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Publish or perish

Universities should release reports to show what they are doing to tackle misconduct — and funders should help them to do so effectively.

As every politician knows, it is important to address problems, but even more important to demonstrate that you are addressing them. When it comes to research misconduct, UK universities are failing on both points. To fail on the first is understandable: eradicating misconduct is difficult. It demands cultural change, education and a system of checks and balances. But to fail on the second is unacceptable, especially given that it is relatively easy to achieve.

The United Kingdom has no regulatory body to deal with research misconduct. Instead, since 2013 universities have had to adhere to a set of guidelines in order to receive grants from major funders. Called *The Concordat to Support Research Integrity*, the guidelines detail good practice and aim to strengthen the mechanisms available for investigating misconduct. They also call on universities to publish annual summaries of their formal misconduct investigations.

As we report on page 271, a survey reveals that most universities are not bothering to do so. And when they do, some of the reports are not very enlightening. One did not include the number of cases investigated, and another could not be accessed without a login. Four reports claimed that the universities had carried out zero investigations that year — an unlikely figure for any research-intensive university that takes the issue of misconduct and integrity seriously.

British universities are notoriously image-conscious, especially since the 1998 introduction of tuition fees established a marketplace, and it is understandable that many are reluctant to publish the figures. The few that do publish reports risk being singled out as having a problem, when in fact the reverse is true — such investigations show that the institution has processes to detect and deal with misconduct. But almost 2% of researchers admit to having fabricated, falsified or modified data at least once, according to a metastudy by social scientist Daniele Fanelli of the University of Edinburgh, UK (D. Fanelli *PLoS ONE* 4, e5738; 2009). Pretending that misconduct does not happen is no longer an option.

Discussion at a research-integrity conference in London last week suggested that many institutions have just been slow to publish details of their misconduct investigations, rather than aiming to avoid it entirely. It also emerged that staff who oversee research integrity in universities, and who are still working out how to ensure that their institutions adhere to the concordat, feel under-resourced.

For those universities that do have adequate systems to report and deal with misconduct, making investigation summaries public would be an easy win. Those institutions that have yet to make such systems a priority should remember that the concordat was introduced because UK systems for dealing with issues of research integrity had been judged inadequate by a parliamentary enquiry. Unlike in the United States, where the Office of Research Integrity oversees formal misconduct investigations related to research funded by the US National Institutes of Health, or Ireland, which plans to subject labs to spot-checks from auditors, UK universities have been allowed to police themselves.

When the concordat was introduced, many feared that it lacked

teeth. That many universities have so far been willing to skip around its recommendations does nothing to ease those fears. Currently, the only checks and balances are universities' statements to funders, saying how they are taking action.

Although universities are best placed to investigate and censure misconduct by their own researchers, funders can do more to help them. First, Research Councils UK and the Higher Education Funding Council for England, which have responsibility for ensuring compliance to the concordat on behalf of funders, should clarify the document's language and intentions. At present, the concordat says that universities "should" publish investigation reports. Many institutions seem to have read this as a suggestion rather than as a mandate. Funders should make clear who it is aimed at, and how they expect universities to comply.

Second, the funders should consider changing how misconduct investigations are published. Putting them on university websites that must be trawled manually and individually for figures is not ideal, either for the institutions themselves or for those who want to find the data. As well as making clear that universities must report the figures, the funders should collate and publish the reports.

Research misconduct is a fact, and institutions should not feel that they will be penalized for investigating cases promptly and fairly. The best way to change perceptions is to ensure full compliance. If every university acknowledges the issue, then the risk of being an outlier disappears, and only those institutions that choose not to publish will be the subject of suspicion and public scrutiny. ■

“Pretending that research misconduct does not happen is no longer an option.”

A patent problem

Making lawsuits more risky for patent trolls is just one way to stop abuse of the system.

Earlier this year, a group of 51 legal scholars and economists sent a letter to the US Congress urging it to take action on the increasing toll of frivolous patent lawsuits. Over the past five years, they said, researchers have published more than two dozen studies on the economic consequences of patent litigation. The view that has emerged is grim: the lawsuits are hindering research and development, and slowing the launch of firms.

Less than a month later, another 40 scholars rebuffed the claims, saying that the impact of the lawsuits has been exaggerated. Furthermore, they argued, patent litigation is on the wane, and legislation to rein it

in could damage the US “engine of innovation” by weakening patent protections for inventors.

Such are the muddled waters that Congress has been navigating as it seeks to respond to the cries of technology companies and of President Barack Obama’s administration, which want to crack down on lawsuits launched by ‘patent trolls.’ No fairy tale, these entities are essentially holding firms to ransom, threatening organizations that are making use of the innovations with expensive, time-consuming lawsuits if they do not pay to license the patent. A 2013 attempt to curb such legislation met with failure last year. Lawmakers now seem to be making progress (see page 270).

Much of the scholarly debate boils down to a difficulty that has also plagued Congress: how to define a troll. Universities, too, license their patents, often for a fee, to those who want to use their researchers’ inventions to create a product or service. As such, they are considered ‘non-practising entities,’ a more-polite term than troll, but the two labels are often used interchangeably.

Scholars generally argue that universities should be considered differently because they work towards a social good and their patenting efforts spur innovation based on academic discoveries. This is in stark contrast to a troll, which accumulates weak, broad patents with the sole intent of using them to push firms into settling a lawsuit before the expense of the litigation damages their business. Lawmakers in the US Senate seem to agree with this distinction, and last month created a carve-out that excludes universities from some of the proposed measures for cracking down on patent trolls.

But the distinction has fuzzy boundaries: some universities are

highly aggressive in monetizing their patents, even licensing them to companies that are considered to be trolls (see *Nature* **501**, 471–472; 2013). Earlier this year, the Association of American Universities and the Association of Public and Land-grant Universities took a step in the right direction by urging their members not to align with trolls. Universities should heed that guidance or risk losing the faith of Congress and the

“It is important not to see patent-troll legislation as a panacea.”

public. The Senate loophole for institutions of higher education was a political necessity in the face of heavy lobbying by universities, but that lobbying would have been much less persuasive had it not been tied to widespread public trust.

As Congress has wrestled with definitions, its overall approach for deterring frivolous lawsuits has remained fairly constant: make them more risky for the plaintiff. It is a welcome change to a system that is much too easy to exploit, but it is a blunt tool that could jeopardize the ability of small firms to defend their intellectual property. And even if it succeeds in Congress, it will not tackle the underlying problem: the US Patent and Trademark Office is granting far too many vague and redundant patents. This is a particular problem for software, but affects other fields, too.

Measures to raise the bar — including a process that allows parties to challenge a patent without needing to resort to litigation — may be having an effect: the number of patent lawsuits dropped by 18% between 2013 and 2014. But it is important not to see patent-troll legislation as a panacea. Fundamental changes at the patent office remain the key to curbing abuse. ■

The kill switch

Brain researchers and social scientists are well placed to find out what makes humans murder.

Groups of humans have always slaughtered those who belong to other groups. The twentieth century was shot through with numerous examples, from the genocides of Armenians in Ottoman Turkey and of Jews in Nazi Europe to the massacres of ethnic rivals in civil wars in Rwanda and Bosnia during the 1990s. Today, the fundamentalist group ISIS is spooking the world with its willingness to butcher others who do not adhere to its extremist form of Islam.

Attempts to understand such events tend to focus on political reasons. But a conference in Paris last month dared to ask a different question: how, biologically speaking, do normally non-violent and psychologically stable people overcome the instinctive human aversion to killing when faced with circumstances of war or extremism? What drives them to participate in acts of genocide? This is arguably the biggest challenge for interdisciplinary dialogue across the fields that consider brain and behaviour.

All human behaviours originate in the brain, which computes cognitive and emotional information to decide what to do. So what, precisely, happens in that organ at the moment that a person’s natural abhorrence of harming others is computed out of the equation?

The organizers of last month’s conference at the Paris Institute of Advanced Studies — ‘The Brains that Pull the Triggers’ — deserve credit for even posing this question. It goes against another human instinct: to consider evil in moral rather than biological terms, as if identifying a biological signature in the brain might somehow be exploited as an excuse to absolve a person of his or her responsibility.

Neuroscientists have studied the abnormal condition of psychopathy in addition to components of normal cognition — such as the recognition of emotions in the faces of others — that may have a bearing on

the problem. And psychologists and sociologists have looked at the behaviour of ordinary individuals who identify themselves with particular groups and align their behaviour with that group.

The conference brought researchers from these disciplines together, along with historians who presented sobering data on the behaviour of soldiers in wartime. One presentation included documentation from post-Second World War interrogations of hundreds of untrained German reservists who were recruited to active service in 1942 and went on to slaughter tens of thousands of Jews in Poland. Transcripts revealed that their distraught commander had allowed anyone to opt out of killing — but only 1 in 10 did so.

This is tricky terrain for academics, and many researchers at the conference admitted some discomfort at being asked to consider their findings as being relevant to the neuroscience of repetitive killings. For some of the sociologists, it felt like an attempt to medicalize a social issue. For some neuroscientists, it felt like over-extrapolation of results from much simpler experiments. In the air was an uneasy feeling that such interpretations could seem superficial and trite, and could trivialize crimes against humanity.

In fact, the researchers present made a brave contribution to what was a bold and important attempt to bring a multidisciplinary approach to one of the biggest questions facing humanity.

The answer will not come quickly, but research has already identified some useful paths to follow. Neurosurgeon Itzhak Fried from the University of California, Los Angeles, for example, proposes that ordinary people are able to become repetitive killers because changes in neural circuitry free the ideology-fed, cognitive parts of the brain from the emotional parts of the brain, which normally keep actions in check.

A better understanding of brain circuitry could not, of course, influence the political forces that create the conditions for mass murder. But discussion of such politically neutral basic neuroscience could allow progress while avoiding unhelpful rhetoric.

And findings in basic science could have a direct impact: perhaps by helping to find ways of educating people to make them less likely to succumb to ideological requests or commands to kill. ■

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