

attack on the general problem of getting to know the Russians, people and officials, in an atmosphere of genuine interest and tolerance rather than one of chronic suspicion and competition.

The objective outlined in this letter will require a redoubling of our efforts to open up lines of scientific communication, especially in regard to meetings and exchange visits, and such a move can be effectively spearheaded only by organizations like the AAAS. Advantage should be taken of the apparent readiness of the present Administration to act in a conciliatory manner from a position of military strength. Expression of support for AAAS officials in such

endeavors can be offered by individual members, both in general and on specific issues that arise, and should be communicated to congressmen and other public officials.

If scientific opinion in this country can concentrate on this one major objective I feel that there will be some promise of our making at least a small crack in the Iron Curtain. And the social and political voice of the scientist will certainly become more potent when some such common objective is widely accepted and promoted within the scientific community.

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## Science, Linguistics, Lexicography

The editorial "Say it *ain't* so" [*Science* **134**, 1493 (1961)] is a fair and reasonable commentary. Whether or not one agrees with the editor's views, no exception can be taken to the manner in which they are presented. It is to be regretted that the same cannot be said of the comments of Max S. Marshall [*ibid.* **135**, 739 (1962)] on this editorial. One scarcely expects to meet in the pages of *Science* techniques more commonly reserved to propaganda and the polemical diatribe.

It is unfortunate that a scientist of some professional stature sees fit to employ, in discussing a matter outside his specialty, an intemperance of language and inaccuracy of reporting that he assuredly neither would nor could employ in professional communication in his own field. The use of such pejorative terms as *ringleaders*, *proselytizing*, *self-styled*, and *make a mess of* seems as misplaced in scholarly comment as does the quoting of fragments out of context in such a manner as to completely obscure the intent of the original author; for example, "the advocates of 'observing precisely what happens when native speakers speak.'" These are the self-styled structural linguists. . . ." (Marshall), versus Gove's actual statement, "The fundamental step in setting down postulates for *descriptive* linguistics is observing precisely what happens when native speakers speak. This is the essential *first step* required by scientific method" (*italics mine*). Does Marshall deny linguists alone the right to accumulate data, or does he hold the familiar, the accepted, the authoritarian to be the proper bases for all scholarly activity? No, this seems hardly likely in an adherent of one of the newer biological disciplines and one whose founder answered the criticisms of academicians of his day with clear-cut data.

To turn to the content as distinct from the manner, there are a few points in Marshall's letter that require special notice, if only because they appear as misconceptions in several reviews. The idea that the Merriam-Webster editorial process was in any fundamental way a clerical or mechanical tabulation is wholly false. On the contrary; this process involved the accumulation of data (citations) on a carefully planned basis designed to assemble from varied sources and levels of usage word samples adequate for analysis. The resultant material was then sub-



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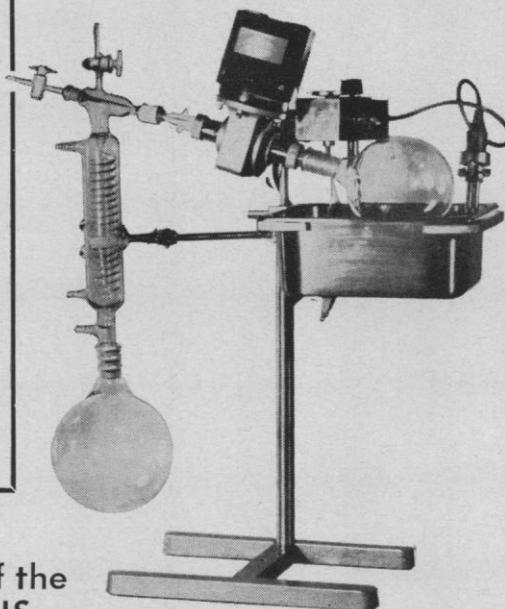
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mitted to technically qualified editors who, in the light of their knowledge and experience, weighed the items included not solely for meanings exemplified but also with due attention to place of origin, character (as technical, scholarly, classical, popular) of publication, kind of writing and evidence of editing, and other indications of status.

Another misconception in holding which Marshall is not unique is the assumption that matter in angle brackets in a *Webster's Third New International* definition is a quotation of authority. As is specifically stated in the initial explanatory notes (p. 19a), "The matter enclosed in a pair of angle brackets *illustrates* an appropriate use of the word in context" (*italics mine*). The purely illustrative status of such material should be patent, even in the absence of such a statement, from the fact that much of it is anonymous. That an editor has occasionally out of abundant material chosen to illustrate a usage by an apt quotation from a ball-player, a disorderly-house keeper, or a politician is rather indicative of his awareness of the living, democratic character of our language than of an attempt to establish false authorities.

As one whose training is fundamentally in "science" in the narrow sense apparently recognized by Marshall, I am perhaps no better qualified to defend than he to criticize the scientific status of linguistics. Yet I think the question is no more than one of definition. If science is equated with what is often distinguished as the natural sciences, then by definition linguistics is excluded. If we recognize that the esoteric mystique of science is as dated as alchemy or the benefit of clergy and go along with much of modern thought in stipulating that science is not any one discipline or any group of disciplines but is knowledge obtained by the scientific method, then a scholarly field that is subject to objective analysis is at least potentially a science. On this basis we may doubt the possibility of a science of religion or of literature or, in traditional terms, of grammar, but there can be as readily a science of linguistics as of bacteriology or genetics. The crux is the methods and aims of the practicing scholars. Individually, linguist, bacteriologist, or geneticist may be scientist or nonscientist, but each field lends itself to objective investigation and, insofar as its adherents practice this, it cannot in any normal sense be denied status as a science.

Personally, I doubt that any scholarly

or scientific linguist would call the classicists reactionaries on the basis of their belief in "a standard of quality in English" or their respect for "the accepted great in literature." While one might quibble over whose standard and whose acceptance, there are few indeed unwilling to acknowledge both the import of the classics as part of our cultural heritage and the desirability of nicety of expression. It is not to these the modern linguist objects but to attempts to restrain, by an authoritarian dominance, the normal evolution of language. If I write "Che cou'd not i' honor passe your worde vnchallenged" I am using 17th-century verbiage sanctioned by notable literary sources, but I would be more generally intelligible if I said "I could not honorably allow your remarks to pass unchallenged," and this, as a member of the Merriam-Webster editorial staff, I do say to Marshall.

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Though the challenge is somewhat personal, Kay does help to clarify the side he takes. Try J. Donald Adams [New York Times Book Review (11 Feb. 1962)] and Dwight Macdonald in his searching analysis [New Yorker (11 Mar. 1962)], or almost any other earlier comment on Webster 3, for more detail on points to which Kay and his associates have become hypersensitized.

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### Simulation of Cognitive Processes

The computer simulation of human thinking presumably described by Newell and Simon [Science 134, 2011 (1961)] is questionable on a number of counts, general and specific.

In the first place, the simulation is made to seem plausible because the authors first "postulate" that human beings behave exactly like computers. Then they "discover" that they can imitate on a computer the computer-like characteristics of man they have already postulated. The human use of symbols implies that, on some occasions at least, a human being considers both a symbol and what it symbolizes. Newell and Simon restrict their subjects

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