

Letters

A Plea for Clarity

Both Peoples and Ford (Letters, 29 July), in reacting to David McNeill's article (13 May, p. 875) "Speaking of space," seem to suggest that a combination of editorial sternness and occasional vilification are the main weapons for combating the sloppy writing of many engineers and scientists. Unfortunately, learning to write readable prose is work. Perhaps subconsciously recognizing this, an engineer will usually reply, "I am doing alright. Don't bother me. That sort of thing isn't my field, anyway. I don't pretend to have any literary gifts." (In dialogue, engineers can be quite pithy.)

I once hoped that another approach might work. If an engineer could be made to recognize the personal stake that he has in communicating his results as clearly and as widely as possible, perhaps he could be persuaded to take an interest in the problem and to give some thought to what can be done about it. In collaboration with an English teacher, I wrote a book based on this approach, but as nearly as I can judge, it is meeting the fate of all such books: those who need it ignore it. It appears that exhortation, sternness, and appeal to self-interest all fail or at best succeed only now and then. The true cure should be undertaken in college and perhaps in high school by shifting the emphasis, by changing the appeal made to the students. It seems to me that English departments draw too little attention to the distinction between beauty and clarity, and that English courses could emphasize simple expository writing far more than they do. This would not be appropriate for all students, but for many, it would set a goal that they could see some hope of attaining.

For such students, appreciation of fine writing should be kept as distinct from composition as history is now kept distinct from biology or Spanish. The course in composition should consist

solely of expository assignments on prosaic things that the students already know about—from installing spark plugs to cutting out a dress pattern or washing a car—and these efforts should be judged entirely on their clarity, on how well they say what the writer meant to say, not on their entertainment value as light reading. I am aware that such assignments are occasionally given now. Sometimes they are even graded on clarity alone. But what I am suggesting is a writing course that consists solely of such assignments, year after year, especially for technically minded students. In all of my own education, I recall no English teacher who emphasized that beauty is a step beyond clarity, and that clear writing is usually possible even for those who cannot write beautifully. As a start in such a course, the students might rewrite some of their science texts.

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Which Comes First: Money or Brains?

I can sympathize with some of Greenberg's commentary "Money for science: The community is beginning to hurt" (10 June, p. 1485). Unfortunately, the statement does not differentiate adequately between subsidizing research on a wholesale scale and granting subsidies as rewards for demonstrated skills or as encouragement to those who are likely to yield outstanding returns.

There seems to be a widespread feeling among numbers of young scientists that without abundant funds for equipment, travel, or other purposes, worthwhile research is unlikely. I am not unmindful of the value of money nor of its necessity for given purposes. What disturbs me is the apparently growing attitude that solid research in any project depends first on money and secondly on brains.

Men seem to be forgetting that ideas and hard work have been of paramount importance in the history of our scientific ventures. All the subsidies from Uncle Sam, from large foundations, or from vast corporations, cannot guarantee discoveries or solutions to problems, helpful as these funds may be. Possibly such dependence upon grants can contribute to the loss of the spirit of initiative and leadership that we expect from young applicants. A reduction in appropriations may hurt, but an excess can hurt, also. Grants can become a crutch without which, one day, the recipient may find himself totally disabled.

EUGENE VAN CLEEF

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Reprints: The Situation Abroad

It is customary here down under to acknowledge the receipt of reprints by mailing a card with the message: "Dear . . ., I am most grateful for the reprint which you recently sent me. Yours sincerely." On numerous occasions in recent years, upon sending those cards to authors in the U.S.A. and Canada, I have received by return mail a second copy of the reprint, even though the "thank-you" card did not specify the work concerned. On one occasion the card was returned to me with a note, "Sorry reprint supply exhausted" stamped across it. Well. . . .

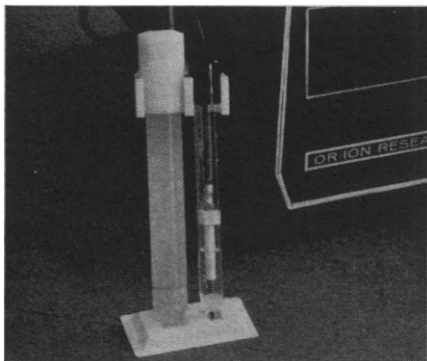
So as not to deprive some other interested reader of a reprint, I have stopped sending the acknowledgment cards to the U.S.A. and Canada. This letter is to be an explanation and apology to those authors who may have considered me impolite.

I. SALASOO

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May I apologize to those scientists who have sent me reprint request cards but who have never received reprints of the paper. Our maximum order is for 200 reprints and secretarial assistance is not unlimited. Reprint requests number several hundred before the reprints arrive from the printers, and selection becomes a daunting task based on a number of arbitrary parameters: date sent, known workers in the field, legible signature, probable photocopy facilities, and color of stamps. Consign-

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ing several hundred reprint requests to the wastebasket leaves a sense of guilt at frustrating legitimate attempts by scientists to cover the world literature. It is interesting to note that the number of requests per paper correlates with the number of key words in its title and not its length. Please accept this letter as my personal apology for discourtesy engendered by circumstances which may not be peculiar to our Institute.

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Art in Science:

Another Protagonist

The letters on the subject of art in science (20 May, 11 March, and 10 December) point up the abysmal ruts into which the concept of art is being channeled these days. To equate a mechanically derived photograph of a natural phenomenon with art reveals a basic misconception of what we call art.

We have gone a long way from such narrow opinions as propounded by such men as Aristotle or Tolstoy who held the view that imitation of nature is the highest aim of art, or that a work of art must be sugarcoated to be beautiful. The imitation of an apple or a tree as seen by the naked eye, or the path of an electron in a cloud chamber as revealed by the electron microscope, can never be more than mere facts of nature. The reasons why similarities exist between the appearance of an amoeba or an exploding galaxy and certain forms that appear in abstract paintings are twofold: either the abstract artist became acquainted with certain forms as revealed by the microscope or telescope and used them as raw materials in the same way as the general lines of the human body or as the arrow were used by artists of Paleolithic times; or else, the artists in their search for rhythmically related forms have discovered and predicted the existence of such forms in nature unperceived by the naked eye. In either case, the creative effort consists not in the forms employed but in the design of a rhythmic configuration so organized as to constitute an esthetic unity. The accidental apparent unities which are sometimes found in nature such as driftwood, stone, or photomicrographs,

must never be confused with works of art, which are man's effort to recreate and give meaning to life experience.

The aim that art and science have in common, though they take different paths to accomplish it, is to create order out of chaos. The Albany Exhibit would have been far more instructive and much less confusing to the general public if the mechanically derived works were separated from man's efforts to create works of art. The mechanically derived photographic works could stimulate and inspire artists in their creative efforts and would therefore be of value, especially to those who have little access to scientific journals or books.

I have derived much esthetic pleasure and stimulation from many of the photographs that have appeared in *Science*. To mention a few, I would like to point out the cover designs, Fibrillar Nylon (31 Dec.), Alaskan Island, aerial view (15 April), and Lightning (28 Jan.), the photograph of a particle of interplanetary dust (7 Jan., p. 36), and chemiluminous trails (20 May, p. 1020).

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Automotive Watchdog

It is with great surprise that I watch the continuation of the debate on Nader's *Unsafe at Any Speed* (Letters, 21 Jan. and 25 Mar.), especially the letters from scientifically trained readers. . . . anyone who has followed "Uncle" Tom McCahill in *Mechanics Illustrated* for the last 20 years will find nothing new or surprising in *Unsafe at Any Speed*. Other automotive reporters say much the same but without "Uncle Tom's" humor. Year after year McCahill is given access to the automobile company proving grounds and latest model cars. He tests and reports on each, carefully telling what dealer options and private modifications would make the car more safe operationally. He reports statements from engineers who repeatedly show bad sales data on models where engineering took precedence over styling. He is bitterly critical of automobile company management, but admits that they have little choice. An interview with Tom McCahill would be most enlightening.

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