Correspondence

Fossil-fuel funding could speed energy transition

Yannai Kashtan and his colleagues propose that universities should sever research links with fossil-fuel companies (*Nature* **612**, 404; 2022). We argue that collaboration in some areas is essential to ensure a timely transition to clean energy, given the substantial funding needed to quickly develop and scale up green technologies.

A transition to low-emitting processes will be slow and expensive for some industries. In the chemical industry, for instance, around 200 million tonnes of ethylene are produced annually. A newly developed sustainable process that produces 25,000 tonnes of ethylene per year would need 30 years to reach this output at a compound annual growth rate of 35%. Only companies that are already embedded into supply chains and the global energy infrastructure can reorient such mega-chemical production routes in a reasonable timeframe.

Universities need immense amounts of funding to train researchers, advance new technologies and develop prototypes. And industry understands the challenges that need to be addressed for successful upscaling. Working together will therefore benefit society, provided that the collaboration promotes a zero-emission energy system.

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The authors declare competing interests; see go.nature.com/3cdxvva

Devise more controls to protect cryptocurrency investors

Earlier this year, US regulators issued a warning to banks about fraud and other risks associated with cryptocurrency investment. The collapse last November of FTX, one of the largest cryptocurrency trading platforms, is a case in point. More research is needed into regulatory and blockchain technology to protect investors.

Blockchain technology promises a decentralized future in which algorithms govern transactions and make them publicly visible. However, personal investors supply funding mainly through centralized institutions, which are unregulated. Meanwhile, even prominent venture capitalists that backed FTX failed to detect the misappropriation opportunities associated with the platform.

Many crypto exchanges simultaneously function as banks, brokers and investment funds. Instead, the custody of crypto assets should be audited separately, and service providers made accountable. Regulatory technology can provide solutions, such as smart-contract auditing and real-time risk-alert systems (see, for example, http://finreg-e.com).

Further developments are needed in blockchain technology. For example, the layer-2 scalability protocol (https://ethereum.org/en/layer-2) builds on an existing blockchain to increase speed and reduce transaction costs, helping investors to trade directly and more securely on a decentralized network.

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COP15: escalating tourism threatens park conservation

At December's United Nations Convention on Biological Diversity summit (COP15), an insidious threat emerged to national parks — even as scientists argued for expanding protected areas. The World Travel & Tourism Council wants commercial tourism to be allowed to build developments in national parks globally, without obligation to help finance park conservation (see go.nature.com/3x2fsi9). This would undermine existing private tourism developments that do support conservation.

Tourism funds conservation of up to 66% of remaining populations of some species in national parks. It provides up to 80% of parks-agency budgets in some low-income countries. And in the United States, contracts with service providers are used to reduce parks' operating costs. In India and China, private tourism accommodation has been removed from protected areas.

In our view, wealthy nations should prohibit new fixed-site private tourism developments in protected public areas, because they increase ecological and legal risks (see R. C. Buckley *et al. Biol. Conserv.* **274**, 109723; 2022). Moreover, permitting year-round private tourist accommodation could downgrade parks from the International Union for Conservation of Nature's high-protection management category II to category IV status (see go.nature.com/3iarj2x).

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Early insight into spontaneous mutations

In her cogent review of Rena Selya's biography of Salvador Luria, Alison Abbott describes the 1943 Luria–Delbrück fluctuation experiment as a demonstration of "Darwinian evolution in action" (*Nature* **612**, 25–26; 2022). In fact, the experiment was not an example of populations adapting to their environment, but rather provided crucial proof that even functional mutations occur at random.

The results demonstrated that the bacterial mutations responsible for resistance to infection by viruses (bacteriophages) occur randomly and not in response to selective pressure, because they are evident before exposure to the phages (see S. E. Luria and M. Delbrück *Genetics* **28**, 491–511; 1943). This refuted the then-common view that mutations are caused only by exposure to external agents.

These historic findings apply throughout the biosphere. They revolutionized the science of genetics and have informed all research on genetic variation. Although Darwin realized that natural variation within species is the raw material of evolution, he never speculated on how it came about. It was this experiment — much more than mutation induction by agents such as X-radiation, cosmic rays or chemicals — that provided a theoretical framework for evolution a hundred years or so later.

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