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Free for All

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editor,

Martin K. Starr
Columbia University

FREE FOR ALL



... dedicated to the uninhibited exchange of relevant opinion.

Becoming involved with a "Letters to the Editor" column may be something like going "Through the Looking Glass." The letters you receive are not meant to communicate with you but through you. No longer a terminus but a (noisy) channel, you find yourself hooked into the system with the major purpose of inducing a continuous flow of stimulus and response. Also, a sudden awareness is generated with respect to other such operations whose management you had previously taken for granted. A (cursory) literature search reveals no attention to the unique properties of such systems; taxonomy is non-existent, and there are no analytic models for optimization (of what?).

Although we have called it Free For All there is a cost of participating. This includes the time required to write a letter and the price of supplies and a stamp. Time and commitment costs are clearly very personal and highly variable between individuals. Is there a particular group in the population for whom these costs are especially low? Surveying the letters found in other columns produces the hint that this may be so. Alternatively, the key may lie in the expected payoff that can be associated with publishing a letter. Even if it is quite small, the cumulative opportunity cost of *not* being published as consecutive issues of the journal appear should eventually pass a threshold... that is, unless an extremely high discounting rate is used.

Perhaps the expected payoff from published letters can be classified according to the author's intent as well as by his mode of expression. It seems reasonable to believe that certain types of letters will generate a stream of future correspondence while others produce no follow-up at all. In any case, letters to editors columns might be typed by the frequency with which different categories of correspondence appear. As a rough approximation we can identify and differentiate letters to editors in the following way:

- I. With respect to prior articles and letters that had been published:
 1. Supplementary information
 - A. Additional facts

- B. Philosophy and concept not included or stressed in the original material
- 2. Standing in judgment
 - A. Disagreement
 - a. for discussion
 - b. for destruction
 - B. Agreement
 - a. for discussion
 - b. for concensus
- II. Original materials and new issues:
 1. Not about to write a full blown paper
 2. Humorous or poetic transformations*
 3. Political, social and historical issues
 4. Educational issues
 5. Economic issues
 6. Philosophical issues

These are, of course, just a limited number of categories chosen in a most arbitrary fashion. But they do present a semblance of structure within which those who are interested may discuss the form that they would like our Free For All column to take (as well as to analyze the character of other letters to editors columns). Observing a variety of publications, especially those devoted to scientific matters, we can note that there are distinguishable stylized aspects to the letters that are typically printed by each of them.

We shall not comment on the nature of our survey (it wouldn't stand up under even momentary scrutiny). Instead, let us get to the heart of the matter: what kind of column do we want Free For All to be; to what extent can we control this evolution? If, as would seem to be the case, a Markovian type of process can exist wherein a letter may take seed and lead to a branching tree of letters, then it might be possible to nourish certain node points. Contrariwise, should we attempt to discourage such trees from being created? Further, are the style and the tone of letters contagious? What part do these factors play in determining how the column will fare? Are contributors from one field likely to be more polite than from another? Are there traditions in a field that get reflected in this way which are inevitable or can the style and tone be managed? Can we assume that the editor acts as a clerk and copy editor—not as a censor?

This editor would be interested in any comments which might provide structure and rationality in the concept of how to conduct the operation of Free For All. It seems fitting that in the management science area instead of blindly following tradition, instead of permitting environmental forces alone to shape our future—we can at least attempt to provide rational direction.

Do the editors of other columns every now and then, sensing the need for action, write a John Doe letter—designed to be a seed? Our survey revealed one

* Arthur Koestler in *The Act of Creation* (The Macmillan Co., 1964) draws a triptych which relates the jester, the scientist and the artist as different manifestations of the same creative urge.

such potential seed. It is the discussion concerning the pros and cons of adopting the metric system. John Doe wrote us the following letter which might be classified under II-5, i.e., Original materials, fitting into the sub-category of an economic issue.

MARTIN KENNETH STARR
Columbia University

Letter to the Editor—Free For All

Scientists have exhibited strong feelings about the system of measurement that we presently use. The discussion—to be or not to be metric appears regularly in the pages of substantial scientific journals (for example, see *Science* magazine editorials: 22 January 1960, Volume 131; 29 June 1962, Volume 136; 9 July 1965, Volume 149. Also in *Science*, "Status of the National Standards for Physical Measurement," by R. D. Huntoon, 8 October 1965, Volume 150). Management scientists, it seems to me, have an obligation to express themselves concerning this issue within the scientific community and particularly as representatives of management. This is especially appropriate since Congressional study is pending in the United States and the United Kingdom has decided in favor of a ten-year conversion to the metric system. It has not gone unnoticed that while the shift from the English to the metric system is of everyday importance to scientists it is also a matter of vital economic concern to industry. In addition to research opinion, enterprise deserves to hear the voices of production and marketing managements and the interpretations of management scientists.

As a result of the interesting pros and cons (see, for example, the *Science* editorial 29 June 1962, Volume 136) which have been clearly developed over time, I requested a class of graduate students to set down their feelings as to whether or not the metric system should be adopted and to explain their positions with regard to the advantages and disadvantages. Included here is an abbreviated summary of the answers which were gleaned from the papers of these 47 students. The class tally, it will be noticed, is very definitely on the pro side. This represents a class of business students specializing in quantitative and production management techniques. Many of them have had some industrial experience.

Class tally

17—very pro	(long run necessity—the sooner the cheaper)
17—mildly pro	(gradual change necessary, but not in all industries— decimalize the inch first)
6—neutral	(let market forces determine the speed of any change)
5—mildly con	(too costly—study thoroughly first—complete change impossible)
2—very con	(complete waste of resources if substantial change is forced—chaos would result from any attempt at rapid change)

The writer of this letter would be most interested in knowing whether this class

distribution would be a fair representation of management and management science opinion.

JOHN DOE
New York

Letter to the Editor—Free For All

I wish to undertake the defense of what I consider an important although usually abandoned class of *Management Science* readers; the class of those that still believe in simplicity and prefer to stick by the old Cartesian method of "ordering ideas, starting with the easiest and gradually going toward the most complicated . . ."*

We, the simplicity fans, do not tremble when faced with equations, graphs, matrices, Boolean algebra or linear programming. We do get somewhat nervous when our colleagues present sophisticated formulations of simple problems . . . which the French call "épater le bourgeois."

Hence, I feel that this is the right place to comment on Bernard Giffler's paper on "Parts Requirements" published in Series A, July 1965 issue. I shall contrast the author's argument (illustrated on the left side of the table below) with the simple-minded solution (shown on the right side).

1. NOTATION

- N*: direct requirements matrix (next requirements)
D: demand vector
A: availabilities vector (inventory on hand)
T: total requirements matrix
G: gross requirements vector
X: inventory utilization (netting) vector
E: edited requirements (production) vector
I: identity matrix

2. DATA

$$N = \begin{vmatrix} 0 & 0 & 0 \\ 2 & 0 & 0 \\ 1 & 1 & 0 \end{vmatrix}$$

$$D = \begin{vmatrix} 5 \\ 10 \\ 5 \end{vmatrix}$$

$$A = \begin{vmatrix} 1 \\ 5 \\ 50 \end{vmatrix}$$

3. THEORY

Total requirements are calculated from the direct requirements matrix by

$$T = (I - N)^{-1} = I + N + N^2 + \dots$$

Hence, for the given data

$$T = \begin{vmatrix} 1 & 0 & 0 \\ 2 & 1 & 0 \\ 3 & 1 & 1 \end{vmatrix}$$

* DESCARTES, RENÉ—Discours de la méthode pour bien conduire la raison et chercher la vérité dans les sciences, 1637, second part.

TABLE 1

Author	Simplification	Interpretation	Solution
<p><i>Data:</i> $D \ A \ N$</p> <p><i>Step 1</i> $G = (I - N)^{-1}D$</p> <p><i>Step 2</i> $\max F(X) = TX$ subject to $X \leq A$ $(I - N)^{-1}X \leq G$ solution X</p> <p><i>Step 3</i> $E = G - (I - N)^{-1}X$ Answer E</p> <p>(1) $(I - N)^{-1}X \leq G$ $\therefore TX \leq TD$ $\therefore X \leq D$</p>	<p>$D \ A \ N$</p> <p><i>Step 1</i> $G = TD$</p> <p><i>Step 2</i> $\max F(X) = TX$ subject to $X \leq A$ $X \leq D(1)$ solution X</p> <p><i>Step 3</i> $E = T(D - X)$</p>	<p>$D \ A \ N$</p> <p>If $\begin{cases} A \leq D \rightarrow X = A \\ A > D \rightarrow X = D \end{cases}$</p> <p>If $\begin{cases} A \leq D \rightarrow E = T(D - A) \\ A < D \rightarrow E = T(D - D) = 0 \end{cases}$</p>	<p>$D \ A \ N$</p> <p>$E = T(D - A)$ if $x_i < 0 \rightarrow x_i = 0$</p>

TABLE 2

Author's Solution	Simple Solution
<p><i>Step 1</i></p> $G = \left \begin{array}{ccc c c} 1 & 0 & 0 & 5 & 5 \\ 2 & 1 & 0 & 10 & 20 \\ 3 & 1 & 1 & 5 & 30 \end{array} \right $ <p><i>Step 2</i></p> $\max \left \begin{array}{ccc c} 1 & 0 & 0 & X \\ 2 & 1 & 0 & \\ 3 & 1 & 1 & \end{array} \right $ <p>subject to</p> $X \leq \left \begin{array}{c} 1 \\ 5 \\ 50 \end{array} \right $ $\left \begin{array}{ccc c} 1 & 0 & 0 & 5 \\ 2 & 1 & 0 & 20 \\ 3 & 1 & 1 & 30 \end{array} \right X \leq \left \begin{array}{c} 5 \\ 20 \\ 30 \end{array} \right $ <p>solution $X = \left \begin{array}{c} 1 \\ 5 \\ 22 \end{array} \right$</p> <p><i>Step 3</i></p> $E = \left \begin{array}{c ccc c c} 5 & 1 & 0 & 0 & 1 & 4 \\ 20 & 2 & 1 & 0 & 5 & 13 \\ 30 & 3 & 1 & 1 & 22 & 0 \end{array} \right $	<p><i>Step 1</i></p> $E = \left \begin{array}{ccc cc c c} 1 & 0 & 0 & 5 & 1 & 4 & 4 \\ 2 & 1 & 0 & 10 & -5 & 13 & 13 \\ 3 & 1 & 1 & 5 & 50 & -28 & 0 \end{array} \right \rightarrow \left \begin{array}{c} 4 \\ 13 \\ 0 \end{array} \right $

4. *CRITIQUE*

The complicated procedure of the author can be easily reduced to a simple product by means of

- a) algebraic simplification
- b) common sense interpretation

Results are shown in Table 1.

5. *EXAMPLE*

Using the data given in 2, results are shown in Table 2.

Let both solutions speak for themselves.

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