

letters

who is credited with proposing this experiment, did not use the unsound argument criticized above.

LESLIE E. BALLENTINE
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7/25/77

Leslie Ballentine's criticism of Lushkov's article is absolutely correct. The crux of the matter is that the purely classical relation $\Delta\nu\Delta t \approx 1$ is often combined with the Einstein relation $\Delta E = h\Delta\nu$ and the resulting $\Delta E\Delta t \approx h$ is then mistakenly called a Heisenberg uncertainty relation. A careful distinction between the Heisenberg uncertainty relations and the relationship between energy and time is drawn by M. Bunge in *Foundations of Physics*, Springer-Verlag (1967).

P. D. MILLER
W. B. DRESS

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10/25/77

Scientists out of the closet

To Frank von Hippel's essay on scientific freedom: Bravo! The time has come for scientists to come out of their closet-like laboratories. For centuries science has been at the beck and call of the slavish desires of self-seeking elements of society. Science, like other professional fields, must control its own destiny. The world must know the true humanity of science, as the soporific seventies become the eager eighties.

RICHARD A. RODMAN
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10/20/77

Referee standards

In view of the dedication of The American Physical Society to the advancement and diffusion of the knowledge of physics, I wish to remind members of the APS and other interested readers of two ongoing and pervasive situations that threaten these goals. It has been my misfortune in recent months to have come face-to-face with these situations in two separate instances.

The first point I wish to raise again concerns the standards applied by referees to judge the suitability of papers for publication. The variability of these standards among referees has been a subject for discussion (and lament) on many occasions. The issue of its desirability, and the separate issue of whether or not the physics community can change this variation, depend to some extent on the degree of variation under discussion. Small-scale variations are probably desirable, and almost certain to be found.

On the other hand, large-scale variations are both undesirable and destructive, and no less certain to exist.

By large-scale variations, I am referring to referees whose standards are either extremely exacting or very lax. For example, the referee who will not approve a paper unless it represents a truly major step forward, and the referee who approves papers with elementary mathematical errors, represent large-scale variations. Both are destructive, especially the latter. The former referee excludes material useful to workers in the field. The latter, however, permits diffusion of work that represents a bad example, and serves to diminish the quality of work of the journal's readership. The argument that bad work in the literature sharpens the wits of the readership is, I believe, false. Bad work is generally believed as readily as good work by many readers, except in extreme cases. The referee who approves work containing logical, mathematical or conceptual errors of an elementary nature does the community a great disservice, and I would urge all potential referees to be more vigilant than the community as a whole has been in the past.

Some papers in this category contain an error of the type where one or two results are quoted to support an idea or method, whereas several others to which the idea or method applies, and which tend to discredit it, are ignored. These papers exhibit especially poor research, and I hope that we can minimize their appearance, or better still, eliminate them altogether.

The second point I wish to make concerns a style of politics that has recently appeared. In recent years, the emphasis in funding has moved towards "relevance." By this I mean that the proposed work must be shown to assist the efforts of the agency to complete its mission. Not all agencies have missions, but more and more those that do are requiring proofs of relevance. Consequently, we see efforts by some to show that work that is either wrong or controversial or just irrelevant is in fact the Crux of the Matter. Unfortunately, sometimes these claims are sufficiently well orchestrated to require a careful and thorough response. From my own experience in recent months answering such groundless claims has taken time away from other work that I feel is important. Again, referees can help here. Also, the community as a whole, through contract monitors and reviewers, can help to minimize or eliminate this problem.

On the other hand, the suppression of good work, whether it disagrees with one's point of view or not, is highly undesirable. The basic point I wish to make is that time, effort and frustration can be saved by eliminating from circulation work that contains elementary mathematical, logi-

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PHYSICS TODAY / FEBRUARY 1978

continued on page 83

letters

continued from page 15

cal or conceptual errors, or which makes the error specifically mentioned above. The elimination of this type of work will serve to raise standards throughout the community and encourage quality research.

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10/17/77
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Management by objectives

I was interested to read Frederick Rothwarf's and Arthur Tauber's recent letter (August, page 13) concerning their proposed managerial uncertainty principle as a panacea for overzealous bureaucratic regulators. While their objectives have considerable merit, their last sentence associating "management by objectives" with accountability-overregulation is at best a *non sequitur*. Their management uncertainty-like principle rather than moderating "management by objectives" (MBO) framework should actually enhance it.

Basically, MBO,¹ whether employed singularly or collectively, is a process of establishing an overall organization goal and a series of time-dependent subordinate goals, developing intermediate objectives to a given goal and then successively accomplishing each of these subordinate objectives with the end result being goal accomplishment. After a specific secondary goal has been accomplished the MBO doesn't cease to exist. On the contrary, the process is an iterative one, in which specific goals are accomplished, new goals are established, and old goals are refined and modified. This cyclic process properly utilized can provide a logically ordered framework within which creativity need not be stifled, but rather, nurtured and cultivated into a unique mechanism that provides original and innovative solutions to difficult tasks.

MBO was never intended to be its own self-serving end, but a system that encourages all participants to conceive or invent new methods to accomplish their own subordinate task. However, managers must permit their subordinate managers to establish their own objectives consistent with the previously established goals. It is precisely this concept of delegation of responsibility that is the key to encouraging creativity within an organization. Disregarding this can lead to management by minute detail. Certainly, MBO requires effective communications between a project manager and his subordinate managers; indeed, the opportunity for positive feedback and active participation of subordinate managers should be strongly encouraged in determining future courses of action

toward a goal. Succinctly stated, creativity can be and should already be an integral part of a successfully directed MBO approach or framework to scientific advancement and achievement.

Reference

1. T. M. Tobin, "Company Management by Objective," *Logistician*, Vol. 8, No. 5, Sept-Oct 1976, pages 8-10.

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Cost of tenure

It is well known that financial stringency at universities, caused by declining enrollments and declining government research funding, has virtually halted the hiring of new young faculty. It is also commonly realized that the absence of young faculty is leading to a decline in research vitality, particularly in the development of innovative new ideas. However, many people fail to realize that this very situation further worsens the financial condition of the universities involved simply because all things being equal, older faculty members are paid more than younger ones. A tenured full professor may be paid more than twice as much as a recently hired assistant professor, even though the older person has an equal teaching load, a declining research productivity, but perhaps a greater contribution to the tedious administrative committee work on which the functioning of any modern university depends. (This is one more example of Murphy's 6th law: "The more productive you are, the less you are paid. The ultimate example would be the fellow who is so productive that he is fired because the senior members of his organization see him as more of a threat than an asset). It is clear that universities must find some way to replace older, non-productive tenured faculty members with bright young people, if they are to survive financially as well as intellectually.

ROBERT JOEL YAES

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10/11/77 St. John's, Newfoundland, Canada

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