

Science rejoins the human race

With the publication of the front-page article ‘How Science Goes Wrong’ in *The Economist*, the social problems of scientific knowledge have burst open in full view of the public. Every now and then there is an event in which public consciousness is transformed; we can think of the speeches of Khrushchev and Martin Luther King, the reports of the Pentagon Papers and Watergate, the TV interview with Princess Diana, or the recent warnings by Pope Francis. Quite suddenly the world is transformed. Insights and concerns which had previously been aired and discussed but which were somehow kept on the margins of significance, instantly became vital public knowledge.

Now it has happened to science. The myth of a ‘science’ (preferably natural but necessarily mathematical) that is pure and certain has been propagated and perhaps also believed by generations of teachers and publicists. It has also been used heavily by politicians to denigrate critics of official policies that depend on scientific evidence. Working scientists have always been aware of a contrary reality in their practice, but even when they have published for a popular audience their message has not been taken seriously. Books about the perversions of science by special interests, first big tobacco and now big pharma, may sell well but make no obvious impression on the acceptance of the prevailing mythical story.

The message of *The Economist* was reinforced by analyses of the vacuity of contemporary neuroscience in *New Scientist* and the *London Times*, along with a similar attack on applied mathematics by the eminent mathematician Sir Andrew Wiles. Its lesson is how, within basic research, there can be large, long-lasting and very expensive programmes, which are easily seen to be sloppy in execution and futile in outcomes. Yet they go on and on, until ennui sets in and another mirage shimmers on the funding horizon. Where is the quality-assurance, where is the

leadership, which can call a halt to such extravaganzas? There are always wiser counsels and critics, but hitherto they have surfaced publicly only after the event. And if that is the state of affairs where scientists are free to choose their own problems and assess their solutions, how vulnerable are they when enlisted in the service of external institutions, private or state?

This is truly a crisis, both a danger and an opportunity. All the strong practical reasons for covering up corruption are still relevant. But now that the secret is out, the reasons for swift and honest reactions are dominant. The title of the forthcoming conference, 'Science in Transition', suddenly becomes highly relevant. We are no longer dealing with an evolving problem; the social and ideological situation of science is, as of now, in a new epoch. In the work of the conference, exposés of scientific malpractice now belong to the remote past (that is, last week). Rather, all perspectives must come together to begin the arduous and painful work of together creating a new understanding of science in which integrity can be restored.

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for the Science in Transition Group, 20 October 2013