

would be a monument to national flaccidity". In the subsequent 95 years, however, this stance has softened, and *Nature* welcomes the proposal currently before the British parliament to extend current daylight saving by putting Britain's clocks forward by one hour all year round. This would put Britain into the GMT+1 time zone in winter and GMT+2 in summer, bringing the nation into line with the rest of Europe.

The evidence is that lighter evenings make life safer and may well save energy too (see page 344). A three-year experiment along these lines, well monitored to ensure that the change lives up to its proponents' claims, seems a sensible idea.

Much less persuasive is a separate plan to move forward the time on the 'Doomsday clock', an icon cannily created by the editorial board of the *Bulletin of the Atomic Scientists* in 1947 to alert the world to the looming threat of nuclear annihilation. Last week the current board decided to broaden the clock's remit to include such developments as climate change, and to move its hands forward by two minutes to just five minutes to midnight.

This raises two concerns. A minor one is that 'nuclear war' means something rather different today to what it meant at the time of, say, the Cuban missile crisis (when the hands were set further from midnight than they are now). A nuclear war is no longer necessarily synonymous with an all-out exchange between superpowers, and may not lead to the doomsday envisaged by the creators of the doomsday clock. This is not to minimize the horrors of a limited nuclear exchange, but to acknowledge that the context for the still vital project of averting any military use of nuclear weapons has changed.

A greater misgiving comes from the addition of non-nuclear concerns to the doomsday calculus. This seriously muddies the waters. Climate change is undoubtedly a major challenge, but it does not threaten doomsday in the manner of a full-blown nuclear war. Global warming has no hair trigger, no tiny margin between safety and disaster, no doom that can be unleashed in the flight time of a missile — none of the characteristics, in fact, that made the fatal minutes on the face of the doomsday clock so iconic.

Climate change is a substantial threat, but it is quite different in character to nuclear war: it is the deterioration of land, the increase of drought, a billion livelihoods descending from backbreaking to impossible. The principal human cost of climate change is likely to be an intensification of global mortality due to poverty and ill health — mortality that already runs at a level that all would condemn as unacceptable were it not that, as a world, we accept it. This moral weight makes it pressing, but does not make it urgent in the 'time ticking away' sense the doomsday clock so powerfully evokes. It is more important that policies to reduce the harm done by climate change be sustainable over the long term than that action be taken precipitously.

To fight climate change, we do not need to alarm ourselves with clocks of doom. Instead we just need to use our time to good purpose. And the reduction in energy use to be expected from single-double daylight saving in Britain — or from the extended single daylight saving that is to be implemented in the United States this year — will be a marginal, but nonetheless welcome, step in the right direction. ■

## Making connections

A series of essays is launched in *Nature*.

There are times in the development of science when a shift in approach is sufficiently extensive that only a collection of thoughts and perspectives from many different practitioners can do justice to it. This issue sees the launch of a themed series of essays, called Connections, which take such an approach to the interdisciplinary study of complex, dynamic systems (see page 369).

Scientists in almost every discipline are grappling with the problem of how best to model such systems. Cell biologists are being driven to do so, for example, by the surge of data from techniques that reveal biological processes in unprecedented detail, and quantum physicists by properties exhibited by collections of particles that would not have been anticipated on the basis of how a single particle behaves. Across these fields and beyond, deeper insight requires a systems-level approach that seeks to understand interactions and make connections. Although the goal is clear enough, the way to reach it is not.

Many researchers recoil from terms such as 'systems biology' and 'complexity', interpreting them as euphemisms for things we don't adequately understand. Research on problems involving dynamic interactions between large numbers of entities is often directed by the availability of the data, rather than by a carefully considered question. And a rush of studies claiming to uncover simplifying prin-

ciples that unite complex networks has sometimes generated more heat than light.

In some cases, attempts to understand networks and whole systems are driving researchers to cross disciplinary boundaries. Social and physical scientists are often more accustomed to such collective activity than molecular biologists, for whom the borrowing of techniques and expertise is now becoming commonplace.

The essays in the Connections series will illustrate some of the insights that are emerging as researchers pursue more holistic approaches to problems, while engaging in an unprecedented degree of collaboration between biological, social and physical scientists. They will raise provocative ideas about how to probe dynamic systems, illustrating, for example, how systems approaches can challenge assumptions established within the more reductionist framework of twentieth-century science.

The series begins just a few weeks after the popular Essay page returned to *Nature*. It will reiterate the tradition of this format as a forum for scientists to reflect on new ideas, or re-evaluate old ones. The Connections essays will also be collated on the web, where access to the first four will be free. We hope that, week by week, a greater story develops than could be told by a single article — and that over the coming year, the Essay page will continue to provide scientists with a valuable opportunity to say exactly what they think. ■

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