edinburgh

“The analogy of using traditional techniques of creating fabric-like crochet methods is applied in this design... by utilizing LED fibre optic technology. In this way the entire construction of this 'crochet space-frame' becomes a source of light supply. The main concept takes inspiration from the transformation of nature in motion throughout free forms.”

"A Novia", 2005
Joana Vasconcelos, Lisboa, Portugal

This is made of 14,000 OB tampons. Although Vasconcelos was the first female artist invited to exhibit her installation work in 2012 at Versailles, this enormous chandelier was denied a display area there. It was instead shown simultaneously at an exhibition space in Paris called Espace 104.



"Styrene", 2002
Paul Cocksedge, London

In ordinary polystyrene coffee cups, Cocksedge has found a cheap, abundant but aesthetically malleable material. He simply melts them together. It is important to him that there be no glue involved in the construction. He holds to the philosophy that his work be direct, simple and pure. A large version of this piece was in a recent show at the Victoria and Albert Museum. Cocksedge first created the Styrene lamp for his graduation from the Royal College of Art. Ten years on, as a brilliant designer/artist of light, he's now reissuing the design for his online shop.

"Bread lamp", 2010
Dominic Wilcox, London

"I experimented with materials to find surprises that can't be found simply by thinking with a pen or computer." Restless and irreverent, he devised a project called "speed creating" whereby for 30 days he had to design something quickly and instinctively. This pendant lampshade of baked bread dough fitted with a light bulb was the result of "Day 6". "I rolled out a large circular shape of dough and draped it over a large glass and put it in the oven. Then I dried it until it was hard."

"Flower Ball", 2004
Heath Nash, Cape Town, South Africa

"I called the range 'Other People's Rubbish'. It was intended as a possible form of future upliftment for a country in desperate need of employment opportunities, and as a way to promote the idea of recycling to a very unaware South African public."

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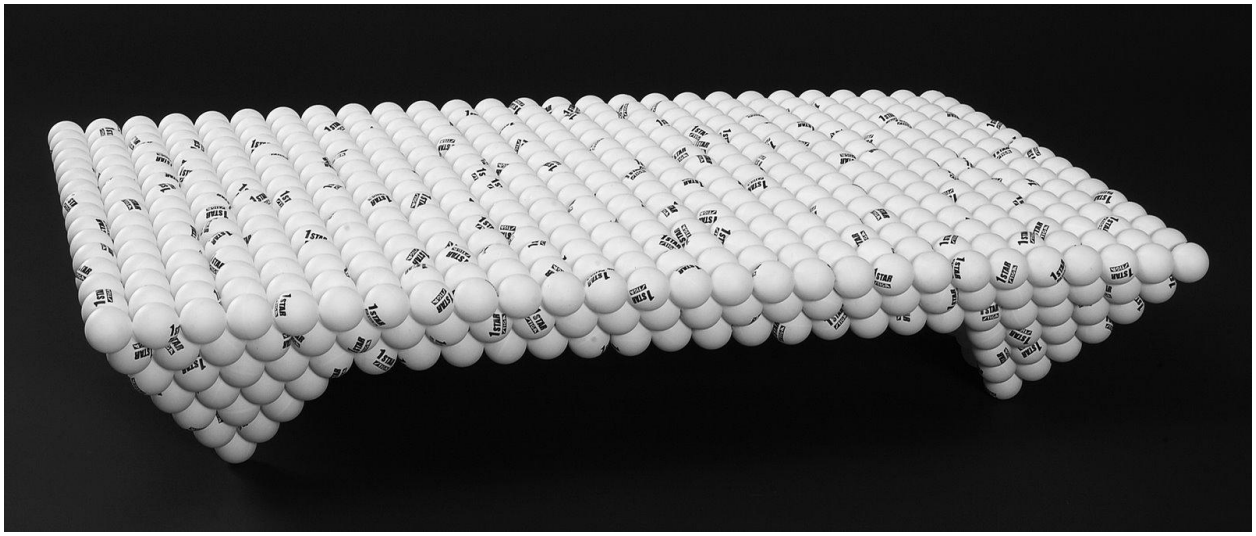
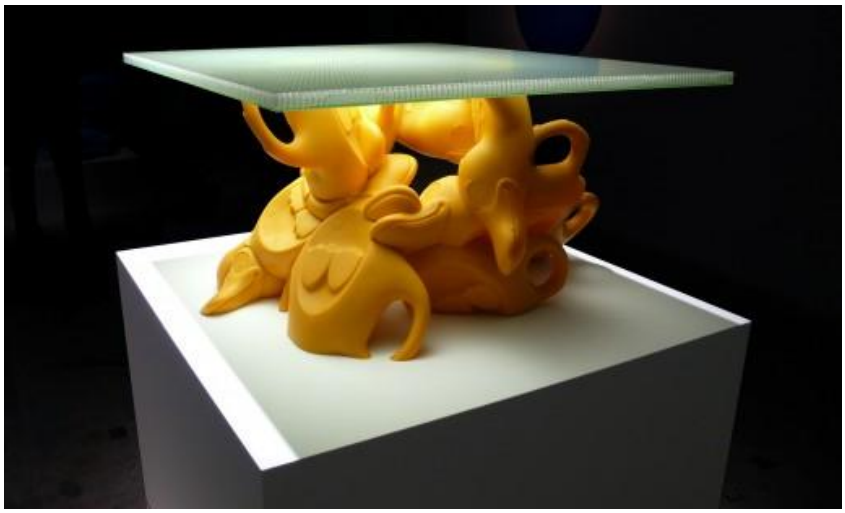
The Hose Table”,
Rodney Allen Trice, Brooklyn, New York

Trice calls his work “Applied Deconstruction”, Object Career Counseling”, and “Recovery and Reassignment”.



“Ping Pong Table”, 2005
Gustaf Kjellin and Andreas Aaltonen (Don't Feed the Swedes), Stockholm, Sweden

“This was an experiment in making a piece of furniture out of 100% round components, and ping pong balls were just the right size and weight.”



"Duck Table", 2008
Greg Lynn, Venice, California

This was one of a group of "first generation prototypes of high technology scavengering of recycled plastics for furniture. The Recycled Toys are laser scanned and digitized into a computer, they are designed and arrayed like bricks, their intersections are defined as cutting paths, and a robot cuts their joints and connections with precision. They are then welded together with a tool used to repair car fenders."

"Caniche Meuble", 2008
Serge Van de Put, Belgium

His sculptural medium is exclusively recycled rubber, except in this case where he incorporated a set of old drawers.

"Istanbul Lingerie Cabinet," 2006
Pucci de Rossi, Italian living in Paris

The purpose of his work is to 'divert' a material from its original use. Two elements are ever-present: eroticism and sensuality. Hence, the use of lace was inevitable. (The first title was "A Little Armoir for the Undergarments of a Rich Parisienne with a Pied-a-terre in Miami.")

"Diadem" chandelier, 2005
Timothy Horn, Australian living in Zurich, Switzerland

The focus of Horn's work is the meeting point between the natural and constructed worlds, where he attempts to locate the area of slippage between the organic and artificial. Scale is important, but he also chooses to work with materials for their inherent physical and metaphorical qualities. In 2008 the fabled "Amber Room" belonging to Catherine the Great of Russia, considered "the eighth wonder of the world",

inspired a crystallized rock sugar encrusted carriage and this chandelier for Horn's exhibition Bitter Suite at the de Young Museum in San Francisco. This piece, fabricated in New Mexico where he was living at the time, required eight shopping carts filled with rock candy from China. He made it in pieces and drove the elements 1500 miles from Santa Fe to San Francisco through the tremendous heat of the high desert in a rented truck, checking as he drove. Not one speck of sugar detached from the piece! It was assembled for the first time at the museum. It is still in excellent condition.

"Silk Purse (Sow's Ear)", 2005
Timothy Horn, Australian living in Zurich

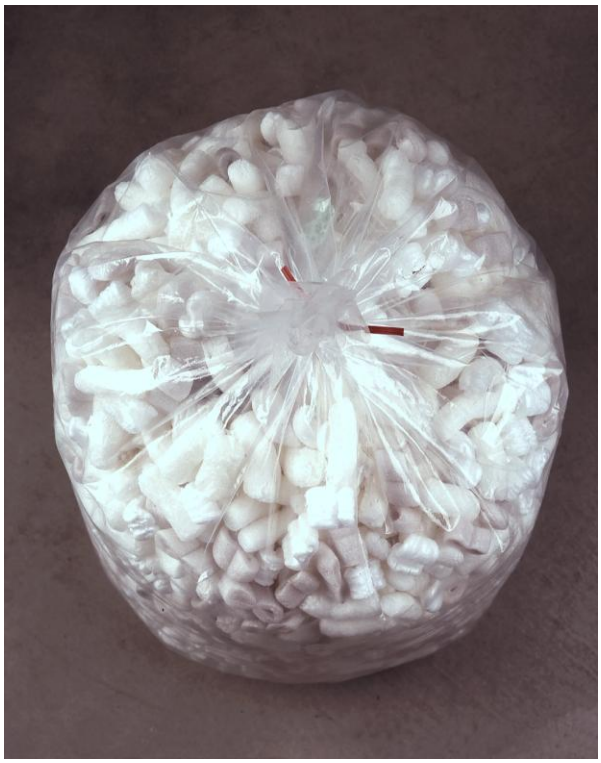
His process-oriented work is "about taking objects from a historical realm and recontextualizing them, using the language of the decorative arts."

"Medusa" and "Eurale", 2006
Timothy Horn, Australian living in Zurich

These chandeliers were inspired by the 19th century zoologist, Ernst Haeckel's engravings of jellyfish.

"Blood, Money and Tears", 2003
Andy Diaz Hope and Laurel Roth, San Francisco, California

There are six chandeliers like this in existence. "The focus of our work has been the human urge to modify itself – in this case, examining the utopian ideals promised by the pharmaceutical industry and recreational drug culture... Dripping with hundreds of medical syringes and garlanded with strings of multicolored pills and Swarovski crystals, the chandelier highlights the pursuit of a beautiful ideal which may involve unintended consequences." Quite conscious of the fragility of their materials, they always wore gloves while handling the pills and coated them with a UV inhibiting lacquer used mostly for inkjet prints: BIMAJET.



“Packing Peanut Clock” ,
Tim Hawkinson, Arcadia, California

“Envelope Clock”,
Tim Hawkinson, Arcadia, California

"Hair Brush Clock".
Tim Hawkinson, Arcadia, California

Hawkinson talks of "Animatism" in his work. Here, he had the idea of making clocks.
"It is interesting: once you get into the mode of thinking, everything starts looking like a clock. You just carve it out and rewire it...There is an animating force in all objects. I am really interested in time and the different contraptions that we've constructed in marking time."

Ginger Duggan: I am an independent curator and one of the partners in a firm called **curatorsquared**. We look specifically at the intersection of art and design in our exhibitions. For the purposes of this panel, I want to explore the issues that surround design that is either disposable, or at least designed to go out of fashion very quickly. The rate at which we, as a society, consume and discard is incredibly fast and is growing ever faster. Because artists are a direct reflection of society it follows that we would see the same themes in the fine arts as well as the applied and functional arts and design. Whether we see it as a critique or objective comment on the phenomenon, or manifest in the materials and the formal qualities of the design, it is undoubtedly present and results in work that is increasingly impermanent. The issue of impermanence has long been part of performance art, installation art and land art, for example. It remains an important subject everywhere in the world, including in the applied arts.

Conservators must revisit their standard practices and techniques to accommodate the shift, making rapid-fire adjustments to meet the technological advances and material experimentation. One suggestion might be that we take our cue from the world of fashion when considering where to go from here. As a case study of sorts I would like to look at an exhibition that my partner and I curated for the Design Museum Holon in Israel, called “Mechanical Couture”. Within this one grouping of fashion and objects there were 40 garments ranging from super organza to the humble T-shirt; 12 pairs of shoes created in response to a computerized questionnaire; working machines and 3-D printers; and an installation comprised of everything from toy pianos to soldering irons. Because of the range of materials, literally from steel to repurposed audio cassette tapes, this exhibition was rich for discussion about conservation.

It has always been challenging to deal with the conservation of fashion. Does something that is ephemeral or out of fashion quickly need to stand the test of time? Now more than ever the range of materials and new technologies is making conservation a greater challenge. One of the designers in our exhibition named Ying Gao is known for her interactive approach to fashion design. Something that could easily be seen as conceptual fashion design becomes in her hands a fashion reality. Delicate origami-like folds of super organza and medical grade metallic gauze expand and contract when light is shined on them. Others respond to breath or even the presence of cameras. Not only would such materials themselves be difficult to conserve but the functional and supporting apparatus must also be taken into consideration. Now conservation includes an I.T. specialist not to mention someone to manage and maintain the air compressors that are part of the work.

Shelley Fox, on the other hand, turns to vintage garments as a starting point. Using fat maps, typically used for medical purposes, she renders the layers of fat within the dresses through the accumulation of fabrics to create a visual representation of fat loss by volunteers participating in supervised weight loss regimens. Here the fat map x-rays, vintage reworked garments, and documentation are all part of the work to be conserved. While the textiles alone might not pose a significant problem, maintaining the integrity of the work which has been reworked to integrate fabrics from various periods and other elements does present a significant challenge. It also brings up a point about documentation and the object record. The fat maps are integral to the understanding of the collection, and in many ways communicate more about the work than the garments themselves, and must also be part of the conservation effort.

This incredible installation was part of a collaboration between Isssey Miyake and James Dyson. The robot-like manikins are as much a part of the work as the garments. These pants can obviously not simply be placed in an archival box with tissue. Issey Miyake is extremely particular about the storage, display and documentation of his work and so those records become an integral part of the work. This is an example of a piece which is not a self contained package with the garment alone communicating information. The entirety of the installation becomes the work.

This leads us to Marloes ten Bohmer and her experimentation with the mechanics and engineering of shoe design. Her installation comprised a working rotational molding machine, which she designed with the help of a mechanical engineer. The various embodiments of the shoe and the testing stages, the

mold and the resulting designs were shown, among countless other objects. Her other work involved the 3-D printing process that has become so prevalent in the design industry. The technology is arguably as much of the final product as the resin or plastic the product is made from, and all must be taken into consideration. In the same way that the conservation of new media needs to account for technology so too must technology be taken into consideration when conserving this installation.

Alyce Santoro's Sonic Fabric is made from discarded audiocassette tape that has been woven into fabric that can actually be worn and played using a vintage Walkman. Of course the Walkman becomes part of the work, as if the audiocassettes don't already present enough of a challenge.

New techniques have to be developed to conserve new materials. If conservators are meant to be caretakers of sorts conserving our cultural heritage, this has to embody our culture in its entirety, including the somewhat ephemeral or even disposable objects of our own design. What these objects communicate about us through material choices and content is that we are living in a fast-paced time of change. This is a significant bit of information to communicate and fashion takes on multiple meanings for us today. Fashion with a capital "F" is one thing to preserve and conserve, but the continual disposal and consumption of more fashionable design objects, over older objects, leads us in a direction that requires a refashioning of our methodologies on the part of curators conservators, and countless other professionals involved in our field.

Ying Gao

Shelley Fox

Issey Miyake and James Dyson

Marloes ten Bhomer

Alyce Santoro

Tomáš Libertíny: I studied industrial design, painting, and sculpture. And now I do something that's actually in between all three. First, I'm going to discuss three images that are relevant to the subjects of my work, and then consider some images that are relevant to the subject of conservation of contemporary art. This is one of the ways that I look at challenges that come from my work. There is a hidden relationship within the materials and the inner workings of phenomena. And usually I am referring to natural phenomena. This is for me "design". There are many ways to define design in

contemporary discussions, for example the ongoing question of what is "art" and what “design” is. Generally I see design as a system by which elements are put together into a coherent whole.

This image of Arnold Schwarzenegger goes in line with the same thought. The reason that I have chosen Schwarzenegger is because this is for me the symbol of design. This is an understanding of a natural process. Understanding it to its extreme limits, so that you can manipulate it and achieve results. Results that are seemingly impossible and are unique.

I started working with beeswax because it was a natural choice for me to counter act the current approach that was common in industrial design. I made several objects with wax. I started with vases because for me the relationship between wax and vase was a very beautiful loop between the bees and the flowers. I tried to work with the material, the tragedy of the material, which is very sensitive to light, temperature and pressure. All of these things render it useless. Then I made a larger object. A large amphora. This is made out of seven different types of beeswax. They create beautiful textures and colors. The wax renders the object vulnerable.

What I found later was that beeswax is one of the more durable materials in the range of natural materials. I like the contradiction that this carries and so I started investigating options that I had. How far I could push working with beeswax because a lot has been done in previous times. I began researching bees and beekeepers and I found a way to manipulate nature to the extent that I can encourage honeybees to create an object that resembles artifacts, human artifacts. Like a vase that was completely made by bees. It speaks a lot about repetition and industrial production and it also takes away the rule of a maker from the equation and puts the designer or the artists in a position where he or she understands the process completely and is able to manipulate and control it and achieve results. This goes back to the Arnold Schwarzenegger picture where these things connect.

A couple of years ago I made a human figure, the skin of which is made completely by bees. We used quite advanced techniques to complete this installation. There were a lot of different materials. The figure is actually rapid prototyped and then milled through computer guided machines. The bees deposited the honey over this form. So there is a computer-generated image, rapid prototyping, manipulation of nature and a combination of all these together results in one installation.

In collaboration with Venice glass blowers I did another figure. The title of the work is "the Seed of Narcissus". It's hollow glass that is silvered on the inside. So it serves as a shaped mirror which the bees used to build a wax layer over it. As a result individual honeycombs become little tiny mirrors. It becomes a many mirrored object. It was a beautiful combination of two fragile materials in one object. There was a strange vibration between these two.

I created a table out of paper because I was interested in the surface quality and the relationship between wood, paper, and writing and the whole aspect of being cautious with objects. The surface of the table is made out of 22,000 strips of paper which are aligned vertically so you can open it vertically like a book. But they are so tightly compressed together that it is difficult to see the individual sheets with the naked eye. However if you press hard on the surface you see the slice and so it's like a super

large book. But the surface has a very strange and new kind of tactile quality. It's like a fabric but it's not a fabric. And it brings a new experience in terms of materials.

Another object I made with paper resulted from gluing together hundreds of strips of paper that were pre-printed with images of a tree. Once these strips are together you can see the tree as a kind of ghost image along the side of the assembly. Each phase contains the same image through and through so it means that anywhere you look you find part of the tree. These strips were glued together in a block and given to a wood turner turned the vase shaped. The tree image always appeared but was also always different depending on the shape of the vase that was turned from the block. I liked that the image was not a surface phenomena but was part of the material quality. The image was inside the material…or inside the object.

In another project I made a large fresco of sorts. I used plaster to achieve a beautiful new visual effect. We poured fine plaster on top of a large 4 X 3 meter sheet of glass and then lifted the whole assembly straight up. I've never seen an object or a surface like this before…this super-flat, super white mirror-like surface. Later we covered it with India ink. We then used carnauba wax to polish it and achieve a really strange result, almost like what you see in Polaroid cameras. Objects that were close to the surface appeared clear in focus and sharp and the further away from the surface you went the illusion of the reflection increasingly became blurred.

I found this very strange and a poetic way of making a mirror from very vulnerable materials, such as a large sheet of plaster, India ink, and carnauba wax. (you can see works by Tomáš Libertíny at www.tomaslibertiny.com/)

Friederike Waentig: The beginning of my professional training has been an apprenticeship as a cabinetmaker followed by practical studies in museum conservation labs. Then I studied conservation in Cologne and preservation and monuments care in Bamberg. I worked in six different museums and as a freelancer, before I took the challenge going back to University as a teacher in the conservation of wooden artefacts and modern materials.

As you have seen in the talks before there are so many objects and so many materials to consider and discuss in the field of conservation of applied arts, I would like to talk only about plastics. The objects I will show you belong to museums and private collections.

The first object I want to discuss is a plastic chair from the late 1960s designed by Oscar Hodosi, an Austrian designer. It is made from hard and soft polyurethane foam and is owned by a private collector. When I first saw it, it was in a damaged condition.

As the chair is owned by a private collection, the owner came to us and said, "this is my most loved object and I want to be able to sit on it". First I thought, "Oh my God, this won't work!" But we discussed it and took the considerable challenge of making this object once again functional. As we knew we couldn't solve this problem alone… after all, conservation is about teamwork. It is not only a matter of working together with the designer but it's also working together with the industry, with the plastics engineers. Coming from wood working as my background I thought about using structural supports and of adhering the sections together. But discussing possible options with the plastics

engineer, he encouraged me to think about the stress distribution on the chair and then to think of trying to introduce more material in those areas. We considered taking some woven carbon fibre sheets or aramid fibre sheets and adhering them in the appropriate places to reinforce the structure. The engineer calculated the weight distribution since we knew the owner weighed 90 kg. We contacted the original manufacture of the material asking about the composition of the foam but they suggested that they would simply make a new chair, which was no option for us. We wanted to save the material of the old chair but reinforce it so that it could be used again. However we adhered the two parts with polyurethane adhesive and included the reinforcing sheets. And luckily it worked very well. It has now been five years since the treatment was finished and the owner told me that the chair is still in one piece and that he is able to sit on it regularly.

Let´s come to another problem with plastics. I think you are all familiar with the Panton Chair. The Panton Chair was produced using a range of plastic materials over the years. Which is important to keep in mind as every plastic material reacts different and differ in composition. In production every plastic material needs its own moulding tool and its own construction. If making the chair in glass fibre polyester you need to construct thick edgings. And even thicker walls are necessary if you use polyurethane hard foam. The walls can be thinner if you're using polypropylene. This you can see directly looking at different chairs.

When we think about conservation of plastics and modern materials we have to think about the materials, the function, and the production technology. How the chair is produced. What are the ingredients that went into making the object and what is the manufacturing process that was used. Understanding this only then can you start thinking about how to plan the conservation work.

At the moment we have a conservation project on the Panton Chair. We are trying to find an approach that will make the broken ASA-chairs stable and functional again. We know that we can do it for museum collections where you only need to see it…but not sit on it. Nonetheless it is very difficult to find the appropriate adhesives. As until today we have not found one that we are fully satisfied with and the research needs to continue.

What I want to add to this discussion is the observation that one must look deeply into the materials, research them in detail, and then ultimately take the risk to carry out the conservation treatment and the stabilization.

Roger Griffith: Thank you Friedericke. This idea of risk-taking, even in conservation treatment, with modern materials ties together the last two talks very nicely. I know from my own practice than in the treatment of modern materials conservators are faced with risk-taking all the time.

Tim Bechthold: I started my education as a cabinet maker. After this I attended a three year school for conservators of furniture and wooden objects and completed successfully as a state approved conservator. Then I studied at the Technische Universität München Conservation Science and Arts Technology. Here I focused on the degradation of modern materials and did some projects at relevant collections of applied art of the twentieth century. In 2002 I was offered the position of the Head of Conservation at Die Neue Sammlung, The International Design Museum Munich.

In the following I would like to introduce you to the museum I´m working for, the conservation department and just a few of our daily challenges in conserving applied art and design objects, mostly made of modern materials.

Die Neue Sammlung – The International Design Museum Munich – houses the world's largest and most important collections of industrial design. The large number of objects (which is around 80.000) reflects the technologies and materials developed in the course of the 20th century, attesting in particular to the use of plastics. However, unlike most traditional materials these are subject to a dynamic aging process and after only a short time often already bear irreversible traces of degradation. Corresponding types of damage can hardly be reconciled with the respective designer's original intentions and are often problematic in terms of conservation.

The Conservation Department was founded in 200 when moving to the Pinakothek of Modern Art. Since that time there is a strong focus on the conservation of degraded modern materials. Through the research into the deterioration and preservation of the collections, the development of new conservation processes and the knowledge of original technology, our department has become an important centre for the conservation of design. If you focus on the conservation of modern materials the basic necessity of networking is evident. With the international renowned biennial conference, FUTURE TALKS, we succeeded in establishing a groundbreaking international platform to discuss and exchange experience in the conservation of modern materials.

To illustrate the huge range of challenges in conserving applied art objects from the 20th and 21st century I´d like to highlight four representative examples. Many of our conservation projects are somehow related to plastic materials which proofed to be far less stable as expected at the time they were applied by the designer. The 'S-Chair', a prototype made of powder coated, bended and welded steel tubes, designed by Tom Dixon in 1987 showed heavy signs of deterioration already 13 years after production. The cover is made of very thin latex rubber (O.7 mm). Within a few years it became brittle and sticky. The evolution of tears leads to heavy deformations and the urgent need of a conservation treatment. The only possibility to prolong the life span of the degraded rubber cover was to exclude the negative influences like oxygen, light and ozone. **T**he treatment included not only consolidation and special storage of the original cover but also a reconstruction with pattern.

In 1965 'Futuro', an UFO-shaped house, was designed by the Finnish architect Matti Suuronnen. The outer shell comprises a sandwich construction of glass fibre-reinforced polyester filled with polyester-polyurethane hard-foam. Due to nearly 50 years of weathering the outer shell of the house was in a very poor condition. Regarding the design-historical importance of the Futuro-house and its complexity in synthetic materials different aspects were projected:

-documentation of condition, material and technology

-analysis and influence of microorganisms

-virtual documentation and display by means of 3-dimensional laser scan technology

If we think about prototypes we can state that in most cases they are not meant to last. Basically they have to illustrate a certain state of the designers idea in 3 dimensions just for a certain time. Most of all the car industry relies on them.

An important part in the car design process is still the so-called tape-drawing. By means of very thin and elastic self-adhesive tape a 2-dimensional draft is attached to the wall. Basically these drafts are temporary. In our last exhibition on Mercedes Benz we had two of them. The challenge was to transfer this tape drawing from the exhibition wall to a portable carrier to conserve it. Inspired by the italian technique called “strappo” we developed a suitable method.

Related to prototyping I also like to mention a rather new technology called Rapid Prototyping (RP), that became available in the late 1980s. Rapid Prototyping plays an important role in the design process to realise complex shapes. Since the beginning of the new millennium some of these products have attained cult status. Produced as limited editions they were sold like art objects. No wonder that in the meantime the first RP objects have already entered museum collections.

If we consult the RP producing industry we can state a high degree of enthusiasm with a huge amount of remaining questions. There is just a few information related to material degradation and failure. Here you can see a RP-piece of our collection: the famous chair SOLID C2 designed by Patrick Jouin in 2004,

For the chair SOLID C2, Jouin opted for the RP technique stereo lithography. Due to its distinct tendency to yellow the chair was realised in lacquered epoxy resin. Solid C2 is a limited edition of thirty pieces which are sold each around € 35.000. To avoid further failure began monitoring on a regular basis.

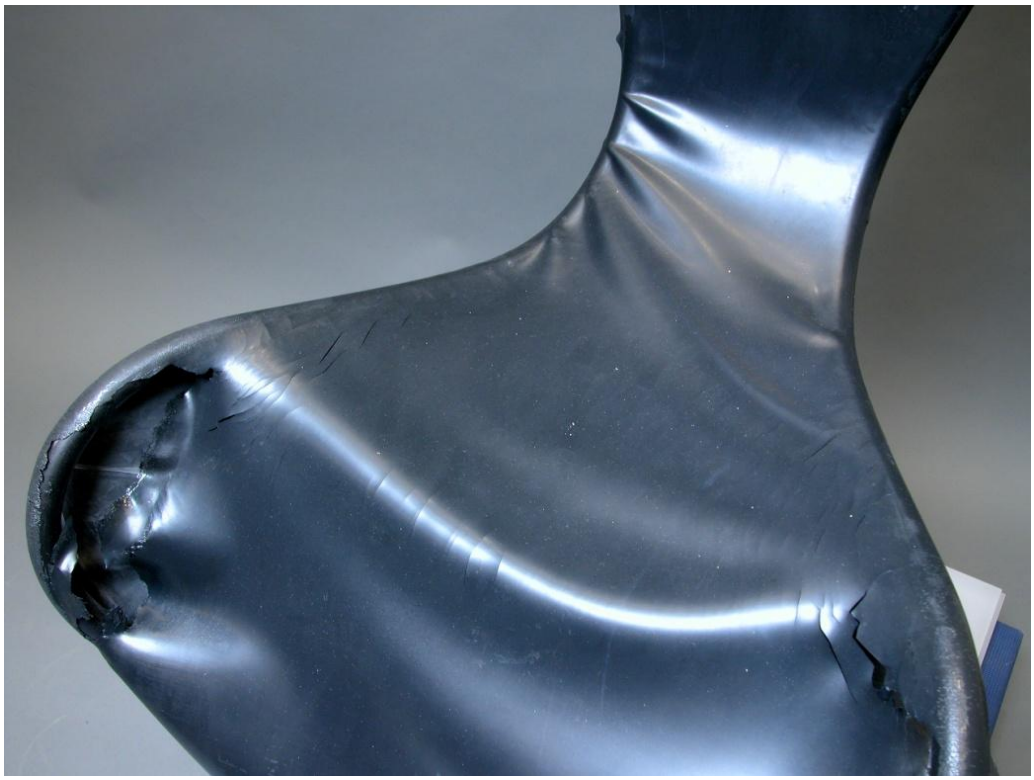
By showing you these examples I hope you got an idea of some challenges in the conservation of modern applied art. Most of our collectibles are objects of daily use. When entering the collection they show traces of use, are damaged or the synthetic material is significantly degraded.

A dramatically change in appearance is quite often a result of irreversible chemical reactions in the material which blurs the original intention of the designer. What is acceptable? For us this is mostly the interface / basis for discussions / most important aspect to start our discussions to define a suitable conservation concept.

And last but certainly not least let me summarize our top eleven when it comes to conserving modern applied art:

1. Document your object as comprehensive as possible. Try to avoid exclusively digital documentations.
2. Carry out regular monitoring on sensitive objects(decision maker for priority / preferential treatment)
3. When it comes to objects that include designed parts which are not visible while out of function (user interfaces): Always collect further information on your collectible (e.g. IPhone: advertising spots and other audiovisual data on handling and operating)
4. Consult the designer but always question his conservation concept.
5. Initiate scientific research projects most of all on topics which are fast moving (prototyping, design processes, ephemeral objects etc.)

6. To avoid drastic conservation treatments: Reconstruction is always a possibility but it's not the original
7. Stay cool if it comes to the 'death' of an object
8. Remember collectibles which were mass-produced are sometimes hard to find: After a certain period of time everybody throws them away. Moreover they are often made of cheap material. So you better go for more than one piece.
9. Create platforms / institutes to advise artists / designer on material behaviour, testing of materials, degradation tests.
10. Share information on the condition, technological findings and conservation treatments with other collections.
11. Intensify your professional network (other professions / forums / conferences visit the FUTURE TALKS, buy the catalogue)



Prototype, S-Chair, Tom Dixon, 1987, degraded latex cover, photo: Tim Bechthold, copyright: Die Neue Sammlung. The International Design Museum Munich.

Prototype, S-Chair, Tom Dixon, 1987, consolidation of flaking latex cover with Kozo-paper, photo: Tim Bechthold, copyright: Die Neue Sammlung. The International Design Museum Munich.

Prototype, S-Chair, Tom Dixon, 1987, presentation of both versions, photo: Tim Bechthold, copyright: Die Neue Sammlung. The International Design Museum Munich.

Futuro house, Matti Suuroonen, 1968, laserscan, photo: Tim Bechthold, copyright: Die Neue Sammlung. The International Design Museum Munich.

Futuro house, Matti Suuroonen, 1968, Investigation of glass-fibre reinforced polyester surface, photo: Tim Bechthold, copyright: Die Neue Sammlung. The International Design Museum Munich.

Roger Griffith: Tim touched on the concept of the "death of an object". An object that is no longer exhibitable. I hope we will return to this, since it is important and a challenge to modern conservation.

Carl Aigner: *"It all fell to pieces, the pieces to more pieces and these to even more pieces….The words decomposed in my mouth like mouldy mushrooms".*

In this way, 100 years ago, the Austrian writer Hugo von Hofmannsthal, cofounder of the Salzburger Festspiel and author of the world famous theatre piece "Everyman" described in his prose text, "The Letter of Lord Chandos", the falling apart of the relationship between language and the world.

In the light of the well known fact, that no other generation of artists more so than the generation of the twentieth and beginning of the twenty first century have had access to such an abundance of ever newly developed material and immaterial, it is not absurd to draw an analogy to the words of von Hofmannsthal. Words which speak of a world which disintegrates into ever new material and this material in turn crumbles into new material and immaterial.

This has become a Herculean challenge, not only from the perspective of conservation and restoration but also in terms of curatorial and conservation requirements of a collection. In the following I would like to speak about some aspects regarding the areas of the tension between artistic and museological needs and requirements which these developments have brought about.

In the nineteen sixties the term „expanded" art established itself increasingly. However, in general at the latest since the nineteenth century, with the industrialisation of European society and also in consideration of the resulting newly created "materials", be it the photograph or electricity, can we speak of a permanent societal expansion process.

At the latest with Marcel Duchamp's "Urinal" was the border between art and everyday life abolished. The trivial everyday on one side and on the other side the exclusive artistic became obsolete, as we vividly see in the Italian "Arte Povera" movement. There were no more material taboos, on the contrary: in the areas of decorative and applied arts, the new materials quickly became important elements of the artist's repertoire. We must not overlook the fact that it was and is always the artists themselves who have and still do participate in the creation of new materials. We have only to think about the invention of photography which represented the creation of a completely new form of picture material or on the world of the digital picture, in the development of which many artists also at MIT participated and still do participate.

In the area of fine art as well as in the areas of decorative and applied arts, the semantic properties of the new material played an important role in the motivation to use them. It is in the semantic properties, above all in the functional aspect that the material is easily formed and lightweight which brings variety to the fore front as in the area of fine art it is mainly the aesthetic effect.

Aluminium is an instructive paradigmatic example. In eighteen twenty-five experimentally isolated by Hans Christian Östered, the industrial production began in the middle of the nineteenth century: It was first noticed as a luxury article at the Paris "World Exhibition". Monika Wagner in her informative study

titled “The Materials of Art” described it as a jewellery metal. It quickly became an important industrial factor, above all because of its ease of handling and its extremely lightweight.

At first in connection with Constructivism it became a more and more frequently used as a fine art material in part because of its outstanding properties of light reflexion on its surface as well as the possibilities for combination with other materials. For example as aluminium colour it became a constant material factor in the art of the last eighty years, from Tatlin to Pollok, from Judd to the Austrian artist Hans Kupelwieser or in the work of Helmut Bruch with his mathematical principle the “Fibonacci Sequence”. Its elegant plasticity is another important aspect of its usability above all in the area of object art. And its material semantic, as with stainless steel has per se become a statement and a synonym for the modern and modernity.

Silver iodide, silver chloride and silver bromide as well as quicksilver vapour for development and saline solution as fixative are the ingredients and basis of photography. With this entirely new picture material also came new museological, conservation and curation demands. With the development in the eighteen seventies of plastic celluloid, a completely new support material for the photo-chemical substance was created. Because of its elasticity and transparency it was until the invention of the digital electronic picture the ideal analogue photo-film-material. It is also a remarkable example of how in the area of fine art between the first and second world wars and after 1945 a material could be transformed from a carrier medium into an object. I would direct you to the work of the avant-garde film artist Peter Kubelka.

Basic experimental attitudes in the area of applied arts as well as fine arts are the signs of innovative and intensive handling of ever more new materials. The fact that from the perspective above all in fine arts the conservation aspect has often not only been neglected but also ignored is as we know painfully clear. The argument for more durability and sustainability as part of the artistic material consciousness leads quickly to a rigorous counter argument of the limitation of artistic freedom.

But how can an awareness of the durability of material be demanded, when apparently there is an implicit inner correlation between the accelerating demand of society for disposable products and the resulting short life of these products. Not to speak of an art form such as performance art which per se allows only documentation and disallows preservation of the real time event in a museum.

Roger Griffith: I'd like to begin the second part of the dialogue event by talking about materials. Since the word material has come up quite often in the initial short presentations we should discuss materiality and choices of materials. And since we are all coming from different backgrounds this seems to be a good place to start. An artist uses materials to give form to their expression. A curator will choose to collect an artwork in a certain material. And then conservators have to make choices about how to conserve that material. Does anyone on the panel have a comment about materiality? Ginger, in your talk you mentioned the difficulty with materials; you mentioned the use of magnetic tape. Often we don't want to interfere with artists and their choice of materials and I wonder if you could talk about that from your perspective and your experience in curating exhibitions.

Ginger Duggan: I think in many cases the unusual choices of materials and experimentation draws you to the works to begin with. That's a big part of what we have looked for in certain exhibitions. A new definition of couture. I also want to mention that I went to the MAK Center for Art and Architecture, here in Vienna, and saw their current exhibition. So many of the pieces on display are prototypes for the works leading up to the finished product. And with the rapid progression from one iteration to the next those prototypes are often collected with the final object. Now we have more and more objects and more and more materials to consider and to care for.

Denise Domergue: As a conservator of contemporary paintings, I obviously encounter a pretty broad spectrum of materials in art. I think an interesting dilemma arises today, particularly when artists and designers use already deteriorated materials or when they experiment with materials that, unbeknownst to them at the moment of creation, are bound to quickly deteriorate. Are we, as conservators, to stop them from making a philosophical statement about that deterioration or prevent them from incorporating untested new materials whose behavior in a certain application may be unpredictable? In all contemporary fields of conservation, we will inevitably be dealing with the failure of materials and technologies and the subsequent collapse of intent. We may or may not find a way to prolong the life of these objects, made of unusual and unstable materials, but I don't think it is our place to curtail creativity in any way, although we can and should, if and when we are consulted, call attention to a high probability of material vulnerability.

Roger Griffith: I would like to ask Tomas, since he is an artist who works in unusual materials and wants to push the limits of materials and processes, about the question of what that desire implies. And also of the difference between "art" and "design". As conservators we often find that the problem comes from the use of a combination of materials not, for example, from a single material like beeswax. I'm wondering if you think about that or consider that when you choose materials.

Tomáš Libertíny: I'm glad you asked that because a few months ago I designed a very large vessel made by bees in a glass vitrine. It is invisibly mounted to the inside of the vitine. The museum that acquired it wanted to know every aspect of the process and the material characteristics. And luckily I keep all that information at hand. I was impressed to find out that they wanted to know all the details of what kind of glue, a two-part epoxy that I used. I'm a fanatic about materials myself and I like it when people care about this, particularly people who buy the work. I had this thought as I was listening to the presentations, that there is this need to restore objects to their former visual state, as they were. It was a year ago that I went to the Acropolis in Greece. It's still in terrible shape, a ruin even after all these years of working on it. Is the idea to restore it to its former glory? When you have a broken chair you just fix it, you bring it back to its functional state, but you don't necessarily fully restore it. The reason I work in wax is because I wanted to make durable objects. I find it intellectually appealing to work with the material that is seemingly out of the context of industrial design, though it is part of a lot of industrial objects from cosmetics to food to furniture. I find that wax is one of the most durable materials available. It is found in ancient tombs, completely intact and well preserved. The interesting thing about the objects made by bees is that as fragile as they look they will last thousands of years if they're kept in the conditions suitable for the material. The fact that it was made for intellectual use, a

visual use, only renders it timeless in a sense. I keep that in mind, but of course now we're working for a French fashion brand and I can't use beeswax for mass production. So you choose according to the context.

Roger Griffith: I also think you have touched on something that Tim Bechthold raised, which is sharing information. That's a really important part of the conservation profession. We have an artist interview program at MOMA in which, once we acquire an object we send out a questionnaire for the artist to complete about the object, this questionnaire allows us to learn as much about the artist and his art practice as possible. We keep that information in our files so that we can better deal with any changes in the future. But there are some artists who don't want to give that information. With designers sometimes that information is kept secret due to proprietary secrets

Friederike Waentig: I would like to comment on what Tomas said about the Acropolis, as it's quite interesting. You said that you work as an artist, or designer, or something in between, depending on the project. And I think it's much the same in conservation. We have a wide range of possibilities when we undertake conservation. And just like the Acropolis we can have a design object that we conserve or preserve as a "ruin". Or sometimes, as Tim said, we have objects that we cannot preserve but we retain the documentation as related to what the artist or designer intended and were thinking. And sometimes there are rare projects where we really do full restoration on both the visual and the functional aspects of the object so that you can really use the object again. So the range of activities in conservation related to design objects as well as art objects is as broad as what you face working as a designer or an artist.

Tim Bechthold: And the discussion, how comprehensive the conservation treatment may be, is always closely connected to each single object. Not to long ago there was the idea of conserving design objects, or perhaps better said, restoring them, to a level that represented the way they looked or functioned when they were new. But from my point of view it's fortunate that this has changed. For some time the following tendency is becoming apparent: We, as museum people and even the galleries, keep traces of use and changes to the original materials, like an old lacquer which turned to yellow or became perhaps brittle…But to be honest this is always a tricky situation and as mentioned above it needs to be clarified and discussed for each single object.

Tomáš Libertíny: What happened to the Tom Dixon chair? Because I would have just said there is no point and let it go.

Tim Bechthold: In this case things were pretty delicate. Our S-Chair version is an early prototype of the later series production by Capellini. The cover is made of a very thin rubber dress which was produced at a fetish-costume-shop, located quite close to Tom's studio at that time. Therefore to focus on the conservation of the original material was paramount. The fact that rubber degrades quite easily, especially if it is this thin, was the challenge in this project. To win some time we first consolidated the surface - which was badly flaking – with small stripes of Kozo paper. Then I wrote Tom to ask for more details about its production. He was amused, but also very interested in our approach. He wrote that he likes our prototype-mummy-version and he proposed we should keep it like this.

But we didn't feel very happy with it. To show the original prototype with this somehow ‘stylish’ Kozo-paper facing would have hold the risk of showing an object which is permanently oscillating between a design-ruin, a conservation-mummy and - interpreted falsely by the visitors - as the real study by Tom Dixon.

Keeping Tom’s information about the production in mind we investigated the possibility to reconstruct the cover. We found a small company which is specialized in the manufacture of fetish clothes in rubber. On base of the original pattern they were able to reproduce the cover in every detail. The consolidated, original cover was removed, strain-released and stored under oxygen-free conditions in transparent laminated foils. This procedure will definitely prolong the life-span of the original material and keeps it available for further research. In a small presentation on the degradation of elastic plastics we exhibited both ‘versions’ together. Additional explanatory text informed the visitors about the decision-making process and the significance of original and reconstruction.

Tomáš Libertíny: I have to say I think this is a good solution. I've never seen a design object that had been updated into a version using contemporary materials. It's not like architecture which perhaps has a medieval ground plan and then there was a Renaissance addition to it and so on. It grows and grows. But you don't have this with industrial objects which are made at a certain time period. There is something beautiful about preserving architecture which lasts for hundreds of years and you can see through layers of additions (professional or not). You just don't have that with industrial design. You don't have that with wood chairs. They're very short-lived and time specific.

Friederike Waentig: I think sometimes living with an object for years you will change it. Especially with chairs and tables you change the surface or you change the drawers or whatever, so you can see every time something happened. You can read the surface, the history of the object and its use.

Tomáš Libertíny: Well the “ S chair is a good example.

Friederike Waentig: Yes it will last a long time. But with wooden objects and technical objects people are living with them and they will change them. People change them according to what they want, they may start with the wooden surface on the table for example and then they change that surface to linoleum and then perhaps they will paint it red. But perhaps this is not so with architecture.

Denise Domergue: I think there's an interesting point here about living with things, with objects, and the fact that many of those things that have been lived with, end up in the custody of a museum. In contemporary art we try to respect the intent of the artist and now we have to respect the intent of the designer who creates objects to be used. With something in a collection that's falling apart or shows wear and tear, your solution might be to "freeze" it at a certain point in time. Thus you're able to show that intent and concept, albeit from a certain point in time, and perpetuate that into the future. You retain the original as an artifact, preserving the history of human interaction as well. I think it is a good and interesting solution.

Tim Bechthold: I think for us as museum people it is quite a challenge to educate the visitors that even objects which were mass-produced are getting older, fade and tend to degrade somehow. But the

difficulty is that the public opinion is strongly influenced by all these shiny re-editions from the Bauhaus-era, the 50ies and the 60ies. Take the famous 'Lounge-Chair', designed by Charles and Ray Eames in the mid-50ies. You can see the re-editions world-wide, flooding lobbies of new architecture. The public opinion only knows this feature. But the fact is that most of these objects - just imagine the latest Panton Chair version in polypropylene – are different to the earlier versions. That is why we as conservators have to inform the public; via written documentations on technology and most of all via well-conserved objects.

Tomáš Libertíny: Yes, but there is nothing like a new Ince chair because it is a design and design is always an original.

Tim Bechthold: Let me take the example of the famous Wassily-Chair (model B3), designed in 1926 by Marcel Breuer. This chair was meant to be a cheap and lightweight chair. Breuer choose nickel-plated tubular steel and combined it with mass-produced straps of iron thread fabric. The measures of the metal structure were in close accordance to the fabrication width of the textile. For the re-editions in the early 1960ies the design was diametrically modified. Instead of lightweight materials such as hollow tubular steel and iron thread fabric, massive steel tubes and heavy leather was used. Breuers early idea of an affordable and moveable furniture changed dramatically to that of an expensive, representative, heavy and exclusive design object. This example is paradigmatic for many other design icons. This is why I'm convinced that we have to discuss about the conservation of material, the importance of authenticity and the transfer of information.

Carl Aigner: And there is another aspect, we cannot feel like the people in the 19th century, there is a very great difference between us and them, our time and that time. And so there is an important aspect of what we should do in our museums. These things are not absolutely authentic to the moment of reception.

Roger Griffith: I think this is a good moment to open up the questions to the audience and those who might be logged in to the webcast.

Diane Eastop, textile conservator: If I would have been in your position with the chair I would not have started with the word materials. I would've started with the word matter. Which in English means the physical matter, the materiality, but also what matters when is significant. And I think conservation is always dealing with the materiality and also what matters about that materiality and that's where the change takes place and I think that's the complexity of what were dealing with and that's what's important. The changes that happen over time, people's perceptions of that reality, and that's what conservation is always grappling with

Online chat room: a question from a student at the University of Amsterdam**:** Would Tomas Libertiny want his beeswax object restored?

Tomáš Libertíny: There is an aspect of the originality of the object, once it is made its unique. It will never be the same. Therefore if the object is damaged it is dead for me. It is a complete loss. And I have

to make a new one. But we have tried and succeeded several times in placing these objects back into the hive. And the bees "restored" the object. And you wouldn't be able to see where the damage had previously occurred. It's flawless and perfect repair machine. And in that sense the process is a perfect method for making an object if there is damage you simply place it back into the process. But it's not 100% back to where it was before because there's change. It's a natural process. It's not mass production. For example we're now working on the design of the pavilion made by bees. So imagine a large work of architecture that you can walk into and its quite a complex engineering feat.

The whole project can be continually renewed as an architectural experience. I think this has a beautiful story behind it. It's not fixed; it can always live as a new thing.

Amber Kerr: When you create one of these works do you provide written parameters if something was to happen? Do you have those dialogues?

Tomáš Libertíny: When we place a mold in the beehive we preset certain conditions for the bees to build the object and I have to intervene all the time. It's like working with the bonsai to cut and shape it until you think it's finished. And it still resembles the idea you had although it's never the same. At that point you pull it from the process and set it.

Amber Kerr: Thank you, but I was speaking to the issue of when someone acquires your work and it is damaged. Do you set parameters as to what your expectations are regarding its conservation?

Tomáš Libertíny: Well MOMA was very good at maintaining a proper environment for the long term care and preservation of my sculptures. Humidity, temperature and the level of UV light.

Roger Griffith: I'd like to tell a similar story about beeswax. We have a piece in our collection by Wolfgang Laib He is an artist that works with beeswax as well and we had this room which the visitors were allowed to walk into. Work is titled “The Passageway” from 1988. Wax is such a beautiful and sensual material that everyone wants to touch it. So the work got damaged when on view. We contacted the artist and told him that we tried to restore it but the material was really unforgiving. We even tried melting the area of damage and using spatulas to restore it to its original condition. But no matter how careful, we would always see the area of repair due to the way he made the panels in the room. He would cast them, take them out of the mould and that would simply be part of the room. But we could never get that same quality. He was very unsatisfied as well, so we reproduced all the damaged panels so they would be consistent. I wanted to bring this up because Tim was talking about reproduction and this is another example of reproduction. Tomas, you were talking about each piece being unique, but there is this problem of repair and reproduction.

Sarah Staniforth from the National Trust in England, Wales and Northern Ireland: I was very struck at what Dina said about the fact that we are mainly a "Western" audience here and we have a specific view about material culture. I work with collections and thousands of objects in storage. And it's all about that balance between how objects are used and their materiality. In the Far East the culture of conservation is all about the meaning of objects. A Japanese temple for example probably has not an iota of material that was there when it was made. Yet they can be hundreds of years old. The meaning

of the Temple is what is conserved rather than its materiality. I had a question for the panel. We have a tendency to make a distinction between what we call contemporary and what we call historic. But I see it as continuity. And I wonder if members of the panel really do see a distinction between works of art or design that are created now and the things that have found their way into collections in museums.

Ginger Duggan: I think it depends on whether the artist is still alive. It's not so much a matter of whether it is considered historical or contemporary but rather whether the artist can play a role in helping the conservator. On that same point I would be interested to know if Tim may have had the same experience with Tom Dixon, where the artist is continually engaged and interested in the process.

Tim Bechthold: Well he was very interested in our project but as mentioned before, we do not get in contact with the designer to define conservation concepts. The interview is definitely an important part in the whole process to understand both the making and the meaning of a design object. This knowledge surely helps in implementing a sustainable conservation treatment. Moreover it happens quite often that the designers offer: "Well send it to me and I will rework it". Finally this is not what we, as a museum, intend to collect. To accept a reworked version means to have a new object. It has definitely nothing in common with the original. This is why we try to keep objects as long as possible in a condition, as authentic as possible. As long as this does not endanger the condition we accept signs of ageing and traces of use. As soon as this affects its readability we discuss possible treatments.

(online) **Karen te Brake-Baldock** from the Netherlands Cultural Heritage Agency and Coordinator of INCCA: This is a question for the conservators regarding interviewing contemporary artists and designers. It can be very difficult to get information if you don't want to also influence the artist's choice of materials. How do you handle this?

Friederike Waentig: Consulting artists or designers are not easy because we as conservators should be careful not to interrupt the creativity of the artist or designer. In Cologne I have consulted with quite a few artists and I often advise them. There was one artist who was working with polyurethane soft foam, he made teddy bears and he wanted these bears to be pink. So he worked with polyurethane pink soft foam. He used it to make the bears and put them on exhibition. Those of you who know polyurethane soft foam, uncoated, knows that after two weeks the pink bears turned yellow. The artist came to me and asked if I knew a material he could use with the same "feeling". He didn't want to coat them because he would feel and touch the different surface. You could change the material from polyurethane to polyethylene but it feels different. So we tested a wide range of foam materials and he tried many of them, but he was really unlucky. Nothing seemed to work. At the end he stopped doing teddy bears. Today he's working with polyethylene foil. There was another artist I worked with who created her works using beeswax. She works by using found objects, like paper or old books. She cut the books using the single pages clued on book covers and dip them in beeswax. But beeswax attracts dust. Many of the exhibition and galleries where she showed her work were not really clean spaces. So she has a lot of problems with dust on her objects. I asked her why she didn't change from beeswax to a mineral wax and she did not know. We began an evaluation on waxes with her collaboration, which actually was easy as she is a very precise artist. I provided her with a wide range of waxes and in the end

we found a mixture that looked like beeswax, felt like beeswax, responded like beeswax. I thought we had solved the problem. But then she came to me and said, "You know, I'm going back to using beeswax because I like the smell so much". So consulting can be difficult and you have to be pragmatic about it. I try to be really careful when I'm working with artists. Sometimes it's easier to work with them when they're in the early stages, the decision-making stages, of their work. Designers have the chance to work together with BASF, the industrial design company in Germany, who has developed a material laboratory for designers. They invite designers to come to the factory and discuss the design and the material. After listening to their requirements, the engineers provide them with a range of material options. The engineer and the designer are working together to produce the mass produced item. This seems to work with some designers but not with others. So there really is no general rule or conclusion you can draw.

Denise Domergue: In researching this issue, I have found that the designers and artists are very concerned with materials in the sense that they try to fully understand the particular characteristics of a material they have chosen in order to work out a process or achieve a desired aesthetic effect. When it comes to using plastics, I think most artists and designers assume that the preponderance of plastics are inherently long-lasting materials, hence they might be surprised to encounter unexpected consequences after the fact, like those mentioned by Frederike. Most often, in my experience, artists will seek out a conservator on a question regarding the most suitable adhesive or the best coating to use on a specific piece. Sometimes they will conduct their own research. They seldom have the luxury of a team of engineers or material scientists to work out their designs, as in the arena of mass-production.

Roger Griffith: I'd like to provide some comments from my own experience in this area. At MOMA some of the artist consult conservators about the materials they use though that comes later in their career when they're already being actively collected and have pieces in museums. We had an experience with Matthew Barney where we had a very early work of his in our collection, in fact made when he was still a student. He made this piece using commercially produced ice packs. It's a piece called "Stadium" and it dates from 1991. This particular conservation project was published in the postprint publication, *PLASTICS: Looking at the Future and Learning from the Past*. Papers from the Conference held at the Victoria and Albert Museum, London 23-25 May 2007(see notes). Matthew used traditional ice packs the kind that you can find a grocery store. They were made of PVC and so of course they degraded. He noticed the degradation when we had this piece installed and he felt that the peace no longer represented his original intent. He wrote the museum and said "Send it to me and I'll fix it". We explained that the museum doesn't do this but rather has a conservator deal with these problems. So we ended up working with the artist. And we made new the ice packs, we made reproductions of them. But all of this was done with the agreement of the artist. Once it was finished and he fully approved of it, we stepped back and asked "But what is this?" “Is this your work? Or the conservators work?” “Or a combination?” “What is the date of this work?” And this is where our efforts create a kind of fuzzy area. But in the end he said to us that the treated sculpture was “the real thing”.

Denise Domergue: I find that a lot of contemporary artists are primarily concerned with their concept. It's their idea that is what they want to perpetuate. The artist prioritizes the effectiveness of the conversation over the physical object used to communicate it. However, like the Mathew Barney example, often the older the artists get, and the more famous and collected they become, and as they witness the deterioration or alteration of their work, they tend to grow less cavalier about the issue of material longevity. In contrast to an earlier stage in their careers, the appearance and survivability of the physical component of their art increasingly compel their involvement. Thus, a welcome interaction with conservators can ensue to jointly solve the problem in a manner beneficial to both the perpetuation of intent and the proper treatment of the physical work itself.

Stefanie Winkelbauer from the University of Applied Arts in Vienna: I would be interested to know what experience members of the panel have when dealing with industry and when it comes to proprietary mixtures, adhesives, plastics. Particularly in situations where you would like to know what the recipe is because you'd like to know how the material will respond over time or what the best approach might be to repair and stabilize an object made from this material. This can be a problem if people are hanging on to their industrial secrets.

Tim Bechthold: Yeah, it's quite difficult to get information from the industry, that's true. Basically we make our own material tests or we send them to scientists for analysis. It is obvious that these results are always qualitative. We do not get information about percentages of element X and percentages of element Y. Moreover you have to be aware, that we are mainly looking at degraded materials. That is why you have a lot of by-products stemming from degradation processes like oxidations etc. Nevertheless sometimes you do get information from the industry. Some years ago, performing a research project on rapid prototyping techniques, I went to a factory that produces prototypes via stereo lithography, 3-D print and so on. My investigation was basically related to the durability of the materials used in rapid prototyping processes. Surprisingly they were very open-minded and told me what they were doing and where the problems exist with the materials. But being a supplier for prototypes, which have an expected life-span of some months; it is not really difficult to chat about degradation effects. Nevertheless they were very open-minded and helpful. I think the bigger the company gets the more difficult it becomes to receive further information.

Last but not least I'd like to mention the growing tendency to publish books on design technology and innovative materials. For us some of these publications are quite helpful. Some of them are more or less promotionally effective: The German designer Konstantin Krcic, designed a chair called Myto in close co-operation with the chemical industry BASF. Being aware that the public documentation of a design process is an interesting process, they published a smart book with great figures on the production of this chair.

Tomáš Libertíny: Speaking of industrial companies, we were working for a gallery in Paris on a piece they commission me to do. It was a monolithic object made of wood and it was painted with BIC ink, the notoriously popular and well-known disposable pen. It was really beautiful and I think Jan Fabre is quite well known for using BIC ink on his artwork. I also try to work with it a lot. In any case we made this object and it was stunningly beautiful we had it lacquered with French Polish, which is an old technique

of a kind of lacquer. But we found out that it would not stick. And so I called the Bic company in France, where their headquarters are, and they were impossible. We stated openly that we were doing a limited edition art object and we needed their help to make it. We even offered to do free advertising for them in the sense that we were using their material. We wanted to get information on the content of the ink, information on what we were using. We could not get a single element of the composition, it was intellectual property. I got angry as I don't like to waste time on such problems. So in the end I said I would analyze it myself. So I went to a company in the Netherlands who specializes in chemical analysis. We said “Here is an ink, tell us what's in it so I can find a lacquered to use over it”. So that's how he got around the situation. But it's sad that we have to go around and to such extremes to find this information which should be given to us for free.

Friederike Waentig: It's also a problem when industry changes the composition of the materials, which they do on a regularly basis. So you can't be sure that you get the same material that you ordered last year, which is a real problem with plastic materials. There are a lot of chemists who will do the analysis for you or you can do your own tests as Tim said. And with these results you can go back to the industry and say I know that this is different. What did you change? Can you tell me more? And then sometimes you can get more information. Or you can work with research institutes who sometimes get more information than the individual conservator. It often depends who is asking the questions of the industry.

Dr. Martina Griesser, University of Applied Arts, Vienna: We have invited Friederica Waentag to lecture at the University of Applied Arts and we have also invited artists, young artists, to take part in the lectures. I must say that two of them decided, as a result, to change their material choices. Especially with regard to epoxy resin sculpture. But I have a question; I am not a specialist in contemporary art conservation but going back to the question of the conservation of wax sculpture: many of you have visited the anatomical wax collections here in Vienna made in the 18th century. I wonder if there really is a difference between the conservation of a wax model of the 18th century and a contemporary wax sculpture, for example by Tomas Libertiny? It seems to me we would use the same methods and materials to do a proper conservation in either case. The difference is that Tomas is still alive and we could discuss the treatment with him. Or perhaps you might even be able to train bees to do the repair. Sometimes I feel that conservators who work with modern and contemporary materials are not really linked with conservators who work on historic objects.

Tomáš Libertíny: We live in an era where we specialize as individuals. We become experts in the miniature sense. But back in the times when things were made by "artisans" they were craftsmen/creators, chemists and conceptual thinkers...all in one. They were like the "Renaissance man", artist and master of the materials. They mastered not only a particular technique of painting but the technique of preparing the paint for example. They knew the material intimately. It's very rare today to find an artist who knows a lot about the material he or she works with. They simply buy I can in the art store and paint with it. I am part of the old school. I want to know what the qualities and characteristics are of the material am working with. When I worked with paper, I wanted to know everything about the history of papermaking. And that was the same with wax. One might say I take a

holistic view. I think we're missing that today. In the past artists took care of their own works. They were the restores, the preservationists. In some ways art in the past was an industrial product. People who bought it wanted it to last. For me there was no difference at that time between a painting, a public sculpture, and a staircase, it was all meant to be consumed, enjoyed, but it was also meant to last a long time. Now we have a whole profession that takes care and deals with the faults of the artist.

Robert Payton, Museum of London: What happens to the dead body? How is it buried?

Roger Griffith: When I was a student at the Royal College of Arts I wrote a paper called "Two Pooped Out Pop Chairs"(see notes). I came upon a PVC inflatable chair, and the "le sac", which is the beanbag chair. Both of these objects had degraded to the point that they were no longer capable of being exhibited. We considered these dead objects and I wrote in this paper the question "Do we build coffins for them to put in storage?" It's a very good question and I think at the Museum of Modern Art if we had an object that was no longer exhibitable, we might just throw it away. So it depends on the institution. We have to accept that some of these objects are not going to be around forever. We can document and perhaps that's the best we can do. There are other objects, for example by Nam Gabo, that have been lost in collections because of their inherent instability. But their legacy continues through documentation. And that just demonstrates the importance of that part of the conservator's responsibilities. Thank you everybody for your comments and questions and thank you to the panellists.

Jerry Podany: Let me add my thanks to the panellists for a thought provoking roundtable, and to you the audience, here in Vienna and on-line, for inspiring questions, comments and discussion. It strikes me that this topic, the challenges facing conservators when artists and craftsmen use an ever expanding array of materials for their creations, would benefit from ongoing discussions. Such a discussion should also of course include realization that these are not just challenges presented by contemporary artists, but also by the expressions of a broad array of artisans aand craftspeople all over the world. I would encourage you to consider the on line presentation by Susan Küchler, http://vimeo.com/43868191, from the "Inspiring Matter" Conference, April 2012 at the Royal College of Art, London. Please also continue to explore these challenging issues in the IIC initiative "Dialogues for the New Century" through the transcripts published on the IIC web site and made available to all.

NOTES:

1. *Matthew Barney's Stadium-A Treatment of Replacements.* Co-authors Margo Delidow, Scott Gerson. Presented at the symposium on conserving plastic, **Plastics; Looking at the future learning from the past,** Post print publication Victoria and Albert Museum London, England 2008, pp. 59-63.
2. *Two Pooped-Out Pop Chairs: What is the Future of Our Plastic Collection?* Published in **V&A Conservation Journal,** The Quarterly Publication of the Victoria & Albert Museum Conservation Department. Issue No. 20. London: Victoria & Albert Museum, October 1996.

This IIC program has been made possible through collaboration with
the University of Applied Arts Vienna and INCCA-NA (International Network for the Conservation of Contemporary Art, North America)
And made possible through the generous support of
the Amt der niederösterreichischen Landesregierung, Abteilung Kunst und Kultur and the Samuel H. Kress Foundation.