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## Writing and the Economic Researcher

By Ronald L. Mighell and Elizabeth Lane<sup>1</sup>

Writing is a working tool for the economist—a tool both for doing research and for presenting research results. Effective writing is important for all scientists, but especially for economists. Economists need to write well to complete their work effectively, to meet their ethical obligations, and to advance their own welfare.

Key words: Writing; communication; language; research tool.

Writing has been termed "visible thinking." Certainly writing leaves a living record that exposes thinking to view. It is a way of communicating with other times and places.

This paper is concerned with the use of writing on the part of those engaged in research and especially economic research. Such writing should reflect the underlying logic of research. It should be balanced and judicial, not an advocate's brief, but a search for truth.

The conscious use of language to find truth traces back at least to the Greek philosophers. The Socratic method, for example, asks searching questions on all sides of a problem in the hope that the answers may lead to truth. John Locke in 17th century England came close to the modern view in his "Essay Concerning Human Understanding" (5). This essay was really a report on the use of words as tools of investigation and action, an inquiry into what the human mind can know and cannot know. Locke thought a word properly used should "excite in the hearer the same idea which it stands for in the speaker" and that words to properly convey ideas should be "as near as may be to such ideas as common usage has annexed to them."

Good writing in any field is effective writing. As Susan Stebbing once put it, "a word is a tool only in so far as it is used in a context by someone who has some purpose in view. Whether, therefore, we are using language well or badly depends upon the purpose for which we use it" (11). Obviously, effective writing may have different purposes, some quite different from the one that concerns us here. Writing has been used for purposes of persuasion to specific courses of action. One of the present writers once heard former Governor James Curley of Massachusetts deliver a street corner address that was one of the most moving and persuasive

that could be imagined. This was speaking rather than writing and an important element in this politician's charm was the warmth of his personal delivery. But persuasive writing may be equally effective.

### Economists Need to Write Well

Effective writing is important to all scientists because a research project is never complete until the final report is published. But writing is doubly important to economists. It is important not only at the end, but in the beginning and in the middle of a research enterprise. It contains a large part of the thinking that guides the research economist through the whole maze of his analysis. Economics is both less tangible and less exact than the physical and biological sciences. Measurements are frequently difficult and logic forms a greater part of the whole process. "Logical reasoning is the key to success in the mastery of basic economic principles, and shrewd weighing of empirical evidence is the key to success in application" (9).

C. P. Snow, the British novelist-scientist, has called attention to the lack of communication between scientists and nonscientists in his phrase, "the two cultures." As science becomes more complex the comprehension of the ordinary citizen is baffled. The scientific world seems to be receding from his ken at an alarming rate, an expanding universe indeed (10).

The very nature of economics places an extra ethical burden on economists to use writing even more effectively than other scientists. Economics deals with the most efficient use of resources, and writing is one of the leading resources of the economist. The results of economic research in agriculture, for example, are intended to be put to practical use by farmers, businessmen, and others who work directly or indirectly with farmers. How well they are put to use may depend on how well the findings are presented. A farmer quickly grasps the meaning of an improved genetic strain of

<sup>1</sup> For an earlier treatment of the same theme see the paper by Esther M. Colvin and Ronald L. Mighell (1). Italic numbers in parentheses indicate items in the References, p. 20.

corn. But he needs more time to understand the economic effects of a new method of vertical coordination. If economic results are not clearly presented, the value of the research may be lost entirely.

The economist deals with what Alfred Marshall called "the study of mankind in the ordinary business of life" (6). Whatever he writes must be clear to the man who is doing this ordinary business. If the economist does not write clearly he will not be understood or listened to. Worse still, the ideas he is trying to advance may be scorned and receive less favorable attention than if he had not written at all.

### Writing and Professional Standing

Economists need to write well, not only to report their work but also to establish and maintain their own professional standing. In other callings, there are more obvious ways to gain recognition. The engineer has the working model, the artist the great painting, the geneticist the improved variety, the geographer the new discovery. The research economist must look to his written report as the tangible evidence of his accomplishment.

The younger research economist needs to write effectively to become favorably known. His writing may be the only available basis for measuring his output. It will be used by his peers and by his supervisors in appraising the quality of his work and in rating him for promotion or for selection for specific assignments. The older economist must continue to write effectively to maintain his research standing. And he who becomes an administrator has a special need to present ideas effectively.

A moderate but sustained volume of writing of high quality is likely to be the most productive. We all know individuals who turn out many mediocre reports. This may be evidence of expendable energy, but if the work is carelessly done the results may be of dubious value. The harm done by faulty conclusions can be very great. Witness the often quoted statement of Keynes about the ideas of statesmen "emanating from some economist good or ill of a preceding generation."

Economists then need to write well to complete their work effectively, to meet their ethical obligations, and to advance their own welfare. Properly understood, these objectives are reinforcing and not conflicting.

### Writing as a Research Tool

The foregoing discussion suggests some of the reasons why writing is a research tool. Writing is the means by which we report research findings and complete the

research task. But it is more. It is the working record of a project from the first note to the final report. It goes through each phase of the analysis to the last commentary that may follow. Project statements, program reports, current memoranda, correspondence, research notes, and other records, all constitute writing. Each serves a particular purpose, temporary or more lasting. Some writing is for internal use, just notes for the eye of the researcher only; other writing is for the use of immediate colleagues, and final writing is for publication. Even the writing the researcher does for himself is an integral part of the thinking about the problem before him. It is like talking out loud to oneself, an extension of the mental processes in which all aspects and all possibilities are examined and reexamined. Nearly all such writing should be discarded as soon as it has served its purpose. You will understand why if you have ever tried to read a manuscript in which the writer has been unable to eliminate his notebook from the final draft. Such writing includes all the false starts, the dead ends, the mistakes, the wrong theories, the partial answers that were an essential part of the research pilgrim's progress, but which need to be put aside and forgotten once the correct way has been found and illuminated.

### What Makes Good Writing?

Good writing is that which serves the particular purpose most effectively. Note writing may be trim and short, no more than a memory jogger, if that is all you need to communicate with your future self. Instruction-book writing makes good use of brief, direct descriptions of essential points. Novels must appeal to the prospective reader or they will not be read. Even research reports had better not be dull if one expects them to reach their intended audience.

Style is an essential part of good writing. Each writer develops his own style. The best advice on how to do this usually contains a number of *do's* and *don't's*. The first *do* is to read other good writers and see how they engage the interest of their readers. Another *do* is the good advice to use short, simple words. But this doesn't mean that longer words are not to be used at all. They are sometimes the most effective. E. B. White's story about the calculating machine is an indication of the problem:

A publisher in Chicago has sent us a pocket calculating machine by which we may test our writing to see whether it is intelligible. . . . The machine (it is simply a celluloid card with a dial) is called the Reading-Ease Calculator and shows four grades of "reading ease"—Very Easy, Easy, Hard, and Very Hard. You count your words and syllables, set the dial, and an indicator lets

you know whether anybody is going to understand what you have written. An instruction book came with it, and after mastering the simple rules we lost no time in running a test on the instruction book itself, to see how *that* writer was doing. The poor fellow! His leading essay, the one on the front cover, tested Very Hard (14).

A few economists have been charged with bringing economics down to the level of comprehension of the common man and making the subject interesting. For example, some professional eyebrows may have risen to all-time highs at Samuelson's statement in the preface to the seventh edition of his "Economics" that:

No effort is spared to help you understand and enjoy economics. Each chapter is carefully planned. Each has a comprehensive summary. Color has been planned, behind the scenes, for optimal learning. Key definitions are indented in brown for emphasis and new concepts in figures and tables usually appear in green to alert the reader.

Samuelson's attention to these details and the general quality of his writing made his book one of the most widely used college texts in economics and did not prevent him from receiving a Nobel award.

Despite the reputation of fostering a dismal science, the writings of the early classical economists were often entertaining. No one who has read Adam Smith's description of the operations in a pin factory can deny its compelling and effective style. Thomas Malthus has been much maligned but there is no doubt that his writing attracted attention.

Consider the following brief passages from three current economists. Each sets a stage for your attention.

Is our marketing machinery too complicated? . . . This may seem complicated and mysterious. It is complicated, but it need not be mysterious. A watch is a complicated mechanism, but there is no great mystery about it. Few would object because a modern watch is more complicated than an hourglass or than a sundial—at least not if the watch runs well. Nor should we object to a complicated system of marketing if the parts are well coordinated (13).

Economics has always been partly a vehicle for the ruling ideology of each period as well as partly a method of scientific investigation. . . . So economics limps along with one foot in untested hypotheses and the other in untestable slogans. Here our task is to sort out as best we may this mixture of ideology and science. We shall find no neat answers to the questions it raises. The leading characteristic of the ideology that dominates our society today is its extreme confusion. To understand it means only to reveal its contradictions (8).

There is no more pleasant fiction than that technical change is the product of the matchless ingenuity of the small man forced by competition to employ his wits to better his neighbor. Unhappily, it is a fiction. Technical development has long since become the preserve of the scientist and the engineer. Most of

the cheap and simple inventions have, to put it bluntly, been made. Not only is development now sophisticated and costly but it must be on a sufficient scale so that successes and failures will in some measure average out. Few can afford it if they must expect all projects to pay off. This was not the case in the late eighteenth and the nineteenth century. Then, in the beginning stages of the applications of science and technology to industry and agriculture, there was scope for the uncomplicated ingenuities of a Hargreaves or a Franklin (3).

Notice how each passage arouses interest. The first one uses a simple analogy to clarify what might have been a dry technical discussion. The second sets out the kernel of the writer's philosophy about what economics is. The third one uncovers a "pleasant fiction" about technical change that forms the basis of an argument about current capitalism.

## Planning Your Report

Suppose that you, an economist, have completed a study and are about to write your final report. You have done the analysis, you are thoroughly acquainted with your material, you are enthusiastic about it, you now wish to communicate the results to a wider audience. The first thing is to decide who that audience is. Are you writing for your professional colleagues? For farmers? For businessmen? For whom? This decision will determine much of what you are to include in the report. If you write for professional people the style can be more formal and technical. But if you expect farmers to read the report, it must be presented in straightforward, clear style, free from technical terminology.

A good way to begin working is to make a general outline, listing main headings and subheadings. An outline is not a sacred plan, but one subject to change as you go along.

The *organization* of your final report will depend on whether it is to be a journal article, a bulletin, or a book. It may start with a preface or foreword with acknowledgments and follow with the central contents, a summary, and conclusion. A few pages of introduction to give the setting and background of the problem may be helpful. The central contents will be most effective if marked with suitable headings for the pertinent parts.

Authors of reports directed to an audience of nonspecialists need to use special care in preparing prefaces, tables of contents, and summaries or abstracts. Some readers rely on these parts to give them a basis for deciding whether to read long reports.

Some short reports and journal articles do not need a formal preface. But readers need to know why the study was made and perhaps how it is related to other studies. Acknowledgment of assistance is sometimes desirable also. Material of this sort, which is not actually part of

the research but which helps readers to see the whole picture, is often best presented in a preface.

The headings that compose a table of contents are essentially an outline of the report. Use enough headings to make an informative table of contents (but not so many that your narrative seems discontinuous). A table of contents can be a help to an author as well as to readers. While your report is in manuscript form, the contents page will show you at a glance whether the organization is logical.

The summary should begin with your principal conclusion. If you found, say, that a new practice will reduce the cost of marketing certain commodities, let that be your opening paragraph. Then summarize your supporting data. Include background and research method only if the summary is not clear and self-contained without them.

It might seem reasonable that your summary should describe events in the sequence in which they occurred—beginning perhaps with a bit of history, proceeding through what you did, and ending with what you learned. Research tends to be inductive in its procedure and is all too likely to be tedious and uninteresting to nonspecialists. If you adopt such a leisurely pace, therefore, you could lose your readers. Some of them, of course, are already interested in the subject and will stay with you to the end, no matter how you present your material. It is the other readers—those who are not yet interested but who would be, if they knew what you are going to tell them about—who need your special consideration.

To this end, you need to keep details to a minimum, emphasize the significant findings, and suggest some of the important deductions that flow from them. Good research reporting really establishes effective communication through two stages, roughly corresponding to the inductive and deductive kinds of reasoning.

## Standards of Style

Style in writing is of two kinds. There is first the individual style of the writer, which we have already mentioned. This consists of all those special characteristics that set his writing apart and make it interesting or not.

The second is the kind of style reflected in the rules of each publishing house or agency. These rules of style may seem arbitrary but they serve a useful purpose in providing uniformity and consistency. They are conventions that improve communication just as traffic rules improve the flow of traffic.

Some of the items covered by such rules are spelling, word usage, tables and charts, and footnotes.

(1) *Spelling.* Economists like other scientists are expected to use accepted spellings of both common and scientific terms. Any fall from grace in this respect is likely to affect the reception of the message. The reader unconsciously responds adversely and wonders whether the writer who cannot spell really knows his special subject. If the economist writes: "The *concensus* was..." the reader may conclude that there is little *consensus* about it.

Some words are spelled in more than one way. Accepted spellings usually mean those that are preferred by your publisher. In the U.S. Department of Agriculture, we follow the Government Printing Office Style Manual or one of the leading dictionaries if the Manual does not show the word. Each State agricultural experiment station, each journal, and each publishing house has some preferences that it follows.

(2) *Statistical tables and charts.* A good picture may be worth 10,000 words, but a bad picture is worth hardly anything. Thus amended, the proverb is especially applicable when the "picture" is a chart in a research report.

Economists are necessarily skilled at interpreting difficult analytical charts, and they sometimes forget that readers of their reports may not be so skilled. As a result, they occasionally illustrate their reports with charts that defy comprehension.

Few readers are willing to put great effort into understanding a chart. If it remains a puzzle after a few moments' contemplation, most readers will give it up and turn the page. Some people dislike all charts, but even those who don't object to charts can be defeated by a bad one. The purpose of a chart is to help readers grasp the situation quickly. A chart should never be more difficult than the reading matter it is supposed to clarify.

Tables and charts can follow more than one style, but there should be uniformity within each publication. Look at a current copy of the U.S. Department of Agriculture's annual "Agricultural Statistics." You will find one general style for table titles, boxheads, stubs, and data presentations. The U.S. Department of Commerce follows another style in its annual "Statistical Abstract of the United States." Both use some of the general guidelines of the GPO Style Manual. Agriculture Handbook 433, "Preparing Statistical Tables," is a useful reference for tablemaking economists and statisticians (12).

The annual "Handbook of Agricultural Charts" issued for the agricultural outlook meetings illustrates one style for charts.

Various conventions develop in different fields. In economics, for example, we learn to draw a demand schedule (or supply schedule) with price on the vertical

axis and quantity on the horizontal axis. We do this because Alfred Marshall did so. But in statistics, we do it the other way around, because the early American statisticians adopted the convention of placing the dependent variable on the vertical scale.

(3) *Reference notes.* Footnotes and citations bother many writers and readers. Some readers go berserk and would banish all footnotes. It is best in popular writing to keep them to a minimum. In professional writing, some footnotes and references are essential for well-rounded discussion and for acknowledgment of sources. However, as one editor put it, it is not necessary to take in each other's washing nor to seek excessive support for a point that is generally accepted. As a working rule, put most footnote material in the main text if it is needed or leave it out unless very essential.

References to publications need special attention. Whether to place them in footnotes or in a reference list may be a matter of preference. But accurate checking of details is imperative. Nothing is more discouraging than tracing a scrambled reference.

(4) *Punctuation.* Proper punctuation is desirable, but sentences that depend too much on punctuation may easily go astray. Try to construct sentences that will take the least punctuation. They will be better because they will be less involved and will carry your message more directly. When in doubt consult one of the handbooks such as the Macmillan Handbook of English (4).

(5) *Word usage.* It is said that a straight line is the shortest distance between two points. In the choice of words, the word that goes to the target is the straight word with the clear meaning. In terms of sentences and paragraphs, it is the straight construction and the correct idiom. If someone says it is a clear morning with a sunny prospect, you know what he means. But if he says the day breaks on an uninhibited atmospheric condition with a prospective outlook for full-scale illumination, you may be perplexed.

Economists sometimes overwork certain words. One of the current vogue words is *aggregate*. There seems to be a feeling that it is more professional to say *aggregate* than *total*, *whole*, or some other shorter and more euphonious synonym. The shock value of using such a word on special occasions is largely lost if it is used all the time.

The same reasoning applies to superlatives, adjectives, and adverbs. They should be used sparingly. If you overstress every point, your reader will pay no attention when you have something that really deserves stress.

A special problem for economists in discussions of future events is the tendency to overqualify. The future is uncertain. No one wishes to be caught out on a limb that may break. But it is better to state your assump-

tions and make forthright statements than to hedge and lose all meaning. Take this statement in the November 1966 Demand and Price Situation: "The value of final goods and services produced in 1966 will likely be slightly more than 8½ percent above the 1965 level. . ."

This is fussy-fuzzy. Why not just say: "The value of goods and services produced in 1966 will be about 8½ percent above the 1965 level."

The following from the February 1972 Demand and Price Situation is more direct and interesting and conveys more information: "The economy made a significant though incomplete recovery in 1971 from its 1969-70 mini-recession. Real output rose approximately 2½ percent. . ."

## Conclusion

We have talked about why economists need to write well, how writing serves as a research tool as well as a way of presenting research results, and how it relates to professional standing.

We have outlined some of the elements of good writing and standards of style. And finally we have considered how to go about report writing. Some of the steps in doing a report may be listed briefly:

1. Have something worth writing about.
2. Know your material.
3. Define your audience.
4. Choose the appropriate form and outlet: journal article, technical bulletin, popular release, etc.
5. Lay out the general organization of your report, listing significant headings.
6. Write a preliminary draft and rewrite several times.
7. Have your colleagues review the draft.
8. Write a final draft.

If research results are to have their greatest value, a report must not only be written; it must be read. Other things being equal, the reports most likely to be read are those which are written as simply and clearly as possible without loss of accuracy. Many factors enter into the production of a high quality report; a writer who resolves to spare his readers unnecessary difficulty has made an excellent beginning.

## Writers' Guides

A number of handbooks, dictionaries, and other guides for writers are available. This selected list may help. Some have been mentioned earlier; others could be added.

U.S. Government Printing Office Style Manual. Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., January 1967 (or later revision).

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