I have recently had my say elsewhere [Nelder (1986)] on the relations between statistics, mathematics, science and technology. If I had to make choices as a teacher I would be forced to give first priority to the statistical ideas underlying the analysis of variance (in my general sense) and its generalization, the analysis of deviance. This is not to say that the student should not be aware of the mathematics of balanced random structures; rather that (s)he should also be aware that the scientist and technologist will be interested primarily in the systematic part of the model (signal), and will regard the random part (noise) as an unavoidable nuisance. I believe that the analysis of variance, in its existing wider sense, has a useful part to play in the interpretation of the signal, so I should not like to see its use restricted to the description of the noise only.

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London Business School
Sussex Place
Regent's Park
London NW1 4SA
England

Tue Tjur

University of Copenhagen

First of all, let me congratulate the author on an interesting paper. Though I find his use of the phrase analysis of variance somewhat unusual, it is certainly important to be aware that the mathematical tools in such seemingly different statistical procedures as that of analyzing a split plot experiment and that of analyzing a time series are, in fact, aspects of the same algebraic theory for spectral decompositions of covariance matrices.

I would like to stress a point related to the discussion of infinite arrays. What is said below can be read between the lines of Section 5, but I think it deserves more attention that the concept of an infinite array constitutes the ideal framework for discussion and clarification of the classical (and, unfortunately, slightly controversial) problem of negative variance components.

Very briefly, there are two kinds of variance component models:

(1) random effect models stated in terms of sums of independent random effects (error terms); and
(2) models stated in terms of covariances (as in Section 4).