

Lillian M. Gilbreth.<sup>15</sup> Dr. Yoakum's discussion is a plea for research, the more powerful because it is stated in positive terms. It gives us the needs in industry in terms of our own problems and largely in our own vocabulary.

It reviews our progress, or perhaps we had better say history, constructively, in that it points out not only what we have done that is of value but which parts of our activity have been useless or have been over-emphasized.

It points out as well errors in psychological investigations or conclusions, as for example where the accepted theory of learning curves is criticized.

It stresses most emphatically the need for accurate measurement and the importance, in every field, of adequate criteria.

It suggests to the reader, as an associated cause for delay in solving personnel problems, the long space of time that is allowed to elapse between the recognition of a subject as worthy of investigation and the actual general participation in such an investigation.

For example, it is now more than ten years since the relation of psychology to management was brought to the attention of the Taylor Society,<sup>16</sup> yet only within the last year has the subject received much attention. It will soon be ten years since the importance of psychiatry and mental hygiene as factors in better industrial relations was first demonstrated,<sup>17</sup> yet it is a matter of months since this subject was first discussed at a meeting of this group.<sup>18</sup>

The importance of correlating with findings of investigators in the human sciences outside this country is not as yet appreciated even by investigators in the specific fields.

Nor are investigators in the engineering field more open-minded and progressive. In spite of the fact that industrial engineers have been in production work going on twenty years and are entering the fields of office management, sales management, and, most recently, finance, records are so poor and so seldom

contain details as to causes that they furnish most unsatisfactory criteria.

Dr. Yoakum's paper should, then, serve not only as a stimulus to investigation but also as a guide to that exactness of method which alone can make investigations truly profitable and to that correlation which alone can prevent duplication, and serve as a guide to future development.

Z. C. Dickinson.<sup>19</sup> I believe we should give more attention to promoting cooperation between business houses and scientific institutions, in order to advance both pure and applied psychology more rapidly. The work of pioneers in industrial psychology, like Muensterberg, shows abundantly that the cloistered and apparently useless science of experimental psychology can be turned to practical account by shrewd scholars, when they gain access to practical facilities. The contributions of managers like Taylor, on the other hand, have been of great value to pure psychology. But the academic laboratory suffers from lack of human material who may be observed under normal industrial conditions, while the researcher employed by a single business, like the manager himself, is under such pressure for quick practical results that his investigations are likely to lack scientific rigor. Therefore, arrangements like the Carnegie Institute's bureau, with which Professor Yoakum was connected, whereby the financial burden of fundamental research, as well as the bother of subjecting employees to experiments, may be shared among the various parties who will ultimately benefit by the research, should be multiplied.

Harry A. Wembridge.<sup>20</sup> We have just listened to a splendid appeal for research in personnel administration. But Dr. Yoakum has gone further. He has selected for us certain important personnel problems and suggested a method for solving them.

That there is a great need of personnel research is not universally accepted, but most thoughtful students of the problem agree that only through the method of scientific measurement can any real progress be made. The handling of people is considered by many business men and personnel directors to be more of an art than a science, and perhaps because of this there has been considerable reaction in recent years against personnel activities, which were ad-

mittedly not based upon measured results but upon emotional and fanciful judgments!

This disillusionment has been conspicuously true with reference to mental testing. Intelligence and allied tests were introduced into many industries on the wave of popular interest in such matters which followed the war. By this time their popularity has greatly diminished. The reason for the supposed failure of these tests to do what had been expected of them was the incorrect assumption that there must necessarily be an absolute correlation between success at any work and mental ability or alertness. The tests failed only in that they could not do what no one had a right to expect they should do. They undoubtedly isolated in a quick and satisfactory manner those whose intelligence was so deficient that they could not be depended upon to do any satisfactory work. But in a study, using several kinds of tests and correlating the results with actual performance on standardized operations, I found that there remained approximately 90 per cent whose success in the test was not correlated with their measured performance. That the tests were of economic value in eliminating those who had no chance of success at their work was apparent from the correlation table and from the actual experience that followed. But with the main body of workers success depended not merely upon their mental alertness but also upon some more intangible factor, that is, the incentive which would make them want to work. Most workers, like most of us, apparently had more brains than they used. But a deeper analysis showed that what is a constant and imperative demand is the incentive to make us use even that necessary minimum of thought and energy which we all possess. Therefore, the personnel problem shifts from merely one of intelligence to an analysis and organization of motives.

Business is based upon the assumption that money is the main, if not only, incentive. That it is the most

powerful one there can be no question, but we have in the past failed to tie up the actual payment with the emotional factors connected with incentives. Moreover, there are other incentives which operate in special cases even more powerfully than money. To illustrate my meaning I will instance only two or three examples of the innumerable number that could be chosen. There is the incentive of getting home early or of changing one's social position by working in the office rather than in the factory. Again, the young factory workers whose wages go automatically to their parents have very little interest in a money increase which they cannot spend. For these the financial incentive works only when it involves overtime wages which they can, without detection, appropriate for themselves.

Many instances could be cited where money unattached to other motive forces has failed to inspire the worker to do his best. In fact a complete study of adequate motives would be a study of all life—a field which I hardly planned to cover. Moreover, I disclaim any pretense to originality in emphasizing the importance of motives.

The employer would be following the lead of modern psychology in leaving for the time the intensive study of thought processes to investigate the more important forces of emotion which make up the background of thought. In fact, William James, the greatest of American psychologists, made the statement some twenty years ago in his famous address, "The Energies of Man," that most people realize their capacities only when some exceptional situation has forced upon them an emotional stress involving a motive sufficient to make them use the talents which have hitherto remained latent. The employer and personnel manager of the future must, therefore, not only be versed in the routine matters of personnel, but he must be able to organize and develop incentives so as to call forth from his workers their best efforts.

#### Next Meeting of the Taylor Society

Engineering Societies Building, New York

Thursday, Friday and Saturday, December 3, 4 and 5, 1925  
An attractive program is being planned. Make your plans to attend.

<sup>15</sup>President and Treasurer, Frank B. Gilbreth, Inc., Montclair, N. J.

<sup>16</sup>Tuck School Conference on Scientific Management, Dartmouth College, October 12-14, 1911.

<sup>17</sup>E. E. Southard, "The Mental Hygiene of Industry," *Industrial Management*, Vol. 59, No. 2, February, 1920, pages 100-106; "The Modern Specialist in Unrest—The Place of the Psychiatrist in Industry," *Industrial Management*, Vol. 59, No. 6, June, 1920, pages 462-466.

<sup>18</sup>Elton Mayo, "The Basis of Industrial Psychology," *Bulletin of the Taylor Society*, Vol. IX, No. 6, December, 1924.

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