Correspondence

Ethics review for AI surveillance studies

Scientists who develop algorithms based on user data face a moral dilemma: if their work is subverted to manipulate democracy or to support oppressive regimes, they could become part of something they would not knowingly endorse.

In common with other fields, research on artificial intelligence (AI) and machine learning needs to be subject to approval from institutional review boards and compliance with data protection. In my view, journals should demand this as a condition of publication. Data scientists in industry must also adhere to professional guidelines from organizations such as the IEEE (see go.nature.com/2vt6ngr). And research that combines academic and corporate interests should be disclosed, as in other fields.

As surveillance is combined with intelligent forms of behaviour-change technology, a new social contract around data is needed (see also H. Shah *Nature* **556**, 7; 2018). Unlike the media companies, governments and organizations that use surveillance data, those who are monitored do not benefit. Nor do they have any control over how their data are used (uninformed consent), as was poignantly illustrated by the Cambridge Analytica scandal (see *Nature* **555**, 559–560; 2018).

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Poor meta-analyses pollute the literature

Meta-analysis of published data is important in evidence-based medicine. However, it is an experiment-free route to rapid publication and so is open to abuse. Extra vigilance by peer reviewers and journal editors is called for to prevent redundant and conflicted meta-analyses from corrupting the literature.

China produced 63% of meta-analyses of genetic associations in 2014, and most of those results are misleading (J. P. A. Ioannidis *Milbank Q.* **94,** 485–514; 2016). Pressure to publish may be responsible, given that doing actual experiments takes much longer and can yield insufficient clinical data. And skilful presentation is often all it takes to disguise a poor-quality meta-analysis.

Conclusions from arbitrarily merging results of variable quality will not resolve problems and should not guide clinical practice. A rigorous meta-analysis requires meticulous evaluation of the literature. And even high-quality meta-analyses in leading journals still need constant clinical testing to ensure that current guidelines for treatment remain valid.

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Count the costs of sea-bed mining

The International Seabed Authority (ISA) is negotiating a mining code to allow commercial deep-sea mining of minerals to start worldwide. At Greenpeace, we argue that we should instead be developing a sustainable circular economy that reduces the use of virgin materials.

There is a huge demand for minerals in the computing, renewable-energy and mobility sectors. So far, the ISA has approved 29 exploration contracts in the Pacific, Indian and Atlantic oceans. Next year, the Canadian company Nautilus Minerals plans to mine copper, zinc and gold at depths of 1,500–2,000 metres in waters off Papua New Guinea.

In our view, the ISA should take more account of the biological and ecological impact of these mining activities. It conspicuously lacks an environmental committee, for example. Proper oversight is crucial, because sea-bed mining risks wiping out pristine habitat and potentially unknown species.

Mining-induced loss of biodiversity in the deep sea is likely to last forever on human timescales, given the slow natural rates of recovery in affected ecosystems (C. L. van Dover *et al. Nature Geosci.* **10**, 464–465; 2017). We should instead be recycling the valuable materials contained in the 90% or so of the world's electronic waste that is currently illegally traded or dumped (see also go.nature.com/2toh2vr).

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Use SDGs to guide climate action

The United Nations Agenda for Sustainable Development commits all countries to attaining 17 goals (SDGs) and 169 targets by 2030, including SDG13's action to combat climate change and its impacts (go.nature.com/2r1wf72). Notwithstanding this goal's long-term benefits and synergies across other SDGs, climate action could have trade-offs with several of the SDG targets (see also M. Nilsson *et al. Nature* **534**, 320–322; 2016). We suggest that the SDGs should be used as reference points to map relationships between climate action and sustainable development.

For example, climate-mitigation policies in carbon-intensive and energy-exporting countries could slow economic growth (counter to target 8.1) or impair industrialization (target 9.2) in some sectors while boosting others. For end uses of energy alone, an estimated US$3.5 trillion needs to be invested annually from 2016 to 2050 to adhere to a warming trajectory well below 2 °C (go.nature.com/2jpmtbs).

Climate policies can also be socially and economically regressive, exacerbating inequality and poverty (targets 1.1 and 1.2) through impacts on land and food prices (target 1.4) and putting smallholders at risk (target 2.3). And some national climate-adaptation programmes have been linked with violent conflict (B. K. Sovacool *World Dev.* **102**, 183–194; 2018).

Effective policy on climate action and sustainable development requires researchers and decision-makers to be mindful of such trade-offs and of how they could risk undermining the social and political support needed for climate action.

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Blobel's Nobel — why so slow?

Goran Hansson's assurance that Nobel prizes continue to recognize the potential impact of a discovery is undermined by the lengthy interval before the award is won (*Nature* **556,** 31; 2018). Cell biologist Günter Blobel is a case in point (see S. Simon *Nature* **556,** 32; 2018).

I attended a research seminar by Blobel in the late 1970s as an undergraduate biochemist. Three years or so after Blobel published the papers Simon mentions, our lecturers all acknowledged the central importance of that work. The Nobel committee only caught up 20 years later, finally recognizing what was by then in undergraduate textbooks, when Blobel was in his 60s.

This interval is typical (see S. Fortunato *et al. Nature* **508,** 186; 2014), with prize recipients often past retirement age — hardly a reward for emerging excellence.

Academic recruitment committees, too, tend to favour proven success over promising talent. Today, the postdoc who faced failure after failure in validating a brilliant intuition would not be rewarded with continued support as Blobel was.

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