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News and Views

Material witness: Everything must change

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No one finds it easy to come to terms with death, and for the materials scientist the death of their materials is still traumatic. They may feel let down, as the bereaved often do; they say that the material 'failed'. And so they battle against entropy, struggling to achieve permanence in a world where impermanence is one of the fundamental laws.

For artists and designers, however, their relationship with impermanence isn't what it used to be. Some embrace change and decay, as artist Joanna Greenhill explained at a recent discussion meeting at London's Tate Modern gallery (*Fugitive Materials* 29 November 2005) on 'the art and science of impermanence'. Although painters, clothiers and sculptors once fretted over whether their pigments and dyes would fade or their metals corrode, now artists use materials that cannot possibly last long: milk, mud, snow and ice.

Artist Cornelia Parker goes further: she confessed that many of her works involve "killing off the object", which she then 'resurrects' in another form. She explodes sheds, steamrollers silverware, throws teapots off cliffs — and then arranges the remains in a way that speaks of this process of change.

And as designer Chris Lefteri showed, the issue of decay in many commercial products has been side-stepped by the shrinking of product lifetimes due to the dictates of fashion and technological progress. Today, products are discarded not when they are worn out but when they are obsolete. As a result, perfectly functioning items are sent to the landfill, unless they can somehow be recycled. "We have reached a point", Lefteri said, "where the unmaking of products is as important as the making of them."

One answer is of course to make the products biodegradable, and there are now some ingenious solutions to that — such as a water-soluble plastic for food packaging, or artificial snow for movie sets made from starch. Lefteri pointed to how the cell phone company Nokia is using shape-memory alloys for the screws holding its phones together, which automatically unscrew when placed in hot water. This makes disassembly and recycling of materials much easier.

But to a designer like Lefteri, environmental consideration isn't the only factor raised by short product life cycles. We seem prone to forming an emotional attachment to even the most mundane objects if we possess them for long enough. It's understandable perhaps that we might grow to love our car, but we even feel fond of our favourite coffee mug. If ownership becomes so fleeting, how must the designer respond? Does design itself then risk becoming redundant?

All this is a long way from the traditional concern of the materials scientist to fight decay: to foil cracks, to prevent corrosion and fatigue and wear, like modern Canutes hoping to hold back the tide of change. As materials scientist Mark Miodownik pointed out, this isn't how nature copes with impermanence. Instead, it constantly renovates and replaces by reproduction. But that's difficult.