

# Correspondence

## Saving Vesuvius from Pompeii

When an eruption from Mount Vesuvius buried the town of Pompeii in southern Italy in AD 79, it left behind not only intimate details of daily life in the Roman empire, but also an extraordinary record of how volcanoes behave. These archaeological and volcanic histories together offer a unique insight into how societies live and die in the shadow of a volcano. It is alarming, therefore, that volcanic deposits are being sacrificed during archaeological excavations.

The volcanic deposits should be preserved and studied where they landed — otherwise, the information they contain about the eruption is lost. When deposits were re-investigated in the 1980s, they revolutionized archaeological reconstructions of social conditions in Pompeii and in nearby Herculaneum.

We have appealed to Italy's minister for culture to leave strategic portions of the volcanic deposits untouched during Pompeii's latest excavations. This would help to transform Vesuvius and its Roman settlements into a natural super-museum for generations to come.

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*\*On behalf of 4 correspondents (see go.nature.com/2lkgd3h for full list). scandone@uniroma3.it*

## Human TB threat to wild elephants

Wild African and Asian elephants are at risk of infection by a human form of tuberculosis (TB). Long known to be fatal in captive elephants, *Mycobacterium tuberculosis* has been found in wild elephants in Sri Lanka, India and, most recently, in South Africa's Kruger National Park (M. A. Miller *et al.* *Front. Vet. Sci.* **6**, 18; 2019). The source of infection remains unknown.

Should human TB become established in the wild, the

consequences to already endangered African and Asian elephant populations could be devastating. We call on the authorities — including government agencies, non-government organizations and local stakeholders — to step up surveillance and devise effective control and prevention strategies. **Sarad Paudel, Toshio Tsubota** *Hokkaido University, Sapporo, Japan.*

**Susan K. Mikota** *Elephant Care International, Hohenwald, Tennessee, USA.*  
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## More than stats to dice throwing

In his review of my book *Do Dice Play God?*, Andrew Gelman focuses on sections covering his own field of applied statistics (*Nature* **569**, 628–629; 2019). However, those sections form parts of just two of 18 chapters. Readers might have been better served had he described the book's central topics — such as quantum uncertainty, to which the title of the book alludes.

Gelman accuses me of “transposing the probabilities” when discussing *P* values and of erroneously stating that a confidence interval indicates “the level of confidence in the results”. The phrase ‘95% confident’, to which the reviewer objects, should be read in context. The first mention (page 166) follows a discussion that ends “there's only a 5% probability that such extreme values arise by chance. We therefore ... reject the null hypothesis at the 95% level”. The offending sentence is a simplified summary of something that has already been explained correctly. My discussion of confidence intervals has a reference to endnote 57 on page 274, which gives a more technical description and makes essentially the same point as the reviewer.

I also disagree with Gelman's claim that I overlook the messiness of real data. I describe a typical medical study and

explain how logistic and Cox regression address issues with real data (see pages 169–173). An endnote mentions the Kaplan-Meier estimator. The same passage deals with practical and ethical issues in medical studies. **Ian Stewart** *Mathematics Institute, University of Warwick, UK.*  
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## Research partners set to crack poverty

The findings of a participatory research project into poverty released in May have provided insights that could lead to a reform of policy (go.nature.com/2xpbek9).

The project was organized by ATD Fourth World and the University of Oxford, UK. It involved people in poverty, practitioners and academics from Bangladesh, Bolivia, France, Tanzania, the United Kingdom and the United States. It identified nine dimensions of poverty in all the study countries. Poor people were already known to have low, insecure incomes and to experience material and social deprivation. The project highlighted how they also feel disempowered, suffer physically and mentally, and are caught up in struggle and resistance. These experiences seem to be shaped by wider society in the form of social and institutional maltreatment, and by a failure to recognize personal worth.

The findings need to be compared with those obtained using established methods for measuring poverty. And the method itself still needs to overcome ethical, epistemological and practical challenges. For example, giving academics, practitioners and people living in poverty equal roles in framing the research and collecting and interpreting the data is not always perceived as credible or feasible.

Academic interest is mounting, as evidenced by the Merging Knowledge initiative developed by ATD Fourth World and

the French basic-research agency CNRS and National Conservatory of Arts and Trades (see also *Nature* **562**, 7; 2018). **Xavier Godinot, Bruno Tardieu** *ATD Fourth World, Baillet, France.* **Robert Walker** *University of Oxford, UK.*  
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## Celebrate a female climate pioneer

Understanding how atmospheric gases absorb solar radiation and affect Earth's temperature is fundamental to climate science. We now know that the pioneering work for this understanding was done in 1856, by a relatively unknown woman, Eunice Foote. Her story, which came to light only in 2011 (go.nature.com/2xky63a), shows that climate science and history intertwine in ways still relevant today, on the 200th anniversary of her birth.

Foote's laboratory work showed that certain gases absorb solar radiation and warm the atmosphere more than others. She found that the action of the Sun's rays was “greater in moist than in dry air” and that the highest effect of the sun's rays was in “carbonic acid gas”. She wrote that “an atmosphere of that gas would give to our earth a high temperature” (*Am. J. Sci. Arts* **XXII**, 382–383; 1856). Her conclusions pinpointed the crucial role of carbon dioxide and water vapour as regulators of Earth's temperature.

Although her paper preceded John Tyndall's (*Phil. Trans. R. Soc. Lond.* **151**, 1–36; 1861), Tyndall was the one credited with the discovery of the role of radiation absorption by atmospheric gases, in part owing to his later comprehensive work on the topic. Foote went on to contribute to the women's rights movement after signing the Declaration of Sentiments in 1848.

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