QED: science and philosophy

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Science turns to philosophy in search for truth, writes Robert Matthews

According to Wittgenstein, the purpose of philosophy is to show the fly the way out of the fly-bottle. For those reluctant to regard themselves as flies, still less ones trapped in bottles, Wittgenstein's aphorism gives all the excuse needed for lobbing philosophy into a mental box marked "Not Needed on Voyage".

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Having long regarded Wittgenstein an intellectual fraud, it has taken me a long time to recognise the potency of his definition. It began with a growing suspicion that those keen to boss us about are indeed like flies buzzing around in bottles, in the shape of academic departments or the Westminster Village. Only very recently has it occurred to me that philosophers might have something useful to say on the matter.

To judge by a meeting I attended last weekend in Seville, others are beginning to sense the same thing. It was organised jointly by the Group of Policy Advisers to the European Commission and the London School of Economics, with the aim of showing what philosophers could contribute to the vexed question of dealing with risk.

The answer, it soon became clear, was rather a lot. Take the trade disputes that flare-up between America and Europe over the alleged risks posed by some or other product. One such dispute, concerning Europe's de facto moratorium on approval or marketing of genetically modified (GM) produce, is currently in the lap of the World Trade Organisation and shows no signs of being resolved any time soon.

On the face of it, the way to do so is simple: just call in the scientists, and ask them for an objective view of the evidence. Which seems perfectly reasonable until one considers the issues involved with philosophical rigour.

For example, one of the leading themes of current philosophy is that the notion of objectivity is utterly illusory. This is not some post-modern pose: the subjectivity of scientific knowledge has been proved with mathematical rigour. The upshot of these proofs is that data merely serves to update our pre-existing beliefs, and that its impact on those beliefs depends on such touchy-feely concepts as trust.

There was a time when philosophers would have been content to point all this out, and then sit back with a smug smile. No longer: the speakers at the Seville meeting were keen to offer practical solutions alongside the philosophical insights.

A study by a team led by Dr Erik Millstone of Sussex University showed that trade disputes are ultimately the result of American and European policy-makers unwittingly buzzing round different fly-bottles. In the case of GM products, the Americans focus principally on the commercial risks posed, while the Europeans fret about the risk to human and ecological health.

As such, the scientific data each side wheels out to support their case is irrelevant: as their pre-existing beliefs about what is important are so different, data alone can never bring a consensus. The solution, Dr Millstone and his colleagues suggest, is to ensure that both sides open discussions as soon as there is any hint of potential dispute - and

at least agree on the shape and size of the bottle in which both sides should buzz.

Insights from epistemology - the philosophy of knowledge - inveigled their way into many of the discussions at Seville, as did a notorious quote from Donald Rumsfeld, the US Defence Secretary.

The mathematician Dr Lenny Smith of the LSE and Oxford University pointed out that while Mr Rumsfeld was widely ridiculed for distinguishing between "known knowns", "known unknowns" and "unknown unknowns", scientists and policy makers would do well to follow his example.

While science is often seen as a repository of known knowns, the discovery in the 1960s of phenomena such as chaos revealed the existence of "known unknowns": measurable but ineluctable limits to the accuracy of, say, weather forecasts. Yet scientists and policy-makers alike have still to come to terms with the equally unavoidable "unknown unknowns" that necessarily dog any attempt to model reality.

According to Dr Smith, the consequences can be seen in the climate change debate, where scientists are routinely forced to deal with policy questions that simply cannot be answered with any real confidence.

Whether we can look forward to European directives being based on the works of Hume rather than the demands of French farmers remains to be seen. I do know that by the end of the meeting I had been compelled to rethink my view of philosophers as the incomprehensible in pursuit of the ineffable.