

United Kingdom was putting the final touches to its concordat, six newspapers in Germany were running a full-page advertisement questioning whether scientists who experiment on animals are even human.

The advert opens with the quote: “Animal experimenters are a particular type of creature — one should not casually call them human.” It publishes a photograph of primate researcher Andreas Kreiter of the University of Bremen, a long-standing target of campaigners in the country, and describes him as a tormenter of animals whose research is without value. The advert closes with calls for citizens to treat all animal experimenters with contempt and denounce their work publicly.

Last week, the powerful Alliance of Science Organisations in Germany declared in a press statement that the lobby group that placed the adverts, *Tierversuchsgegner Bundesrepublik Deutschland*, had crossed acceptable boundaries. The alliance’s strong words represent a welcome change from its unhelpful default policy of keeping its head below the parapet. But German scientists deserve more.

Now that it has broken its long silence over the use of animals in research, the alliance cannot retreat. It should follow the UK example and push for wider public awareness. Given the political weight of the institutions it represents — the Max Planck Society, the Leopoldina national academy, the universities and the Helmholtz Association among them — such a stance could make a crucial difference.

Scientists across Germany have been lobbying for nearly three years for the alliance to create a web resource for journalists and the public that makes available the true facts about research using animals. The Max Planck Society, which is taking the lead in a dragged-out effort to gather data about the value of such a resource, has doubts. But this should proceed as soon as possible.

The *Tierversuchsgegner*’s advertising campaign may have been expressly designed to provoke a response, to keep the subject of animal research in the media. That is all the more reason for the alliance to collate an accessible pool of information for the public.

An immediate goal could be to prevent a recurrence of the advert,

which ran in publications including the quality intellectual nationals *Die Zeit* and the *Frankfurter Allgemeine Zeitung*. What were they thinking?

Germany takes the right of freedom of expression very seriously. But newspapers must balance this right with the first clause of Germany’s 1949 constitution, which states that the dignity of humans is inviolable. This was designed to ensure that a regime could never again label people ‘subhuman’, and so unworthy of life, as the Nazis did.

This is not the first time that such disturbing terminology has been levelled at science in Germany. At a public lecture in March, the

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award-winning novelist Sibylle Lewitscharoff attacked reproductive medicine, and referred to people born by artificial insemination as ‘half-creatures’.

The use of such aggressive language in debates about the ethical limits to medical research is worrying. When it comes to the use of animals in science, it underlines the impor-

tance of a proactive public stance. The most fiery animal-rights groups may be small, but they amplify their messages by appealing to people’s emotions. To make their points, they often lie or omit key information about the tight regulation and oversight of animal experiments. Journalists have no ready source of counter-information. Research agencies have been nervous of commenting openly, fearing that it might open more scientists to attack. Many medical charities avoid mentioning that they support research with animals for fear of putting off donors.

In 2010, frustrated academic and industry researchers created the Basel Declaration, whose signatories commit to speaking publicly about their work and the value of experiments with animals. More than 2,300 individuals around the world have signed up — 431 of them in Germany — and 13 institutes and societies have given their support. Still, it remains a relatively small effort, and relies on donations to cover its costs. The UK concordat represents a more powerful tool that other countries, Germany chief among them, should emulate. ■

Hard data

It has been no small feat for the Protein Data Bank to stay relevant for 100,000 structures.

Sherlock Holmes understood: “It is a capital mistake,” he said, “to theorise before one has data.” Data are the lifeblood of science, the foundation of innovation. Behind every great discovery is a pile of data; but, crucially, it should not be too far behind.

For more than four decades, the Protein Data Bank (PDB) has been where structural biologists keep their data close. Nearly every biology-publishing journal in the world, *Nature* included, requires protein structures to be deposited in the PDB before publication.

So there was considerable worry at the database when *Nature* accepted a molecular map of HIV’s capsid protein shell last year (G. Zhao *et al.* *Nature* **497**, 643–646; 2013). The multimillion-atom complex was larger than anything then in the PDB, and the database’s team had to devise a way to make the data dump available (and useful) at short notice.

Thus it goes at the PDB — whose trove surpasses 100,000 structures this week (see page 265) — and other long-running archives that have managed to stay relevant and essential. It is not easy. Just ask the scientists, funders, technicians and others who shepherd them.

Money is often the limiting factor. Computer storage and processing power may be getting cheap as chips, but much of the expense is in paying the people (many of them highly trained scientists) who

organize and verify data entries, and engage scientific communities.

There are many ways for a database to stay in the black. The three-decades-old GenBank, a clearing house for DNA sequences, is funded directly by the US government’s support of the National Center for Biotechnology Information (NCBI). By contrast, the 50-year-old Cambridge Structural Database, which stores 700,000 small-molecule structures, gets by on support from industry and around 1,300 institutes.

The PDB is actually hosted by several organizations that provide access to the same data trove, each funded independently. Gerard Kleywegt, who heads the European franchise at the European Bioinformatics Institute (EBI) in Hinxton, UK, says that healthy competition between his portal and others in the United States and Japan helps him to get grants, and keeps the database pertinent. Scientists “vote with their mouse clicks”, he says. “They go to the place where they get the best answer for their questions.”

In the 1970s, protein structures were consumed by a small community of X-ray crystallographers interested in the nitty-gritty of individual enzymes. Now scientists use a range of techniques to determine structures, and researchers of many stripes want to know how proteins behave in a larger context, such as in a malignant cancer cell. A database must change with the times, or face extinction.

The closure of a database is not so awful — as long as its useful information remains available elsewhere. In 2011, NCBI announced that it was mothballing a database that collected information about protein fragments used in proteomics experiments. A competing

database run by the EBI has since swallowed up those data. But with 100,147 structures (as *Nature* went to press), and growing at about 200 per week, the PDB, at least, shows no sign of folding. ■

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