

Why has Europe become so risk-averse?

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I have two key areas of concern that I wish to explore here. One is the new European proposals for chemicals regulations and the second is the broader context for this— societies' particular proclivity to become obsessed with risk nowadays.

Chemicals

The European Commission has recently decided that thirty thousand chemicals in what are known as high-production volume, which means manufactured in amounts greater than one tonne per annum, should now be subject to a new regularity procedure called REACH.

My paper on European chemicals regulation appears in the April issue of *Risk Analysis* and goes into greater detail than I am able to here.

The Chemicals White Paper, which set out the strategy for a chemicals policy, was published and released on 27 February 2001, so it is now over two years old. Two years on the EU now wishes to implement the proposals and is currently seeking views on the matter.

REACH stands for the Registration Evaluation and Authorisation of Chemicals and seeks to test all chemicals produced in volumes greater than one tonne per annum by 2012. In 1981 the European Commission introduced new rules agreeing that all chemicals on the market ought to be tested. Amazingly, many chemicals which came on to the market prior to 1981 have never been tested in terms of toxicity, carcinogenicity and various other forms of testing. However, their continued use and existence in the market over 20 years later should provide some reassurance as to their safety—indeed, many of them have been on the market for well over 50 years.

The Medical Research Council in the UK was commissioned by the then Department of the Environment, Transport and the Regions, to produce a response to the original European Commission paper. They pointed out that the proposals contained therein were essentially unfeasible and unnecessary.

They are unfeasible because there are only 16 contract research organisations in the EU both willing and capable of performing the tests that are now being required. Furthermore, they are not feasible because even if you were only to consider those chemicals produced in volumes greater than ten tonnes per annum, of which there are ten thousand approximately, they believe that it will take until 2017 just to achieve the base level tests on those. In doing so, you would have to involve 8.4 million rodents in animal experiments (45.8 million if you include their offspring) and a further 4.4 million fish, which will lead to interesting ramifications from the animal rights lobby.

To put this into perspective, since 1981, when testing was introduced, less than a million vertebrates have been used in animal tests. Hence, the implications of this Commission proposal are absolutely phenomenal. Not only that, but the tests that they propose are only base level tests. There will not be any tests for quite topical issues such as neurotoxicity or endocrine disruption. Nor indeed higher vertebrate tests on avian species or any corroboration and verification of the testing. The Commission estimates that it will cost 8.7 billion euros at current prices to achieve that. If we want to implement all the proposals, it will take until 2048 to do so.

The question is: do we really need to be going down this route? It is fairly clear that in the last decade the chemicals industry has quite significantly tidied up their house without the need for greater regulation. The percentage decline in what are called Red List Discharges, which are the most toxic substances, has been 95 per cent over the last decade. Fatalities and accidents at work have also declined by 50 per cent—to a level well below most other industries. What I find interesting and what relates this particular investigation to most of the work I do, for example, on terrorism, is the

growing gulf between people's perception of risk and the actuality of the risk that they truly face in their everyday lives.

To take just one popular example, we only need to look at the debate surrounding endocrine disruptors or what are known in the media as 'gender-bender chemicals'. These are held to be chemicals that may affect your hormones in some shape or form. They have led to some rather interesting headlines such as the *Daily Mail's* 'Human sperm count could be as low as zero in 70 years'. These type of stories are not confined to tabloid newspapers. They have also appeared in broadsheets like the *Sunday Telegraph* which ran a headline about the 'Chemical peril hidden in homes'.

This is an interesting area to examine because it is still quite a new area of scientific research, availed by a very great degree of disagreement. In many ways it is a political debate rather than a scientific one. Some observers have noted that you actually encounter many more hormone-disrupting chemicals in the food you eat than in the artificial substances that you may be exposed to. When I say many more times, I'm talking of a factor of many millions. Indeed, if you want to avoid hormone-disrupting chemicals, then what you definitely must not do is go on the oral contraceptive pill or take hormone replacement therapy, because obviously they are both designed to disrupt your hormones.

The Royal Society produced a report on endocrine disrupting chemicals (EDCs) a few years ago which indicated that, in their view, EDCs contributed little to total human exposure and, indeed, could potentially be beneficial. Rather than adding up to a lethal cocktail, as some environmentalist groups have argued, there is quite a lot of evidence to suggest that once you have been exposed to one form of hormone-affecting chemical, then it effectively acts as a blocker to other such chemicals that you may be exposed to.

Another reason this field is assailed by doubt is disagreement over the tests that people have introduced. This uncertainty applies to the species of animals that scientists test these chemicals on, the diet that they provide the

animals with and also the methods that they use, which sometimes involved injecting animals with chemicals—not a form of exposure that humans are often likely to face.

Regardless of such disagreements we are told that restrictions now have to be introduced on a precautionary basis. My concern with the so-called precautionary principle is fourfold. I started investigating it in 1998 when I wrote a paper on the European ban on phthalates,¹ a softening agent added to PVC.

One of my major concerns is that the precautionary principle piles worst case upon worst case upon worst case. You assume the worst possible level of exposure, you assume the worst possible consequence of that exposure in the worst possible animal to be tested upon at the highest doses possible. It just becomes extremely improbable by the end of this whole series of assumptions and procedures.

Not only that but you will find that people who hold to the precautionary principle tend to assume that there is a zero cost to doing nothing, which in itself is not true. Phthalates were replaced by other softening agents known as adipates and citrates, which the European Commission then promptly had to launch an investigation into because there were fears that there was simply less toxicological evidence available and that actually they might be more toxic than the substance they were replacing.

My main problem with the precautionary principle, however, is that it is essentially used politically. It is used to elevate new experts into the discussion and distracts from

¹ 'Poisonous Dummies: European risk regulation after BSE', available on-line.

the real scientific evidence. Scientific committees have become inundated by all manner of ethical experts advising them on how to conduct their science, as well as relatives of the bereaved and other people who really have very little knowledge about the science itself but are now held up to be authoritative voices in order to discipline scientists.

My final concern is that the principle is essentially an endless process. Once the precautionary element has entered the debate the European Commission can always say that there should be further tests conducted. The evidence in relation to phthalates is quite striking here. The emergency ban on phthalates was introduced over three and a half years ago. Indeed, in a couple of weeks' time it is due to receive its fourteenth consecutive temporary emergency ban. This surely begs the question of how long an emergency can last for in the European Union, especially considering that all the tests that have been undertaken in that period have shown that the concerns about phthalates were entirely misguided in the first place.

There is a particular element to this discussion that focuses upon the need to include what are called public values in the deliberative process about science. Call me old-fashioned but I tend to consider those to be public opinions. Opinions are open to being interrogated just as rigorously as the science itself and the attempt to call them values is really an attempt to set the debate off limits. What you find in the research is that people tend to go out and do quantitative polling and qualitative research, which tends to confirm their own prejudice in the first place. So rather than being an egalitarian procedure that includes new voices into the scientific decision-making process, I see it really as seeking to confirm prejudice which is in fact the root of exclusion. In that respect, it becomes a rather destructive process.

What can we conclude from this? I would argue that much of this trend is being driven by the business community themselves rather than the fringe environmentalist and consumer groups that business tends to get very cross about.

Context

We have to bear in mind that the context for both the European legislation on chemicals and the phthalates debate was one in which scientists, government and indeed business, have been on the receiving end of a great deal of criticism over the last decade. Popular panics have included the bovine spongiform encephalopathy (BSE) crisis that kicked off in 1995 (notably, well after the incidence rate of BSE in cattle had been reduced to pretty much that of the pre-peak period of 1987), through debates about genetically modified (GM) crops, the safety of mobile phones, and worries over the safety of the combined measles, mumps and rubella vaccine (MMR) given to young children.

Just to show that these debates are not purely scientific, you have also had concerns raised about the threat from paedophiles or the rise in maverick GPs trying to kill you. Even our individual human relationships are now increasingly viewed through the prism of risks. We now have a phenomenon called 'toxic relationships' and there is a growing fashion for pre-nuptial agreements, effectively taking a contract out to try to minimise the risk of getting married.

So why is it that society has become so risk averse and risk attuned in the past decade? I would argue that this trend runs alongside the break-up of some very important formal and informal social institutions that used to bind us together as a society. Regarding the formal institutions, we might cite the decline in parliamentary participation rates, in voting at elections, the decline of trade union membership—which for most people these days simply means cheap car insurance—and indeed a decline in all manner of other associations such as church congregations, families and local communities.

The decline in informal associations, I find even more problematic in many ways, because these are not associations that you sign a contract to join. But, for instance, it is probably safe to assume that a generation ago you could send your child safely to school on the bus, assuming that other parents would act *in loco parentis*, looking after the child

should an accident occur and indeed telling your child off should they be misbehaving. Sadly, we can no longer make that assumption and it shows the extent to which our informal human bonds as a society have been severely eroded over the last decade. That breakdown of truly social capital, I think, is the most problematic one. Being less connected also means being less corrected. It means that your subjective opinions are allowed to run rampant and therefore your perception of risk becomes completely out of keeping with the reality of risk. Going out into the dark on your own is a very different experience to doing it with 20 of your best mates.

This erosion of the informal sphere, as much as the formal one, is a particular problem for business. I would draw your attention to a book called *The Timid Corporation: Why Business is Terrified of Taking Risks* by Benjamin Hunt which was reviewed recently and quite favourably by Michael Power, a professor of risk and regulation at the London School of Economics. Hunt points out that regulations have increasingly shifted from being formal regulations to informal regulations. The amount of self regulation going on in the business world today is absolutely frightening and staggering. We have moved business from being flexible to becoming more rigid, and from being personal to becoming more legalistic. This phenomenon reflects a far deeper moral malaise within the business world itself. Much of it is justified on the basis of some recent high-profile corporate scandals such as Enron but cooking the books is hardly a new procedure in the capitalist world. You can point to the Mid-West utilities crisis of the early 1930s or, of course, the many scandals relating to insider trading and junk bonds that occurred in the 1980s.

So why is it that we are particularly concerned about these things now? We are seeing a great deal of resistance from a public who have become alarmed about risk and that has been reflected in the business community becoming less prepared and less willing to take risks—even though risk is the driving force behind true business. But business is not just about making profit, it also used to provide social leadership. You can see this decline in particular obsessions

such as that with brand value or brand extension. It is worth reminding the business community that most of the products that we now consume never were brands when they were originally launched on the market.

You also see this trend at a cultural level in our obsession with film sequels. It seems that companies would rather produce *Batman 2* or *Batman 3* than come up with something new and original. Why? It appears safer to trade on a name that you know is already successful than to truly innovate.

Patents are another key area. Whereas in the past patents were reserved for the truly remarkable changes in the business community, they have now become more and more minor. Research and development aspects of certain industries, particularly the pharmaceutical industry, are being eclipsed by the marketing side. This also focuses upon customer loyalty rather than innovation and taking risks.

I wonder whether all of this dialogue is going to save the business world or whether we need to start pushing the barriers back towards taking risks and innovating? Companies are trusting in corporate social responsibility boards and similar measures to revive public trust but the reverse may be happening. Public trust continues to decline as business tries to genuflect in the direction it believes and perceives the public to be pulling. Regulation can entrench mistrust rather than actually releasing it.

Hunt's conclusion is that a society that is not prepared to shape its own future will end up being dictated to by its own anxieties.