

# Response Weather forecasts are not pseudo-science



Met Office predictions are still valid, despite the lack of a 'barbecue summer', says David Spiegelhalter

Simon Jenkins' tirade against weather forecasters (The Met Office thinks August will be wet. Buy futures in sun cream now, 31 July) shows a misunderstanding of what science can deliver. Jenkins contrasts "scientists who lecture ministers on the exactitude of their calling" with "public predictions so smothered in caveats and qualifiers as to be drained of significance".

He seems to expect precise predictions of the future despite deriding such

claims in the light of "the probabilistic nature of life". In fact, there is a middle way between a demand for certainty and fatalistic resignation. I am a member of a rich community - including insurers, statisticians, doctors and bookies - who use probability theory for prediction. This may use unfamiliar language but it is not a "pseudo-science".

Jenkins' view that predictions should be left to "astrologers, ball-gazers and seaweed" was, at least in the medieval period, very respectable. It was not until the 17th century that gamblers realised they could make more money if they could put a number on the probability of winning or dying. Since then techniques have steadily improved, and weather forecasters now routinely qualify their forecasts with probabilities: the fact that a 65% chance of above-average temperatures is fed to the public as the promise of a "barbecue summer" is presumably the fault of an over-enthusiastic Met Office press department.

Perhaps the Met Office feels it has to indulge the unwillingness of people like Jenkins to deal with probabilities. He admits he dislikes the use of qualifiers such as "66% certain", saying, "the information is useless without knowing

the likelihood of the '66%' being correct". This is an excellent point.

It is clear when an unqualified prediction is wrong, but how can we tell when a probability is wrong? This has been closely studied by weather forecasters striving to produce reliable probabilities: when they say, "there is a 60% chance of rain," it should rain in 60% of cases. Reliable probabilities are essential if they are to be of use. If I have a seriously ill relative, I want a reliable assessment of their chances of survival - not a spuriously precise prediction, nor some vague, reassuring platitude. But the lack of a barbecue summer is not sufficient evidence to conclude that the Met Office's probabilities were unreliable.

Strangely, Jenkins seems happy to put odds on the chance of a British soldier being a casualty in Helmand ("in the order of one in 10") and, rather remarkably, has pre-empted Nice by calculating

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in his head that the millions spent on swine flu would be better spent elsewhere. His conclusions about swine flu may or may not be wrong but he should be congratulated for recognising that quantitative analysis is needed to balance the potential benefits and harms of policy decisions. Such an analysis cannot tell us what to do - there are always extra uncertainties, moral ambiguities and political pressures - but it makes explicit the evidence being used and the judgments being made - which is presumably why it is all too rarely applied. **David Spiegelhalter is the Winton professor of the public understanding of risk at the University of Cambridge** [D.Spiegelhalter@statslab.cam.ac.uk](mailto:D.Spiegelhalter@statslab.cam.ac.uk)

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