

# Autre temps, autre moeurs

Remember those happy days before the coming of the nanny state, when the study of chemistry was less ruffled by restrictions than it is today. So much could be done without the necessity of ensuring that, whatever you do in the way of practical experiment, you have some sort of legal cover in case anything goes wrong and someone is hurt in the laboratory or at home, simply to guarantee that the lawyers will make someone pay, come what may. In a world, which is by its nature a hazardous place, it offers a wrong perspective, I think.

In my distant grammar school days we performed experiments, often unsupervised by our instructors, and had little accidents involving explosions, burnings and gassings that we accepted as par for the course. And this was not only in the school laboratory but also at home. Towards the end of every year, our favourite chemistry teachers organised a sale in which we students were encouraged to send in lists of equipment and chemicals we needed for our private experiments. They would make out orders for commercial suppliers, and, come Christmas, we gathered in the laboratory and sorted out our orders, filling test tubes with the materials and distributing them in grand session.

Today, schools would be horrified to see what we purchased — sodium, phosphorus, chlorates, sulphuric acid, hydrochloric acid, nitric acid and various volatile solvents. Yet I cannot remember any cyanides or toxic alkaloids — no doubt our teachers had their precautionary limits. Curiously enough, there was little emphasis on face screens and protective goggles, though we rarely encountered serious trouble from physical injury. Our interests were concentrated on mild explosions, pyrotechnics, foul odours, startling colour reactions and strange precipitates and effervescences.



I have come across a piece in *Chemistry World* by a Californian student describing his experiences with laboratory stinks in particular. The broadest and most often encountered class of foul smelling compounds, he remarks, includes the thiols or mercaptans. Simple alkyl thiols from methyl to butyl have the odour of an omelette made from skunk, garlic and rotten eggs. They quickly evaporate and do not linger for long in the vicinity. The sodium salt of ethanethiol imparts a kick that burns the nose of the incautious. It will linger in the laboratory for some time and follow you home unless you take an immediate shower and change your clothes. Selenides smell even worse than thiols. The alkyldiamines, putrescine and cadaverine, true to their common names, are not overwhelming, since they lack volatility.

The alkanic acids, often oily liquids, are interesting because they all have goat-like odours, and hexanoic acid has the odour quality of an entire farmyard. It has never been explained why extending the propionic acid chain by three carbon atoms alters the odour from that of cheese to that of goats.

One thing is certain. The experimental chemist who starts to study odours fair and foul will never find himself at a loose end, but he or she will never be easily accepted in the bosom of the family home.

## Making a judgement is a balance between reason and emotion

When it comes to resolving a moral dilemma we do not depend entirely upon our reason, but have to make allowance for emotion also. These two factors come into conflict in making all manner of judgement in our daily lives.

In a discussion in the 19 April issue of *Nature* evidence is offered that the emotional component is not to be lightly dismissed. When faced with having to decide a moral dilemma we have to choose between the lesser of two evils. If, for example, in the course of an accident you have to choose between the death of one person and that of five, the decision is unlikely to be the outcome of a reasoning process.

Measurement of brain activity in individuals has shown that people with impaired emotional responses also have altered moral intuitions. Those with damage to the ventral medial prefrontal cortex in the brain show diminished response to emotionally charged pictures and reduced feelings of empathy and guilt. Patients with such lesions are more likely to choose the utilitarian option than are controls and patients with lesions in other brain regions. The effect is particularly marked when the conflict between the utilitarian and the emotional component is marked.

There is a paradox here. On the one hand, our society, believing that emotion is the enemy of reason, argues that we must go to great lengths to prevent emotional reactions from influencing decisions, particularly moral ones. On the other hand there is evidence that damage to the brain area under discussion does not impair moral decision-making. In applying the reasoning process to the playing of games, it appears that decisions are often made without reference to self-interest. Intelligent use of emotional responses is important to decision-makers, and movements are afoot to embody this notion in looking to the improvement of judgements in the legal system.

## Doctors are alienated by recent developments in the health service

There is an interesting comment in the 28 April issue of *The Lancet* regarding the future to which doctors are setting their course. In 2005 the Royal College of Physicians published the results of an inquiry into the state of the medical profession. It defined professionalism as the set of values, behaviours and relationships underpinning the trust that the public has in its doctors.

Medicine is defined as a vocation in which a doctor's knowledge, clinical skills and judgement are placed at the service of protecting and restoring human well-being. It involves a partnership between patient and doctor based on mutual respect, individual responsibility and accountability. By this assessment doctors are committed in their daily practice to integrity, compassion, altruism, continuous improvement,

excellence and working in partnership with members of the wider health team — which of course includes pharmacists.

At a final meeting on 25 April it was pointed out that doctors today are less optimistic about their future than non-doctors. They want to debate their prospects openly but may feel dangerously disengaged and alienated by recent developments in the health service. An important development, it is thought, would be to work not as discrete professional groups but as cross-disciplinary teams to include managers, students, inpatients and the general public.

I imagine that most workers within the NHS would agree on the need for greater professional co-operation and less division of labour.