

indict all the rest of us because we did not drop everything and turn our attention to this problem, or to underrate the investment in facilities necessary to carry out the experiments under discussion.

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Perhaps I underestimated the experimental difficulties others might find in conducting the reaction of fluorine and xenon and can speak best for myself. I conducted experiments involving fluorine at temperatures above 400°C during the days when experimenters generated their own gas, and I personally observed that an excellent containing vessel can be made from nickel. For the last two years xenon and fluorine gas have been on hand in my laboratory. We have excellent shop facilities at the Geophysical Laboratory [Washington, D.C.], and the fabrication of necessary experimental equipment merely required a request on my part. Thus, all that was needed for me to make the discovery was a dose of the medicine I have prescribed—a grain of skepticism.—P.H.A.

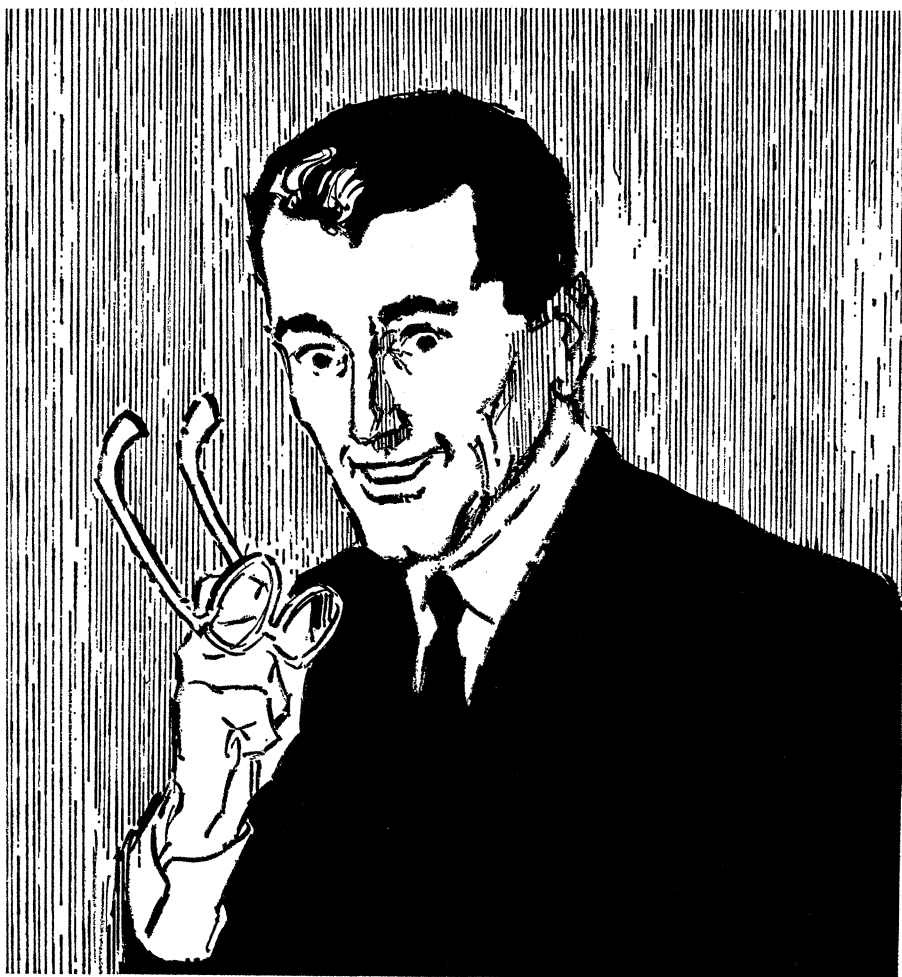
### Dictionaries and Language

Although I greatly admire Warren Weaver, and have for a long time, I feel I must oppose the unrealistic viewpoint he expresses in regard to language [*Science* **137**, 1025 (1962)].

He is much mistaken, I believe, in making analogous use of the particular biological fact he cited in order to indicate how we should communicate as human beings. It is fascinating, but not relevant, that genetic communication is so precise and generally so devoid of error that it rarely allows the introduction of deviation or mutation.

With men, living in the complexities of modern society, communication cannot possibly be so stabilized, so simplified, and so free of ambiguity—at least, not until there is complete, global cultural homogeneity, with universality of thinking, language, and responses (and probably not even then).

In our society we speak as we live: according to our roles. Our roles are many, and the ways we use speech are as numerous. One may be a physicist, gardner, husband, father, lover, do-it-yourselfer (don't flip your lid, sir!),



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birder, surfer, hiker, biker, piker, Scout leader, discussion-group chairman, and much more, all more or less contemporaneously and with no trouble at all. And each of these roles requires a different use of language if the role-player is "with it."

There is no more hopeless aim than that of arresting the pattern of language so that it may be definitively fixed in a dictionary, like insects in amber. Especially is this so in times like ours, when change is the dominant universal and is proliferating exponentially.

The main trouble with Weaver's way of looking at language is that it ignores the facts of linguistics. Several years ago, in *The Miracle of Language*, Charlton Laird was very specific in declaring that the fundamental principle of language is that it constantly changes. He also took the position that it should not change so rapidly as to lose currency. However, there isn't much danger that this will happen, he said, for the simple reason that innumerable nonofficial agencies—news-papers, broadcasters, bureaus, and schools—are all assiduously asserting themselves as to what is correct. Indeed, the urge to be "right" is so strong that, where words have two spellings or two pronunciations, our multitudinous seekers after correctness demand to know which is preferred and scorn the nonpreferred.

There is little recognition of the fact that dictionaries come to us not from on high, or from any supreme court of lexicography, but from scholars who may, and often do, differ. Dictionaries record the speech of the day and often specify whether it represents English that is formal, informal, vulgate, or colloquial. This should be enough in the way of mirroring the usage of the moment.

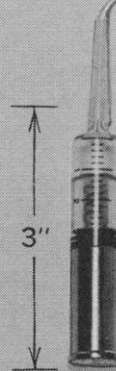
Probably the most revealing misconception of Weaver's plea for language stability is the one revealed in his phrase, "Human words should change occasionally. . . ."

It is not a matter ever, of what human words should or should not do, when it comes to change. If today's pace of change is the fastest in world history, how can word change be confined to "occasionally"? King Canute did not occupy himself more futilely than those who would stem the tide of change in language.

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Warren Weaver's excellent remarks have long been needed. When we alter our language we should be sure that we are progressing, not retrogressing. . . .

F. BRUCE SANFORD

*U.S. Fish and Wildlife Service,  
Seattle, Washington*

I was delighted to read Warren Weaver's editorial making a plea for a return to good English and away from the sloppy, slipshod, and short-cut methods used by many today. . . .

FREDERICK D. ROSSINI

*University of Notre Dame,  
Notre Dame, Indiana*

. . . I agree thoroughly with Weaver's viewpoint. . . . The mere use of certain incorrect words . . . or the lack of certain forms of punctuation in writings of many people is no basis for making that . . . "correct."

A. A. FLEMING

*College of Agriculture,  
University of Georgia, Athens*

. . . The precision of a language generally reflects the mental precision of the users of that language. . . .

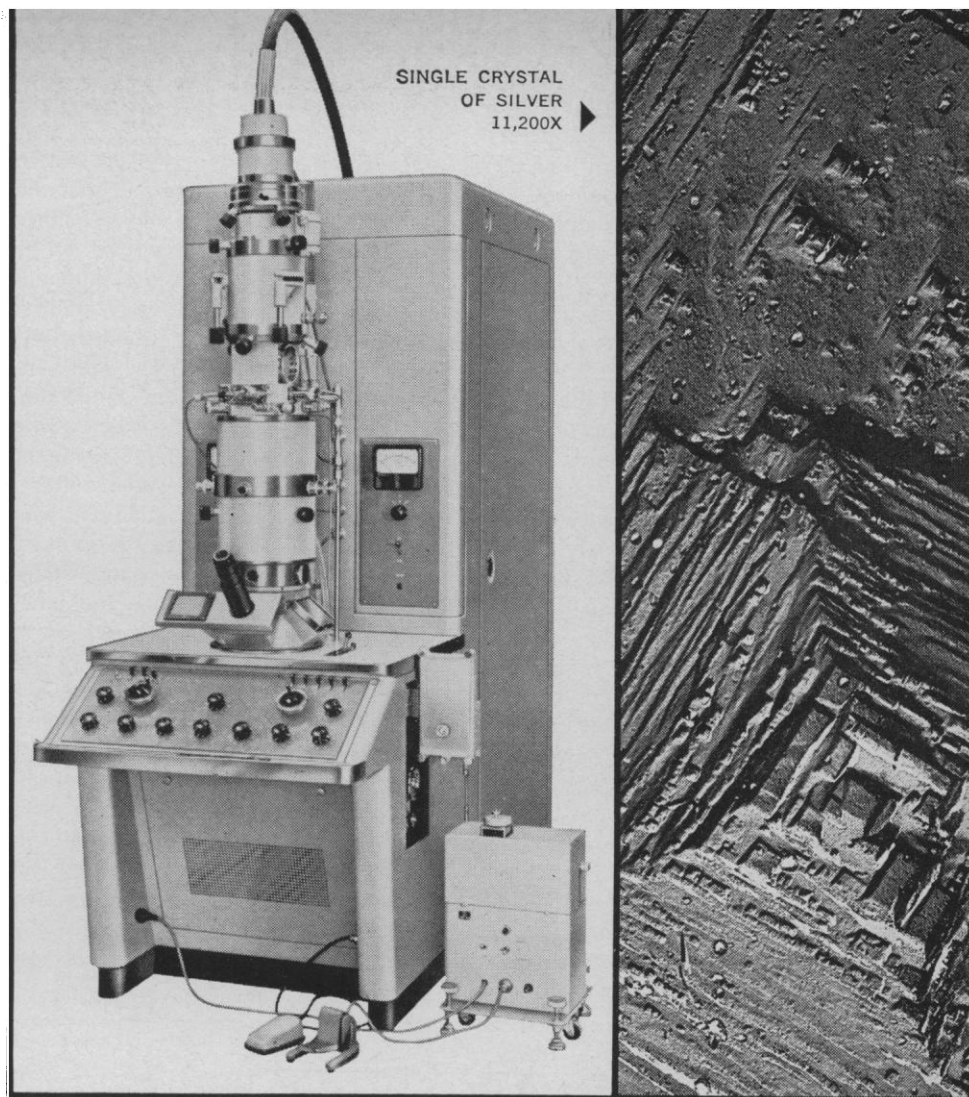
FRED PLUM

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University of Washington, Seattle*

### Dominance of the Military

It is easy, at this stage of the societal sciences, to contest any general theory of social causes, and it is equally easy to accuse Fred Cook of holding the same bogeyman image of the military that he says the military holds of the Soviet Union [*Science* 138, 797 (1962)]. If Cook meant to imply that the military establishment and its prime contractors are the single, hidden, omnipotent, and irresistible determinant of all major policy choices he would be wrong, and D. S. Greenberg's critique would be appropriate. If, on the other hand, he is claiming that a certain type of amoral strategic thinking (pioneered by the military) and a certain set of expectations for the cold war (engineered by the press and by industry) have been gradually encapsulating even those who consider themselves quite removed from the military, his case seems sound. Educators, scientists, and backers of many forms of civil-rights and social-welfare measures now feel impelled to justify their endeavors by citing the potential value of these en-

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