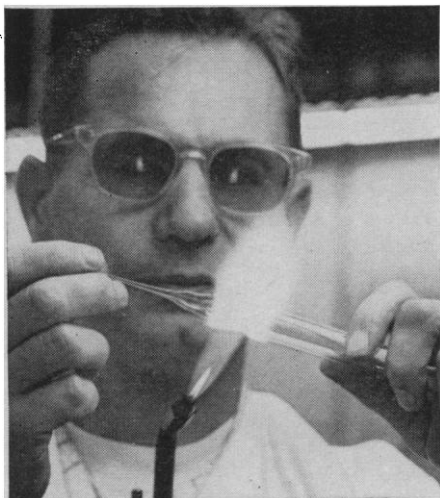




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mation should be carefully spelled out. What information might lead to the selection of option A? What combination of facts would give us confidence that option B was better? Is there any conceivable set of facts that would lead us to choose option C?

4) Those seeking information should first make their own searches for data. A very large proportion of the information for which we are routinely asked has already appeared in published form.

5) Accurate methods of acquiring the missing facts should be devised with the help of competent social scientists. For example, account should be taken from the beginning of possible distortions in the data resulting from incomplete returns. Plans should be made to deal with alternative patterns of response.

6) Only those questions should be included in the survey whose answers have specific and definable bearing on the making of a decision which is itself of significance. (These questions include, of course, those which will define the respondent and enable his data to be suitably classified, but the classifications should themselves be limited to those of known importance.)

7) The specific usefulness of individual items of information should be clarified for the respondent. If the college president or dean sees no relevance to your question about the number of laboratory assistants or faculty secretaries, he is unlikely to count them for you.

8) Institutions, individuals, and associations should place less reliance on "survey experts." Commercial survey organizations have been responsible for many of the worst examples that we see, including some of those cited.

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Energy: Release, Not Increase

David H. Fuller writes (Letters, 19 Nov. 1965), "A quite common factor in achievement in all fields is energy level—not motivation or drive or push but the physical energy a person has available to follow his motivation." He wonders about the man who could find a way of increasing this energy.

When iproniazid, the first monoamine oxidase inhibitor and antidepressive drug, came into use, N. S.

Kline termed drugs of this type "psychic energizers," believing that psychic energy could be increased by administration of the drug. This turned out to be a wrong assumption.

That we shall be able to truly increase the innate energy or intelligence of man seems unlikely. What we can do, however, is to free the psychic energy that is bound by inner conflicts and emotional turmoil. Thus we can add to the available energy and ability to think.

It is estimated that most people use only 50 percent of their potential energy and ability; psychiatrists and educators, to mention just a few, are active "achievers" in improving this situation.

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Metric System in Optics

The optician's attention should be drawn to the advantages of the metric system, which is coherent, logical, and internationally accepted. The problem of "inconveniently large numbers" cited by G. Wald in his letter on the plotting of spectra (3 Dec., p. 1239) is easily avoided in the metric system by the use of prefixes. The obsolete "micron" and "millimicron" are, correctly, the micrometer and the nanometer, respectively, abbreviated μm and nm .

The metric unit of frequency is the cycle per second, or hertz. For electromagnetic radiation, $1\text{ m} = 300\text{ megahertz}$, and $1\text{ }\mu\text{m} = 300\text{ terahertz}$, approximately. If the opticians will invent suitable prefixes for 10^{15} , 10^{18} , and 10^{21} , all frequencies of interest at present (from the megahertz waves from space up to the highest frequency cosmic) will be conveniently describable.

Wald is perfectly correct that it will take a long time to change over. He is also correct in saying that change is long overdue. It took the electronic engineers 25 years to accept the prefix "pico" (10^{-12}). The recently coined "femto" (10^{-15}) and "atto" (10^{-18}) now await acceptance.

The metric prefixes are tabulated on page F85 of the 1965–1966 *Handbook of Chemistry and Physics*—and elsewhere.

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