

Figure 5

swers. The second and third show a skew toward the high side, but a careful reading of the questions indicates that this is to be expected from the socially educated group usually found in colleges. The social element does not enter into the first question so strongly. The method of scoring by giving direct percentage (approximate) is shown.

Figure 4 shows a complete failure and is commented on later.

Figure 5 is given to illustrate good, poor and bad questions bearing on the same basic characteristic. The fault with question (b) is probably that the criterion of what constitutes a wide acquaintance is itself a variable. Question (c) evidently involves several variables. Neither of the latter should be used.

Figure 6 is chiefly interesting on account of question (c). This and several other cases, most of which are not given here, seem to show a distinct differentiation for the engineers, and this in a higher degree than appears explainable on the ground of statistical probability.

Figure 7 gives single illustrative examples from three categories. The curve for question (c) is probably correct but presents an interesting study.

In administering these questions to candidates the names of the basic characteristics are not given, but they are shown here for convenience in identification.

In the criteria on the questions we also have some evidence bearing on the correctness of our selection of unit characteristics or categories of behavior. If the units chosen were actually com-

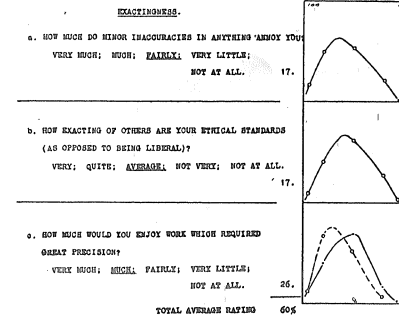


Figure 6

pound we should expect to have some difficulty in getting good distribution curves. This is evidenced by some of the individual questions which inadvertently introduce strong extraneous factors, as in Figure 5, question (c). In that case there are obviously likely to be two or more powerful variables and the resulting curve is in fact quite aimless and erratic. In Figure 4 the curves are all bad and indicate the probability that the category itself is not basic within our meaning.

Assuming that the categories are correctly chosen, and that the corresponding questions are reliable and valid and are intelligently and honestly answered by an individual, our measure of his average strength of response in each of these categories should not be far from the truth. We can now either use them as numerical values or draw a profile or graph of that part of the personality. The latter, however, facilitates synthesis for the prediction of compound behavior. Such a graph of average responses is shown at (a) in Figure 8. The findings of the personal interview are noted and compared. The general facts of the life history are considered. Additional factors, abilities and skills appropriate to the particular job are measured in any suitable way and added. This approximates our man, as is, and generally indicates also his probable direction of growth.

The next step is the job chart. As jobs and men must be compared in the same terms, the approximate "personality" of the job, if we may call it that, is also analyzed on the basis of the units already established. This may be the combined

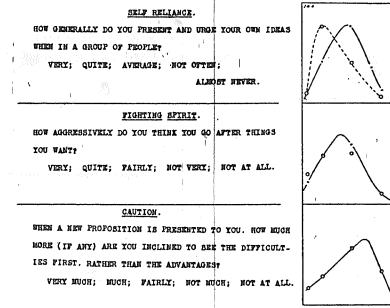


Figure 7

judgment of the supervisor and the personnel manager, and perhaps others, and is expressed in a graph similar to that made for an individual. The job chart has, however, one added feature. Upper and lower critical scores are estimated for each basic characteristic, and the dangerous areas indicated by heavy lines.

The personality section of a job chart is shown at (b) in Figure 8. By direct comparison now with the man chart, the degree of suitability of the man, and points of disability, become evident in appraisable detail. The individual's personality characteristics have become aptitudes for a specific job. Numerous cross influences and combinations have to be considered, as human nature is highly complex. But in the end we have some measure of the actual personal fitness of the man for the job and its environment. The good engineer knows all the properties of every part of his structure, before it is put to work. Eventually human engineers will be not less particular.

The remainder of Figure 8 indicates the application of this technique to a case of reassignment. Personality disabilities for one job which constitute fitness for the other are illustrated. Under (c) the man chart is superposed on the chart of the old job—a routine clerical job. It will be noted that in certain instances the man's graph runs beyond the critical scores indicated for various factors on the job chart. In this case restiveness and inattention, irritability, poor discipline and constant talking with fellow employees are induced by this situ-

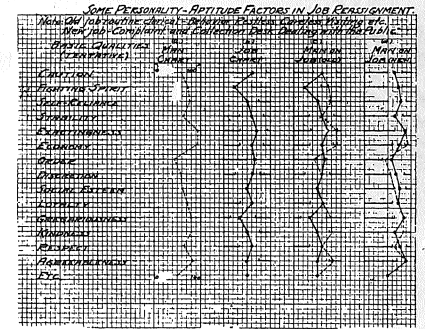


Figure 8

ation. The personality is too highly geared and too sociable for routine clerical work. A successful job is indicated under (e)—complaint and collection desk, dealing with the public. Cases of improvement after reassignment are commonplace in the experience of every personnel man. The present example suggests a method of analyzing the normal personality factors involved a little more definitely than usual, and making the reassignment on that basis.

An interesting case reported by Anderson⁶ on the change of a girl from cashier to salesgirl is a good illustration, among many others, of the importance of considering also intellectual, physical and psychiatric factors. Time, however, permits only a mention in this paper of these and of specific abilities and skills.

For an illustration of procedure in original employment a rather elaborate case is taken, both because it is comprehensive and because it deals with our own subject, scientific management. This is the James Mapes Dodge Fellowship—two years of study and industrial experience leading to a career as teacher of scientific management. Illustrative portions of the technique are shown in Tables 1, 2, 3, 4 and 5:

The job specification is in the form of "do" things, as so ably propounded by Dr. Mann. From this are worked out the man specifications. For each major heading are listed not only the general

⁶Anderson, V. V., "The Problem Employee," *Personnel Journal*, Vol. VII, No. 3, October 1928, p. 212.