

Reasons and Plans for Research Relating to Industrial Personnel

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The following address was delivered by President Angell to a conference on personnel research in Washington, November 12, 1920. This conference preceded and led to the organization of the Personnel Research Federation. This statement together with an address of President Gompers on the part of labor in personnel research,¹ admirably set forth the spirit in which the Federation was founded.

THROUGH the generosity of the trustees of the Commonwealth Fund, Engineering Foundation and the National Research Council have been enabled to call this conference in the belief that the time is ripe for a definite forward step in the solution of those crucial problems which center about personnel in industry. Many of these questions grow out of, or are directly related to, engineering practice and as such are of direct interest to engineering Foundation and to the Engineering Division of the National Research Council. Not a few of the issues involved fall within the field of the Medical and Psychological Divisions of the latter. It is perhaps unnecessary to enter into a detailed historical account of the organization of the conference. Suffice it to say that the immediate initiative comes from Engineering Foundation and that during the war both Engineering Foundation and the National Re-

search Council had conducted investigations falling within this general field. Neither organization, however, has felt itself at all competent to attack the problem in any large and inclusive way, as there are vast numbers of critical issues with which neither is equipped to cope. Both organizations have the men and the facilities to deal with a few of the more technical phases of the problem, but neither is competent to handle the economic, social and generally humanistic aspects of the case. They have therefore decided to combine in bringing together this group of men and women, representing, as they believe, a very broad, if not exhaustive range of organizations, vitally related to one or another feature of the problem and competent to decide along what lines and by what methods coordinated effort can be fruitfully directed.

If our deliberations are to eventuate in results of a constructive and successful kind, certain pre-conditions must be constantly borne in mind. In the

¹ President Gompers' address will appear in the next issue of this JOURNAL.

first place, there must be no question of the fair and open-minded impartiality of the persons in charge of any enterprise we set on foot. In the second place, and equally important, there must be no question of their practical, intellectual and scientific competency to handle the problems with which they undertake to deal. They must enjoy and deserve prestige. In so far as the questions which are dealt with at this time are incapable of decisive treatment in terms of ascertainable fact, there must be generous and adequate representation of divergent opinion. In other words, there must be convincing *prima facie* evidence of freedom from bias, coupled with intellectual integrity, courage and general competency. At best, mistakes will be made, but the most fatal of all would be to start an undertaking foredoomed to failure because of partisanship, real or fancied, in a field where absolute honesty and impartiality are of the very essence of the contract.

Assuming general assent to this formulation of the essential pre-conditions, we shall next have to consider how best to proceed, and here we are at once confronted by a number of perplexities. You have had submitted in the preliminary programs of this meeting a number of problems to which attention has already been vigorously directed. I need not, at the moment, repeat them. But by exhibiting the wide range of interests represented in our gathering (and they include by no means all which have been urged), they instantly present the necessity to determine where we shall begin and how, for it would be ob-

viously impracticable to attack simultaneously along the whole front. This consideration, accordingly, compels us to decide among competing opportunities; those which are most deserving or most likely to prove susceptible to successful attack. Coincident with such an effort to delimit the field of work, and constituting a highly important part of that problem, is the determination of the means through which we shall work. One of the comments frequently made is that enterprises of this character are the proper function of the federal government, that private agencies lack the necessary power and prestige to accomplish the proposed results. This is a view which must be given due consideration. Certainly no one desires to do badly work which any one else is prepared to do well.

Attention is often called to the fact that many agencies are now working in these fields without any attempt at coördinating their programs or the results of their undertakings. There is, moreover, reason to believe that in some instances, at least, both their methods and their personnel leave something to be desired. In the long run, this policy must result in wastage and duplication of effort, but how to relieve the situation has not been so clear. It is fairly certain that some of the problems deserving attention are not at this moment receiving any serious, systematic study. In these cases, we may perhaps be able to secure the interest of competent agencies, or if such are lacking, we may possibly call them into being; but the largest possibilities are probably in the region of establishing mechanisms of

coördination and coöperation which may promise some assurance of both continuity and community of programs, prompt interchange of findings, especially for purposes of educational training, expert assistance, and, in general, the services of a central body, intelligently in touch with a great variety of undertakings, all of which converge upon the fundamental problems of modern industry on its human side. That we should sedulously avoid any danger of merely adding one more to the agencies already working in too great isolation upon these questions, all will agree. Our field must be clearly defined, and the chances of our occupying it with success must be large, if not certain. Otherwise, we can hardly justify the solicitation of funds, without which the plan must perish even before it is born. Moreover, it must be clear that there is nothing coercive or dictatorial about our program. Should we establish a bureau or institute, it would assume to assist other agencies only when desired. We contemplate no super-scientific research autocracy.

We shall have also to consider whether it be wise to set out with a relatively permanent project in mind, or whether we should regard any steps which we take as tentative and purely experimental. The decision on this issue will obviously play a decisive part in any financial policy we may adopt. Although the members of this conference have doubtless come with certain prejudices regarding the wise answers to these questions which I have suggested, it should be clearly understood that those responsible for the meeting have in no way wished to

pre-judge any of these issues, nor to do more than consider with the rest of you the possibilities presented. If it should not seem to you that a program of the general type is at present practicable or advisable, we should accept your judgment, and even if we went forward with some of the specialized undertakings which we believe ourselves competent to guide, we should accept as conclusive your negative judgment on the larger proposal. On the other hand, if you think a forward step can be taken on the broader lines, we are ready to do our part in so far as our resources permit. We should not, in this case wish to become the responsible directing agents, for our composition does not render this appropriate, even were it desired by you. I am sure that in this statement I voice the attitude of both the Engineering Foundation and the National Research Council. We have been glad to take the initiative, and we shall expect to receive instructions from our organizations to coöperate in any general plan agreed upon, but beyond that, we wish it clearly understood, we should not desire to go. In other words, we stand in this matter on exactly the same level with the rest of you here present.

How you will wish to organize any institute, or bureau, or committee which may commend itself to you, remains for you to determine. It may be that some extant agency, whether private or governmental, can be used as the nucleus around which our purposes can be developed. It may be that an entirely new organization is preferable. In the latter case it had occurred to us that a possible mode of

procedure would be to establish a small board of directors or trustees to be selected in some equitable fashion by such agencies as are represented here today, and to put in their hands, subject to proper endorsement by those they represent the actual selection of the necessary personnel to conduct an effective institute. Obviously there are other possible modes of procedure. This is proposed merely as a specific suggestion to focalize discussion. Our feeling in the Council and in the Engineering Foundation is that any organization we adopt should be plastic and adaptable, that it may feel its way gradually into the situation, and attempt at the outset only the more pressing and significant work. But all these questions are for you to pass upon.

Coming now to the real point of our meeting together, it may be said that whatever the technical means to which we resort for the realization of our purposes—and to assure success, they must receive the most thoughtful scrutiny—we are fundamentally interested to further the application of scientific research to certain of the critical problems affecting the happiness, welfare and efficiency of the great body of industrial workers, from manager to unskilled laborer. Indirectly, the community as a whole must profit by any improvement in the conditions of life and work which affect this industrial group, and our interest is therefore broadly humanitarian. It is our belief that throughout wide ranges of these problems, there is no longer justification for mere opinionating and for mere exploiting of preconceived social and industrial dogma. We recognize frankly

that there are considerable regions within which it is at the moment extremely difficult, if not wholly impracticable, to apply genuinely scientific methods; but this fact should not discourage us from the effort to carry them to the farthest possible forward point. That we have in mind as our dominating motive the desire to improve contemporary conditions, should not be held to prejudice our ability to conduct impartial scientific investigation. Nor should it be assumed that we are unmindful of the many hopeful attempts which are in progress, directed to exactly the same end which has just been described. But it is our belief that many of these suffer from disabilities and limitations of one kind or another which might be relieved by appropriate means.

Certain of the hygienic problems of modern industry exemplify cases in which a thoroughly scientific study of causes and effects is possible with convincing conclusions regarding practice which will safeguard the health and vigor of all concerned. Not a few highly important results have already been attained in this field. The effects upon industrial productivity on the one hand, and physical vitality, on the other, of good and bad ventilation, of good and bad light, of high temperatures, of irritant fumes, of dust and other similar features are, theoretically, at least, within the field of scientific analysis, and the ascertainment of demonstrable fact. Similarly, and in a different zone of inquiry, it should be possible to secure thoroughly reliable data regarding the dominant causes of unrest in our industries, of excessive turnover and the

like. Many other instances of the same kind will suggest themselves to all who have experience in the industrial field.

Another type of problem in which there is the utmost need for careful and exhaustive studies of the factual situation, is represented in the determination of the compensation of unskilled as against skilled labor and the criteria by which a just wage scale may be determined. Here one enters upon a region of inquiry in which, after once the facts have been successfully gathered, there remains as the critical part of the process, the drawing of inferences and conclusions in connection with which one is inevitably thrown back upon certain social and philosophical conceptions regarding the desirable forms of industrial and political life. These are the fields in which, at present, discussion is often so acrimonious and seemingly so futile. There is on the one hand, generally, the most fatal lack of adequate data, and, on the other hand, a hopeless exuberance of social prejudice and conviction. Problems of this character are accordingly of a transition type partly within the field of genuinely scientific study and partly outside that field, in the zone of social philosophy.

Whether it be wiser to confine ourselves at the outset to those issues which lend themselves most readily to approach by sciences which have already developed reliable objective methods, or whether it be more desirable to plunge at once into issues which cannot at present be so treated, is also for you to decide. Broadly speaking it is probably accepted by all competent observers that at present

the mathematical and physical sciences have developed the most objective, impersonal and trustworthy methods. The biological sciences probably rank next in this hierarchy of prestige, and the social sciences probably come last. In so far then as the problems of personnel in industry can be approached from the physical and biological side we may reasonably expect a somewhat higher order of certainty and reliability in our investigations than we are likely to gain from research on the economic and social side. This general rule has obvious exceptions, but it may perhaps be profitably borne in mind in deciding the main lines of work toward which it may be expedient to direct our efforts in the early stages of any movement we set afoot. It should be understood that these comments upon the relative status of the several sciences bear simply upon the situation in so far as we may decide ourselves to undertake new research. They have no immediate significance in so far as concerns the investigation already being carried on by extant agencies.

What we desire is to bring the best and most objective methods of modern science to bear on the problem, and anything which will accomplish this will in so far meet our purposes. We are under no illusions regarding the infallibility of contemporary scientific methods, but we do believe most sincerely that the spirit embodied in these methods is the only one which holds out real hope for a continuous forward movement in the development of a point of view and a technique adequate to cope with the ever-changing problems which life presents. In the par-

ticular field today enlisting our interest as we are gathered here we believe these methods have been unduly neglected, and that there rests on all of us who desire to see intelligence most profitably employed the obligation to extend as rapidly as may be the unquestioned benefits which in the long run always

accrue from the substitution of science for ignorance, of expert knowledge for amateur opinion and traditional prejudice. It is in the faith born and bred of this belief that we have asked you to come here today to join in considering whether we may not convert this faith into beneficent deeds.