Correspondence

Complex politics in nations' COVID responses

Martha Lincoln discusses the contribution of exceptionalism and hubris to the poor responses to COVID-19 by Brazil, Chile, the United Kingdom and the United States (*Nature* **585**, 325; 2020). In my view, the political orientations that colour her inferences seem oversimplified.

Reported COVID-19 cases and deaths vary with countries' testing capacity, their age distributions and population risks. Political factors, too, subvert data quality. For example, among countries that seem to have contained the virus, Cuba and Vietnam have authoritarian socialist regimes that control the handling of information (the two rank 171 and 175, respectively, out of 180 countries in terms of press freedom; see go.nature.com/3jhywwy).

Lincoln implies that hubris and poor outcomes are associated with right-wing government. But the Mexican president Andrés Manuel López Obrador, who is left of the political spectrum, also dismissed social distancing and delayed quarantine and testing.

As Lincoln points out, exceptionalism and hubris are hard to define. For example, the United States after its withdrawal of funding to the World Health Organization, and Britain after Brexit, will remain more internationally involved than Cuba or Vietnam. And, unlike the United States, the United Kingdom and Brazil, Chile did not play down the threat of the virus (see M. A. Benítez *et al. Health Policy Technol.*; in the press). Yet its outcome has been poor, perhaps because Chileans have lost trust in democratic institutions.

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Hunger in Africa: get the costing right

Jaron Porciello and colleagues' proposed price tag of US$10 million is much too low for inclusive data governance and evidence synthesis to end hunger in sub-Saharan Africa (*Nature* **584**, 37–40; 2020). Massive investment in infrastructure will be needed across the region, and the cost is likely to be at least 10,000 times that amount.

Providing universal, affordable and good-quality broadband across the continent will be the first step in generating the data for effective monitoring, interventions and inclusivity. This alone has been priced at $100 billion (go.nature.com/2f5b4km). The biggest information challenges, particularly for poor people, are data gaps and inclusive citizen engagement in data-driven decision-making. Unconnected populations must be brought online.

Even with connected populations, knowing what kinds of evidence-based policy can best alleviate malnutrition will not be enough. Basing actions on the data and knowledge already curated by the United Nations World Food Programme and the UN Food and Agricultural Organization would go a long way towards ending hunger. In my view, what is urgently needed is greater political will, not more data synthesis.

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Non-animal-derived antibodies: pharma companies respond

We disagree with claims by Alison Gray and colleagues that synthetic antibodies can replace animal-derived antibodies for "all known applications" (*Nature* **581**, 262; 2020).

Few platforms can deliver multiple drugs across many indications, not least because of the complexity of drug development, discovery and approval. If drug approvals are the yardstick for a platform's performance, then the track record of animal-derived molecules is a strong argument for their use: nearly all approved antibodies are animal-derived, including about 90% of those approved over the past 5 years (see go.nature.com/3ikvxgx; R. M. Lu *et al. J. Biomed. Sci.* **27**, 1; 2020). This also refutes the correspondents' claim that "animal-derived antibodies are plagued by efficacy issues".

Display technologies, which allow for *in vitro* selection of human antibodies, have produced beneficial drugs, but their success is limited — despite widespread application. The success of animal-derived antibodies is due to their high affinity and specificity and superior biophysical properties (T. Jain *et al. Proc. Natl Acad. Sci. USA* **114**, 944–949; 2017). These superior features minimize rates of drug-candidate attrition during discovery and development, translating into a reduction in the overall use of animals.

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Antibodies: alternative grading for research

Although knockout animal models can offer a 'gold standard' for validating antibody specificity (*Nature* **585**, 313–314; 2020), they are restricted to applications in which analysis of such mutants is feasible.

Even under best-case conditions, knockout analysis simply demonstrates antibody specificity for the assay, organism, tissue and developmental stage under investigation. However, high-throughput methods, such as protein microarrays and phage display, are able to identify antibodies with improved performance in standard assays and predict patterns of cross-reactivity (see D. Mohan *et al. Nature Protoc.* **13**, 1958–1978; 2018).

Furthermore, microarrays of full-length proteins can be screened for specificity against either native or denatured antigens. Peptide arrays and phage display will identify linear epitopes — target amino-acid sequences — on the antigen.

These techniques have revealed as-yet uncharacterized cellular targets of autoantibodies in a systemic inflammatory syndrome associated with COVID-19 in children, for example (see C. N. Gruber *et al. Cell* https://doi.org/gd9kvw; 2020).

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