

Experimental Methods of Science

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Science is one of the most important divisions of our society, yet few people understand its basic nature. Most chiropractors believe that chiropractic is a scientific movement; our opponents frequently contend it is not, and too often the one doing the judging has very little knowledge of the basic nature of science. Professor Conant of Harvard, recently wrote a book which he called, "Understanding Science." One could read the book, however, and still have a very inadequate understanding of the nature of science for the reason that science, like America, has many aspects. While one might read many books on either of these subjects, much would still remain unexplained. At this point I should like to suggest the reading of various histories of science as one of the best approaches to the understanding of science.

A surprising thing about the study of science is that when the facts are presented to us we often find that we had already accepted them without having given the subject much conscious thought. This is especially true of the experimental method of science. The experimental method was not a part of ancient science; the latter accepted any knowledge obtained as a result of observation and critical investigation. The ancient method was rather "loose" and much knowledge was accepted which was later proved completely erroneous, and methods based upon such knowledge were often unworthy. A more precise method was needed and during the revival of science, following the Dark ages, numerous leaders suggested the experimental method. Newton was finally successful in gaining a full acceptance of the experimental method, which is now a part of the basic methods of science. For the foregoing reason some authorities contend that ancient science was not really a science. On such a premise, however, future generations may improve on our basic methods and contend that our present methods are not actually those of science.

Since chiropractic is a clinical science, I shall illustrate the experimental method only as it applies to clinical science and chiropractic, in particular. Let us take the chiropractic methods of treating goiter, as an example, and to simplify our explanation, we shall consider only three of the many methods in use. The first one accepted was the adjustment of the vertebra most likely to be concerned. We shall say that the second method offered was the adjustment of the spine, according to the Carver Technique. Now that we have two methods our experiment can begin. First, the original method would be used on a certain number (say 30) of cases of a particular type of goiter and all pertinent factors would be observed and recorded, such as number of treatments, time for recovery, the completeness of recovery, etc. Then thirty cases comparable to the first group would be selected and treated by the second method and the specific facts likewise observed and recorded. As a result of the two methods of treatment, the specific facts could then be compared and the treatment impartially evaluated without regard to tradition or previous concept of their value, for the man of science must select his methods according to their demonstrable value.

We shall use as our third example a procedure whereby the doctor makes the experiment of treating thirty cases of goiter by a form of manipulation together with vitamin A. If the results obtained by this test are better than those in the other two methods wherein he used manipulation alone, he must accept the third method since it has greater demonstrable value.

The reason we mention tradition is the fact that tradition has been a great obstacle to scientific progress, especially in the field of medicine where many of the practice methods used have little scientific evidence to support their use and are followed only because someone previously proposed and adopted them.

I mention preconception because of its tremendous importance in chiropractic history. When a student's mind is indoctrinated with a certain concept of disease and the methods of its correction, as is done in the teaching of a chiropractic philosophy, his mind is no longer free to choose his methods according to their demonstrable value. He then selects them according to his indoctrination. It is on this point that our opponents contend that chiropractic is not a science but rather a healing cult. To the extent that chiropractors select their methods as the result of preconception (chiropractic philosophy), it is a just criticism according to the basic principles of science.

It is evident that it is very difficult for a healing movement to become a science. As one chiropractor stated, "I have not treated more than thirty cases of goiter in five years. I treat hundreds of conditions. I would be in practice twenty years before I could even begin to select only methods tested by the experimental method." This, of course, is a very real obstacle to a clinical healing movement ever becoming accepted as a science.

It is this problem which clinical medicine faced during the latter part of the last century until 1910. British medicine was trying to overcome it, and it was Morris Fishbein who attacked the problem for American medicine. His success in solving it gained him his leadership in American medicine, and it is to his credit that clinical medicine is today recognized as a science. Yet few people know of Fishbein because of this great contribution; rather, they know and dislike him for the obnoxious, political conniving and theatrics of his later years, which is wholly unnatural to men of science.

Through the organizational genius of Fishbein, he was able to organize clinical medicine so that today the methods the medical physician uses have been tested upon from a few hundred to a few thousand cases by the experimental method before they are accepted. One doctor will test a particular treatment for a condition in one city, while in another city hundreds of miles away, another doctor will be testing some other treatment for a different condition. Each issue of the A.M.A. Medical Journal is filled with the results of these clinical investigations, and every medical man today can use only methods tested by the experimental method of science, if they will but keep informed by reading their scientific literature. Thus, organized medicine, or to clarify the term, medicine so organized, meets every demand of the experimental method of modern science and has rightly gained acceptance as a branch of science.

Certainly, medicine is not a perfect science. Many M.D.'s still select their methods from tradition rather than by their demonstrable value. Indeed, many doctors, especially surgeons, select their methods upon a purely commercial basis instead of upon the demonstrable needs of the patient. I could go on and on criticizing clinical medicine as a science, but we must admit clinical medicine's failure is in the **personal** behavior of the men who make up the movement, rather than its **basic** method. So long as tradition, commercialism, arrogance and dramatics play such a big part in clinical medicine, it cannot obtain full acceptance as a **worthy** science, and there will be a place - even a need - for a second and better science of healing. Our only question is whether or not chiropractic can meet that need. We can only speculate upon the answer to that question, and we must take a realistic view of the problem.

Tradition has been a tremendous obstacle to the scientific progress of medicine, but it is not nearly so formidable as preconception is to chiropractic scientific progress. To the degree that "chiropractic philosophy" is effectively taught as a prior authority, it imprisons the mind and prohibits the free scientific investigation essential to scientific progress. Therefore, as long as the method of indoctrinating the student's mind with a preconceived chiropractic philosophy is continued, students will not be free to test and accept their methods of practice on the basis of their demonstrability in accord with the scientific method. For that reason the student's mind must be left free and not subjected to the limitations imposed by indoctrination.

Clinical medicine was fortunate in having a small group of members who were so fitted by attitude as to be able to understand the basic nature of science. It is true, naturally, that from so large a number a few such men are always found, and these were enough to form the nucleus of scientific leaders in organized medicine. Actually, today, less than five thousand out of one hundred and thirty thousand doctors contribute to the scientific progress of organized medicine. Many of the rest are but technicians of the "needle pusher" and "pill peddler" variety.

Why are there so few scientific leaders of chiropractic? Because a great number of our membership have had their minds imprisoned by indoctrination and no longer can they be considered suitable material for the purposes of free investigation. For that reason we must look to the future for our scientific leaders. In fact, we must produce them in our schools. That is why I have suggested that we must formally orient the chiropractic student as a man of science. By that method, I believe that the ratio of chiropractic graduates capable and eager to contribute to our scientific progress will possibly reach ninety out of a hundred, as contrasted with medicine's five out of one hundred, who were naturally fitted for science. From this group of graduates must come the chiropractic leaders to organize the science of chiropractic to enable us to take full advantage of the experimental methods of science; from them will also come the future scientists of chiropractic.

I realize such a method of formal orientation of the student is without precedent in the field of education which today emphasizes vocational guidance as the means of finding the student naturally fitted to a certain career, but revolutionary as the method may be, I believe it will be effective if properly and earnestly developed and administered. I believe that chiropractic's hope not only of becoming an accepted branch of science but also of being the foremost healing movement of the future lies in this method of formal orientation of the chiropractic student. I consider it well worth your earnest consideration.

To summarize: Medicine has been a science **in an ancient sense of the word**, ever since they chose their methods of practice upon a basis of observation and investigation without regard to myth, tradition or preconception. Medicine has been a science in the modern sense of the word ever since they have been organized sufficiently to choose their methods by the experimental methods of science. We might place the time about 1920.

Chiropractic must be handled in segments. That segment of the movement which selects its methods via preconception is not a science in any ancient or modern sense of the term. The segment left free by the college to choose methods of practice upon the basis of demonstrability is a science in the ancient sense of the term. Since we are not yet fully organized to take advantage of the experimental methods of science, even this segment of the movement is not as yet acceptable as a science in the modern sense of the term.

Preconception, resulting from the teaching of "chiropractic philosophy," is the greatest obstacle not only to our acceptance as a branch of science, but also to our scientific progress.

Watkins CO. Experimental methods of science. *National Chiropractic Journal* 1948 (Sept); 18(9): 22-3, 58

Formal orientation of the chiropractic student in the basic attitudes and methods of science will possibly do much to make chiropractic a progressive, worthy, united and acceptable scientific movement, from which I am sure the rest of society, as well as our own membership will benefit materially.