



INTERDISCIPLINARY LABORATORY

Art | Science | Philosophy | Literature

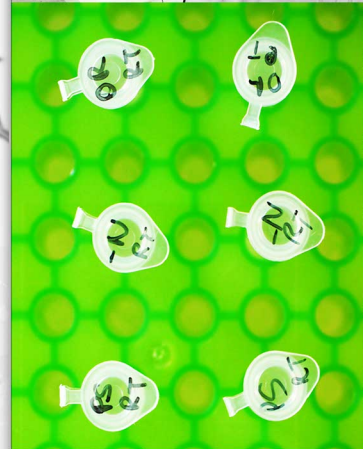
Microplastics and Medusae – expéditions into H₂O

Concept & Animation

Roman Kroke

Interdisciplinary Artist

Lecturer at the Berlin University of the Arts (UdK)



Observatoire Aquitain
rsu
des Sciences de l'Univers

université
de BORDEAUX

ecobim

académie
Bordeaux

MINISTÈRE
DE L'ÉDUCATION NATIONALE,
DE L'ENSEIGNEMENT SUPÉRIEUR
ET DE LA RECHERCHE



RÉGION
**Nouvelle-
Aquitaine**



The 14th edition of the international colloquium on aquatic ecotoxicology **EcoBIM 2018** took place on the campus of the University of Bordeaux (France) from 22 until 25 May.

Since 2005, the colloquium EcoBIM has been assembling each year between 50 and 100 francophone researchers, teachers, technicians and students aiming at informing and exchanging about the latest scientific discoveries as well as the newest technologies concerning the analysis of micropollutants and their impact on aquatic ecosystems (www.ecobim.ca).

The organizational committee of EcoBIM invited **Roman Kroke** to exhibit his artwork at the colloquium, to participate in a panel discussion for the general public and to realize an interdisciplinary workshop for students.



2018

Belgium

Université de Namur (URBE)

Canada

Institut national de la recherche scientifique (INRS)

Institut France-Québec maritime (IFQM)

Ministère Environnement et Changement climatique (AQU-DIV)

Université de Moncton (SBST)

Université du Québec (ISMER-UQAR)

Université de TÉLUQ

France

Ifremer, Corse

Ifremer, La Rochelle

IRSTEA (Institut national de recherche en sciences et technologies pour l'environnement et l'agriculture), Lyon

Unité mixte de recherche Écologie et santé des écosystèmes (UMR ESE)

Université de Bordeaux (EPOC)

Université de Brest (IUEM)

Université Grenoble Alpes (LECA – CNRS)

Université de La Rochelle (LIENSs)

Université de Reims (SEBIO)

Université du Littoral Côte d'Opale (LOG – CNRS)

Université Le Havre Normandie (UMR SEBIO)

Université de Lille (UGSF UMR – CNRS)

Italy

Università degli Studi di Genova (DISTAV)

New Zealand

Cawthron Institute

Sweden

Örebro University (MTM)

Switzerland

Université de Genève (DEFSE)

Tunisia

Université de Monastir

United States of America

Stony Brook University of New York (MADL)





Roman Kroke

Berlin artist, lecturer at the Berlin University of the Arts (UdK), curator, former lawyer. Development, coordination and direction of international projects: exhibitions, workshops, lectures, teacher trainings. Interdisciplinary approach: Kroke's projects aim at establishing a dialogue between the arts, natural sciences, philosophy, history, literature and pedagogy. Some of his current projects in the field of "Art meets Science":

May – July 2019

Travel expedition on the German deep ocean research vessel SONNE crossing the Pacific Ocean from Mexico to Singapore; the Helmholtz Centre for Environmental Research – UFZ (Leipzig) asked Roman Kroke to accompany their unit and a group of Swedish scientists as an artistic mediator; the project proposal, submitted by the UFZ, is in the final stage of evaluation by the German Ministry of Education and Research

January 2019

Teacher training for the Educational Department of the Canton Geneva (CH)

November 2018

Conference "MICRO 2018 – Fate and Impact of Microplastics: Knowledge, Actions and Solutions"; lecture and exhibition; Lanzarote (ESP)

November 2018

17th International Encounters on New Philosophical Practices; lecture and exhibition; organized by the UNESCO Chair on the practice of philosophy with children (4-18 years); UNESCO Headquarters, Paris (FR)

October 2018

European Festival « The Universal Sea - Pure or Plastic?! »; lecture and exhibition; coordinated by the Institute for Art and Innovation (Berlin/DE) and Hybridart (Budapest/HUN)

August 2018

Summer University "Mer Éducation" at the European Scientific Institute for Marine Research (IUEM); lecture/teacher training, Brest (FR)

May 2018

International scientific colloquium EcoBIM 2018; lecture, exhibition, workshops; coordinated by the EPOC laboratory of the University of Bordeaux (FR)

May 2018

Li Po Chun United World College; lecture; Hong Kong (CHN)

October 2017 – October 2018

Berlin University of the Arts (UdK), Technical University of Berlin (TU); direction of an interdisciplinary seminar in partnership with 13 scientific research institutes throughout Germany; Berlin (DE)

Exhibition

As part of the colloquium, Roman Kroke re-constructed his atelier providing the scientists with a “behind the scenes” glimpse into his artistic methodology. The exhibition allowed the researchers to dive into ...

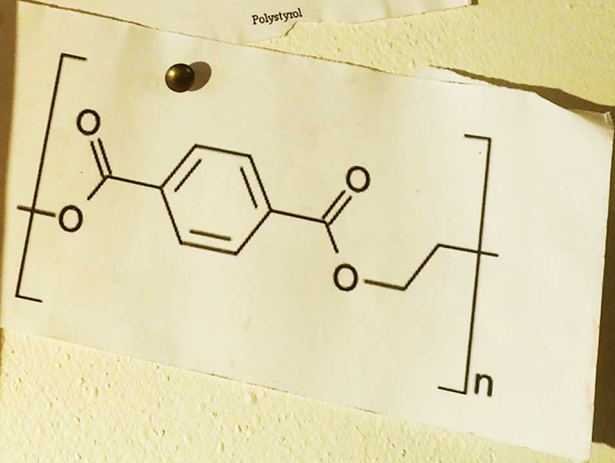
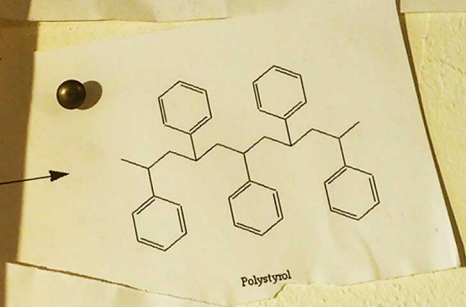
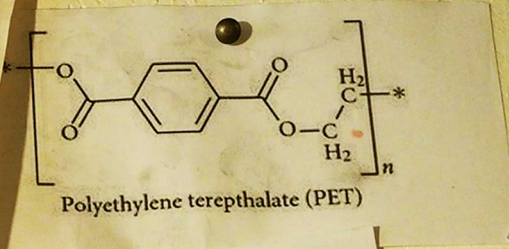


... the transformation process displaying how scientific content enters into dialogue with philosophical and literary sources which then, altogether, resurrect in interdisciplinary metaphors through the medium of the arts.

“During my discussions with scientists about plastic, a product so variable in size, color, shape, elasticity, chemical composition etc., a thought crossed my mind: *What a CHAMELEONESQUE material!* – For the purpose of an aesthetic research, I therefore visited the Berlin Aquarium, immersing myself in a sketching-study of the physiognomy of chameleons – and made an unexpected discovery ...

Extract of the exhibition





Serendipity! The scales of the chameleons visually reminded me of chemical symbols. For instance, it was possible to 'read' into their skin the symbol of *polyethylene*. In view of the omnipresence of microplastics in today's world, might this material not deserve a poetic personalization, like the classical elements of the Greek canon? Aquatic nymphs (as a symbol for water) joined in their springs by a new species of chameleon - *Archaius polyethylenus* -, a metaphor for the evolving polarity between the natural and the artificial? These first research sketches will be the starting point of more poetic experimentation in the weeks to come: Future utopian and dystopian drawings inspired by current scientific research ..."

Evening for the *GENERAL PUBLIC*



Panel discussion (from left to right) :

Dr. François Galgani (Ifremer, Corsica/FR), Dr. Mohamed Banni (Université de Monastir/TUN), Antoine Bourge (Surfrider Fondation Europe), Roman Kroke (Berlin University of the Arts/DE), Prof. Dr. Jérôme Cachot (EPOC, Université de Bordeaux/FR), Frédéric Siacca (Foundation Race for Water), Joann Frontout (mediator of the discussion).



ECOBIM pour les élèves !



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ET DE LA RECHERCHE

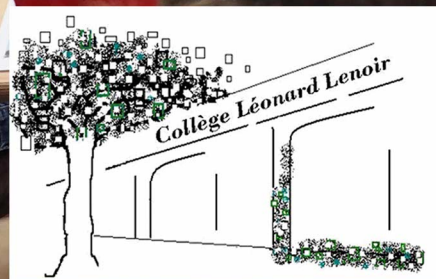


Scientific Research – School Education

The last day of the colloquium was devoted to high-school students offering them to participate in a variety of workshops. This special day for students aimed at reinforcing the dialogue between scientific research and school education. Initiators and organizers: the *Rectorate of the Academy Bordeaux* (Sophie Mouge, Academic Advisor for Art, Culture and Science; Nathalie Ferrier, Academic Advisor for Artistic Education), the *University of Bordeaux* and the research consortium *EcoBIM* (Prof. Dr. Jérôme Cachot; Dr. Florane Le Bihanic).




Students from the following four schools participated in the workshop: *Collège Léonard Lenoir*, *Lycée Condorcet* (Bordeaux), *Lycée de Grand Air* (Arcachon) and *Collège Victor Louis* (Talence).



How could we sensitize students

with regard to one of the major ecological challenges of our time, that of the plastic pollution of aquatic environments (oceans, rivers, lakes, drinking water)? How could we empower them to contemplate about their daily use of plastic and to develop a responsible consumer spirit? How could we serve an “innovative appetizer” to students not necessarily attracted to the field of "hard sciences" in order to make them curious to find out more about a potential career as a researcher?

* The present workshop concept may be adapted to any other topic of scientific research.



In his interdisciplinary laboratories, Roman Kroke proposes to develop these skills through the creation of artworks based on current scientific research, literary as well as socio-philosophical sources. *

Evaluation



"I had the chance to follow Roman Kroke's intervention during the workshop which was really extraordinary. He succeeded in only 15-20 minutes to get the students engaged in the activity he had envisioned. And they succeeded in appropriating the scientific topic of plastic pollution in aquatic environments in a very unique way. Roman managed to skillfully reframe the topic around the personal center of interest of every single student. They were very passionately involved in this work. They particularly enjoyed the practical side of the approach (manufacturing and sculpturing) which, in return, somehow helped them to "liberate" their reflections on the scientific topic. They produced very original works of which they were very proud. As a teacher, I was impressed by the result of the artworks created in rather a short period of time (1h30 for each of the two groups). For my part as a teacher, this workshop has been an unexpected source of educational inspiration. I will try to integrate this concept into my own pedagogy."

Elodie Constans
Science Teacher

Lycée Condorcet, Bordeaux (Fr)

Elaboration of the pedagogic concept

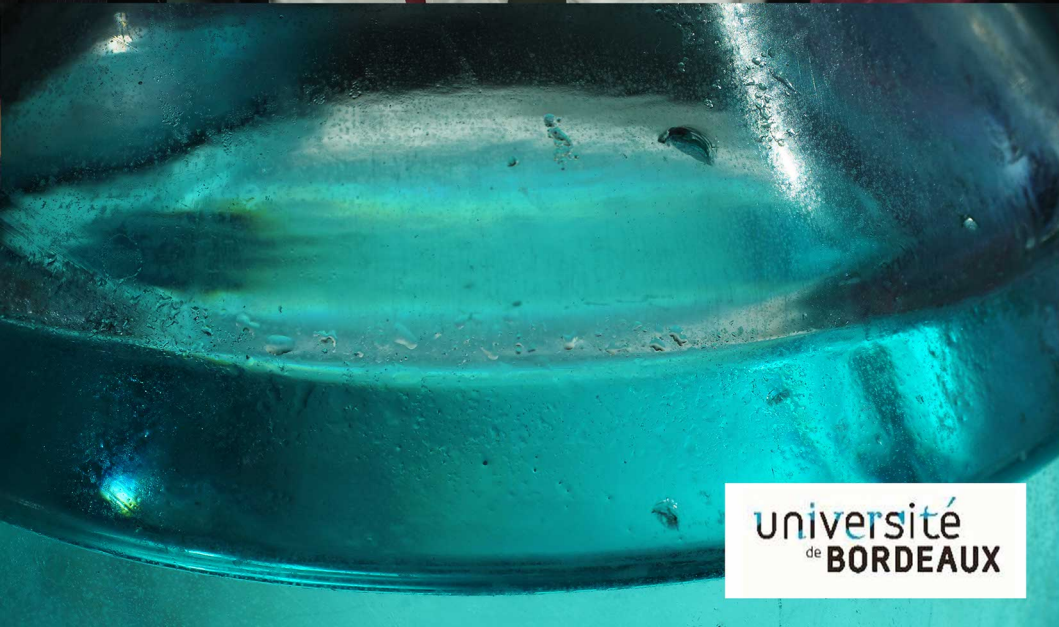
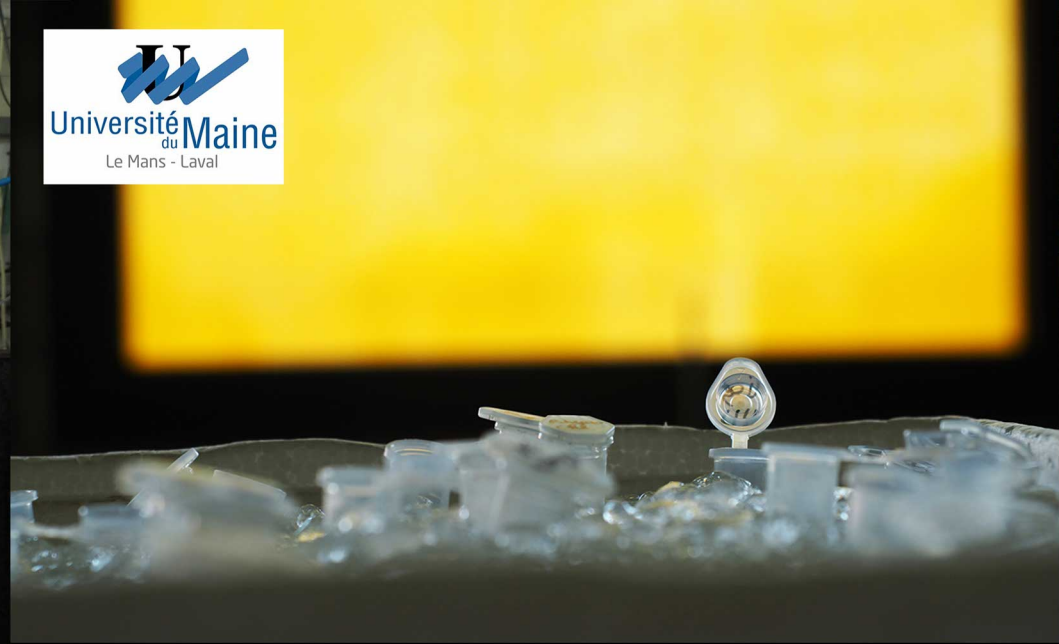
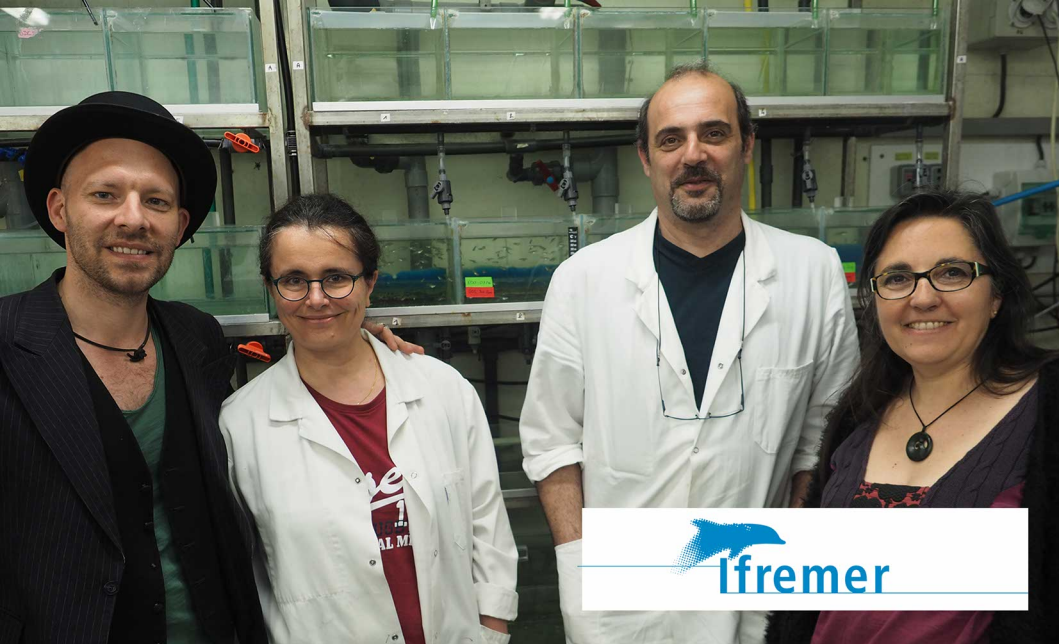
The concept of the atelier was conceived by Roman Kroke in the course of several research travels in 2017:

1. Scientific laboratories

In order to exchange with researchers and immerse himself in their methodology and working universe, Roman Kroke visited several scientific laboratories in France and Germany currently invested in research on microplastics, among others: the Alfred Wegner Institute – AWI – Helmholtz Centre for Polar and Marine Research, Helgoland (DE); the Helmholtz Centre for Environmental Research – UFZ –(Leipzig/DE); the Fraunhofer Institute for Ceramic Technologies and Systems IKTS (Dresden/DE); the EPOC laboratory at the Université de Bordeaux (FR), the Ifremer laboratory at La Rochelle (FR), the Institute for Molecules and Materials at the Université du Maine (Le Mans/FR).

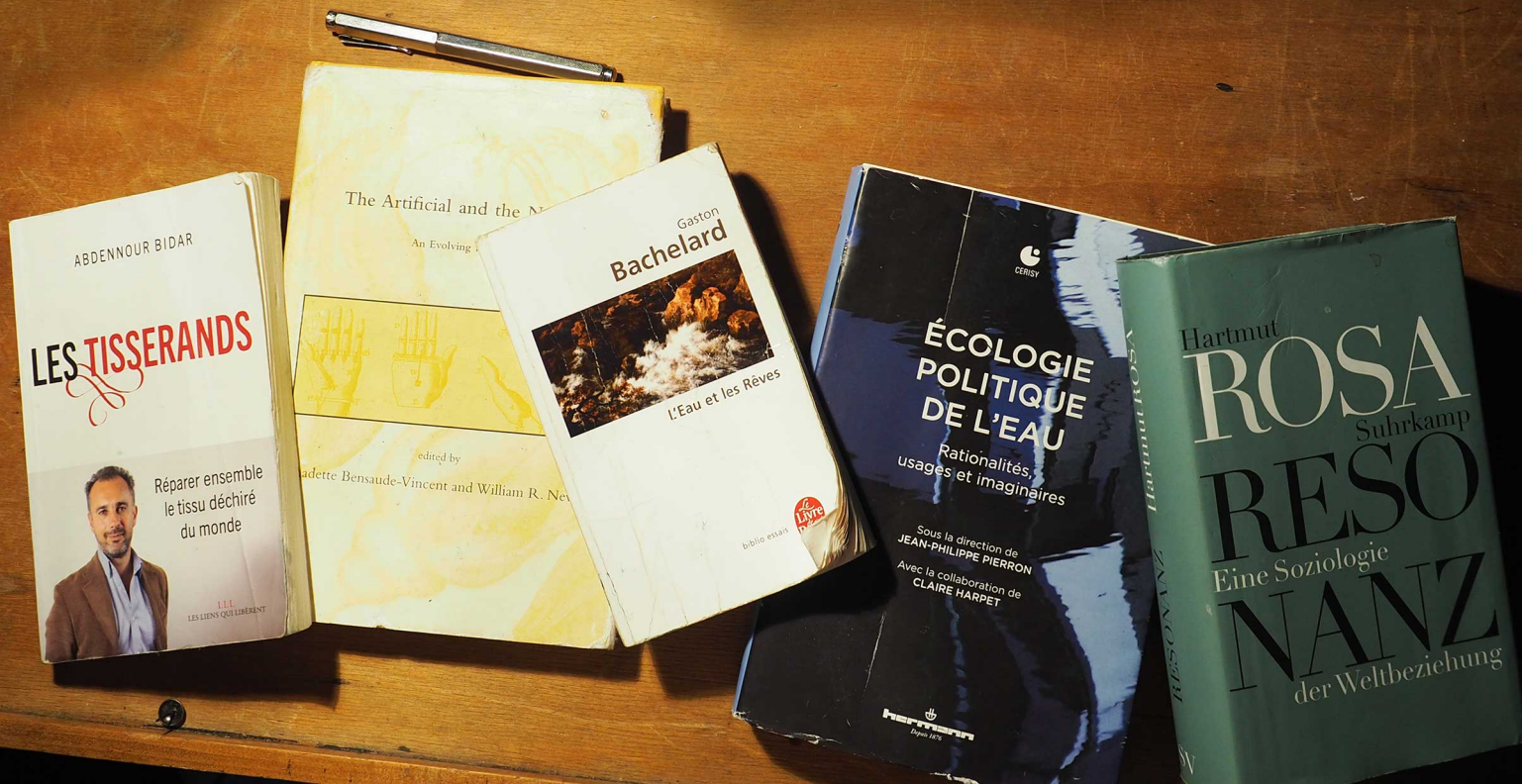
2. Aquariums

During these trips, Roman Kroke also visited the Aquarium La Rochelle (FR) and exchanged with local biologists, raising his awareness about the flora and fauna of the sea, including the fragile dance of the jellyfish and the majestic flight of the sea turtles - two species at the centre of current scientific research on the impact of plastic pollution. This trip was followed by a visit to the Berlin Aquarium (DE), which is famous for its jellyfish breeding.

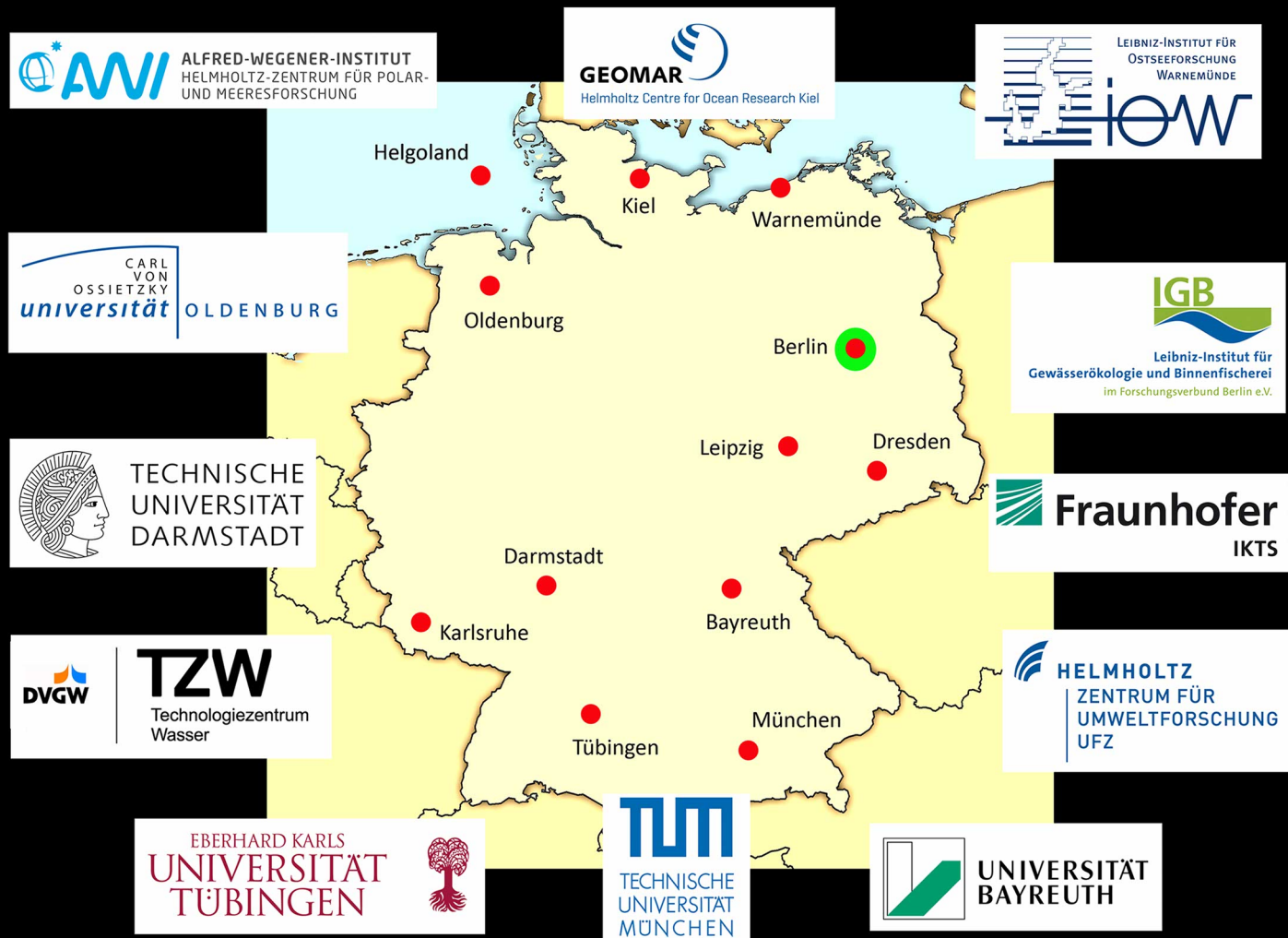


3. Philosophical discourses

Roman Kroke's research also included meetings with contemporary philosophers working on the topics of "sustainable development", the element "water" as well as on concepts of "citizenship" (Prof. Dr. Jean-Philippe Pierron - Jean Moulin University, Lyon/FR, Director of the Doctoral School of Philosophy; Dr. Abdenour Bidar - philosopher, essayist, Senior French official). These experiences were further deepened by the reading of various authors devoted to the study of the material "plastic" (for instance Prof. Dr. Bernadette Bensaude-Vincent - French philosopher and historian) and to societal resonance (Prof. Dr. Hartmut Rosa – German sociologist and political scientist). Among the topics which particularly interested Roman Kroke during his research were the relationships between "fragility and responsibility", "the visible and the invisible", "interiority and exteriority", "man and matter" as well as the "evolving polarity between the natural and the artificial".



4. Interdisciplinary seminar for the UdK/TU Berlin



Kroke's pedagogical concept for the EcoBIM colloquium was finally enriched by the interdisciplinary seminar "Microplastics and Medusae" which he had directed for students of the Berlin University of the Arts (UdK) and the Technical University of Berlin (TU) in 2017/2018.

For this project, Kroke had established a partnership with scientists from 13 research institutes throughout Germany specialized in the impact of microplastics on aquatic environments. During the seminar, his students embarked on research travels to the institutes and then faced the challenge to transform this experience into hybrid artworks.



Objectives

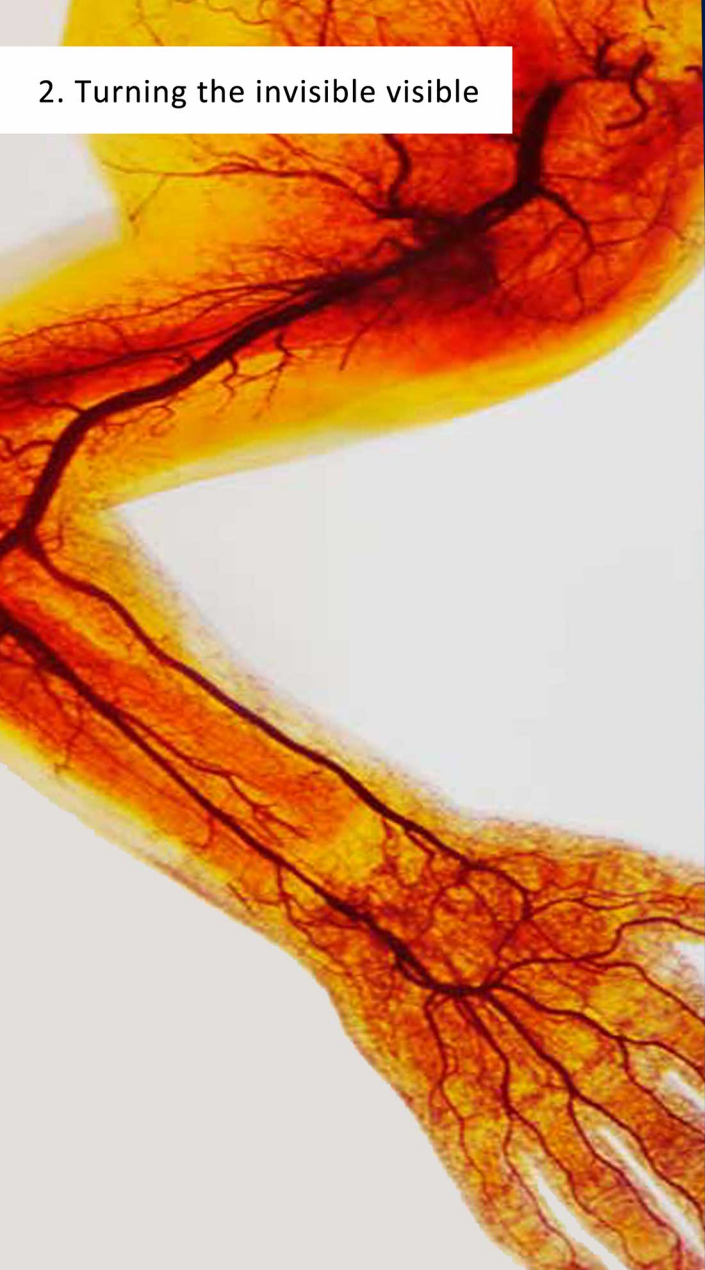
1. Mending mankind's poetic bond with nature



Experiencing a work experience which uses art as an interdisciplinary medium to contemplate the challenges of plastic pollution, its impact on society and the ecosystems of a globalized planet through a poetic prism:

"The pedagogic concept is based on the idea that the current ecological crisis is not only due to a lack of information and knowledge. To overcome this global challenge it will not suffice to rationally enlighten mankind about the impact of his actions on the environment. Many people know very well that a negligent use of plastic materials is detrimental to our ecosystems. Nevertheless, this mere knowledge often doesn't make them change their behaviour in a significant way. I uphold the following argument: The ecological crisis is also due to a *relational* crisis - the one concerning the connection between mankind and nature. If one takes a look at the relationships between people one could say that a sound relationship is generally built, on the one hand, thanks the knowledge gathered about the other person during the time spent together. However, at least with respect to more profound relationships (friendships, love), this tie is substantially also nurtured by something well beyond pure ratio: a *poetic* bond. In a comparable way, I believe that the ecological crisis also relies on the fact that many people have lost this poetic bond with nature. Exploring an ecological, scientific topic through the medium of the arts, with its specificity of appealing to reflection just as well as to emotions, can therefore make a significant contribution to mend this damaged bond."

Roman Kroke



2. Turning the invisible visible

"The invisible" refers, on the one hand, to microplastics. With respect to the topic of plastic pollution in aquatic environments, artistic creations allow to turn visible, tangible what is normally not perceptible to the human senses. In general, the phenomenon of plastic pollution is usually only perceived in the form of macro-plastics stranded along the coastline or floating on the surface of the water. Yet this is nothing but the tip of the iceberg - the big part exists in form of tiny particles (microplastics) present on and below the surface as well as buried in sediments. Art allows, through the transformation of the natural state, to create an apprehensible encounter with this world - for example, through the enlargement of microcosms or the metaphorical transformation of the invisible into a tangible medium.

On the other hand, for students not only the abstract topics treated in scientific research often belong to the world of the invisible (in the sense of the unknown) - but also the scientists themselves as well as their working universe. One goal of the workshop therefore also consisted in making the students aware of the women and men standing behind the research. In order to create an intellectual as well as a haptic connection between the world of researchers and the students, Roman Kroke asked the scientists participating in the EcoBIM colloquium to contribute to the "buffet" of artistic materials with objects related to their work. In the course of the workshop, these elements were integrated into the sculptures and entered into a dialogue with the materials brought by students from their personal lives (joysticks, mobile phones, headphones etc.). Two examples:

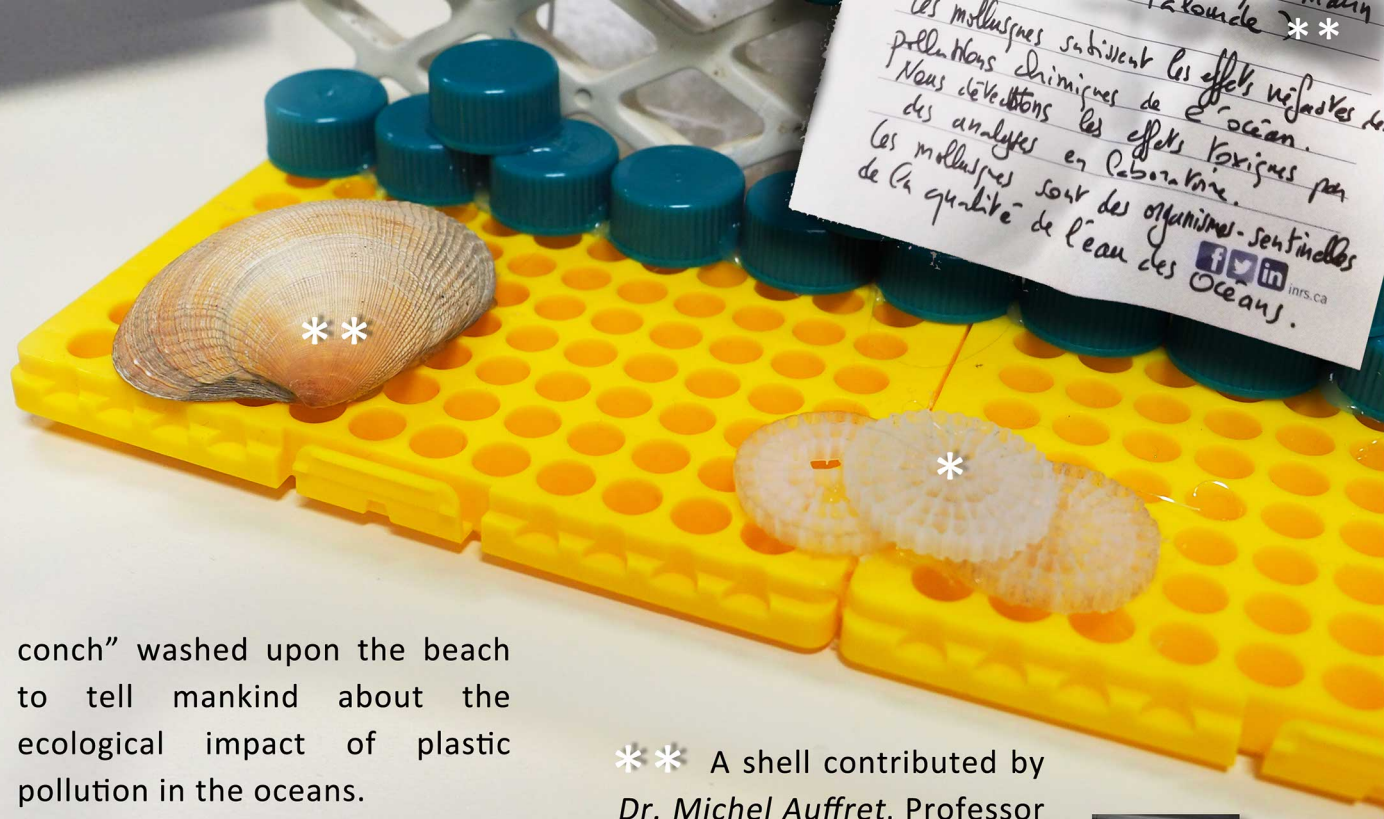
* Objects contributed by the scientist



Dr. François Galgani
(laboratory Ifremer,
Corse/FR) with the
following explanation :

"... pieces of filtering media serving as a populating support for bacteria allowing to increase the fixing surfaces for the colony and therefore the water treatment capacity of the plant. These objects are sometimes lost by the plants thus ending up in the marine environment. These samples I found on the beaches of Corsica – during the recent months they have been travelling with the currents in the Mediterranean before stranding on our shores."

In their artwork, two students picked up the idea of an object "stranding on the shore" by transforming the filtering media into a "plasticized



conch" washed upon the beach to tell mankind about the ecological impact of plastic pollution in the oceans.



** A shell contributed by Dr. Michel Auffret, Professor of Environmental Toxicology at the Université de Bretagne Occidentale (Brest/FR). In their artwork, the students placed it on the beach next to the "plasticized shell" thus raising the topic of the evolving polarity between the natural and the artificial.





* The doctoral student *Bettie Cormier* of the EPOC laboratory (Université de Bordeaux/FR) contributed to the "buffet" of artistic material with original microplastic samples taken during an expedition in the Bermudan waters; through these samples, the students also learned about the catamaran of the Foundation *Race for Water* (www.raceforwater.com), which served the scientists as a traveling laboratory during the research travel.

By integrating these "Bermudan" microplastics into a "Bordeaux" tap, the students highlighted with their artwork that plastic pollution is a global problem which calls for a concerted effort of the entire world: These particles are travelling with the water currents and don't stop at "human" borders like the EU etc.; their artworks also raises attention to the fact that below a certain size microplastics can no longer be filtered by our purification plants and could thus "reach us" by the tap water.



3. Creation of an artistic laboratory



Another goal consisted in exploring together a working approach comparable to that of a (scientific) laboratory where the students are encouraged to experiment with their potential to take an active and creative role. An experimental working approach as a strategy for researching and inventing new solutions is just as much in demand in scientific research as it is in artistic creation-processes.

"I realized during the process of creating my work that with electronic glue guns you cannot only glue – you may also use them to make engravings in polystyrene which is melting due to the heat."

– discovery of a student
during the workshop –
(for his artwork see page 29)

And if the colloquim EcoBIM was ...

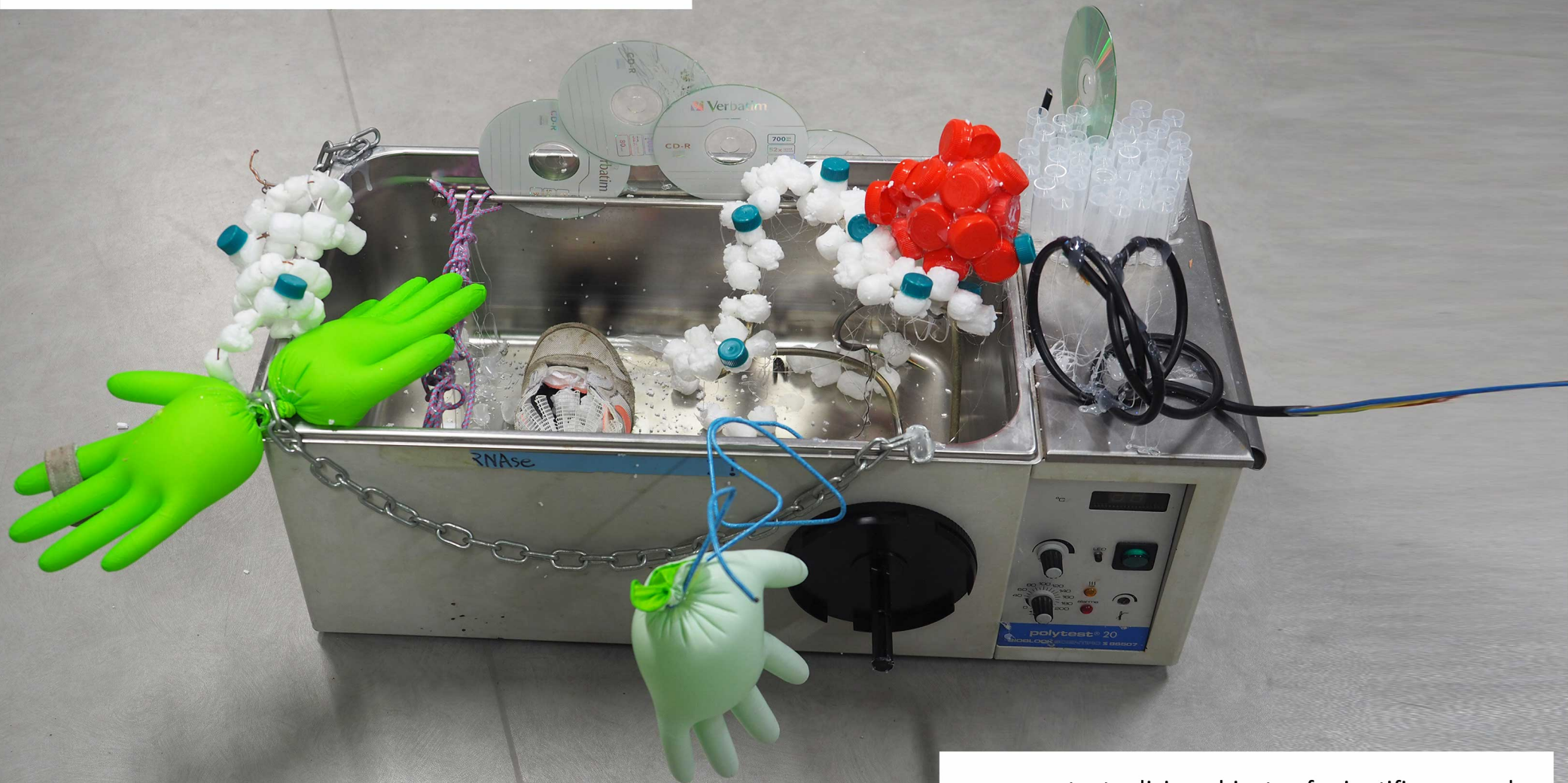
..., metaphorically speaking, a piece of MACRO-plastic,
exposed to an accelerated fragmentation process?

So that on the last day of the colloquium,
the one devoted to the students' workshops,
all the knowledge, discoveries and hypotheses
exchanged between the scientists
would only exist in the form of fragments
torn from the original unity,
just like secondary microplastics?

And where and what would happen in the course of
the artistic creation process of the workshop
if this scientific information was beginning to be inhabited
by the poetry of the element "water",
attaching itself, like a biofilm,
to the microplastics migrating in the oceans?



An experimental artwork created during the workshop ...

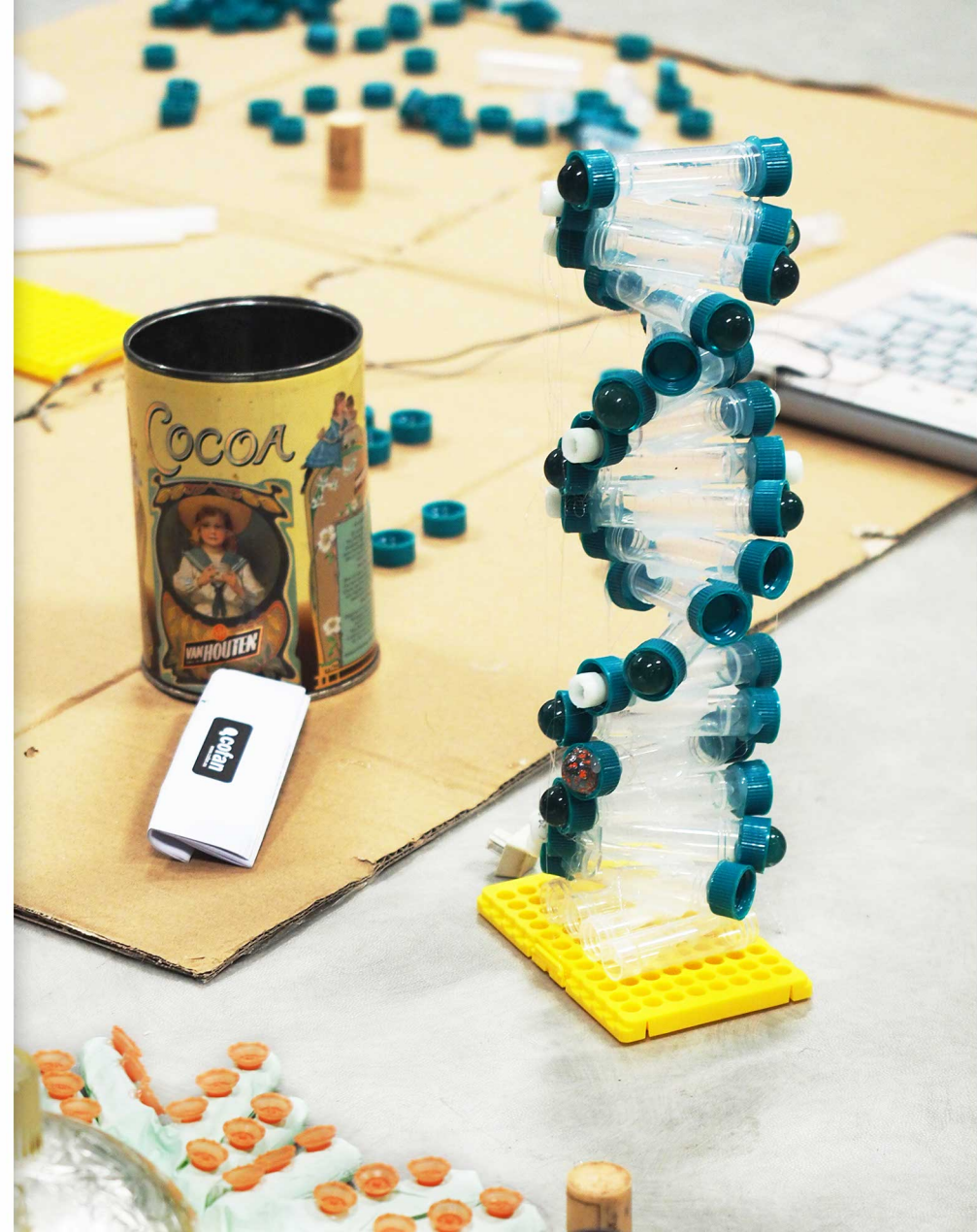


... re-contextualizing objects of scientific research.

The structure of the workshop

The workshop consisted of two consecutive sessions (2 hours each) in which two groups of different students worked one after another to create a series of collective works:

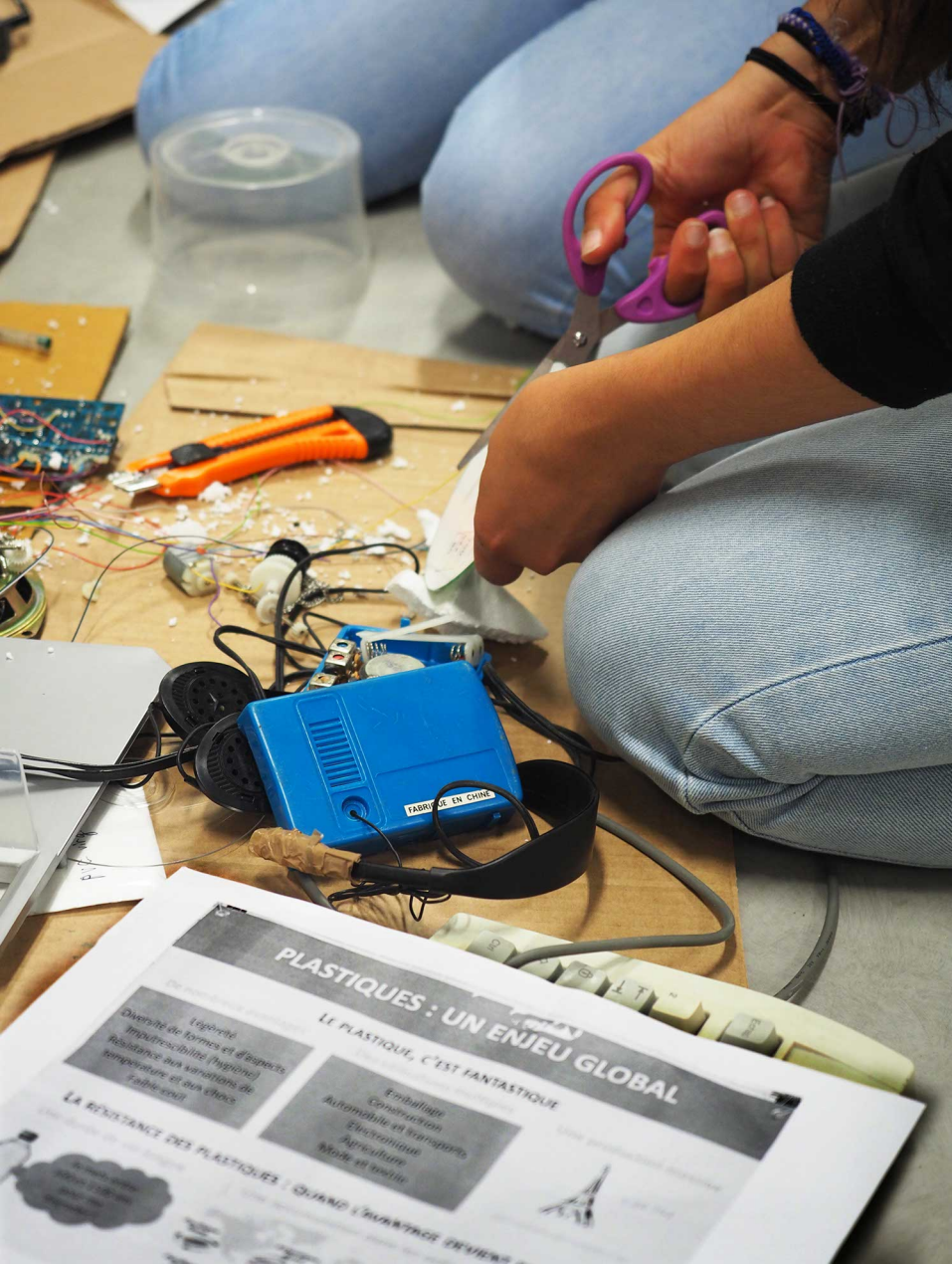
The approach to create these artworks bounced back on **the notion of a "Still-Life"**, the artistic genre which depicts inanimate objects arranged in a certain way, often with a symbolic meaning. In French, this genre is called "nature morte" – which translated means "dead nature" (similar in Italian: natura morta; and Spanish: naturaleza muerta). Contrary to this, in German you call it "Stilleben" which means "Silent-Life". In a metaphorical sense, the goal of the workshop was to transform "dead nature" into "Silent-Lives": The mere acquisition of knowledge could be considered rather "dead material" which can only come to life if you appropriate it by inhabiting it with your own visions. The artistic approach into the scientific topic aimed at allowing the students to establish connections with their own cultural references, personal questions, reflections and emotions. In a metaphorical sense, the students therefore faced the challenge of **resurrecting the classic genre of "nature morte"** by illustrating a scientific topic through a personal, unprecedented artwork. This concept was put into practice as follows:



Group #1 "Science & Plastic"

The first group received excerpts of knowledge, discoveries and hypotheses addressed by the researchers in the context of the EcoBIM symposium. Their challenge consisted then in creating a sculpture representing a facet of their personal life in which plastic plays an important role. This sculpture was the first object, the "scientific-plastic" part of the "Silent-Life". The idea behind this approach was to balance the current discourse in the media which very often paints a very one-sided, "apocalyptic" portrait of plastic pollution, without all of these fears having always been scientifically confirmed yet. The objective therefore was, on one hand, to inform the students about the current research in the scientific world while highlighting, at the same time, how "plastic" provides a quality in many areas of our lives.

To illustrate the omnipresence of plastic in our daily lives, a material coming "in disguise" in countless sizes, colours, shapes etc., Roman Kroke presented to the students his metaphorical personification of plastic: the chameleon specie *Archaius polyethylenus* (see above pages 4-6).



Artworks created by group #1 "Science & Plastic"



"Our work establishes a connection towards the universe of music and video games: On the plate you see a joystick, loud-speakers, ...

... a connecting cable for a play-station, an HDMI cable, CDs – all these objects contain plastic!



* The scientific poster of the EcoBIM colloquium (see also previous page) we integrated with the rear-side facing *outwards*. A metaphor for the invisibility of the scientific world of the researchers in our student everyday life."

"In the future, I would like to become a veterinarian. In this profession plastic plays an important role, for example to manufacture syringes. My artwork bears the title of one of my future patients: *Chameleon Dinotech*."



"I realized during the experimental creation-process of my work that with electronic glue guns you cannot only glue – you may also use them to make engravings in polystyrene which is melting due to the heat."



"I am a goal-keeper. I therefore created a football as it is made of diverse plastic materials. In the beginning, I had tried to make the surface of the ball by wrapping two black speaker foams into a white T-shirt, attaching it with glue. But I didn't like the result at all. However, this failed experiment produced an interesting outcome: When I took off the white T-shirt tiny parts of the black foam were torn off as well. I realized that this damaged surface of the football could be an illustration for the process of fragmentation of plastic materials which had been discussed in the scientific colloquium."



"This sculpture represents a man who has just watched a documentary movie. We can see the film made of the packaging of cotton pads.

This man now contemplates our world with a new vision – about how to change the packaging industry in order to reduce the plastic pollution of our oceans."

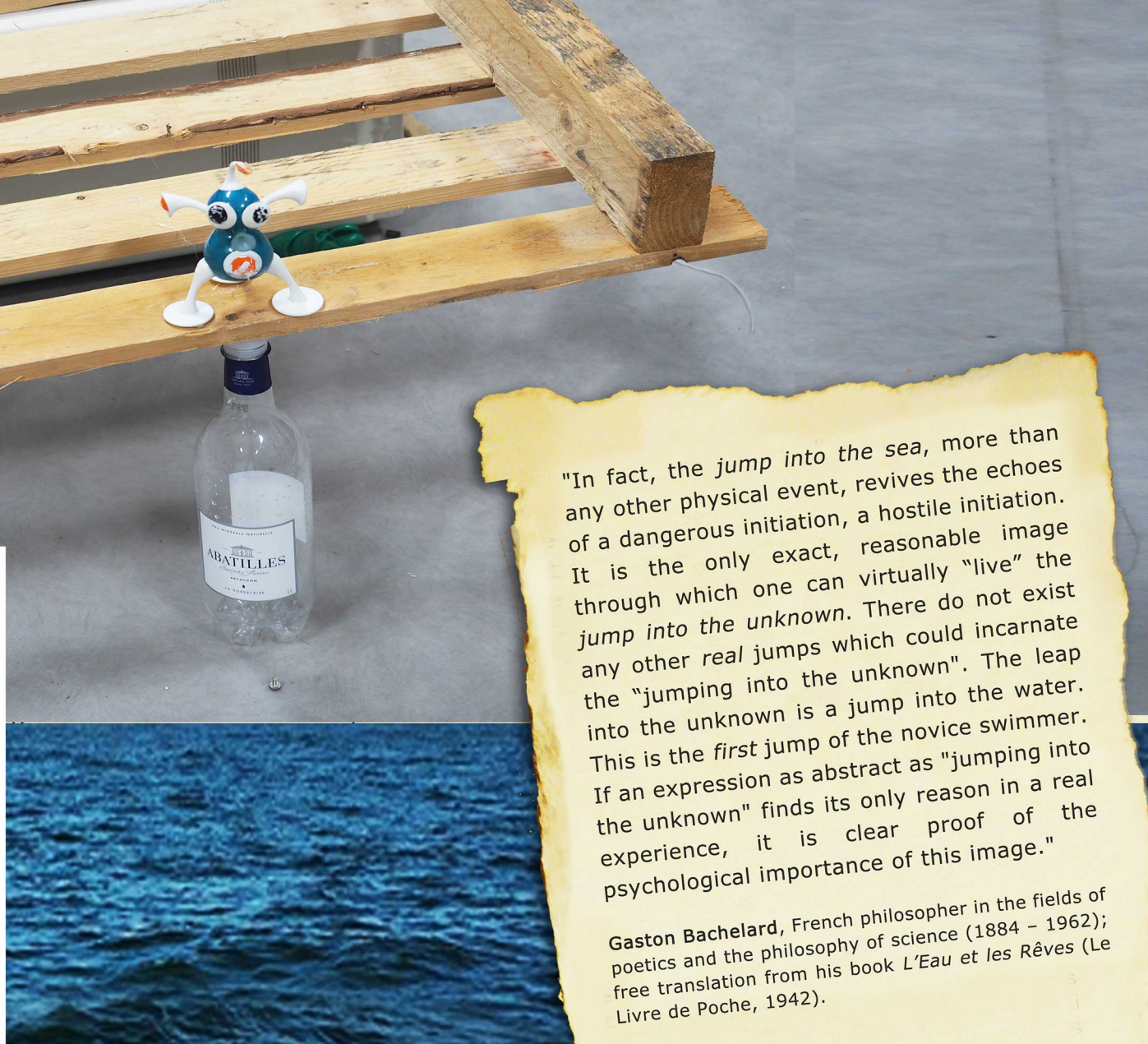




“In our favourite sport, basketball, you find many objects made of plastic: the floor of the court, the backboard of the baskets, the sport shoes, ...”



"Our artwork depicts a day at the beach. I love to jump into the water from the landing stage – dressed in swimming trunks made of *synthetic fibers*! As a construction base for our landing stage we used a computer which had formerly served the scientists of the EPOC laboratory in Bordeaux for their research on plastic pollution – perhaps they also dealt with the question of how plastic textile fibers end up into the oceans?"



"In fact, the jump into the sea, more than any other physical event, revives the echoes of a dangerous initiation, a hostile initiation. It is the only exact, reasonable image through which one can virtually "live" the jump into the unknown. There do not exist any other real jumps which could incarnate the "jumping into the unknown". The leap into the unknown is a jump into the water. This is the first jump of the novice swimmer. If an expression as abstract as "jumping into the unknown" finds its only reason in a real experience, it is clear proof of the psychological importance of this image."

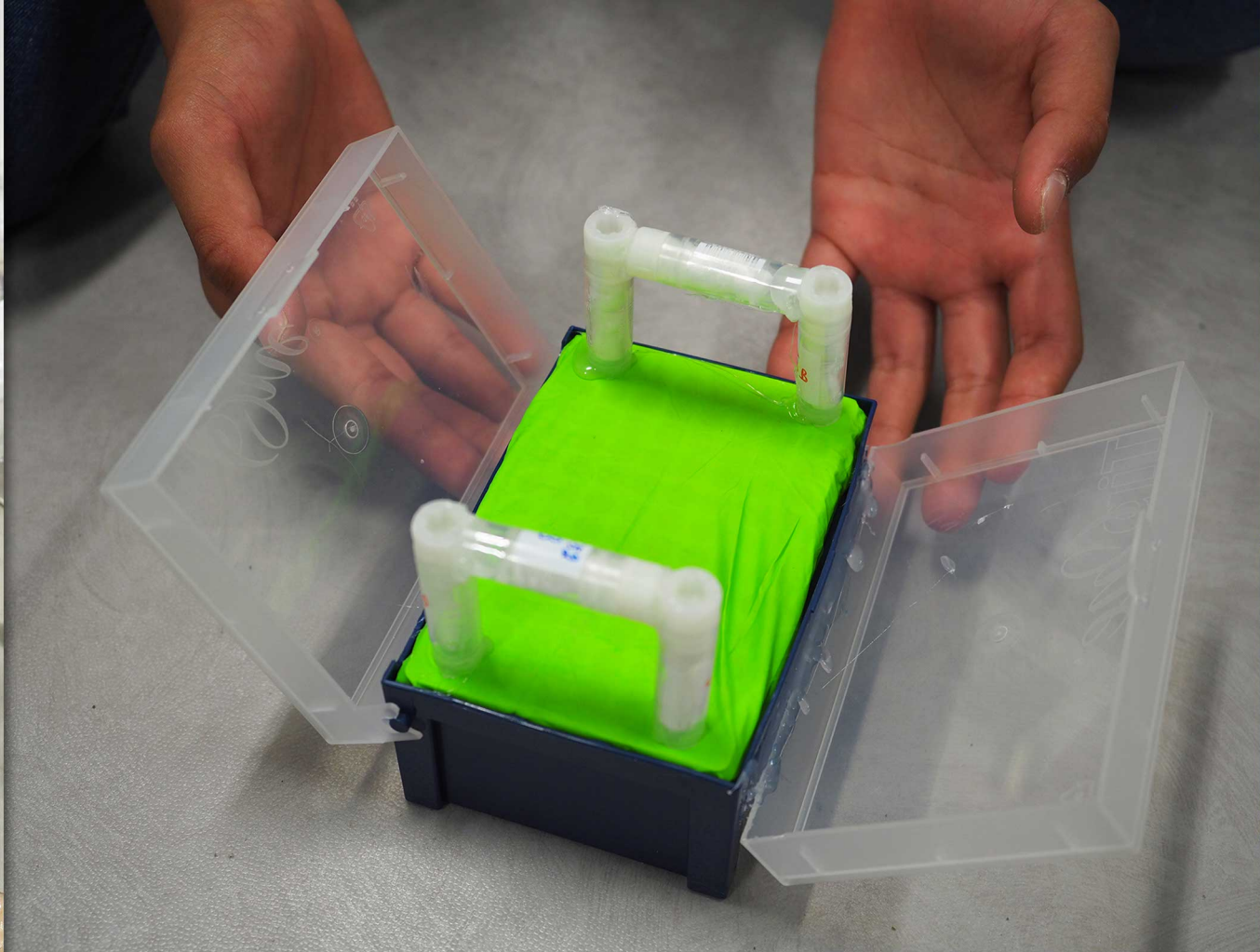
Gaston Bachelard, French philosopher in the fields of poetics and the philosophy of science (1884 – 1962); free translation from his book *L'Eau et les Rêves* (Le Livre de Poche, 1942).

“The last time I went surfing in the Atlantic Ocean I couldn’t take certain waves because of plastic debris floating under the surface. I could have injured myself or damaged the board. Quite paradoxically, my bodyboard is also made of plastic ...”



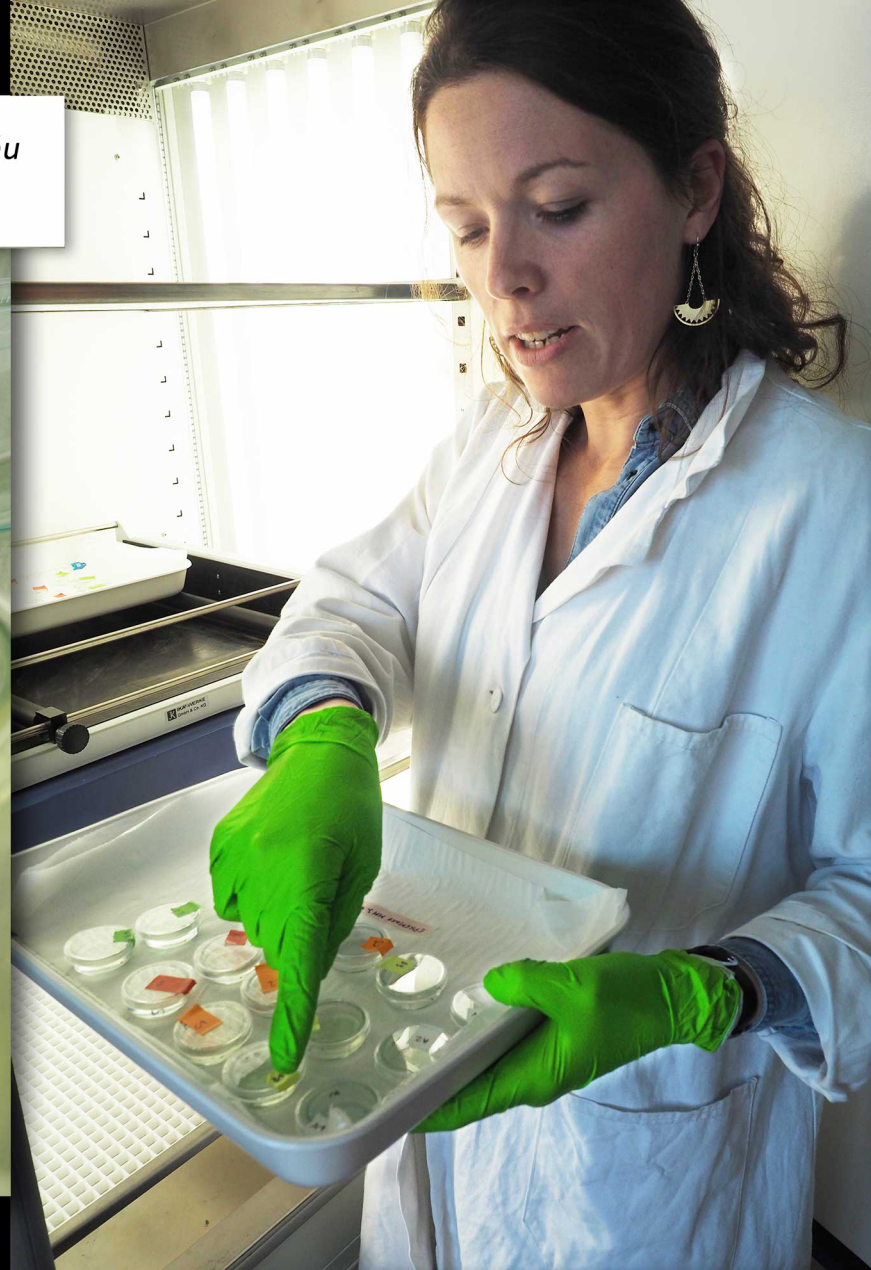
"My artworks has the title *Plastic Surfer.*"





"The so-called 'theater of dreams', stadium of my favorite soccer team *Real Madrid*. In the construction of this temple of entertainment you can find a high variety of plastic materials. Concerning the lawn of the stadium, I created it with a protective glove from the EPOC laboratory (University of Bordeaux/FR)."

The point of origin of the “grass field” of Real Madrid’s stadium *Santiago Bernabéu* (see previous page): The EPOC laboratory at the University of Bordeaux/FR.



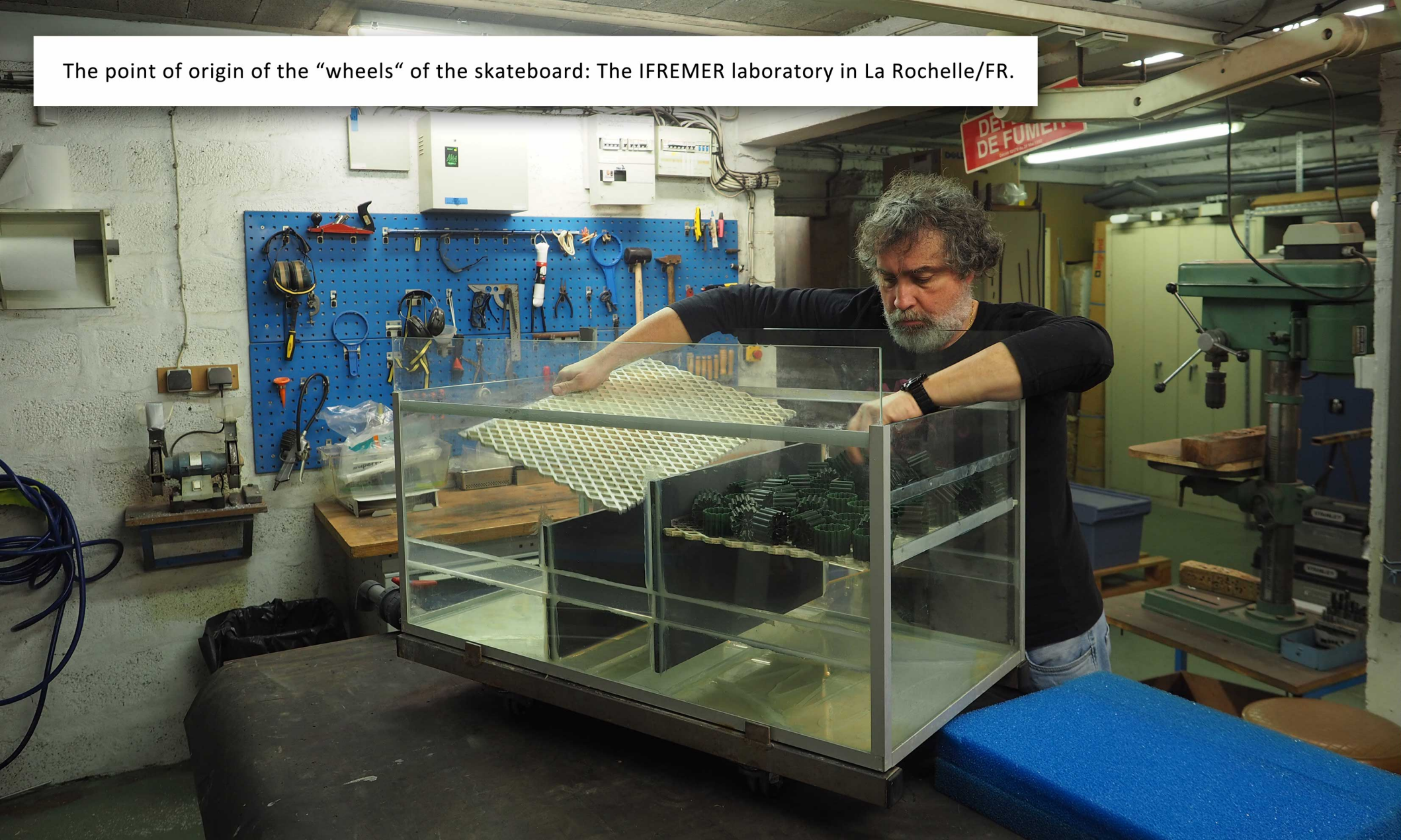


"I would like to become a watchmaker later. I love this object. In watches and clocks (the mechanism) there are hands or sometimes toothed wheels made of plastic."



"I love skateboarding. The wheels I made of two objects donated by the IFREMER laboratory (La Rochelle/FR). They serve the researchers as a population support for bacteria which help to clean the water of the aquariums."

The point of origin of the “wheels” of the skateboard: The IFREMER laboratory in La Rochelle/FR.



“The abrasion of the wheels on the asphalt creates a kind of plastic dust. Through the rain and the canalisation these microplastic particles end up in the rivers, and finally in the oceans.”



Group #2 "Water & Poetry"

The second group of students then received literary and philosophical quotes as well as metaphorical photos evoking the **poetic side of the element "water"**, the marine flora and fauna. They faced the challenge not only of materializing this poetry in the form of a sculpture but also of bringing it into dialogue with the sculptures created by the group # 1 "Science & Plastic" (see page 26 et seqq.).

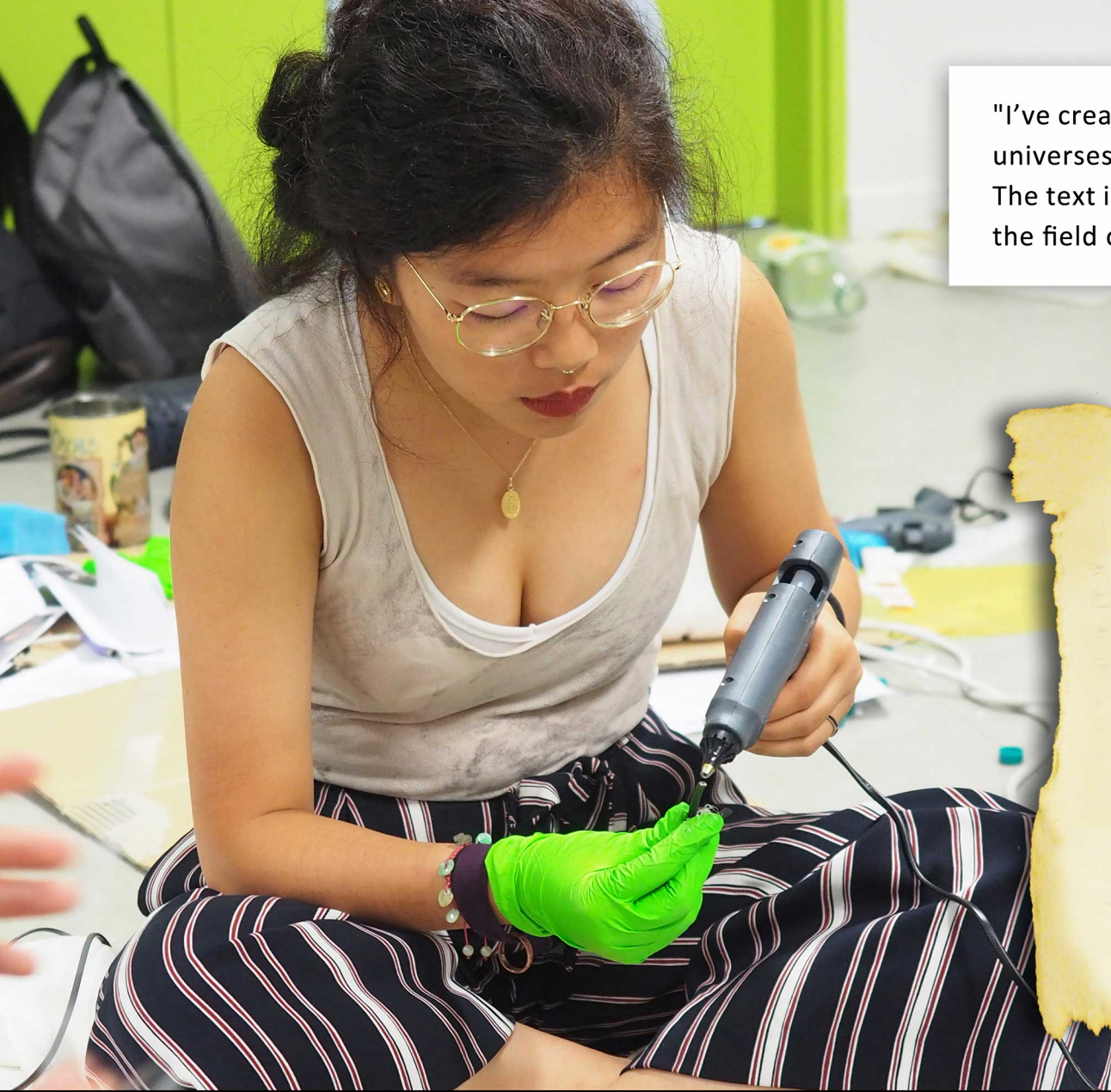




The objective for the second group was then to create a **"Silent-Life"** (see page 25), a setting composed of two objects which would represent an encounter – a symbiosis, a confrontation, a ...? – between, on one hand, the world of science & plastic (the artistic creations of group #1) and, on the other hand, their one artworks representing the realm of water & poetry.

Artworks from group # 2 "Water & Poetry":





"I've created an artwork which brings together different universes resonating with a text which had inspired me. The text is by *Gaston Bachelard*, a French philosopher in the field of science."

"It remains to be proven that the voices of the water are not only metaphorical, but that their language is a direct poetic reality, that the streams and rivers are adding, with a strange fidelity, sound to silent landscapes, that the rustling waters are teaching birds and men to sing, to speak, to repeat, and that there is, in short, **a continuity between the word of water and the word of man**. Conversely, we will insist on a fact noticed far to little: that, organically, the human language has a liquidity, an overall flow, a water in the consonants."

Gaston Bachelard, French philosopher (1884 – 1962); free translation from his book *L'eau et les Rêves* (Le Livre de Poche, 1942).

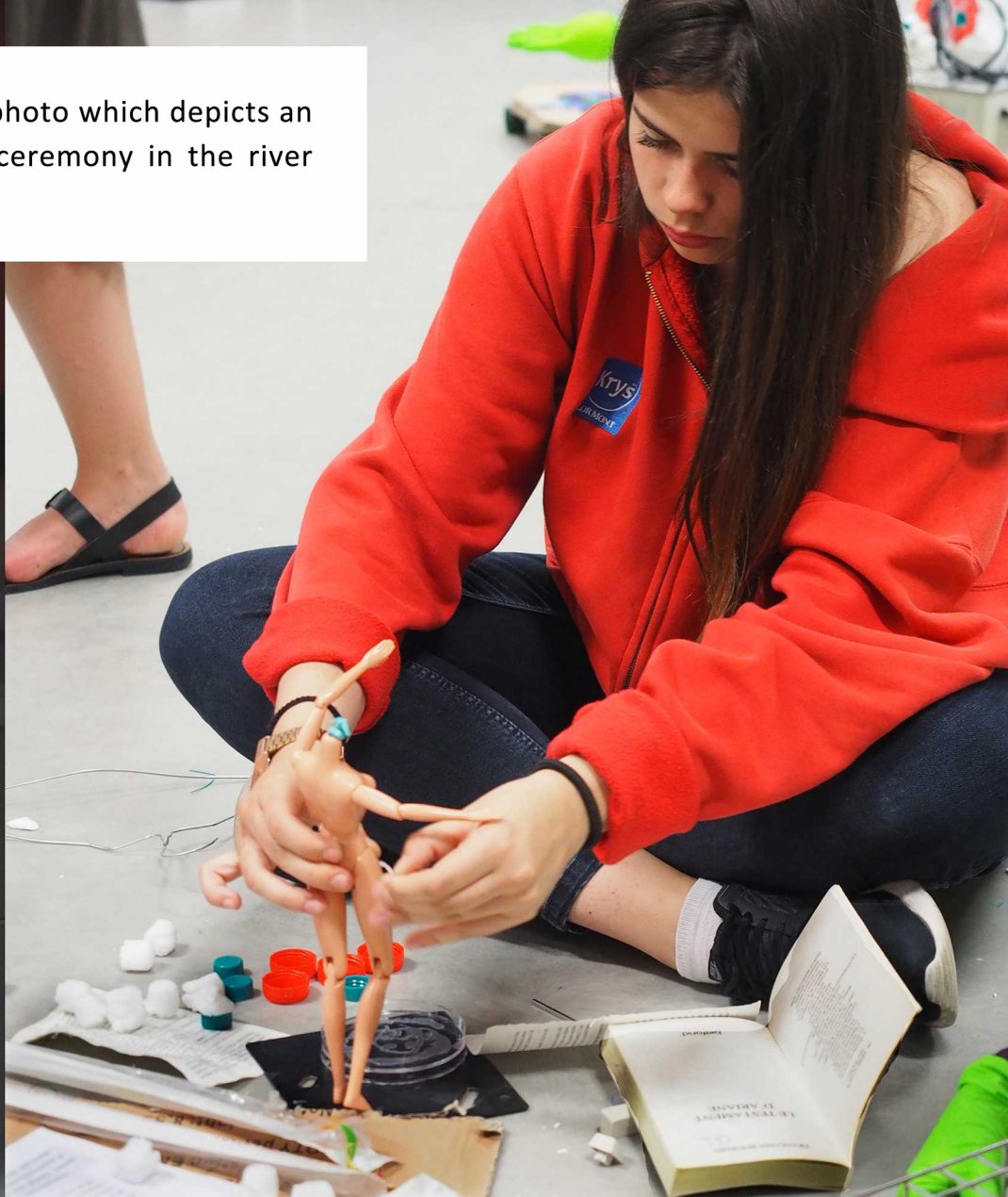


"Bachelar's text is located at the top of my work. He compares water to a language, to words. I decided to create an encounter between literature, letters and the world of science."

prouver que les voix de l'eau sont à po
que le langage des eaux est une réalité poétique directe.
que les rivières et les fleuves sont une étrange
fidélité aux paysages. Les eaux bruissantes
apprennent à parler, à redire la parole de l'eau et la parole humaine.
insisteront sur le fait que l'ensemble d'une eau dans les consonnes
ment le langage humain. Une eau dans les consonnes

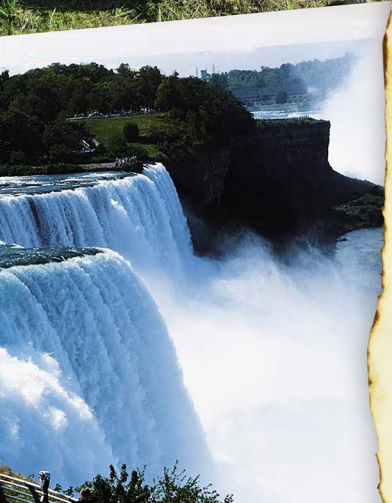


“My inspiration came from a photo which depicts an Indian woman celebrating a ceremony in the river Ganges. I transformed it ...





... by representing a woman with a 'waste head'. She is also pouring out a bucket of waste – although this should actually be sacred water."

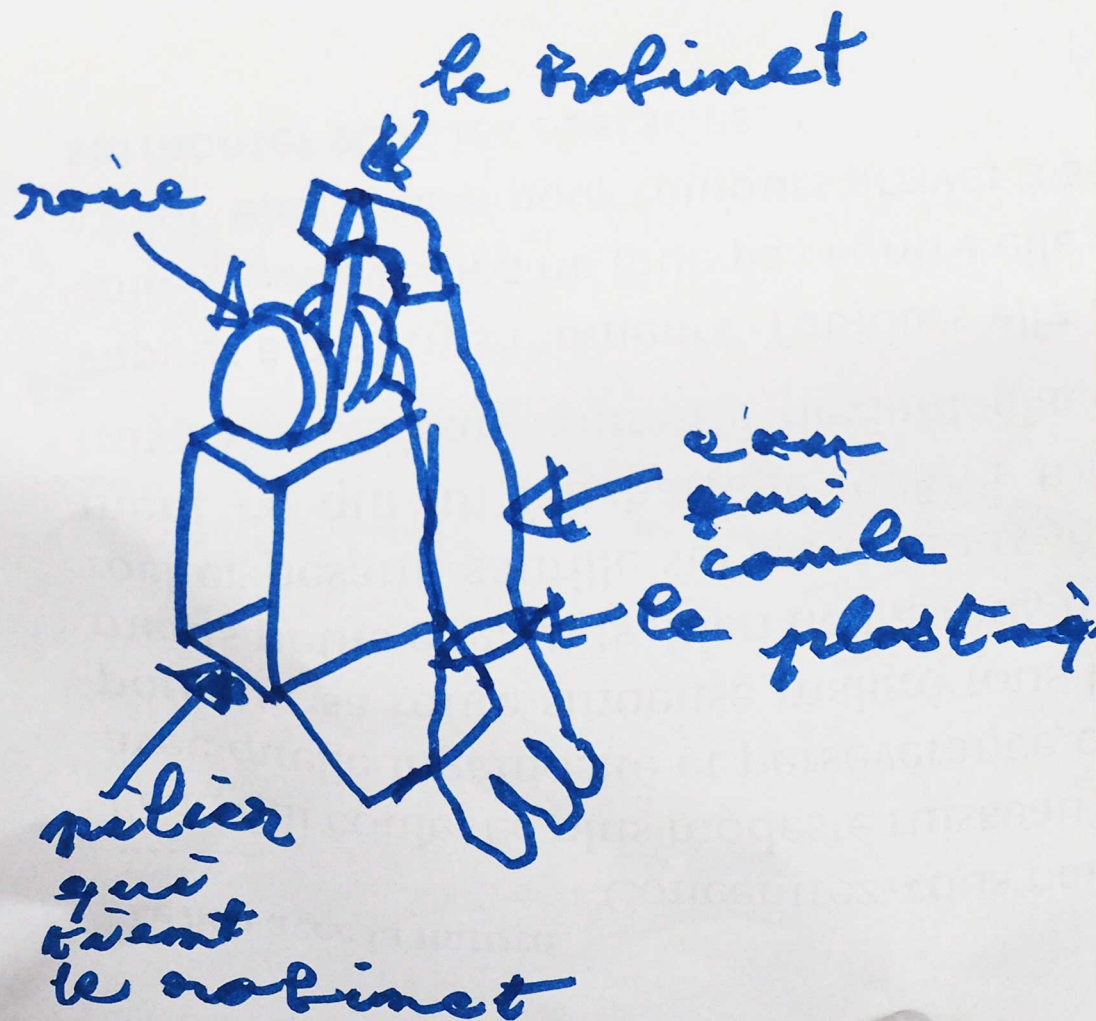


"Quite disturbingly, the unidimensionalization is dominated by a technical rationality which treats human problems, including water supply and thirst, as if they were merely *technical* problems. This machination of the machine reduces (...) **the tap** to a '**drinking machine**'. (...)

With the tap of drinking water, mankind's relationship to water is reflected in our motor habits (it is enough to turn the tap to see the water gushing out), in our schemes of action (the movement of the glass or the mouth towards the tap) and in a guarantee for immediate satisfaction of the one who wants to quench his thirst. This makes us forget the anxiety of dying of thirst. This beautiful technical service of water covers the need in a perfect manner. It can, however, if it is de-poetized, dissociate our thirst from what it actually engages in its relation to nature and our environment. Contrary to this, the introduction of so-called "**eco-gestures**" (= simple gestures in our everyday life which every citizen could do to reduce pollution) could revitalize our relationship towards water which in many areas has become insensitive. One of the current challenges should be to work on the unpersonal route of water supply beginning at the source, along the invisible canalisation until the taps in our bathrooms – with the goal to revive our respect and primordial connection with the element water."

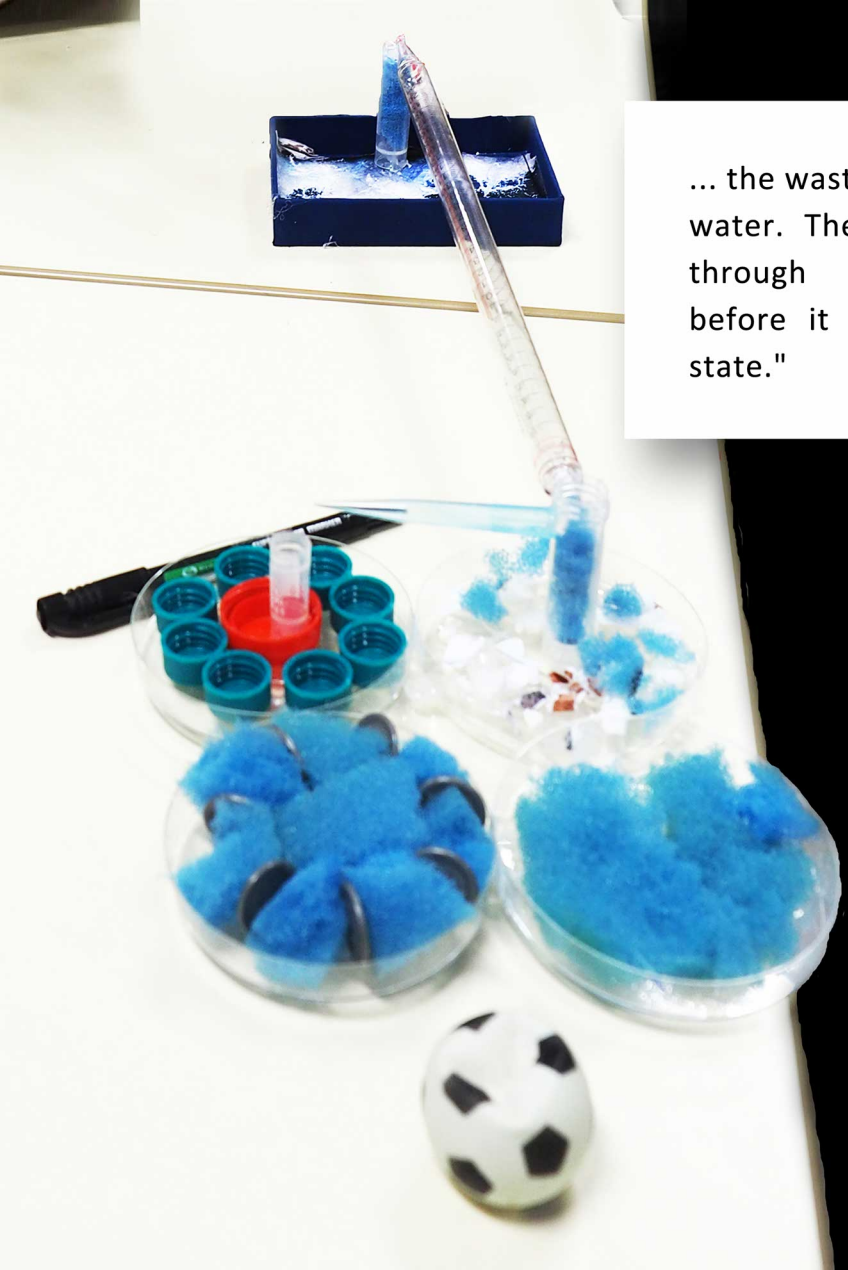
Jean-Philippe Pierron, contemporary French philosopher in the fields of ecology and sustainable development, especially with respect to the element *water*; free translation from his book *La politique de l'Eau. Pour une nouvelle écologie* (Édition Francois Bourin, 2018).







"Our work is an artistic contemplation on the concept of water purification. The water from the polluted river is first lead through a canalisation system to the purification plant where ...



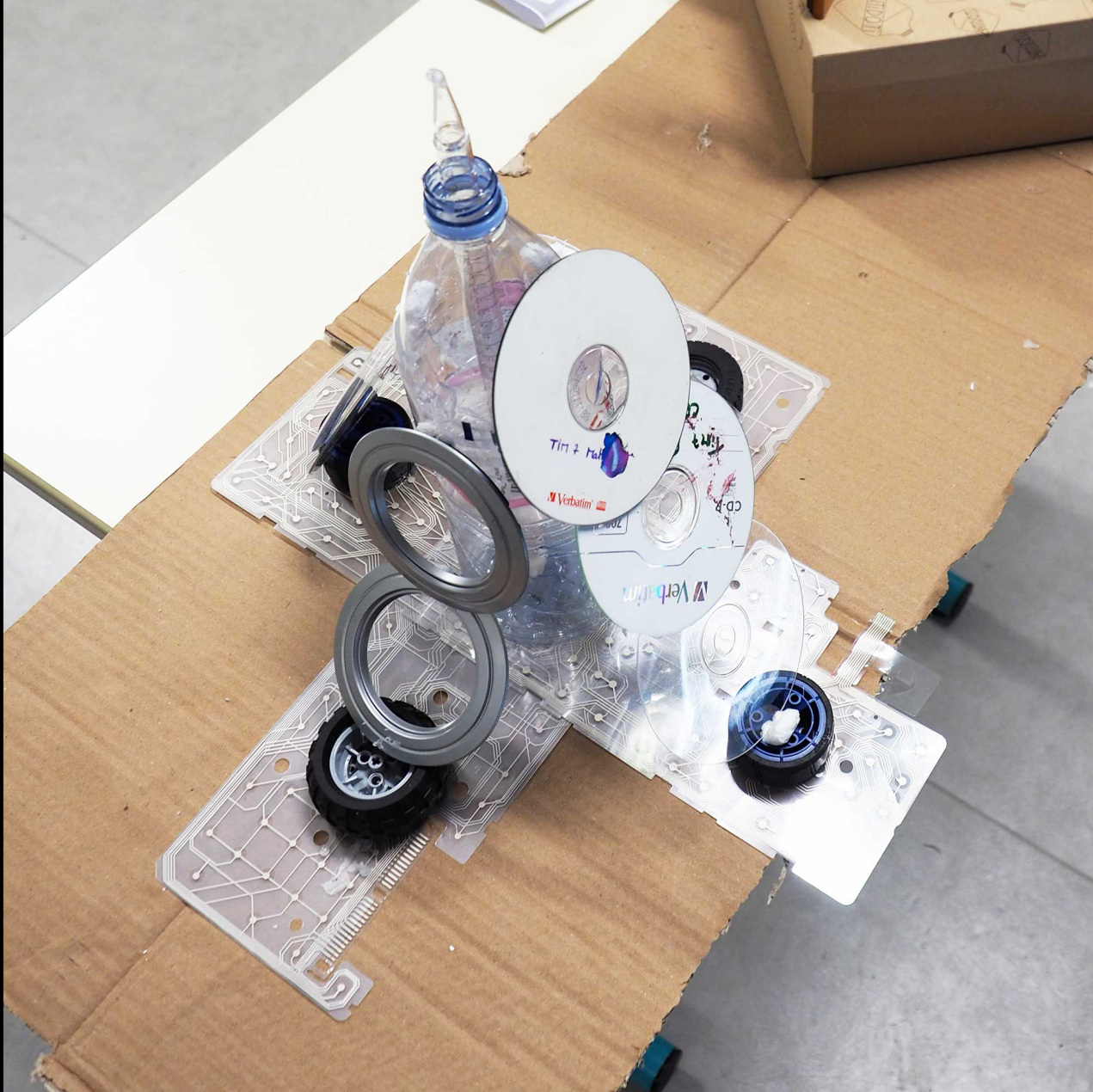
... the waste is separated from water. The water has to go through multiple stages before it arrives at a clean state."

"The **purification plant** re-connects the technical system with the natural systemic. It's within this plant that the course of the anthropised water is taking place. Being the location of this metamorphosis, the purification station **redefines the territories of the sacred and the profane, the wild and the artificial**. The purification plant, a sort of 'inverted temple', redefines the way humans see their position within nature by measuring their impact on it. It is the magnifying mirror of the effects of mankind's powers. Not a temple where the sacred is celebrated, but a space where the perfect sacrilege is conspiring, trying to negotiate a new alliance, through physicochemical or ecosystemic purification. This transitional space, where the transformation of impure into pure water is taking place, has a technical sense (de-pollution), a pedagogical (school visits) as well as a socio-political one (the decisions of implanting these technical insitutions into the territories). The purification plant is one of the symbolic activators where man learns to understand himself by working with nature through the scientific-technical and ethico-political mediation of the water cycle."

"This work represents a pyramid which distributes water in all possible ways and through all its different channels. By its architectural structure it resembles a house of cards. The work illustrates the complex and at the same time fragile distribution of water throughout the entire world, being easily and directly affected by mankind's actions."

"Water is the principle, the
arche (origin) of all things. All
things are water."

Thales of Miletus, Greek philosopher
(c. 624 BC – c. 546 BC)





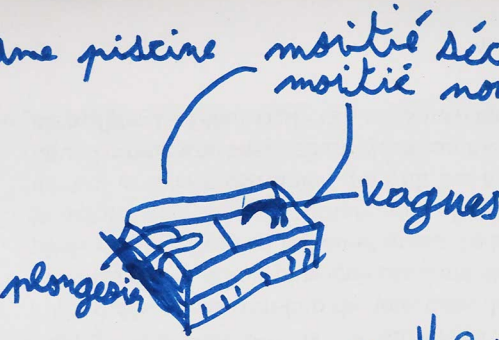
"A poetical approach to water would think about an ecology rather in terms of a gift and not of exchanges. (...) indulging in the festivity of a playfulness where, without grandiloquence, the water of a swimming pool (...) becomes the center of a resurrecting and stimulating universe; reopening the presence of water in the cities may help to **reinstate this primordial relationship between man and water** (...) For one moment, water may once again become an environment where it is possible to live and not to be no stranger."

Jean-Philippe Pierron,
contemporary French philosopher, see page 50.

"I was slowly swimming in the darkness of the swimming-pool, my mind in peace, sharing the gaze between the surface of the water, barely changed by my slow and silent breaststrokes, and the immense night sky, visible through the glass window offering limitless perspectives. I had the feeling of **swimming in the very heart of the universe**, among almost palpable galaxies. Naked in the night of the universe, I gently stretched out my arms in front of me and slipped over the wave without a sound, without a swirl, like in a stream of celestial waters, in the very heart of this Milky Way which in Asia they call the River of Heaven."

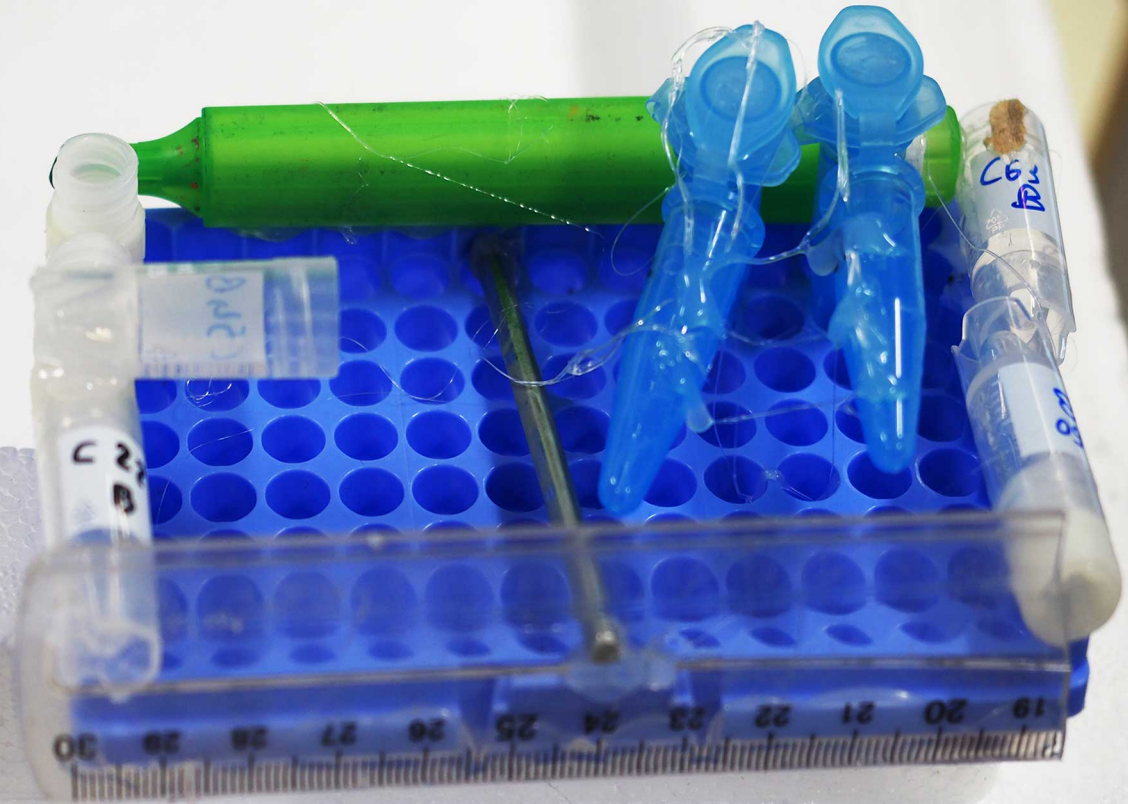
Jean-Philippe Toussaint, Belgian writer, free translation
from: *Faire l'amour* (Les éditions minuit, 2002).

Une piscine moitié sécurisée
moitié non sécurisée

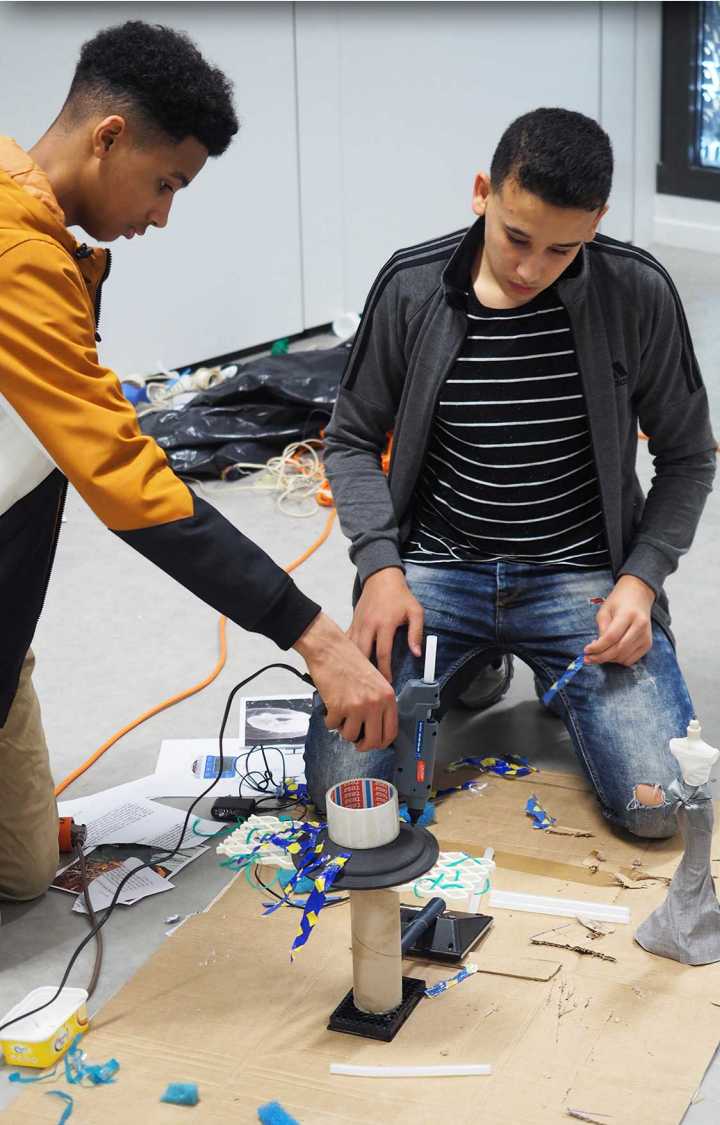


plongée vagues

Draft for a futuristic swimming pool aiming at strengthening the poetic relationship between mankind and water by reminding us of its primordial state: A pool divided into one secured, anthropised half with water “domesticated” by man – and the other half with untamed waves, water in its “wild”, natural stage.



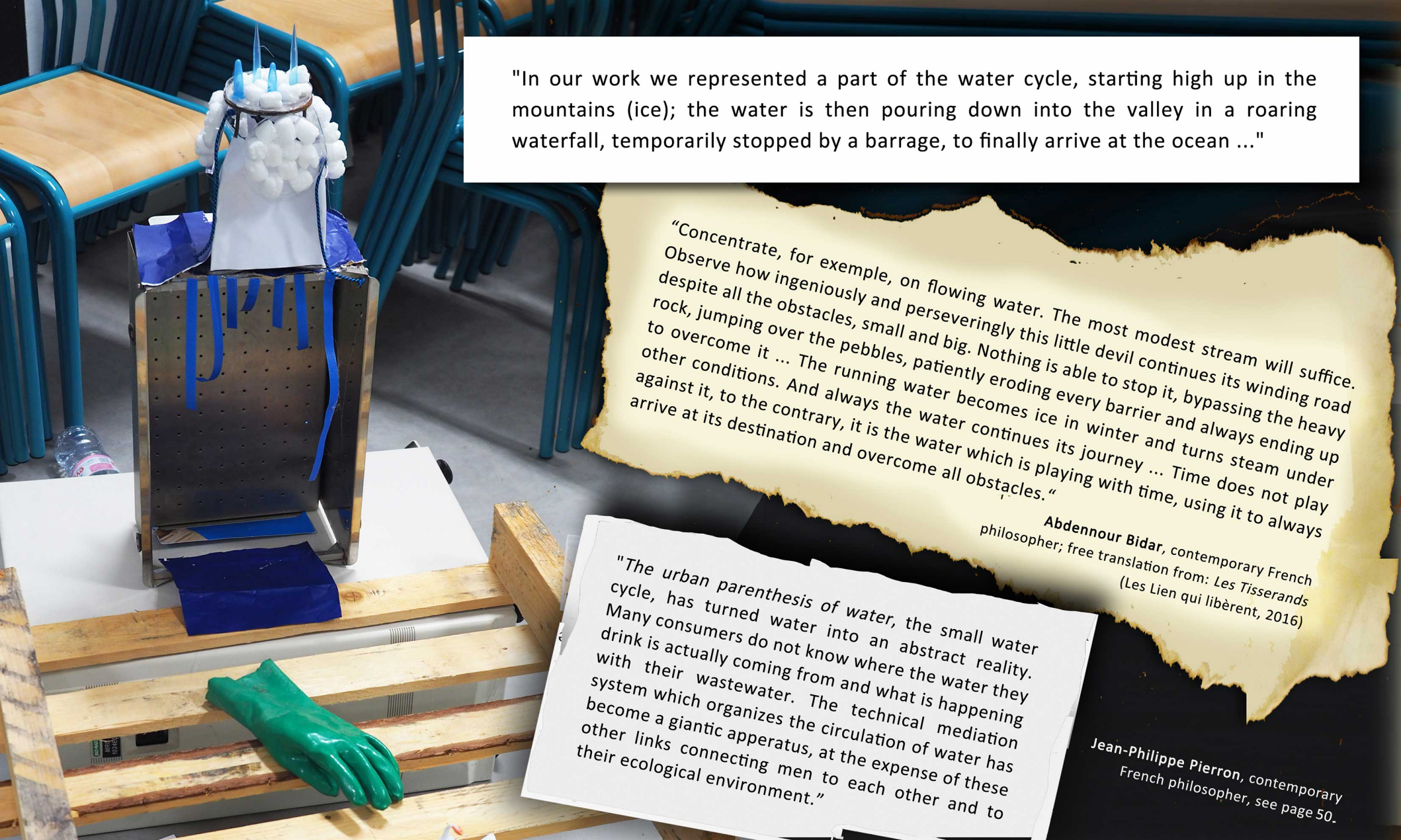
“We have created a staging of water in a city reuniting the elements of art, sport and nature.”



“To be astonished by the element of water and to be astonished by one’s own astonishment has a stimulating and mobilizing effect. (...) The architecture of the Roman villa and (...) its fountains: a poetry which sings the rhythm of water and waves by inventing an adapted versification; the music and the fluidity of its flow make **the song of running waters** a sensitive mediation about the meaning and order of things. (...)

The **staging of water** can be found in rituals and festivities: (...) the putting into service of a swimming pool, the opening of a water meter, the digging of a well from where the water gushes out in great beams celebrated in impressive fountains, ... – in all these cases the water is ‘socializing’ with us. Our rituals allow it to enter the scene.”

Jean-Philippe Pierron, see page 50.



"In our work we represented a part of the water cycle, starting high up in the mountains (ice); the water is then pouring down into the valley in a roaring waterfall, temporarily stopped by a barrage, to finally arrive at the ocean ..."

"Concentrate, for example, on flowing water. The most modest stream will suffice. Observe how ingeniously and perseveringly this little devil continues its winding road despite all the obstacles, small and big. Nothing is able to stop it, bypassing the heavy rock, jumping over the pebbles, patiently eroding every barrier and always ending up to overcome it ... The running water becomes ice in winter and turns steam under other conditions. And always the water continues its journey ... Time does not play against it, to the contrary, it is the water which is playing with time, using it to always arrive at its destination and overcome all obstacles."

Abdenmour Bidar, contemporary French philosopher; free translation from: *Les Tisserands* (Les Lien qui libèrent, 2016)

"The urban parenthesis of water, the small water cycle, has turned water into an abstract reality. Many consumers do not know where the water they drink is actually coming from and what is happening with their wastewater. The technical mediation system which organizes the circulation of water has become a gigantic apparatus, at the expense of these other links connecting men to each other and to their ecological environment."

Jean-Philippe Pierron, contemporary French philosopher, see page 50.

Some “Still-Lives” ...



... created by the second group, arranging a setting where their own works on the topic of “Water & Poetry” enter into dialogue with the ones from the first group “Science & Plastic”:

Object #1 – group “Science & Plastic” »


"*Terminator Bike* is the title of my work! A robot riding a bike - I love cycling. Concerning a bike, there are various plastic items involved: such as the tires which break up into microplastics while rolling over the asphalt."



Object #2 – group “Water & Poetry”



"My artwork: The water running through our bodies, is it no longer pure ...?"



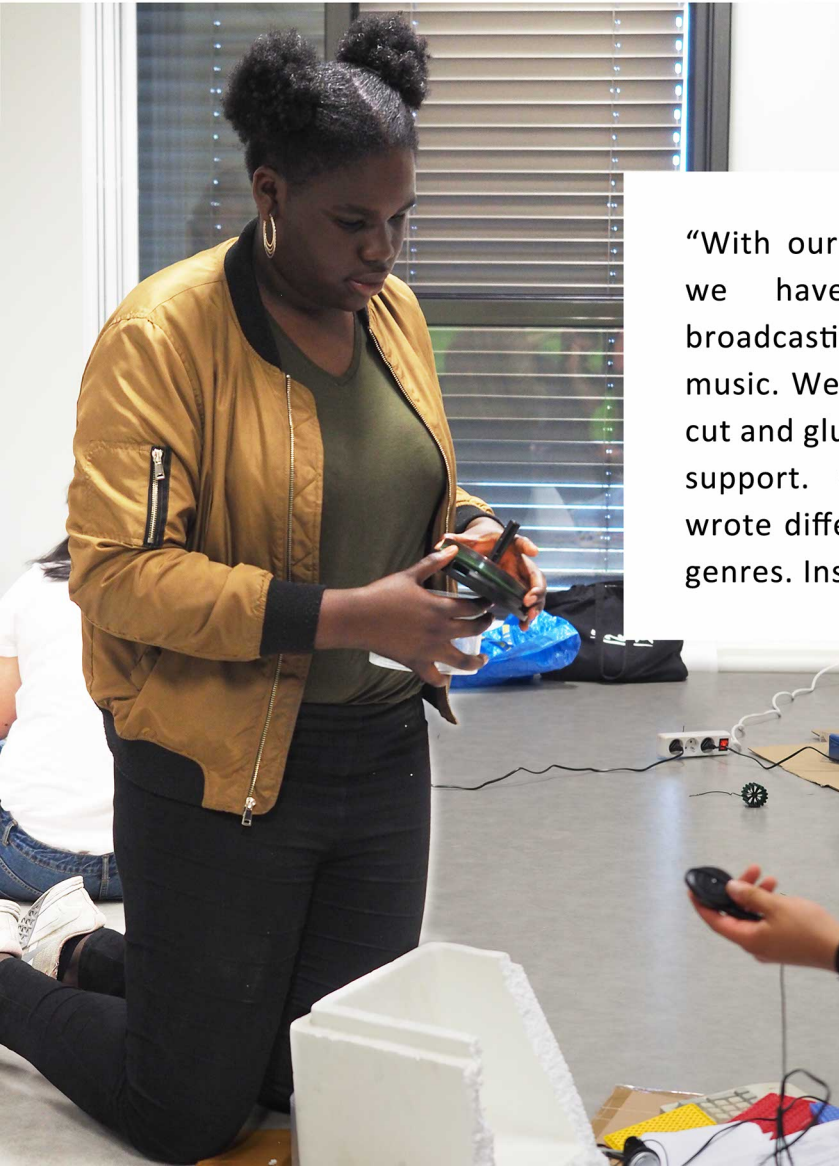
"Our veins infiltrated by plastic nano-particles? The scientists do not know the answer yet ..."

For the concept of the third object integrated into the following "Silent-Life" (plate with joystick etc.) please see pages 27, 28.

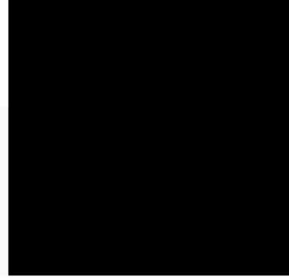
"Silent-Life"



Object #1 – group “Science & Plastic”



“With our work *The Music Box* we have represented the broadcasting and listening of music. We used CDs which were cut and glued onto a polystyrene support. On the records we wrote different notes and music genres. Inside ...



... the box we put a headset, a piece of radio and speakers to illustrate that many of the objects allowing us to listen to music ...



... are made of plastic."

Creating new music refrains on the basis of text fragments taken from scientific research articles ...?



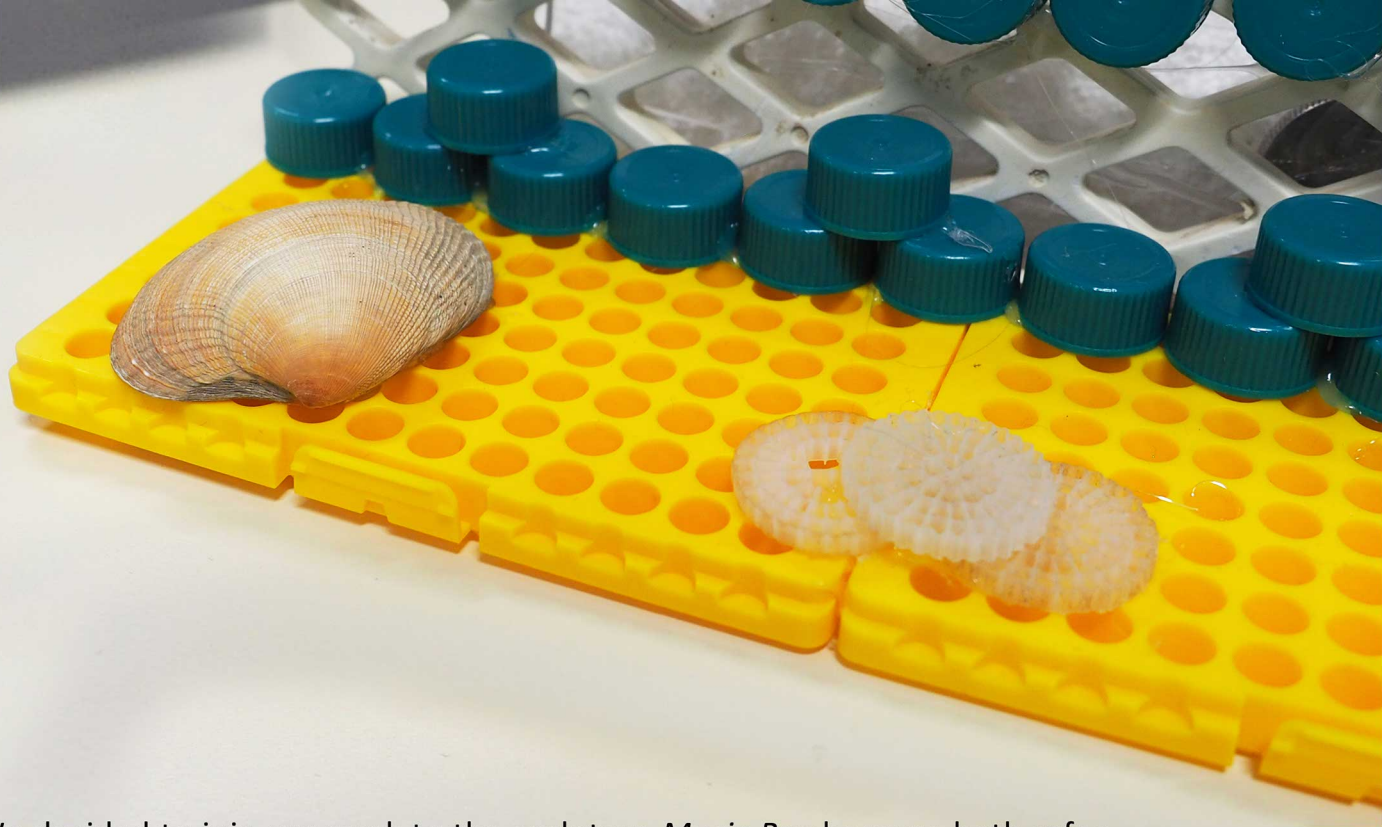
Object #2 – group “Water & Poetry”

“Our artwork depicts a beach which, over the years, has been ‘plasticized’ by mankind due to the waste he throws away. Two conches washed upon the beach are complaining about it at a child which is able to hear nature’s voice by holding them to his ear.” *



"We decided to join our work to the sculpture *Music Box* because both refer to the universe of sounds. In our case, men who, metaphorically speaking, listen to the whispers of nature, will not fail to realize the urgency of the ecological challenges we are facing. We finally integrated into our ‘Silent-Life’ a third object created by the first group: an octopus. This adds a reference to its habitat, the ‘invisible’ world below the water surface, which is equally affected by plastic litter."

* Concerning the points of origin of these materials see page 20.



The photograph shows a project titled "Silent-Life". On the left is a turtle-shaped robot with a silver foil dome, a clear plastic head, and light green limbs with orange circular sensors. On the right is a face constructed from electronic components: a white foam head with a blue band, two black speakers for eyes, and a yellow base with blue and white components forming a mouth and chin.

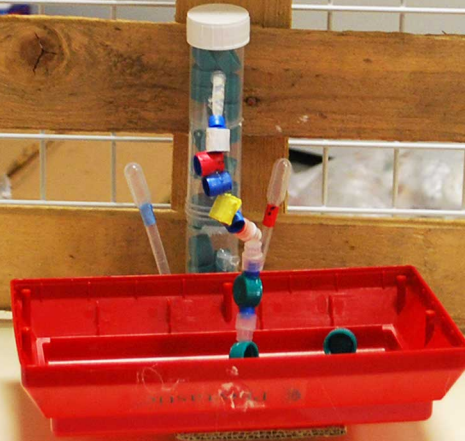


"Silent-Life"

"We added the first group's clock to our tap filled with microplastics in order to raise awareness for the fact that the topic of plastic pollution is an urgent topic: the more time passes without effective counter-measures, the more our plastic-heritage will accumulate."



Par rapport aux histoires liées aux trois objets veuillez-vous page 21 (robinet), 30 (football) et 38 (horloge).



Object #1 – group “Water & Poetry”

"Our work represents a computer in which we can see a beach covered with plastic waste. Articles and documentary movies on the internet about the topic of plastic pollution in marine environments may serve to sensitize especially those people for this topic who are living far away from the oceans and therefore lack the chance to realize its impact through a personal experience. The reason for choosing the two other sculptures (drums and basketball-court) for the creation of our 'Silent-Life' was that they represent both leisure activities (in general pursued at some distance from the oceans); during these activities people are likely to block out the issue of plastic pollution although their behaviour may very well have an impact on its in- or decrease."



Object #2 – group “Science & Plastic”



"I play the drums. I tried to represent this instrument with all its parts. A variety of them are made of plastic, such as the membrane of the snare drum."



Drums Kit

With respect to the third object integrated into the following "Silent-Life" (basketball court), see page 32.

"Silent-Life"





For the “scientific origin” of the blue foam please see the next page ...

The blue foam had been contributed to the “buffet” of artistic materials by the scientist *Dr. Xavier Cousin* from the laboratory Ifremer (Houmeau, Palavas/FR). During his research it had been used in the aquariums as a habitat for bacteria whose „job“ consisted in cleaning the water.



EXHIBITION



The students present their “artistic-scientific-philosophical” hybrid-works to the teachers ...



... and to their class mates.





Meeting and exchange between the students and the researchers of the colloquim: The scientists discover their tools re-contextualized in the students' artworks.



Dr. Xavier Cousin (Ifremer, Laboratoire Ressources Halieutiques, L'Houmeau/FR)





CONTACT :

Roman Kroke

Interdisciplinary Artist

Lecturer at the Berlin University of the Arts (UdK)

Homepage : www.Roman-Kroke.de

Linkedin: <https://www.linkedin.com/in/romankroke/>

FB : <https://www.facebook.com/KrokeRoman/>

E-Mail : rkroke.udk@berlin.com

Tel (F) : +33 769 33 26 99

Tel (D) : +49 163 48 71 751