Scientific Method and Library Administration

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Some people view the terms scientific method and library administration as incompatible. According to their view scientific method is something that may be used in a vague area of business or manufacturing or industry, but has no place where humans are concerned or where values are important and results are gauged in terms of the conveyance of ideas rather than of items. The assembly line can be studied scientifically and its cost accurately appraised, but one must not use measuring devices on things as intangible as information received or understanding gained. There are those who do not agree, and as with many differences of opinion, both sides of this argument have points in their favor. Only after one defines his terms and clarifies the issues involved is it possible to look objectively at the questions—does scientific method have any place in library administration, and if so, what place?

Library administration, broadly defined, includes all the things that go on from the time a group of citizens establishes a library to serve its needs, to the moment that library does something which helps a citizen. The objectives of the institution, and its methods, its facilities, and its personnel—all are involved. To paraphrase a well-known definition, library administration is as much concerned with men and materials as it is with their use in fulfilling accepted purposes.

Implicit is another point not always recognized. Library administration is charged with accomplishing a job, but more than this it is expected to perform its task as well and at as low cost as it can. Nor are these aims antithetical; for a good job can be done economically, even if in ways that differ in terms of expense. Obviously good ad-

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ministration chooses the cheaper manner, or, if it selects a more costly way, satisfies itself that the latter actually is better.

This, in effect, poses library administration's major problem: given certain things to be done, what are the ways in which they can be done best, and what will be the cost of each? And rarely is the answer crystal clear. Even for a very simple or limited function, there are diverse degrees of excellence to be achieved and numerous variations in expense. One does not find that the most excellent way always is the cheapest, nor that the cheapest is always the poorest. One way gives certain advantages and involves certain outlays, while another entails other merits and costs. How balance these facts, and how decide what is best?

There is a considerable body of folklore regarding administrative “hunches.” Prominent in this is the belief that a chief's feelings generally determine his conclusions. With it goes the picture of the busy administrator who listens to a staff member, then stares out the window for a moment and barks out a decision. The philosophy seems to be: “One has to have a feeling for this sort of thing, a hunch, and once the hunch comes settle the matter and go on to the next.” Naturally, many questions come along in a busy administrator's day that have to be decided quickly—where someone has to weigh alternatives and reach a judgment. But administration by hunch soon becomes administration by guess, and society has yet to discover many people who can guess correctly even a fair proportion of the time.

Actually, of course, the popular stereotype has more to it than appears above. For even the administrator who claims he is acting on his hunches is doing much more than that—he is using, perhaps without being aware of it, a body of experience, facts, and information built up over years. He may not consciously isolate, tabulate, and total up all that he brings to bear on a given problem, but his decision is inevitably influenced by it. In one degree or another he is applying scientific method to administration. That method is nothing more or less than the collecting, evaluating, and applying of facts. That it is done in the cerebrum rather than on a Friden makes no difference.

But this too is an oversimplification. Though scientific method does involve the assembling and evaluating of data, it implies much more than recalling those facts that happen to come to mind when a certain problem is under discussion. Such a procedure would be fragmentary, and subject to the chance of memory or influenced by the recency with which something had been reported or discussed. One could
never be sure that all the pertinent evidence had come to light, or was used in reaching a decision.

The real purpose of scientific method, thus, is to see that the best and most complete factual information is discovered, made available, and brought to bear upon a given problem. To whatever extent this process is complete and objective, scientific method is being employed in library administration. Accordingly we now can answer the first question posed above—does scientific method have any place in library administration?—with an unqualified yes.

The next question then is, what place can scientific method occupy in library administration? Where can it be used, and what will it achieve? Though as implied above scientific method should not be thought of as one thing in one area and another elsewhere, for purposes of clarity it may be desirable to separate two of its aspects: (1) scientific method as employed in appraising objectives and programs; and (2) scientific method as a tool for superior administration. Later papers in this issue will develop the latter theme extensively; the first is taken up in the following paragraphs.

How can the scientific method help the administrator decide matters of broad policy, of program, or even of objectives? First, the scientific method as a way of studying problems helps the administrator appraise even qualitative and subjective questions more carefully and accurately than otherwise would be possible. For instance, the question arises whether a library should undertake a new line of activity. How can the scientific method help in such a situation? It can aid at least by outlining clearly and carefully the steps to be taken in arriving at a decision.

These are:

1. Defining the problem.
2. Identifying and stating the assumptions.
3. Breaking the problem down into its component facets.
4. Assembling all the pertinent facts available.
5. Collecting and analyzing facts not already in hand, but needed.
7. Constructing a hypothesis regarding the best solution.
8. Testing the hypothesis in the light of various aspects of the problem and the pertinent facts.
Perhaps a simpler way of discussing this subject would be to say that the scientific method means the application of logical reasoning to a problem. But unless one remembers clearly what goes into the process and takes great care to see that no step is omitted, he is likely to fall back closer to administration by hunch.

It should be clear that at every step in the above process, judgment and intelligence are required. The scientific method is not like a chain reaction, where one step leads automatically to the next until an end result is achieved. The person employing it must decide how to define his problem clearly and completely, and a considerable leeway of judgment is possible. This judgment, however, is much more likely to be sound and correct if one consciously sets out to approach the problem systematically. Thus even where there is a necessary dearth of factual information and of quantitative data, the method helps.

Second, as implied above, the scientific method aids the administrator by refining and clarifying the problem. Very few questions exist upon which no factual information is available or could not easily be obtained. Even in the most theoretical problem, where broad objectives and purposes are the major consideration, there are likely to be some data that would illumine some aspect of it, however minute. If this can be done within the limits of time and money available, and the facts necessary can be collected, obviously the decision is simplified just that much. To cite one specific example, if we know how much it costs to circulate phonograph records, or how many people have phonographs on which to play them, we have advanced one step toward learning whether or not to inaugurate a program involving such records. This does not mean that collection of a few facts will decide an issue, but it does mean that they can help to make a decision more sound.

Third, scientific method will contribute to rendering a decision more widely accepted, or, if it is to be made by someone other than the person charged with studying the problem, will greatly increase the likelihood of the right decision being reached. Using the example cited above, suppose the librarian decides that it would be desirable to circulate phonograph records, but he must have endorsement by the library board. Of course the board will weigh carefully the librarian’s statement of purposes and objectives and his appraisal of the good to be accomplished, but it will enter into a decision with more wisdom and certainly with more enthusiasm if it has even a few facts to guide it. For instance, if there can be a demonstration that
the cost will be so much, and that this is well within the library's resources, the chances will be increased that the board will approve.

Finally, the use of the scientific method can assist the administrator in strengthening morale. If it is known that a given matter has been studied objectively, and that pertinent facts have been collected and analyzed, a decision is apt to be regarded as sounder than otherwise would be the case. Reaching a conclusion by the scientific method may not be necessary to satisfy those who agree with it, nor will such procedure always convince those opposed to the decision, human nature being what it is. But it may elicit and justify recognition and acceptance. One can accept a judgment even contrary to one's interest if a modicum of facts points in that direction.

How can the scientific method serve as a tool for better administration? As suggested above, this subject is developed in other papers in the present issue and need not be dealt with extensively here. Workload analysis, standardization, time and motion studies, all of which are treated in other papers, illustrate the application of scientific method to administrative problems. The point to be made is that in any aspect of administration there are facts to be obtained, analyzed, and evaluated, and that when they are utilized, better decisions can be reached than could be anticipated otherwise. However, lest the foregoing imply that application of the scientific method, or the use of scientific management, offers an easy solution to all problems in libraries, several cautions may well be noted.

First, it cannot be overemphasized that scientific method is an aid to administration and not a substitute for it. No matter how detailed the facts, or how complete the analysis of a given matter, someone has to take the final action regarding it. Indeed, unless there is some happy utopia where all data are easily available, someone has to make a decision as to which facts to collect. For rarely is there lack of question as to the relative importance of the materials needed. Often one has to admit that, although it would be nice to have certain information, to obtain it would be unduly difficult and expensive. Use of the scientific method should help an administrator to reach a wise decision, but it will not relieve him of the necessity of making a decision.

Second, use of the scientific method can be overdone, or, perhaps more accurately, improper use of the scientific method may handicap an administrator. What is referred to here primarily is the tendency to seek facts for the sake of collecting facts, rather than for their relevance to a given problem. It is very easy, particularly when one does
not have to do the job oneself, to assemble data indiscriminately. This is not wise, however, unless careful judgment enters into the decision regarding the relevance of the data before they are assembled. Perhaps the most common criticism of the questionnaires developed by graduate students for their thesis problems, or indeed by administrators when they wish to find out how others are doing things, is that the pertinence of the information requested has not been seriously considered. Why collect it? What will one have if it is obtained? Of what use will the facts be in solution of a problem?

It should be clear that caution in deciding what facts to collect does not imply that one must know in advance what they will reveal. It means simply that one must be sure that they will be relevant, and will aid in resolving a problem.

In the judgment of some, librarians have erred on the side of neglecting factual information. Admitting that librarianship is a profession where there are many intangibles, and for which objective data are not always easily available, one still can argue that this does not condone neglect of facts. Even if information is hard to obtain, it still should be sought where it can be secured and where it will be relevant.

A library's policies and programs are close to its raison d'être. Routines, methods, devices, equipment—these are used to enable it to do something. They are fundamental to the work undertaken, and the better they are the better the results. Furthermore, because they are tangible, they seem to be best subject to application of the scientific method, or of the principles of scientific management. In a sense this is so, since we can measure more adequately the cost of cataloging, or the expense of photocopying as compared with other reproductive procedures, than we can measure the aesthetic satisfaction derived from reading a poem. But administration entails more than deciding the most economical way of carrying out a given operation well. It must regularly weigh the values derived from reading a poem, against the values derived from reading a novel, or a biography, or a magazine of current history.

Scientific method or scientific management will not give one the answers. Even if one had endless arrays of facts regarding the relative cost of circulating poetry and novels, regarding changes of attitude before and after reading, regarding the interests of readers, and regarding community needs, someone still would have to weigh and appraise the data. But if relevant facts can be obtained on even a part
of a given question, if the problem can be analyzed carefully and critically, and if logical reasoning can be substituted for emotional impulse, scientific method can become a valuable aid to administration.