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SOME PROBLEMS IN THE INVESTIGATION  
OF VOCATIONAL DEVELOPMENT

Donald E. Super

As my contribution to this symposium on problems in the investigation of vocational development, I should like to focus on three specific problems. About one of these, let me at once make it clear, I know very little: it is my hope that in pin-pointing it I may stimulate someone who understands it better than I do to elucidate the matter. The second problem is one which I understand a little better, thanks to the fact that my colleagues and I are currently attempting to explore it. And the third problem is one of which I think I have a fair understanding, although not a solution, thanks to the fact that we have been working on one aspect of it for several years in the Career Pattern Study.

These three problems are: 1) the treatment of career prediction data as contrasted with occupational prediction data, 2) the nature of vocational exploration, and 3) the comparability of measures of vocational maturity at different stages of development. Let me begin with what I do not understand and move toward that of which I claim to have some understanding.

1. Career Prediction versus Occupational Prediction. The classical problem in vocational guidance, as I have pointed out elsewhere (Super, 1954, 1957), has been that of predicting occupational choice or occupational success; the classical method has been that of relating test scores prior to entry into the labor market to occupational status some time later. The researcher and the counselor deal, in this model, with status at two points in time. Intermediate and subsequent statuses are disregarded: despite the fact that

the counselor is well aware of the needs and problems of training and entry, and despite widespread recognition of the facts of occupational mobility, this model matches youth and jobs and assumes that, once the match is made, the lucky pair lives happily ever after. This model may be called the occupational prediction model.

But interest in vocational development or career development (terms which I think we may now use synonymously even though I see the possibility of eventually making a useful distinction) has led some theorists and researchers to become interested in what we may call the career model, in the problem and method of career prediction.

Whereas an occupation is, by definition, a group of jobs and positions, and hence essentially a group of tasks performed by one person, a career is the sequence of occupations, jobs, and positions in the life of an individual. Some persons would, it is true, restrict the use of the term career to a sequence involving more than mere time, work, and a person, to a ladder-like progression involving vertical mobility. But others, and I am one of them, consider it more useful to have the term denote any sequence in the life of one person, be the mobility vertical or lateral, the occupations related and on the same ladder or unrelated and on different ladders.

Career prediction, then, involves taking into account the sequence of occupations, jobs, and positions which a given person is likely to occupy. It may be unnecessary to undertake predicting the total sequence from cradle to grave, or even from high school or college until retirement. But to have a better understanding of the nature and determinants of this sequence, and the systematic organization of these data in such a manner as to facilitate the prediction of the academic and of the early occupational positions of a career, would be

of great practical value to counselors and to clients.

The problem which I would like to pin-point in connection with career prediction is that of organizing the data for prediction. The occupational prediction model has, as already implied, methods which are quite appropriate for prediction from one point in time to one other point in time: these are the multiple regression equation and the multiple discriminant function. But what statistical methods are appropriate for predicting from several points in time to a later series of points in time? Figures 1, 2, and 3 (on the accompanying handout) illustrate schematically the differences in method. Figure 1 shows the method of the regression equation.\*

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\* I am indebted to my colleagues of the Career Pattern Study, and particularly to Dr. Henry Borow, Visiting Research Associate in the Horace Mann-Lincoln Institute of Teachers College, Columbia University, for help in developing this figure.

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The regression model takes predictor data at an early stage of the career, in this case at age 18, and uses regression data to predict later success in any one occupation or in each of several occupations which he might enter. Note that the fact that the subject may hold several different positions at successive ages is disregarded: thus the cross-sections at ages 25, 30, and 40 are left blank. The prediction of success in law, teaching, accounting, or sales at some time in adulthood (age 35 in Figure 1) is treated as though this position, this moment in time, were the equivalent of a career, which is actually a sequence of positions in time.

Figure 2 shows the method of the discriminant function with its statement of the likelihood of individual X, entering the labor market at age 18, being in any one of the occupations a, b, c, d, and z as an adult, again treating a moment in time as a span of time.

Figure 3 shows schematically the method of career prediction in which the question is the prediction, on the basis of the past sequential occupancy of positions a, ai, aii, etc., by individual X, of his future sequential occupancy of some combination of potential positions b, bi, bii, c, ci, cii, d, di, dii, etc., e.g., bvi, cvii, dvii, eviii, or biii, civ, diii, and eiii.

In my earlier discussion of these notions (Super, 1954a, 1957) I referred to the method which might be appropriate for career prediction as the thematic-extrapolative method. This was a term selected, somewhat reluctantly, after a consideration of the clinical, as contrasted with statistical, method of career prediction. This resort to clinical methods was used because of the embryonic nature of our knowledge of career development, our partial understanding of its determinants, and the lack of previous attention to career prediction by psychologists and other statistically minded behavior scientists. Here, I have attempted to reformulate the problem in the light of somewhat more knowledge of these matters and of the promise of attention to vocational development by statistically minded researchers. I believe that we have here a field for research which promises important practical outcomes.

2. The Nature of Exploratory Vocational Behavior. The second problem to which I should like to direct our attention, quite briefly because of time limitations, is that of the nature of exploratory vocational behavior. This particular term is one which my colleagues and I have come to use in this year's work on the Career Pattern Study, in which we are concerned with what high school boys do that brings about increased vocational maturity and leads to the making of prevocational and vocational choices. The CPS analysis of vocational maturity in early adolescence (Super and Overstreet, 1960) having shown that most boys are ready to explore themselves and the world of work with a view to eventual

occupational choice, but are not ready to make such choices, we considered it crucial to analyze the exploratory process during the high school years.

This is of course a matter of more than local interest, for a better understanding of adolescent exploration of adult roles is basic to improved education as well as to improved guidance. In order to develop this understanding, methods of analyzing exploratory behavior are needed. And before these methods can be developed, adequate definitions are essential. Thus problems of substance and of method are intertwined. We are now seeking a workable theoretical definition of vocational exploration, after which we plan to formulate operational definitions which will make possible the analysis of data on adolescent exploratory experiences.

It may seem absurd that, with the vocational guidance movement more than fifty years old, we have found it necessary to devote more than six months to the definition of exploratory vocational behavior, but such is the case: by the end of this academic year we hope to be ready to become operations, so that we may proceed next year to analyze the exploratory vocational behaviors of the Career Pattern Study boys during their high school years. So far as I know, this problem of defining and analyzing this type of behavior has never been approached on anything other than a simple armchair basis by writers of textbooks on vocational guidance through curricular, extracurricular, and out-of-school activities, with no concern for theoretical assumptions and only occasional regard for empirical verification of the value of exploratory activities. Important matters of definition and of theoretical formulation have been by-passed and must be dealt with before real advances can be made in this area.

3. The Comparability of Measures of Vocational Maturity at Different Age Levels. My third and last problem is that of the comparability of measures

of vocational maturity at different age levels, a problem which arises from the changing operational definitions of vocational maturity which are required by the theoretical definition which we are using in the Career Pattern Study.

This definition, it may be remembered, was that vocational maturity is represented by the nature of the behavior of the individual in dealing with vocational developmental tasks. These tasks are normally those of the subject's actual life stage. This definition appears, as our second monograph will report next month (Super and Overstreet, 1960), to work well as long as the subjects are in one life stage. But when they progress to the next life stage, and their developmental tasks change, comparing the vocational maturity of a person at age 14 with that of the same person at age 25 becomes impossible according to this definition of vocational maturity: at 25 he is dealing with different vocational developmental tasks from those he faced at age 14. Perhaps we must fall back on our alternative definition of vocational maturity, which treats vocational maturity as a function of the life stage in which the developmental tasks being dealt with place one, relating this to age, and disregarding the nature of the behavior manifested in dealing with these tasks. This is VMI, the first definition. But this would mean using only a very crude measure of vocational maturity, and would make difficult some desirable longitudinal comparisons.

Other possibilities suggest themselves. One is to measure vocational maturity only by means of developmental tasks which are encountered throughout life but which take different forms with changing life stages. For example, planfulness appears as a rather general factor in the CPS 9th grade indices of vocational maturity (Super and Overstreet, 1960). Operationally, planfulness in grade nine involves looking ahead to decisions which need to be made about the high school course and the post-high-school career, talking with people who have experience in fields which interest one in order to judge their appropriateness as occupational choices, etc. But planfulness is probably a factor in vocational

maturity at ages 25, 45, and 65, as well, although at those ages different choices need to be anticipated and different resources may be used in planning for them. Presumably, appropriate planfulness measures could be developed for each life stage, and planfulness scores at each life stage could be compared. But it may be that planfulness at age 14 has a different psychological meaning from planfulness at age 45, and it may play a different part in career development. We have no evidence bearing on this problem now, nothing but data on vocational maturity in the 9th grade, at one life stage. Here, clearly, are other problems for research in vocational development.

#### References

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The Occupational Models for Vocational Guidance

Figure 1  
The Regression Model

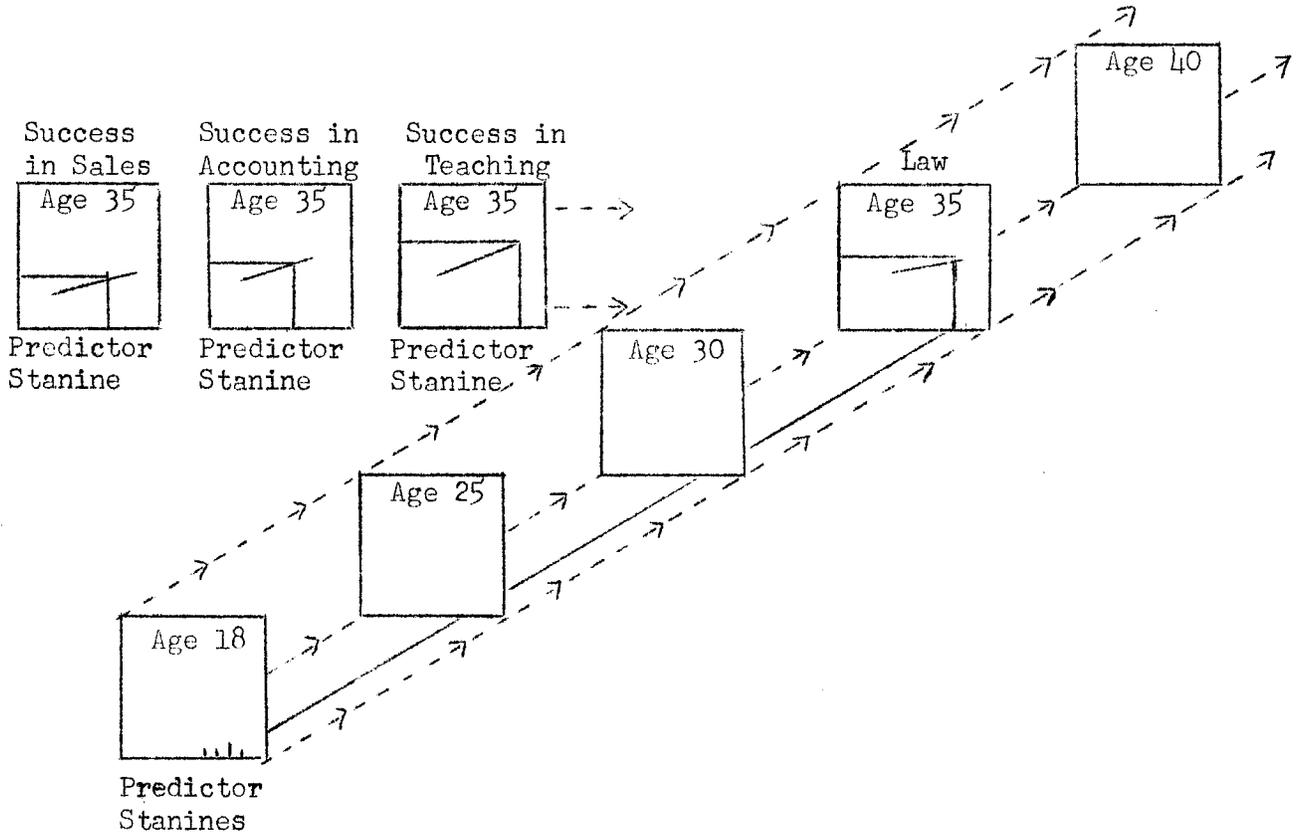
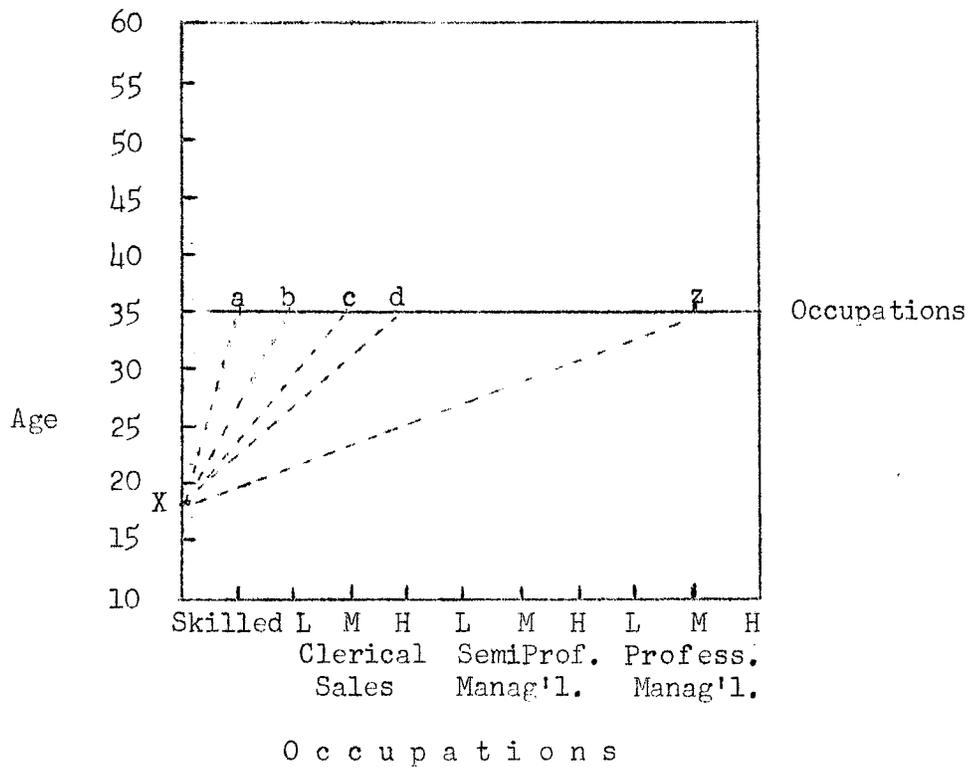


Figure 2  
The Discriminant Model



The Career Model for Vocational Guidance

Figure 3  
The Career Model

