LETTERS

edited by Jennifer Sills

Retraction

THERE ARE SEVERAL PROBLEMS WITH THE REPORT "SPHK1 REGULATES PROINFLAMMATORY RESPONSES ASSOCIATED WITH ENDOXOIN AND POLYMICROBIAL SEPSIS" BY P. Puneet et al. (1).

Specifically, Figs. 3D and 4B contain images that were generated by author Puneet for the Science paper, but had been used in previous publications [see (2, 3)] without her knowledge or consent. Images in Fig. 3D are also found in Fig. 4B. Irregularities in other figures have been suggested, and the validity of the data cannot be confirmed. Finally, sections of the text are similar or identical to sections of (4).

For these reasons, the authors below wish to retract the paper. Author Alirio Melendez has not been available to sign the Retraction. The National University of Singapore has completed an investigation into the irregularities in this paper and has concluded that sole responsibility for the irregularities rests with author Melendez.

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References

Silver Lining of Singapore’s Haze

THE POLLUTANT STANDARDS INDEX (PSI), A measure of pollution levels for major air pollutants, reached a historical high of 401 in Singapore on 21 June, as a consequence of forest fires in Sumatra, Indonesia (1). A PSI between 101 and 200 is considered unhealthy; between 301 and 400 is hazardous to health; and above 400 is life-threatening to ill and elderly persons.

The ongoing 187 fire hot spots quadruple the number that existed in 1997, when the previous PSI historical maximum was realized (2). The majority of these fires are due to land-clearing activities to replace tropical forests by agricultural crops such as oil palm (3). Fire land clearing during the intermonsoonal dry season generates smoke ("haze") that can cover neighboring Singapore and Malaysia for days, causing substantial economic losses (4). For instance, between 1993 and 1998, the impacts of haze amounted to US$4.5 billion (5); the current unhealthy readings could cost the tourism industry of Singapore alone roughly US$1 billion (6). Burning has been illegal in Indonesia since 1995 (7).

The severity of the current situation has led to an escalation of diplomatic tensions between Singapore, Malaysia, and Indonesia. As in previous haze episodes, Singapore officials have demanded actions from the Indonesian central government. Unprecedentedly, Hadi Daryanto, the secretary-general of Indonesia’s Forestry Ministry, was recently quoted suggesting that Malaysia- and Singapore-based oil palm companies could be, together with local farmers, responsible for the slash-and-burn practices to clear land (8). This sparked reactions from Singapore’s Environment and Water Resources Minister, Vivian Balakrishnan, who prompted Indonesian officials to name the companies responsible (6). There was also a response from Singapore-based oil palm company Golden Agri-Resources, which assured the public that it does not use slash-and-burn practices, only bulldozers, to clear the land (9).

The haze is indicative of much bigger biodiversity and climate change global problems. Tropical deforestation in Southeast Asia will result by 2100 in the loss of 13 to 42% of all regional populations, half of which will represent global species extinctions (10). Meanwhile, tropical deforestation will continue to contribute substantially to climate change, causing 15% of global anthropogenic carbon emissions (11).

Surprisingly, in contrast with the haze, neither the impending biodiversity disaster nor climate change is able to spark diplomatic actions between regional governments or to irritate the public in the region. Seeking to assign responsibilities for the haze—who benefits and loses from it and who should get compensation—is similar to the necessary process of identifying responsibilities for the biodiversity and climate change crises. In this context, Daryanto’s remark is important in that it denotes the need for Indonesian authorities to rethink whether the massive
exchange between Indonesia and (to a large extent) foreign companies of natural treasures for oil palm is a sustainable strategy.

Paradoxically, given the effectiveneness of the haze as a stimulus provoking regional leaders to talk about deforestation, conservationists might even prefer that forests are burned instead of bulldozed. Forests only cleared with bulldozers could mean the end of even the tangential discussions of the deforestation problem, permitting the ongoing silent and nonirritating destruction of Southeast Asian tropical forests.

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2. AsiaOne News, ”Four times as many hotspots in Sumatra now” (19 June 2013); http://news.asiaone.com/News/AsiaOne%2BNews/MalaysiaStory/AS1Story20130619-436693.html.
7. FAO, ”Fire Management—Global Assessment 2006”

A Statistically Significant Future for Bayes’ Rule

B. EFRON’S ENTERTAINING PERSPECTIVE

“Bayes’ theorem in the 21st century” (7 June, p. 1177) on the past and possible future of the use of Bayes’ theorem in statistical inference strategically avoids addressing the use of statistics by nonstatisticians. Unlike most professional statisticians, many empirical scientists are not able to use the method of analysis that best fits their particular problem. In addition, their understanding of the frequentist statistics in which they have been trained has been widely found to be rather abysmal. As John Tukey said in 1964, “Most uses of the classical tools of statistics have been, are, and will be, made by those who know not what they do” (1).

This situation has led many to argue for an educational reform in statistical training for empirical scientists, and for increased emphasis on translating between frequentist and Bayesian measures of evidence (2). Tentative implementations of both of these projects already exist (2), and these attempts merit encouragement and praise, all the more because Bayesian statistics is proving to be particularly useful in many fields.

Reasons for this increased popularity in Bayesian methods are not hard to spot. Much of modern research, particularly in the life sciences, is based on the synthesis of multiple categories of evidence. Data coming from many different studies have to be integrated in order to assess the empirical evidence for a new theory, and Bayesian statistics lends itself very well to this. Working scientists have noticed this, and many are using these tools now. With the increasing statistical literacy of empirical scientists and the growing availability of Bayesian computer software, the future of Bayes’ rule, along with that of other approaches to inference, seems well assured.

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References

Response

VAN HULST BRINGS UP AN IMPORTANT POINT: Bayesian methods are easier to explain and understand than their frequentist counterparts. An attractive simplicity is exactly what led to Bayesian statistics’ overuse, and then disuse, in past epochs. Frequentism is essentially a more cautious and self-critical philosophy, better able to withstand skeptical scrutiny from the scientific world. It will always have a major role to play in real-life scientific inference. There are two potent arrows in the statistician’s quiver, and there is no need to go hunting armed with only one.

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Letters to the Editor

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