

Correspondence

CRISPR twins: an Islamic perspective

As Benjamin Hurlbut advises, societal consensus on gene-editing applications should draw from “diverse traditions of thought” (*Nature* 565, 135; 2019). Given that Muslims make up one-quarter of the global community today, we offer an Islamic perspective to enrich the discussion on the ethical issues arising from the birth of CRISPR gene-edited human twins last year.

Research methodology in traditional Islamic scholarship uses five principles to resolve such ethical dilemmas. The first, *Qasd*, relates to intention — valid in this case, if the aim was to improve social welfare by protecting the twins against transmission of HIV from their infected father. The second principle, *Yaqin*, concerns certainty; however, the long-term safety of CRISPR technology is uncertain. The third, *Darar*, alludes to the avoidance of injury; here, the balance of risk and benefit to the twins and their progeny is not yet understood, and so the parents’ consent was not properly informed. The fourth, *Darura*, refers to necessity — questionable in this case, because established and safe alternatives exist for protecting people from HIV. The final principle, *Urf*, relates to custom — in this instance, to the social context and acceptance of using the technology; and the public is uneasy about gene editing.

This philosophy provided the ethical compass that allowed science to flourish during the middle ages in the Islamic civilization, on which Western science partly stands today (see, for example, J. Al-Khalili *Nature* 518, 164–165; 2015).

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Tighten up Mexico’s CRISPR regulations

A map depicting variations in countries’ regulations on CRISPR-edited human embryos in 2014 showed Mexico as having banned the practice for reproductive purposes (see *Nature* 526, 310–311; 2015). In fact, the law was ambiguous, and it still is.

Human genetic engineering and human genome editing are not explicitly regulated in Mexico. The birth in 2016 of the first ‘three-parent’ baby, produced in Mexico by maternal spindle transfer for mitochondrial-replacement therapy (see *Nature* <http://doi.org/btr9>; 2016), raised ethical concerns, amid allegations that the procedures were not properly supervised (see C. Palacios-González and M. J. Medina-Arellano *J. Law Biosci.* 4, 50–69; 2017).

These concerns and the birth of the world’s first gene-edited babies in China last year are prompting calls from the Office of Scientific and Technological Information for the Congress of the Union to reform Mexico’s General Health Law, which gives every citizen the right to health protection. All clinical applications of CRISPR technology should be regulated and supervised, with penalties for procedures that are not safety-tested in humans first.

Until then, a research committee at my institution will set guidelines based on the international regulation of CRISPR applications for clinical protocols.

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Italian manifesto to combat racism

As an interdisciplinary team that includes biological and cultural anthropologists, we have issued

a manifesto for education in human diversity and unity (see go.nature.com/2sc1eoj). This aims to counteract our country’s current surge in racism and intolerance, and will help students to develop a more open attitude (see go.nature.com/2xch3ns).

The manifesto opposes the racist manifesto of 1938, originally signed by ten Italian scientists. It aims to respect and uphold human dignity and rights; to promote understanding of human diversity; to build community and solidarity; to nurture empathy and humanity; and to remind Italians that their own identity is rooted in their cultural and genetic diversity.

The final document took into account public feedback (see go.nature.com/2xcbjmq).
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Speed up mapping of soil pollution

Too few countries are investing in national surveys of soil pollution. A global map is urgently needed, not least to prevent international trading of contaminated produce and the migration of persistent organic pollutants across borders. We urge all member states at next month’s fourth session of the UN Environment Assembly (UNEA) to speed up their assessments.

A global map of soil pollution will also guide policymakers on protecting soils; inform chemical and waste management (see Y. Geng *et al. Nature* 565, 153–155; 2019); prevent further pollution by identifying sources and controlling polluter behaviour; and reduce risks to public health and the environment.

The World Health Organization and the United Nations Food and Agriculture Organization are among those required by the UNEA since December 2017 to report on the extent of global soil pollution,

monitor future trends and identify associated risks and impacts. The results will be presented at the UNEA’s fifth session in 2021. Many hurdles must be overcome before a global assessment can be made. Collaboration between developing and developed nations in allocating technical and financial resources is a priority.

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Slash local emissions to protect Tibet

As well as extending the monitoring network to track sustainable development and environmental issues in the Tibetan plateau, as Jing Gao and colleagues suggest (*Nature* 565, 19–21; 2019), local mitigating actions against carbon emissions need to be accelerated.

The region is developing rapidly. Data from the Tibet Statistics bureau show that its per-capita gross domestic product increased about tenfold, and urbanization roughly trebled, between 1978 and 2017. That caused a steep rise in local emissions from industry and residents: total carbon dioxide emissions in Tibet surged from 1.3 million tonnes in 2003 to 5.5 million tonnes in 2014 (Y. Shan *et al. Earth’s Future* 5, 854–864; 2017). Roughly 80% of these emissions were from cement production and road transport.

Tibet’s emissions will keep rising, in view of the local government’s development strategy. The nation’s fragile ecology is unlikely to withstand production on this scale.

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CORRECTION

The Correspondence article 'Speed up mapping of soil pollution' (*Nature* **566**, 455; 2019) erroneously stated that the fifth UNEA session will take place in 2020. It is, in fact, planned for 2021.