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SUSTAINABLE DEVELOPMENT OR DEGROWTH

Faced with an ecological emergency, the world of conservation restoration of cultural property is at a crossroads. Between the UNESCO conventions and the new approaches to sustainable development, how can heritage professionals combine the preservation of works of art with environmental protection?

In 1972, UNESCO signed a convention for the protection of the natural and cultural heritage. The most original feature of the 1972 Convention is that it brings together in a single document the concepts of protecting nature and preserving cultural property. The Convention recognises the interaction between human beings and nature and the fundamental need to preserve the balance between the two. In 2014, the International Council of Museums (ICOM) and the International Institute for Conservation (IIC) agreed on common environmental guidelines: the conservation of collections should be carried out without heating, ventilation or air conditioning (HVAC), with passive solutions that are easy to maintain and low in energy consumption.

More recently, the term sustainable development has been opposed by terms such as degrowth, frugal abundance, prosperity without growth, convivialism, post-growth, etc., which propose a project for an alternative society involving the transition from a growth society to a post-growth society and a fundamental change in values summarised by the virtuous circle of the 8 Rs (re-evaluate, re-conceptualise, restructure, relocate, redistribute, reduce, reuse, recycle). It is from this virtuous circle of the 8 R's that the 3 R's rule (reduce, reuse, recycle) is extracted, sometimes used in conservation-restoration. This strategy has a more detailed variant, the 5 Rs rule, which forms one of the foundations of the zero waste approach.

It is in this somewhat contradictory context that the growing awareness of ecological issues is beginning to shake up professionals in all sectors

of cultural heritage. They are calling behaviour into question and conditioning new public policies. What is the situation in the specific field of conservation and restoration of cultural property? How can heritage preservation be combined with environmental protection? How can practices be adapted to better meet the pressing need for sustainable development? The majority of French conservator-restorers (75%) are self-employed, working in preventive, curative and restoration conservation. Like everyone else, they consume energy and resources, and generate a certain amount of pollution and waste. But what is the environmental impact of conservation and restoration work, and what can be done to become eco-responsible? What is the world of conservation of cultural property in general and restorers in particular doing? It is still impossible to answer the first question.

The workshop of the conservator-restorer

The integration of eco-responsibility is an essential stage in the life of a conservation-restoration workshop whether institutional or private.

It must be taken into account right from the architectural design stage of the building, so that work processes, the choice of equipment and the provision of collective protection can be adapted as effectively as possible. Retrofitting workspaces is never easy.

Reducing energy consumption can be achieved through major building renovation, but other levers for action can also be mobilised. These include adapting premises and raising occupants' awareness of energy savings, working on the building envelope, installing efficient heating and ventilation equipment and optimising equipment operation. Purchasing energy-efficient laboratory equipment to reduce electricity consumption is also a good strategy. The issue of programmed obsolescence must also be taken into account, and since January 2021 there has been a reparability index, which applies to certain equipment, the aim being to buy durable and repairable.

As far as lighting is concerned, however, improvements have already been made, as follows incandescent lamps have been banned since 2012, followed by fluorescent lamps in 2017 and halogen lamps in 2018. All that remains are compact or low-energy fluorescent bulbs and light-emitting diodes, which are highly energy-efficient. Also of great interest is the research carried out by the American aeronautics industry into air purification, which has identified the decontamination properties of certain plants that absorb formaldehyde, toluene, ammonia and benzene vapours.

Commitment and training

According to the results of a survey on professional commitment to the environment conducted in 2019 of 64 conservators and restorers, more than one in two respondents already consider themselves to be committed to adopting environmentally friendly

practices, and they also feel that they waste and harm the environment in their professional practice. Still more than one in two respondents said they had already looked for or implemented alternatives to the two materials considered the most polluting, namely plastics and solvents. One of the difficulties in this field is the lack of information on ecologically responsible methods or materials directly applicable to the professional practice of conservation. References are often scattered and searches using key words often lead to nature, town planning and architecture. What we have here, then, is a group of professionals who are aware of the potential impact of their activity on the environment, but who need to develop their knowledge and skills on subjects related to the ecological transition and how this relates to the practice of their profession.

As far as conservator-restorers are concerned, the principle of respect for the environment is not yet an integral part of the code of ethics. Nor is it really yet part of the training process, but in fact the same applies to other conservation professionals.

Plastics, cellulose and gloves

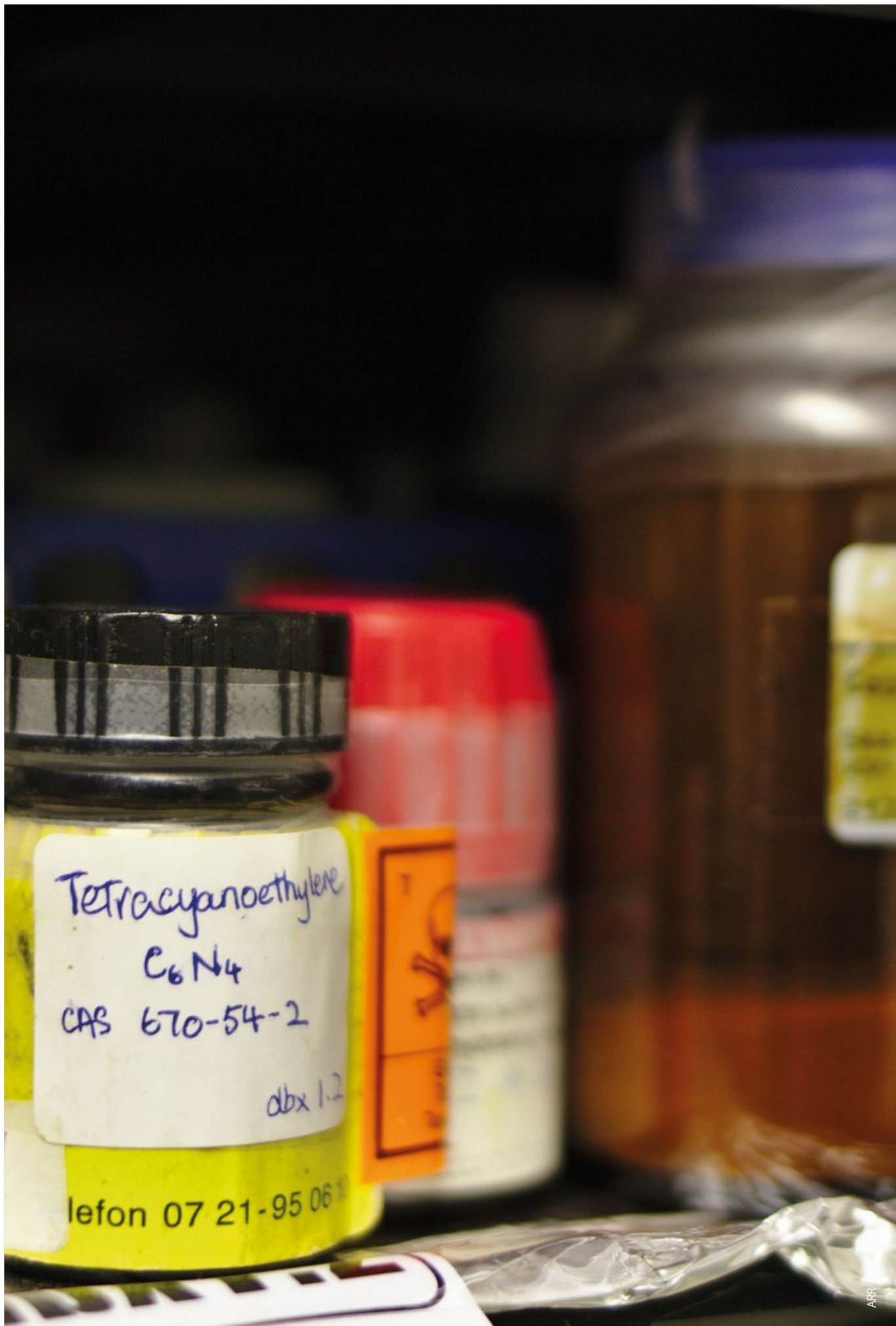
Before looking at the materials used in conservation-restoration, we need to talk briefly about life cycle analysis, which is a method whose main objective is to measure the impact of a material on the environment, in other words, to assess the environmental cost of a product. The cycle takes place from the search for raw materials to the end of the material's useful life. It covers extraction of the raw material, transport, manufacture, installation, maintenance, demolition (if applicable) and recycling. The intertwining of these processes often makes it difficult to determine the sources and destinations of the flows. This is particularly the case for multifunctional processes where a single process will generate several products, or where a product has a large number of components and

there is opposition to manufacturers withholding information.

Paper, cardboard, plastics and gloves are materials widely used in restoration activities, they are used in the temporary or long-term packaging of works of art or for personal protection, they are all recyclable, but the production of cellulose involves high costs for wood, water and energy, generating chlorinated and sulphurous pollutants. As for cotton, which is used every day, growing it requires massive water consumption and the use of toxic fertilisers and insecticides. All these materials, including gloves and plastics, can very often be recycled, but it is not possible to reuse and recycle everything indefinitely, because the material inevitably degrades. And let's not forget that the raw material for plastics is oil, derived from non-renewable sources that are slowly running out.

Solvents

Since the 1960s, conservation-restoration practices have become increasingly professional, and there has been a significant increase in the use of organic solvents, with toxicological and ecotoxic risks that are often poorly assessed and managed. Unfortunately, the precautions taken to treat works of art are not without effect on health and the environment. Many of these solvents affect the nervous, endocrine and reproductive systems, and can also affect organs such as the liver and kidneys. To date, polychrome restorers are the most exposed, despite a fairly recent rise in awareness to which new methods and products are attempting to respond. Replacing a solvent normally used in the profession with another is encountering a great deal of reluctance on the part of professionals. The two main arguments against this are, on the one hand, that we do not know the effect on the works of the replacement solvents that may be proposed and, on the other hand, that we are not used to using them.



Tetracyanoethylene

C_6N_4

CAS 670-54-2

dbx 1.2

lefon 07 21-95 06

ECOLOGY

The European REACH programme is a major step forward in this area, aiming to assess over 30,000 chemicals on the basis of their toxicity to health and the environment, in order to eliminate the most dangerous. But there is a shortage of experts to assess chemicals, and a lack of resources to pass on information. The implementation of developments through legislation, i.e. regulations on exposure limits, is even slower, and current standards often lag behind scientific knowledge. Regulatory limit values are therefore indicative: they are a tool to help assess risks, but must be supplemented by other sources.

Some green methods have nevertheless been developed in conservation restoration. One of these involves applying charged solvents in a gel, which not only increases control of the cleaning process, but also reduces the volume of solvents used and the amount evaporated. There has also been research into the use of essential oils as a preventive air treatment or as a biocide.

What's next?

It is possible to become a more eco-responsible conservation-restoration professional after a radical change in behaviour and lifestyle. This change must first take place at a personal level before it can be professional. Without persuasion in personal life, it won't work in professional life. There are many obstacles to change: human inertia, the lack of research into alternative products, the very status of conservator-restorers, who in France are independent professionals, dispersed units outside the institutions for which they work. Ecology must be included as an additional reference in the profession's Code of Ethics. Today, researching, collecting, conserving, restoring, interpreting, exhibiting and transmitting tangible and intangible cultural heritage must be an ecological, accessible and inclusive process.





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