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# **New Species in the Mediterranean: a visual essay on human impact on biodiversity**

Sandra Martorell. Artist and lecturer at the Polytechnic University of Valencia

Elisenda Ardèvol. Professor at the Universitat Oberta de Catalunya

Gemma San Cornelio. Artist and senior lecturer at the Universitat Oberta de Catalunya

Our work begins with the collection of waste on beaches with environmental activists. This waste, dumped into the sea, is returned and swallowed up again by the sea. Plastic bottles, cutlery, bags or condoms replace shells, crabs and other marine flora and fauna. We wanted to portray this new invasive plastic species that we find in our seas in a series of images made by means of the cyanotype photographic process, also known as blueprint.

We took the collected waste to the photography laboratory and we created photograms through physical contact. It is an artistic, documentary and critical project that aims to inform, signify and reflect on the impact of human presence on the environment. This is all done by harnessing the potential of artistic expression to generate social bonds as well as to facilitate collective action and citizen agency (Fowles and Arterberry 2013; DeMarrais and Robb 2013).

## **Introduction**

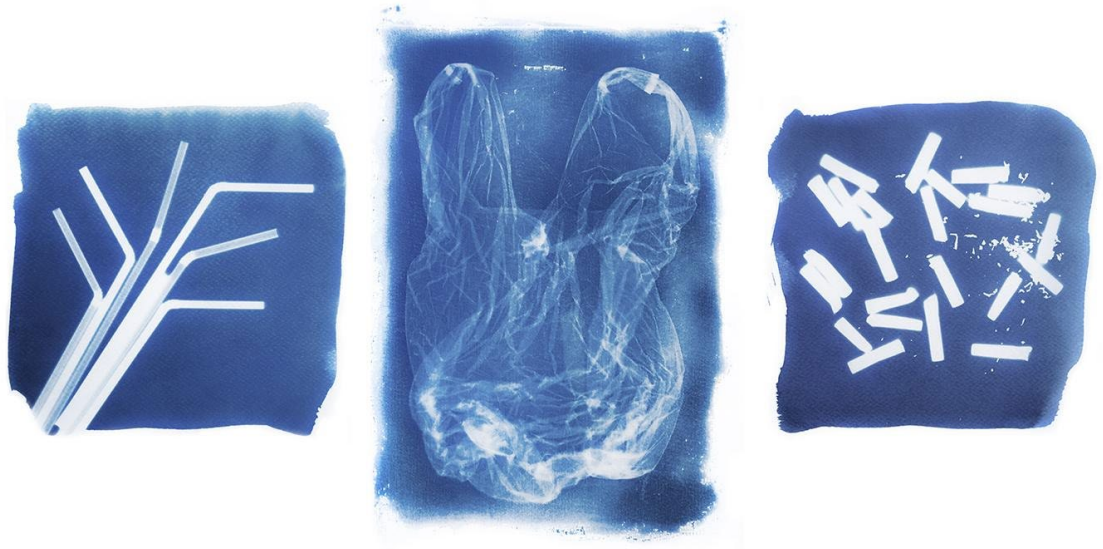
This proposal stems from our previous ethnographic research into new environmental activists. In that previous research, we analysed the visual micro-narratives and noted the power that images have for the activists to contribute to change (Ardèvol et al., 2021). Learning from that, we decided to experiment with art-based research and composed a set of images evoking the new species that inhabit our seas, as we can see in this picture of a tampon:



Picture 1. Sanitary tampon

In this sense, we draw on the approaches of DeMarrais and Robb (2013), as we believe that an artistic production such as this can contribute to understanding the world. It is also a way to express values and promote discussion, a supplementary form of knowledge (Kay 2013; Roes and Pint 2020).

The first step was to contact activist groups and accompany them on a beach clean-up on the Mediterranean coast during the months of May and June 2021. We brought home some of the waste collected, such as straws, bags or cigarette butts, and we created these pictures:



Picture 2. Waste composition. Straws, bag, cigarette butts

The photographic process used was the cyanotype. It was popularised in the nineteenth century by botanist Anna Atkins. She used it to catalogue species in a quick and agile way. For this purpose, she used an emulsion that, after being exposed to sunlight and developed, produced an intense Prussian blue colour.

Atkins created a compilation of cyanotypes of algae, a document of great scientific value, but also an artistic representation of the marine universe (Saska 2010). Today, 180 years later, we undertake a personal version of that work, to talk about the ‘new species’ we find in our seas and oceans, like the bag we can see in the following picture.



Picture 3. Anna Atkins algae in comparison with our new marine species

Source: The New York Public Library

Most of these ‘new species’ are made of plastic, a material that, according to the report *Plastic & Climate: The Hidden Costs of a Plastic Planet* (CIEL 2019), is one of the fastest growing sources of industrial greenhouse gas emissions responsible for the climate crisis.

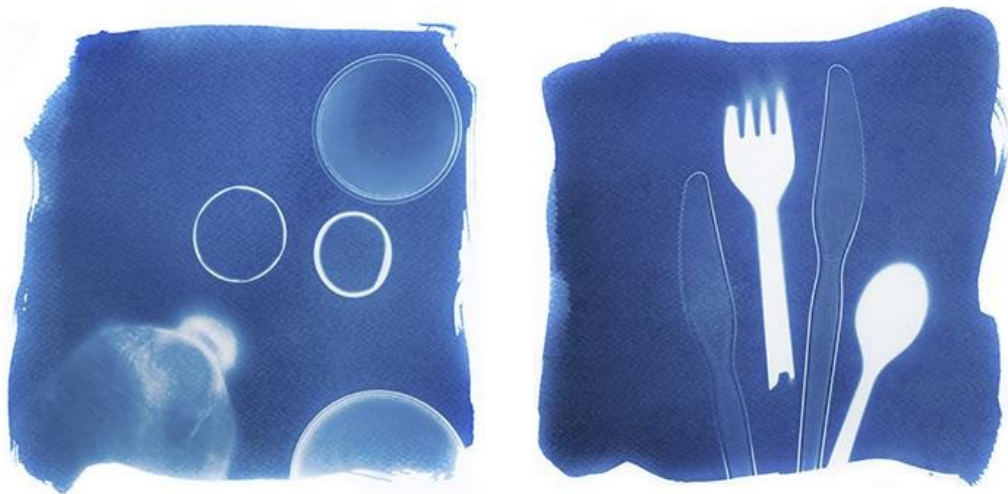
### **Human footprints on the environment**

Every decision, every act of production and consumption has an impact on our environment. The simple fact of inhabiting it leaves footprints on the planet. The idea of a footprint is the first concept we considered for our visual proposal considering its polysemy, but at the same time as a whole that is constantly present when we talk about the ecological crisis.

In environmental terms, we can talk about the carbon footprint, which refers to the amount of greenhouse gases (GHG) emitted into the atmosphere as a result of the

production or consumption of goods and services (Jancovici 2003; Wiedmann and Minx 2008). Also, the ecological footprint, an indicator of environmental impact that relates to the demand for natural resources by human beings and the planet's capacity to absorb them (Wackernagel and Rees 1996).

To reflect the idea of footprints as literally as possible in our images, we created photograms. Photograms are camera-less photographs, showing silhouettes of objects created by physical contact on light-sensitive materials exposed to light and subsequently developed. They have the value of a trace, of an 'index' according to Peirce's terminology (1986). They belong to the same family as fingerprint traces on asphalt or fossils (Fontcuberta 1993), as we can see in the following pictures made with bottles, cups, cutlery and bottle caps. We used engraving paper for the prints due to its absorbency and resistance to water (used in the developing process), and we spread the emulsion with fluid brushstrokes, evoking the sea. A sea that harbours these new species that emerge from the human footprint, a direct influence on the environment and climate change.



Picture 4. Waste composition. Bottle, bottle caps, cups, cutlery

These pictures connect with the idea of Anthropocene (Crutzen and Stoermer, 2000), the era marked by the impact of human activity on the ecosystem. And more specifically with the idea of the Plasticene age (Reed 2015; Haram et al. 2020), that has been reflected in the work of other artists such as Kalliopi Monoyios (Drops in the Ocean, 2020; Divine, 2020; Gyre, 2019; One Time Forever, 2019) or Kelly Jazvac (Plastiglomerate Samples, 2013).

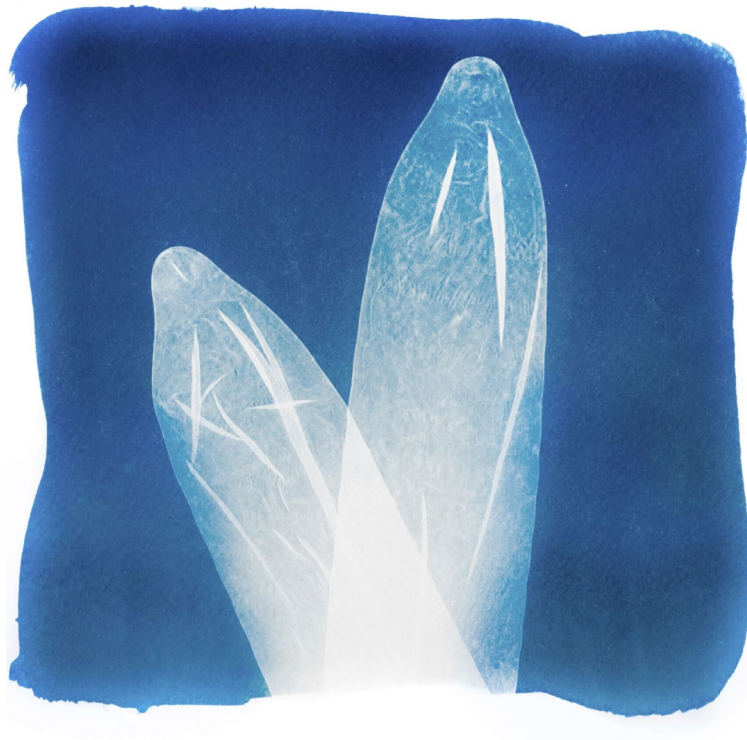
### **Recontextualizations through visual play**

Plastics in the seas often coexist with marine wildlife species. Sometimes it is difficult to distinguish between them. In fact, during the rubbish collection we mistook a plastic bag for a jellyfish; an anecdote that led us to create the following photogram:



Picture 5. Jellyfish

This visual game is built on the idea of mimesis. It arises from an imitation of nature. This imitation of the mimetic or sympathetic magic is the ritual practice that transfers the properties of one object to another by means of its resemblance (Delgado Rojo, 2015). Once we had placed the audience in the context of the ‘biodiversity’ of the sea through this first image, we decided to abandon the metaphor and give the following images their own entity. Thus, the following images do not seek to be pre-existing organisms, but are presented as new species, like the condoms in the picture below.



Picture 6. Condoms

### **Between art and documentary**

Photography is ‘a recording technology but also a medium of expression that has an impressive and varied potential to examine the material world’ (Pauwels 2019, 18). From its documentary side, it has been used in scientific research as evidence of empirical



reality and as a tool for analysis, as Anna Atkins did with her cyanotypes of algae. For her, photography was merely functional. As a botanist, she used it to keep a record of the species she collected for subsequent classification. This idea of inventorying through photography has been done in other visual essays that also work on the impact of human beings on the environment. An example of that is *Everyday anthropo-scenes: a visual inventory of human traces*, by Edgar Gómez Cruz (2020). Gómez Cruz creates a sequence of images as visual reflections evoking the connection between human beings, everydayness and nature. The images have a documentary function, but they also follow certain aesthetic criteria underlined through repetition. In this sense, we can differentiate between photography as a document about the world, and photography (from its more artistic and activist side) as an action on the world. Both can be considered when making visual essays. Another example of that is *Worlds of (in)difference: a visual essay on globalisation and sustainability* by Luc Pauwels (2019). Pauwels creates a personal account of some of the challenges of globalisation and sustainability as observed in the everyday of cities around the globe through photographs taken on the streets. The works of both authors are figurative and close to reality, using a conventional type of photography. Our essay, on the other hand, is an alternative proposal that uses photography in an expressive way, proposing a reworking of reality using an archaic procedure such as cyanotype. For that purpose, we recontextualise the waste we found, figuratively returning the rubbish to the sea as a new invasive marine species.

This shows that the boundaries between photography as a document and as art are often blurred. Following Grady's (1991, 6) definition, a visual essay is a 'statement about human affairs that purports to represent reality and is consciously and creatively crafted from non-fictional materials that are, at least in part, directly connected to the affairs thus represented'. Our visual essay starts from real elements, although there is no mediation

of the camera. However, it does not distance them from what they represent; quite the contrary. They maintain their documentary character even more closely, through the trace left by the object through direct contact with the photosensitive paper. They are a testimony and a document, even though they are far from the more normative documentary style. Thus, the visuality based on the use of cyanotype narrates the reality of the problem from a different perspective. That invites us to participate in a reflective and interpretative experience, thanks to its art-based approach. As botanists do, we document some of the new entities we can find in the Mediterranean Sea. These cyanotypes depict both the traces of the new species and the dangerous and menacing footprints of what humanity can pose to the world.

### **Disclosure statement**

No potential conflict of interest was reported by the authors.

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