

DOCUMENT RESUME

ED 050 372

CG 006 372

AUTHOR Myers, Roger A.
TITLE Career Development in the College Years.
INSTITUTION Columbia Univ., New York, N.Y. Teachers College.
PUB DATE Apr 71
NOTE 20p.; Paper presented at the American Personnel and Guidance Association Convention in Atlantic City, New Jersey, April 4-8, 1971

EDRS PRICE MF-\$0.65 HC-\$3.29
DESCRIPTORS *Career Choice, *College Students, Counseling, Counseling Goals, *Counselor Role, *Vocational Counseling, *Vocational Development

ABSTRACT

This paper concerns itself with two relatively central issues in career development, life stages and choice behavior and focuses on the tasks of the college counselor in regards to them. Life stages refer to sequential series of tasks to be accomplished within time periods that can be specified. Choice behavior is the on-going process of making a realistic career choice. Three implications derived from the material surveyed are offered: (1) a counselor can arm himself with a knowledge of what kinds of characteristics indicate one's degree of vocational maturity; (2) counselors can develop expertise in promoting, eliciting and teaching clients how to profit from exploratory behavior; and (3) counselors can talk to educational policy makers about the importance of restructuring the college or university in ways that better fit the realities of student development. (TA)

Career Development in the College Years¹

Roger A. Myers²

Teachers College, Columbia University

U.S. DEPARTMENT OF HEALTH, EDUCATION
& WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED
EXACTLY AS RECEIVED FROM THE PERSON OR
ORGANIZATION ORIGINATING IT. POINTS OF
VIEW OR OPINIONS STATED DO NOT NECESSARILY
REPRESENT OFFICIAL OFFICE OF EDUCATION
POSITION OR POLICY

Twenty years have passed since the appearance of the monograph by Ginzberg, Ginsburg, Axelrod and Herma (1951) and the book by Miller and Form (1951), which marked the beginning of a new way of thinking about the problem of a young person and his anticipation of, choice of, and preparation for his work life. In those 20 years a great deal has been written and spoken - much of it in forums such as this - about the wisdom of viewing this important problem in developmental frames of reference. The horse that has been so thoroughly beaten with this exhortative stick must surely, you say, be dead by now. Surely the crippling blows of Ginzberg, Super, Tiedeman, O'Hara, Holland, Bordin, Tyler and others have long since put an end to the old dapple grey view of counseling which pretended that a single choice point was the entire process, which assumed that all clients who faced that choice point needed the same kind of help, and which presumed that once a choice was made success and satisfaction followed in some more or less orderly fashion. But, alas, that horse still lives! Career counseling in college, when it goes on at all, still goes on astride that hoary horse.

To be sure, some portion of the legion of college counselors has been listening and changing over the last 20 years. But a large portion has not, either because career counseling is of little interest to them

¹ Paper read at annual convention of the American Personnel and Guidance Association, Atlantic City, N.J., April, 1971.

² I am indebted to my colleague Jean Pierre Jordaen for considerable help and especially for early access to his unpublished paper (Jordaen, 1971).

or because writers on the topic of career development have not been very explicit about the implications of their work for college counselors. It is for this group that my remarks are intended.

Following this intention, I decided to search among the considerable literature on career development in order to identify, collate and magnify those concepts and assertions of career development theory that pertain specifically to the college years. What do you suppose I found? Almost nothing! Surprisingly few of the theorists and conceptualizers even mention the college years. Those who do tend to aggregate the post-high school years in such a way as to make it appear that the participation of a counselor in the development of a youth ends when he leaves secondary school. Even John Holland, whose research leading to and following from his theoretical formulations (Holland, 1959) was based almost exclusively on the college years, does not speak about that period of development in theoretical terms.

The reasons for this strange neglect on the part of theory builders are, no doubt, related to their attempts to be parsimonious and comprehensive, fashioning theories which attempt to organize the data for all people, be they college-goers or not.

The task, therefore, turned out to be somewhat larger and more difficult than I had anticipated when I gave Dr. Cooper that impulsive and ill-considered "yes." My response to this insight was to limit my consideration to two relatively central issues in career development, life stages and choice behavior. The following sections, then, are drawn from various theoretical statements and investigations on these issues, focusing on the tasks of the college counselor where that has been possible.

Life Stages

The deceptively obvious developmental notion of life stages has been used by a number of theorists in an attempt to emphasize their interest in the process of vocational behavior as a guide to understanding specific events within that process. Buhler (1933) is credited with the early formulation of stages of life which, in her scheme, included growth, exploration, establishment, maintenance, and decline. A number of theorists have used this scheme and elaborated upon it to the end of better understanding the stages of life in which they were most interested. The stage which has received the most attention from those concerned with counseling and guidance is the exploration stage.

Havighurst (1964) called the exploration stage "Acquiring Identity as a Worker in the Occupational Structure" and defined the tasks as:

- a. choosing and preparing for an occupation, and
- b. getting work experience as a basis for occupational choice and for assurance of economic independence.

This stage encompasses the years of age 15 to age 25, follows "Acquiring the Basic Habits of Industry" and is followed by a stage called "Becoming a Productive Person."

Miller and Form (1951) treated the stage in approximately the same way as Havighurst. What they called the "Initial" stage follows the "Preparatory" stage and lasts from age 14 to the end of formal education. The theme of the stage, as Miller and Form saw it, is the weakening of dependence on the home. The specific tasks include:

- a. indoctrination of the work values of responsibility, willingness to work hard, getting along with people, handling money, etc.;
 - b. adjustment of aspiration to a realistic level;
 - c. acquiring technical and social skills relevant to job performance;
- and

d. adjusting to a worker culture.

After the end of formal education comes the "Final" stage in which a permanent selection is settled on and a career orientation developed.

Both of these formulations are brief and to the point about the fact that choice takes place somewhere between the 9th grade and the end of college. Both also acknowledge that the stage that comes before provides life experiences that prepare for choosing, and the stage that follows provides experiences which support or modify choice. But both imply that choice is the choice and neither accomplishes much in the way of specifying what is to take place during the college years and how that relates to and differs from what goes on in the pre-college years. It is as if there were no differences worthy of mention.

Super and his associates (Super, Crittts, Hummel, Moser, Overstreet & Warneth, 1957) gave us a bit more to go on by dividing the exploration stage into three substages. For them, as for others, the stage covers the years of high school and college. The theme of the entire stage is described as follows:

Self-examination, role tryouts, and occupational exploration
in school, leisure activities and part-time work.

The first substage, called the Tentative substage covers the high school years and is characterized by the following activities:

needs, interests, capacities, values and opportunities are
all considered. Tentative choices are made and tried out in
fantasy, discussion, courses, work, etc.

The college years are included in the Transition substage which follows and which presumes that the activities of the Tentative substage have been engaged in. The Transition activities are described as follows:

reality considerations are given more weight as the youth enters the labor market or professional training and attempts to implement a self-concept.

This is followed by the Trial substage, in which:

a seemingly appropriate field having been located, a beginning in it is found and it is tried out as a life work.

Note that in this framework most of the actual exploration is seen to take place during the Tentative substage, i.e. in the pre-college years. During college, the increased importance of "reality considerations" - presumably intended to convey considerations such as being able to afford training, getting admitted to a desired training program, meeting the requirements of that program, etc. - is recognized. So is the act of entry to work or training, implying sufficient commitment to a plan to permit action toward implementing the plan.

If all college students conformed to this scheme and accomplished their developmental tasks as they have been described, we might expect that the college counselor engaged in career counseling would have as his typical client one:

- a. who has considered his needs, interests, values and capacities and has made some tentative choices and tested these choices;
- b. who must now evaluate the choices especially in the light of his opportunities and, more important, the limits of his opportunities; and
- c. who is under recognizable pressure to make a commitment to a choice.

Observations of our real clients might lead us to agree that they are characterized by a heavy concern with opportunities and by pressure toward commitment to a choice. But we might also recognize that by no means do all of them enter the college years having engaged in adequate career

exploration and having arrived at some tentative goals. In fact, it is probable that the very students who have deficits in the experiences of the Tentative substage are the ones who are likely to seek counseling.

I chose the word deficits intentionally to indicate that since they are in college, such students are faced with the developmental tasks of the Transition substage despite the fact that the tasks of the prior substage have not been accomplished. That is, the need to cope with the realities of opportunity and the pressure for commitment exists for them as well as for their classmates who have adequately negotiated the tasks of substage that preceded.

Hershenson (1968), in describing his life stage vocational development system, spoke to this point. He calls his stages social-amniotic, self-differentiation, competence, independence and commitment. He maintains that these life stages are not necessarily defined by age and grade, as are the others. What is central for Hershenson is the sequential nature of the stages and the fact that one's success in coping with any stage is necessarily limited by his experiences in completing the prior stage.

Each stage is dominated by a vocationally relevant question. Thus in the early stages, the person answers such questions as "Am I?" and, "Who am I?" In the Competence stage, which probably corresponds to the high school years, the dominant question is "What can I do?", and this involves him in specific concerns about his competence. As Hershenson put it:

Having gained control of his own individuated entity, the person can seek and locate the limits of this entity, that is, to discover what he can (and cannot) do. The attitudes and values developed during the prior self-differentiation stage determine the areas in which the person will seek to develop competencies. (1968, p. 28)

Once a person has learned what he can do, the next task is to decide which, among these things, he will choose to do. Hershenson calls this stage Independence because it represents the first opportunity for choice among real alternatives. The Independence stage calls for goal-directedness and goal-directedness is not possible until the person has demonstrated his ability to direct his energies, which is a task of the Competence stage which preceded.

Hershenson suggests that the counselor must be aware of the stage of development at which his client is functioning before counseling can proceed meaningfully. One cannot help a client work toward a choice of an occupation until that client knows the range of things he can do and has some realistic alternatives within that range to consider.

It should be pointed out that the nature of these life stages - indeed, their very existence - are hypothetical matters. No one, to my knowledge, has ever collected systematic data to see if they conform to the real activities and tasks of development. Even so, it is unfortunate that no theorist has devoted his attention specifically to the college years. Perhaps someone will someday.

The little that we have reviewed about the life stages surrounding the college years leads me to a few simple conclusions that may be of interest to the college counselor.

1. Vocational development, like any other aspect of human development, can be characterized by stages which represent sequential series of tasks to be accomplished within time periods that can be specified.
2. The sequential nature of the stages of vocational development suggests that deficits in task accomplishment at any stage limit an individual's ability to accomplish the tasks of the stage which follows.

3. Inasmuch as the college years impose the task of choice - of major, specialty, occupation - and require a degree of commitment to that choice, attention must be paid to the students' readiness to make such choices. Specifically, counselors should concern themselves with the level of vocational development attained, and especially with the amount of exploratory behavior engaged in, by the college students who become their clients.

Choice Behavior

I would like to focus attention now on the issue of career choice behavior which has always been central to the concerns of counselors, whether they were inclined to embrace developmental notions of career behavior or not. For the developmental theorists choice as an event is as important as it is for conceptualizers of all other theoretical persuasions. The weight of the developmental argument is simply that career choice must not be viewed in isolation, but rather seen as part of an on-going process. As such it should be understood in relation to its antecedents, correlates and consequences. Since the college years impose the requirement of career choice, either formally or informally, the matter is of considerable importance for us.

By way of an aside, I would like to suggest to you that the most useful device for promoting and organizing thinking about the process of choice that I have come across in recent years is the Career Development Tree developed by Cooley and Lohnes (1968) as part of their Project TALENT studies. The Career Tree is a dichotomous one-way taxonomy, presenting alternate decisions appropriate to various age levels. For the ages of 10 to 12, the trunk of the tree, the first career related decision is presented. This decision is Science-Technology on one branch and People on the other. The second decision point occurs between age 13 and age 16 and is a college

vs. non-college decision. These two decision points yield four paths, i.e. Science-Technology, college; Science-Technology, non-college; People, college; and People, non-college. Following the two college branches brings one to the next choice point which involves various major fields. For the Science-Technology path, the next choice is between Biological and Physical Sciences. For the People path the next choice is Business vs. Social Sciences, Humanities or Education. The branchings of the tree can be followed through one more set of choices having to do with graduate and professional education and leading to the branch tips which are specific occupations.

The Project TALENT investigators found the Tree extremely useful in organizing their data, as have a number of others (Bohn & Forrest, 1970; Gibbons & Lohnes, 1969). Its main virtue is its simplicity, presenting as it does the alternative decisions appropriate for the various age levels involved. Its main defect is the absence of paths which connect the branches to describe changes from one branch to another after a major decision has been made and changed. Nevertheless it is a useful tool for thinking about choices in relation to the entire process of vocational development. It may even be useful with clients. I recommend it for your consideration.

To return to the issue of career choice behavior in the college years, let us examine some recent evidence on how well the developmental tasks of the pre-college years are accomplished. Here some unpublished data from the Career Pattern Study may be helpful. Most of you are aware that the Career Pattern Study is a 20-year longitudinal study of some 200 boys who were in the 8th and 9th grades in Middletown, New York, in 1951. The study will end in 1972 when the subjects will be approximately 35 years of age. So far, data have been collected during the subjects' 8th or 9th

grade, 12th grade, at age 21, and at age 25. Career behavior at age 25 has been extensively analyzed (Super, Kowalski & Gotkin, 1967) and relationships between vocational maturity during the high school years and career behavior at 25 have been thoroughly studied (Heyde & Jordaan, in press).

On the basis of these studies and the theorizing that has accompanied them, one can get some notions about how to go about assessing developmental task accomplishment in the high school years. For example, Jordaan (1971) suggests that the important questions to ask regarding the vocational development of a 12th grade student are these:

1. How much progress has he made in identifying a possibly appropriate field or level of work?
2. How much does he know about the occupation or occupations he is thinking of entering?
3. How specific are his plans for achieving them?
4. How aware is he of the important features of occupations?
5. How much and what kinds of work experience has he had?
6. How much concern with choice does he evidence (p. 14)?

Each of these questions implies a developmental task in highly specific terms. It is clear from Heyde and Jordaan's data that these tasks are not very well accomplished by all students by the time they reach the end of their high school years.

Specifically, Jordaan (1971, p. 14) reports that at grade 12:

1. about half of the students were still considering occupations which are not in the same field or on the same level;
2. only one student in 12 has settled on a specific occupational choice;
3. two out of three still have very little confidence in, or commitment to, their expressed vocational goal;
4. most of them know relatively little about the occupation they think they might enter;

5. only half have well thought out plans for preparing for it;
6. two out of three have done little or nothing to implement, i.e. to give substance to, their vocational preference; and
7. more than half are still entertaining three or more occupational possibilities.

Of course, not all of these 12th grade students were college bound, so we cannot comfortably conclude that their picture is typical of that of entering college freshmen. We do know, however, that 45% of the sample pursued some type of post-high school education for two years or more. We also know that those 12th graders who were enrolled in the college preparatory curriculum did not look much different from the total group on the variables enumerated above.

Whether or not we can translate these data directly to an understanding of the antecedents of career choice behavior in college, it is a reasonably well established fact that some portion of the entering college population is not able or not willing to make a career choice.

Crites (1969) reviewed studies on the extent of such indecision and reported that the percentages of students undecided in high school and college samples ranged from 5% to over 60%, with most of the studies showing percentage of undecided to fall between 20% and 40%. Crites cautions that many of these studies are quite old and furthermore, the way in which the choice was elicited from the student is often not specified. For a reasonably contemporary statement on the extent of indecision among entering college freshmen, one must rely on the findings of three of the more recent studies.

In 1963, Tucci (1963) studied 163 male freshmen at Wayne State University and found 18% of them to be undecided. In 1964, Holland and Nichols (1964) reported a study of 1000 National Merit Scholarship finalists in which they found that 18% of the girls and 15% of the boys could not give a

career choice. More recently, Astin and Panos (1969) reported that in their sample of 36, 405 college freshmen about 7% were undecided and another 15% gave no response to their question on probable future occupation. They further noted that the "undecided" and the "no response" categories combined equaled about 18% when the question concerned probable major field in college. These three studies lead us to conclude that something like one in five entering freshmen can be expected to fall into this undecided group.

The differences between these undecided freshmen and their classmates has been the object of some concern for investigators. Holland and Nichols (1964) analyzed correlates of membership in the undecided group of the college-bound, high ability students mentioned above. They arrived at three clusters of characteristics which they described as:

1. socially oriented cluster of school offices, baby sitting, belonging to clubs, etc.;
2. an artistic, creative cluster; and
3. an aggressive, narcissistic, perhaps psychopathic cluster, including participation in weight-lifting, wrestling, etc. (1964, p. 29).

Speculating about the meaning of their findings, Holland and Nichols suggest that although indecision may result from confusion and instability, inadequate occupational information, and so on, undecided students may also "have a more complex and creative outlook about the world, especially the world of work (p. 33)." They also hint that failure to make a choice may be associated with oral dependency and with personal traits conducive to achievement and creative performance.

Ashby, Wall and Osipow (1966) compared undecided college freshmen with those who expressed enough certainty about the educational and vocational plans to enroll in a curriculum that represented implementation of those plans. They also included a third group: those who expressed plans

but were still too tentative about them to take the implementing step of enrolling in the appropriate curriculum.

The three groups were compared on a variety of ability and personality variables and some significant differences were found. Perhaps the most interesting of these was the fact that the decided and the undecided groups did not differ but showed a clear academic superiority to the tentative group. This suggested to the investigators that to some degree the tentativeness of plans may have been related to a fear of doing poorly, a fear that could probably not be attributed accurately to the undecided group. The undecided group, however, showed significantly greater dependency, which suggested that the uncertainty of the undecided group might have had quite different antecedent from the uncertainty of the tentative group.

The findings led the investigators to suggest that differential counseling approaches might be warranted: for the tentatives, concentration on working toward choices consistent with preparation, remedial work, or some combination; for the undecided, concentration on the dependency problem.

The evidence we have been reviewing can be summarized briefly. If we consider the college years a substage in vocational development which calls for a relatively realistic career choice and for a measure of commitment to that choice, the following points can be made about antecedents of that substage.

1. By the end of the high school years students cannot be given very high marks for the degree of vocational maturity attained. If the Career Pattern Study data can be generalized to the college going population, a deficit in the substage which precedes the college years is a common occurrence.
2. The fact that a deficit exists for some college students is attested

to by the finding, from a number of investigations, that one-fifth of entering college freshmen cannot or do not express a vocational choice when asked to do so. Here I would like to repeat my unsupported hunch that although such people make up one-fifth of the entering college population, they make up a much higher proportion of the counselor's clientele.

3. Those students who cannot express a vocational choice at college entrance are different from those who can. They may be more dependent, and if they are it is consistent with the notion of deficit.

What can be said about the choices of the four-fifths who do express a choice upon entering college? A number of studies are relevant to this point, but I have chosen to concentrate on one, because of its recency, its scope, and its methodological adequacy. That is the study reported by Astin and Panos (1969) in the book The Educational and Vocational Development of College Students.

Astin and Panos set out to "identify institutional characteristics and educational practices that affect the student's chances of completing college, going to graduate school, and pursuing a career in a particular field (p. 1)." To do so they surveyed all entering freshmen in a stratified random sample of 246 accredited four-year colleges and universities, more than 127,000 students in all. Four years later they reduced the sample size to 60,000 and succeeded in collecting data from 68% of these, yielding a total of more than 36,000 students followed up - including dropouts. Their data covered educational attainment, family background, perception of the college environment, and a number of other variables. Most important for our purposes, they elicited career choices which made it possible to study the relationship of the two choices separated by four years of college experience.

The book is a gold mine of findings of interest to counselors, including, among many others, such items as the following:

1. Four years after entering, nearly two-thirds of the group had completed four years of college.
2. However, only about half of the men and 62% of the women had obtained a bachelors degree during that time.
3. Forty-four percent of the students left the college in which they were first enrolled, but most of them transferred to another institution.
4. The most frequently cited reasons for leaving the college of first enrollment were:
 - a. dissatisfaction with the college environment;
 - b. change in career plans; and
 - c. need to reconsider career interests.

In these reasons for leaving we see hints of the costs of uncertainty about career choice to some students.

The payload for our present purposes, however, lies in the analysis of the career choice behavior of the college years, reflected in the comparison of the two observations, four years apart.

Their data led them to conclude that about three-fourths of the students changed their career plans after entering college. It should be mentioned that this probably represents the lower limit of the change activity, since they only asked for choices at two points in time. Many of the changers, no doubt, changed plans more than once during the four years.

The observed patterns of change were not random. That is, students tended to switch to occupations that were related to their initial choices.

Among specific careers, what the authors called the "balances of trade" were not equal. That is, among career choices there are what Davis (1965) called gainers, losers, and traders, depending on the proportion of students who defect from a choice to the students who are recruited to that choice.

Astin and Panos summarize the choice and change behavior for each career choice and its corresponding major field of study. To illustrate the value of these summaries, I will paraphrase two.

Biological Scientist. Unstable as a choice over the four years. Only one student in seven who chose it initially ended up in it. The net loss was small because many students switched into it, including a disproportionate number defecting from Dentist. The choice of Biological Scientist appears to be discouraged at colleges where formal - as opposed to spontaneous and informal - social activity is frequent.

Teacher. Relatively stable as a career choice, with more than half of those who initially chose it staying with it four years later. Did not show much gain, indicating that changers were not recruited to it as much as they were to some other careers. Students planning to become teachers after four years included higher percentages of women and of students whose fathers were teachers than did those who chose it initially. Interest in becoming a teacher seems to be enhanced by attending Catholic institutions and teachers colleges. Permissive administrative policies appeared to discourage the pursuit of teaching as a career.

Similar summaries are provided for Physical Scientist, Engineer, Social Scientist, Physician, Health Professions, College Professor, Businessman, Clergyman, Lawyer and Performing Artist.

The result is a comprehensive view of the changes of career choice during the college years. And the sheer amount of change that is charted is amazing. What is clearly documented is the fact that a career choice made at the beginning of the college years is a highly tentative gesture. The probability that it will be changed is three times as great as the probability that it will remain the same. One wonders how any college or university

can continue to justify policies which assume entering freshmen know what their career plans are and which extract a penalty in time and money from those who change their plans.

Implications for Counselors

In closing, I would like to offer a few slightly shopworn suggestions on what the material I have touched on implies for the actions of the college counselor who finds himself faced with clients who present career problems.

One thing a counselor might do as he searches for ways to be helpful to his clients is to arm himself with a knowledge of what kinds of client characteristics indicate his degree of vocational maturity. The set of characteristics from the Career Pattern Study mentioned earlier is not the only set, but it serves well. The questions to explore are: how close is the client to identifying a level and field choice?; how much does he know about the occupation?; how much does he know about occupations in general?; what work experiences has he had?; how specific are his plans?; and how concerned is he with choice? Knowing these characteristics and exploring with the client his status on each enables the counselor to make estimates about how much development has taken place and how much deficit there is to be attended to. Furthermore, the list provides a rather specific set of tasks that the client and counselor can use in working toward future development.

Another thing a counselor might do is develop his expertise in promoting, eliciting, teaching clients how to profit from exploratory behavior. As we have seen, the college years offer the student either the opportunity to prepare for a career he has already chosen or the opportunity to explore prior to making a choice or a switch. There is ample reason to suspect that there is need for a great deal more of the latter than is found at most colleges. But counselors in general have not taken much notice of the

importance of exploration and of how to participate in it.

Super (1964) has said that "Exploratory behavior at its best involves asking self-relevant questions about something while trying it, evaluating the outcomes of the trial, and basing subsequent decisions on this and other evaluations (p. 129)." For the client, this involves selecting what to try, inventing self-relevant questions, evaluating it, and relating future decisions to it. The counselor can comfortably participate in each of these to the client's benefit. Counselors can also become - and usually do become - highly expert in identifying the degrees of freedom within a given college; e.g. how long can one postpone a major choice without penalizing oneself, what are the best courses for exploring a specific major field, where do the degree requirements bend and where don't they, and so on. Such information can be very useful in enabling exploratory behavior. Perhaps it should be more widely disseminated.

Finally - and this one really is shopworn - counselors can talk to educational policy makers about the importance of structuring the college or university in ways that better fit the realities of student development. Your dean of students cannot possibly keep up with the advances in career development theory research and your academic dean certainly will not. Who will tell them about Astin and Panos' work? Who will help them make sense of the Career Pattern Study data? Who will even share with them the "news" of Pennsylvania State's Counseling Division enrolling undecided freshmen as if it were an undergraduate division? More important, who will tell them what the students of today are going through, how their readiness fits with the developmental tasks the college sets for them, where a catalogue requirement might be relaxed to permit a little more exploratory behavior?

You will. Or no one will.

References

- Ashby, J.D., Wall, H.W., & Osipow, S.H. Vocational certainty and indecision in college freshmen, Personnel and Guidance Journal, 1966 44, 1037-41.
- Astin, W.W., & Panos, R.J. The educational and vocational development of college students. Washington, D.C.: American Council on Education, 1969.
- Bohn, M.J. & Forrest, D.J. A career model for engineering. New York: Teachers College, Columbia University, 1970.
- Buhler, C. Der menschliche Lebenslauf als psychologisches Problem. Leipzig: Hirzel, 1933.
- Cooley, W.W., & Lohnes, P.R. Predicting development of young adults. Pittsburgh: American Institutes for Research, 1968.
- Crites, J.O. Vocational psychology. New York: McGraw-Hill, 1969.
- Davis, J.A. Undergraduate career decisions. Chicago: Aldine, 1965.
- Ginzberg, E., Ginsburg, S.W., Axelrod, S. & Herma, J.L. Occupational choice. New York: Columbia University Press, 1951.
- Gribbons, W.D., & Lohnes, P.R. Career development from age 13 to age 35. Washington, D.C.: U.S. Department of Health, Education, and Welfare, Office of Education, Bureau of Research, 1969.
- Havighurst, R.J. Youth in exploration and man emergent. In H. Borow (Ed.), Man and a world at work. Boston: Houghton Mifflin, 1964.
- Hershenson, D.B. A life stage vocational development system. Journal of Counseling Psychology, 1968, 15, 23-30.
- Heyd, M.B. & Jordaan, J.P. The high school years. New York: Teachers College Press, Columbia University, in press.
- Holland, J.L. A theory of vocational choice. Journal of Counseling Psychology, 1959, 6, 35-45.
- Holland, J.L., & Nichols, R.C. The development and validation of an indecision scale: the natural history of a problem in basic research. Journal of Counseling Psychology, 1964, 11, 27-34.
- Jordaan, J.P. Vocational maturity: the construct, its measurement, and its validity. Paper presented at the XVIIth Congress of the International Association of Applied Psychology, Liege, Belgium, July, 1971.
- Miller, D., & Form, W. Industrial sociology. New York: Harper, 1951.
- Super, D.E. Goal specificity in the vocational counseling of future college students. Personnel and Guidance Journal, 1964, 42, 127-134.

Super, D.E., Crites, J.O., Hammel, R.C., Moser, H.P., Overstreet, P.L., & Warnath, C.F. Vocational development: a framework for research. New York: Teachers College, Columbia University, Bureau of Publications, 1957.

Super, D.E., Kowalski, R.S., & Gotkin, E.H. Floundering and trial after high school. New York: Teachers College, Columbia University, 1967.

Tucci, M.A. College freshmen and vocational choice. Vocational Guidance Quarterly, 1963, 12, 27-29.