

ATMOSPHERIC ENVIRONMENT

An International Journal

From the Editor: Dr. J. P. Lodge, Jr.
385 Broadway
Boulder, Colorado 80303, U.S.A.

12 February 1981

Dr. R. D. Snee
Consultant Supervisor
Applied Statistics Group
E.I. du Pont de Nemours & Company
Wilmington, Delaware 19898

Dear Dr. Snee:

I have now heard from two referees concerning your paper, "Models for the Relationship...." Their comments are attached, together with a manuscript marked by one of the referees.

As you can see, the reaction toward this paper was uniformly negative. If I am to keep any faith with my reviewers, I am bound to reject it in its present form.

However, it seems to me that these reviewers have given sufficient detail of the matters that bother them to give you considerable guidance in producing a paper, at some later date, that would be fully acceptable. I really sense that both reviewers would like to see this matter published, but simply feel that you have not proved your point.

I am thus rejecting the present manuscript, but strongly encouraging a later submission that meets these criticisms.

Sincerely yours,

James P. Lodge, Jr.
James P. Lodge, Jr.

JPL:jt
Encl.

TEH 0470526



Published by

PERGAMON PRESS

New York • Oxford • Toronto • Sydney • Paris • Frankfurt

REFEREE FORM

ATMOSPHERIC ENVIRONMENT

MS. No ...1920-L.....

TITLE OF PAPER:"Models for the Relationship Between Blood Lead and Air Lead".....

AUTHOR(S):R. D. Snee.....

You are invited to referee the enclosed paper. If you are able to do this please return the enclosed card. If you cannot report within ten days, please return the paper without delay.

REFEREE'S REPORT

It will be of great assistance to the Editors if the Referee will answer the following questions:

1. Should the paper be accepted for publication? *NO*
If the paper is scientifically unsound or does not contain any material which is of sufficient interest and originality to merit publication, then the paper will normally be rejected. If the referee is of the opinion that the paper fails within either of these categories would he please state his reasons for this opinion.

The data base utilized for personal air lead values was associated with a 2-4 week period (Azar et al.) in the Williams study. The second data base for air lead, a two week air lead (10 samples) and a one week blood lead sampling period was used. These are not adequate.

If the answer to Question 1 is "Yes", then would the referee please indicate:

2. Are there any errors? *The error is basing the extensive modeling on a sampling period which is too short for body storage dept- blood equilibration.*
3. Are there any omissions?
4. Are any sections obscure and what additions or alterations would remove the obscurity? *Additional data would benefit this treatment*
5. Could any sections be omitted or shortened?
6. Is the abstract adequate?
7. Is the title appropriate? *Yes*
8. Are all the illustrations/tables necessary, clear and suitably captioned?
9. Have you any other comments?

TEH 0470527

REFEREE'S REPORT

(This sheet to be used for replies to questions 1-10 if there is insufficient space on the Referee Form.)

While it is certainly true that the bulk of air-blood lead data are for occupational + ambient exposures, this large data base indicates a slow body equilibration to exposure. The one week and two week sampling used in the studies drawn upon by the author cannot be justified on the basis of the dynamics of blood lead equilibration with the body storage depots, which are in proximity to the RBC formation centers and the bone marrow. I think the author has modeled far beyond the data base he utilized. He indicates this is the only data base; it may be. The OSHA lead standard preface dwells at length on the equilibration of body burden with exposure for occupational exposure. An extensive literature is cited. While exposures are higher, to be convincing in assuming that the brief sampling cited here is adequate for modeling purposes, the author would have to display the kinetics of equilibration at these lower exposure levels. The data he uses are simply too sparse. The author notes some respect for complex variations with study group population variation (p.7), but nevertheless still reaches conclusions about the model on this sparse data base.

TEH 0470528

DUP050083349

REFEREE FORM

ATMOSPHERIC ENVIRONMENT

MS. No 1920-L

TITLE OF PAPER: "Models for the Relationship Between Blood Lead and Air Lead"

AUTHOR(S): R.D. Snee

You are invited to referee the enclosed paper. If you are able to do this please return the enclosed card. If you cannot report within ten days, please return the paper without delay.

REFEREE'S REPORT

It will be of great assistance to the Editors if the Referee will answer the following questions:

- Should the paper be accepted for publication? No.
If the paper is scientifically unsound or does not contain any material which is of sufficient interest and originality to merit publication, then the paper will normally be rejected. If the referee is of the opinion that the paper falls within either of these categories would he please state his reasons for this opinion.
Although the general subject of models for linking pollutant exposures and effects is interesting and important, this paper does not appear to qualify as making an original contribution. The author misrepresents the requirements and boundary conditions for use of one class of models (log-log), and fails to make a convincing case for the alternate model he proposes. He fails to provide the data which a reader needs to judge his assertions.
If the answer to Question 1 is "Yes", then would the referee please indicate:
- Are there any errors? (Introduction) Reference 1 did neither predict nor assume that at zero air lead, there would be zero blood lead. The author should reread it.
- Are there any omissions?
- Are any sections obscure and what additions or alterations would remove the obscurity?
- Could any sections be omitted or shortened?
- Is the abstract adequate?
- Is the title appropriate?
- Are all the illustrations/tables necessary, clear and suitably captioned?
The Figures are not numbered. It seems extraordinary that with the same sets of data, the relative positions of the curves for the
- Have you any other comments? five different groups would be different for the two different models.
- Are there any aspects on which you consider another opinion should be sought?

TEH 0470529

REFEREE'S REPORT

(This sheet to be used for replies to questions 1-10 if there is insufficient space on the Referee Form.)

Unfortunately, Azar's papers, of which Snee was a coauthor are not available to me, but given the citations, they are not likely to be available to other readers of "Atmospheric Environment" either. I have located Goldsmith and Hexter, and note that their contribution seems to have been that they identified a model upon the basis of which experimental and epidemiological data appeared to be convergent. Snee chooses two epidemiological studies, despite the availability of several sets of both types of studies.

My recollection of the Azar reports is that they are quite appropriate for one input to model building, but to qualify as an original contribution in 1980, it would seem that at a minimum both types of study should be included.

If there was any quantitative basis for assuming that the five groups did indeed have food and water exposures justifying the huge range of "B" values (0.44-6.26), one could go along with the author's argument, but none is available. Contrasting this range with the range of "a" values given under Eq (1) leaves one with the impression that the log-log relationship is more plausible than the Author's proposed alternative, but lacking clear definition of what a six coefficient model was. The argument that oral lead ingestion was a hidden variable responsible for the proposed air-lead to blood-lead association was tested by collecting fecal lead data in the so-called "Seven City" study, and the data did not support it. To repeat the same sort of argument, with no data to support it hardly merits publication.

To present figures for predictions without any data on what was observed is simply not scientific. That with the amount of extrapolation used there are differences between curves at low than at high levels is not so remarkable as that the relative height of the blood lead curves in the range of measured air lead exposure differs (i.e. comparing LA office and Starke, and the two cab company groups).

In no place does the author discuss the crucial importance of particle size of inhaled lead; certainly it would be relevant in making comparisons between the Azar and Williams data.

TEH 0470530

DUP050083351