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ABSTRACT

The job market should be considered as interaction between supply and demand, and not from the perspective of new and emerging occupations. Three recent major post-World War II changes in the human resources posture have tended to create labor surpluses: shift from rural South to urban North, increased number of working women, and the postwar baby boom, whose high school dropout led to a youth unemployment problem and whose college graduates created an even greater labor surplus. Several theories attempt to explain the tightening job market and overeducation of Americans and elimination of jobs by automation and technology. A decrease in the country's birthrate pattern will lead to a shortage of human resources in the eighties. A principle of the job market is that two of three job openings are replacing someone leaving an existing position. The third job opens up due to growth, and only a small proportion are in new and emerging occupations. The fastest growing jobs will not require a four-year college education. An examination of the spring 1980 "Occupational Outlook Quarterly" shows that new occupations will account for only a small part of the job openings in the next decade. Most jobs will be in the replacment market. (YLB)

Occasional Paper No. 77

NEW AND EMERGING OCCUPATIONS: FACT OR FANCY

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FOREWORD

The topic of today's staff seminar is "New and Emerging Occupations: Fact or Fancy?" This topic is surrounded by a great deal of truth and mythology; probably no subject has more vividly captured the attention of federal policymakers, friends, and critics of vocational education. The concept of new and emerging occupations is especially relevant to vocational education, since one of the primary obligations of vocational education is to prepare the nation's work force efficiently and effectively, and to be sure there is a high level of congruence and articulation between programs offered and the long- and short-term demands of the employment sector.

Today's speaker is Herbert Bienstock, who is Alumni Merit Professor of Labor and Urban Values and the Director of the Center for Labor and Urban Studies at the Queens College of the City University of New York. Prior to that, he was the Commissioner for the Mid-Atlantic Region of the Bureau of Labor Statistics in the U.S. Department of Labor. During his career he received the U.S. Department of Labor Meritorious Service Award and Superior Performance Award, in addition to the Honorary Doctorate of Law from the City College of the City University of New York. He is a fellow of the American Statistical Association and is listed in *Who's Who in American Men and Women of Science*. We are immensely pleased to have professor Bienstock with us, and to present his speech, "New and Emerging Occupations: Fact or Fancy?"

NEW AND EMERGING OCCUPATIONS: FACT OR FANCY?

Since I left a job I held for thirty-five years last January for a new position at the university, I feel as though I am in a new and emerging occupation; there were no previous directors of centers for labor and urban studies at the City University of New York.

I have been studying the American labor market for the last thirty-five years—since the end of World War II—and have constantly seen the reference to "new and emerging occupations." I have been invited to speak several dozen times on this issue. Sometimes I get the feeling that we are involved in a search for the Holy Grail; if we do not find these new and emerging occupations, what are we going to do about preparing people for the job market? Groups want to know, especially at the beginning of a decade, what the job market will be like for the next ten years. Instead of looking at the job market from the perspective of "new and emerging occupations," I am going to deal with this topic from a labor economist's viewpoint—that is, from the point of view that supply and demand in a market interact with each other. The supply of human resources does affect the kind of job opportunities for which we need to train people.

I am going to start by discussing employment trends in America after World War II. There have been six recessions since that time; we are now in the middle of a seventh. I do not know if we are coming out of it, or if it is going to be the first bimodal recession; there is some question as to whether the recent modest recovery is going to last.

In each post-World War II recovery period, unemployment continued to rise to ever increasing levels. After the recession of 1948-49, the recovery level was at 3.2 percent unemployment; the recovery from the 1961-62 recession was up to 5.6 percent. We were defining "good times" as a 5.6 percent unemployment rate. We just went through the recovery from the 1974-75 recession during which time unemployment fell to 5.8 percent. That was defined as "good times." Now we are in a 1980-81 recession.

What is the relevance of these unemployment data to the occupational picture of the eighties? The dominant feature of the post-World War II American labor market has been a tendency toward labor surpluses. Employers have basically been able to pick and choose from the human resource pool to fill their needs. In this type of situation, a high emphasis is not placed on training and research in eduation.

There have been three recent major waves of change in the human resources posture of this country, all of them tending to create labor surpluses. The first wave of change was the enormous shift from the rural South to the urban North. The census data from 1940 show that four out of every ten black males in this country worked on a farm, while roughly one out of ten held a factory job. Southern sharecrop workers only earned about ten cents an hour, but their unemployment rate was almost nil. By 1950, that four out of ten figure dropped to two out of ten, and by 1960, it was down to one out of ten. From these figures, we can see that there was a major impact on the distribution and utilization of human resources in this country with the disappearance of farm jobs. It is

important, in considering new and emerging occupations, to examine the occupations that have been disappearing as well as those emerging. Farm jobs declined from around 8 million right after World War II, to about 3 million at present. With this, the enormous shift of workers began the exodus to the urban North.

The second major wave of change was the increase in the number of working women in America. At present, over half of all American women are working or looking for work, and those who are not are a part of a new minority. This is not to say that women did not always work. They worked in homes and on farms, but now they are working in the urban job market. Competition for a place in the urban job market has soared.

The third major wave was the postwar baby boom. One million more children were born in 1947 than in 1946, a 40 percent increase. Additionally, the birthrate stayed high right into the late fifties.

There were several reasons for the baby boom. During the Great Depression of the thirties, the unemployment rate rose 25 percent. In those days, when men did not have jobs, they tended not to marry or have children. The Great Depression lasted for an entire decade. Then World War II came along in 1941, and the men were drafted, resulting in a very low birthrate from 1930 until the war was over in 1945. The men left the military in 1946, and by 1947 a great number of children were born to make up for lost time. The children entered grade school in the fifties, resulting in an overload on these educational systems, both literally and in a Toffler *Future Shock* sense. Our educational system never quite recovered from that.

By 1963, many of these young people were sixteen and came pouring into the job market as high school dropouts. It was at this point that the teenage unemployment rate began to rise to its present astronomical levels, and the terrible phenomenon of the "first job barrier" began to develop. Between 35 and 40 percent of teenagers included in our monthly unemployment counts in this country never actually held their *first* job. These high school dropouts began looking for jobs just as we were coming out of the 1961-62 recession. The continuing cycles of recession and recovery did not create the kinds of conditions conducive to their employment. This youth unemployment problem began to surface in 1963 and has been with us ever since.

There was a big roar in the sixties about high school dropouts. Actually, it was not that the percentage of students dropping out was going up, the reality was that the number of dropouts had increased enormously because there were more sixteen-year-olds. By 1965, more young people reached age eighteen than ever before in this country. A higher proportion of them went on to college because of the draft, among other reasons. So from 1965 to 1969, enrollment in colleges soared. At the end of that period, the graduates also began to enter the labor market in great numbers.

For college graduates, the employment picture of the seventies was very different from the previous two decades. In the fifties and sixties employers sought them out, recruited them, and stockpiled their brain power. Graduates of those two decades were hired as interns, trainees, and so forth, but that all changed when the third human resource wave created an even greater labor surplus.

Several theories were developed to explain the tightening job market. A number of observers, such as Carolyn Bird, believed that we were overeducating Americans. They felt that we were sending too many people to college and were in danger of becoming a second India, with large numbers of underemployed college graduates. In my view, these observers were not looking at supply *and* demand. At no time during this period did the demand for people with high levels of skill actually decline. During this last recession, blue-collar jobs dropped by 1.8 million. However, positions held by college

graduates—professional, technical, managerial, and administrative jobs—increased by 500,000 right through the recession. The same thing occurred during the 1974-75 recession. What was happening, in my opinion, was that we were overwhelming the labor market on the *supply* side. The pressure to find jobs for this large supply of workers led to the search for new and emerging occupations. With all these people looking for jobs and with our unemployment rate rising continuously, the pressure is still moving us in that direction.

Another philosophy—that automation and technology were eliminating jobs—received much attention in the sixties. It was felt that automation was changing the nature of jobs and work radically. In 1962, the first Manpower Development and Training Act was passed to train 50,000 people. The birth of this Act was rooted in the thinking that if we trained people for the jobs that were available, there would be fewer problems in the job market. At that time, the labor force was around 70 million, with a post-World War II productivity increase rate of 3.2 percent per year. The productivity increase figure means that the same amount of goods and services can be produced in any year as in the previous year with that percentage fewer workers. Since 3 percent of 70 million is roughly 2 million, many people simplistically concluded that 2 million jobs were being eliminated each year due to automation. Willard Wirtz, then secretary of the U.S. Department of Labor, was one of those making this point. Then, by dividing 2 million by fifty work weeks per year, these same people arrived at the figure of 40,000 jobs per week lost to automation. However, there were other factors contributing to the productivity rate besides automation. It never occurred to the proponents of this position that we do not produce the same size market basket from one year to the next, or that we had, at least until 1972, a rising standard of living.

A rising standard of living continued to create sufficient jobs to modify those drastic effects. The higher the standard of living, the more goods and services people are able to purchase, which in turn puts more people to work providing those goods and services. In the fifties, a group called the Cyboculturalists raised concerns that there would not be any employment for people in the future because, they reasoned, if productivity was improving by 3 percent a year, in fifteen years half the workers currently employed would not be needed. Of course all these predictions proved quite inaccurate because they overlooked the other aspects that play a role in determining employment levels. They were also based upon what I call the "Maginot line" syndrome. This "Maginot line" thinking should be avoided in analyzing the job market of the eighties and nineties. A brief explanation from history illustrates what I mean. Examining the myths of the past helps us understand the realities of tomorrow. After World War I, the French generals sat down and said to themselves, "Why were the Germans able to overrun us like that? We have to prevent this from happening again." What they came up with for France was to build a line of concrete pillboxes all along its border with the thought that no one could get past it. This border-long row of concrete was named after the French general, Maginot. What happened? By World War II, airplanes had been invented and the enemy flew right over the pillboxes.

In many ways we sit down to plan our activities and programs for the eighties and nineties using the same type of "Maginot" thinking as the French generals. We plan the future in terms of the same things we have seen in the past. This causes us to make mistakes like the French generals. If instead we look at both the past and the future, we would see that right now, although the past thirty-five years have been dominated by labor surpluses, all that is about to change due to the alteration in our country's birthrate pattern. This change is inevitable. Our economists may not be very good at calculating the unemployment rate for last month (let alone predicting it for next month), or the inflation rate six months from now, but they are good at demographics—the statistical study of human populations. These demographics tell us that beginning in the sixties, Americans stopped reproducing themselves to the same degree as in the fifties. From 1960 to the mid-seventies, we went through two waves of declining births. This was due to increasingly effective birth control

methods, such as the pill and access to aboriton. As a result, live births during this period were down almost to the 3 million mark, at about the same level as in 1946, before the postwar baby boom.

In light of these demographic changes, we are going to have to face some facts. First, we have to recognize that there is no way to produce a twenty-year-old in less than twenty years. Despite all the new technology, we still cannot do that. Consequently, all those people who were *not* born all through the sixties and seventies will not be there to go to work in the eighties. Incidentally, they have not been there to register for school, either, although college enrollments have not dropped as sharply as anticipated because we have discovered such a thing as a penetration rate. Training and education are penetrating to more diverse members of the American populace than ever before, meaning people who were never served in the past are now entering the education system.

In the eighties, we are going to experience a shortage of human resources such as we have not had since World War II. It was back then that black people were able to make some economic progress in this country from sharecropper jobs on farms to industrial jobs in the urban North. It was then that women began to enter the labor market in large numbers, particularly in the then nontraditional occupations in factories. We will see the same patterns at work again. Employers will be looking for workers in the middle to late eighties.

With this information, the next question to ask is, if employers will be looking for employees, in what areas will the jobs be? An overriding principle of the job market is that most jobs are filled by people who replace someone leaving an existing position. Statistics show that two out of every three job openings are filled to replace people leaving previously existing positions. The third job opens up due to growth, and only a small proportion of those are in new and emerging occupations.

For example, for New York City, projections predict a decline of 154,000 positions in 1980-1985. Yet the city has more job openings than some entire states. How can a place that is basically a job growth disaster area have so many employment opportunities? The answer is, New York's replacement economy continues to provide the openings.

According to a 1978 issue of *U.S. News and World Report,* the fastest growing jobs will not require a four-year college education. The magazine lists a number of those fields: dental hygienists, flight attendants, teacher's aides, boilermakers, licensed practical nurses, cement masons, real estate agents, computer programmers, and public relations workers, to name a few.

The U.S. Bureau of Labor Statistics (BLS) projects figures for jobs to be filled due to growth and replacement. Additionally, it assesses the fastest growing areas. Although some of these are new and emerging jobs, how relevant are the growth professions to the actual labor markets? After all, men and women do not live by percentage changes alone. Some assessments of fast growing areas will be described as areas of "keen competition"; that is the BLS's calm way of saying that the job market for that particular occupation is very poor. However, that is only one dimension. For example, people believe that finding a teaching job is virtually impossible. Yet more college students entered teaching jobs in recent years than any other professional occupation. Why has this been the number one occupation? Because it is the single largest professional occupation, and even with slow or no growth, replacement requirements provide large numbers of openings each year.

Everyone is talking about how terrible the outlook is for lawyers. Of course it is difficult to break into fields such as this. The occupational projections tell us that we have more lawyers and people training to be lawyers than we have jobs for lawyers. Such occupational projections must be used with great care. We almost lost the Korean War due to the mistaken occupational projections for engineers. The shortages of engineers was serious. The same situation could develop in the near future in the teaching profession.

Part of the misinterpretation of occupational projections lies in the manner in which they are developed. First, a projection is made as to the number of lawyers expected to be in demand. Then the number of students in law school is determined. If the second number is greater than the first, the projection is that we are preparing too many lawyers. This overlooks the fact, however, that people who study law do not necessarily practice as lawyers. They may go into politics or business and use their training in other profitable ways, but not be classified as lawyers. This illustrates the point that many people may find jobs related to their training, but not in the specific field of their study.

What I am leading up to is that we are about to experience a period of great change on the demand side of the human resources/jobs equation. We have literally been overrun with human resources during the past three decades. In the 1980 election, Mr. Carter said we added 8 million jobs during the year. Mr. Reagan said that the unemployment rate rose substantially during that same year. They were both right. We have had very substantial job growth in 1980, but at the same time, large numbers of people were trying to enter a job market that could not accommodate them all; hence, the inevitable job shortages. When we move into the mid- to late-eighties, we will be going into a period when employers will start looking for people, unlike most of the past thirty-five years.

The spring 1980 *Occupational Outlook Quarterly* put out by the U.S. Department of Labor lists occupations, the number of people employed in them, and the anticipated number of job openings in each. What we find in examining this listing is that although there will be new and emerging occupations, most of the jobs in them will be well known to us. For example, the number one occupational opening for 1978-1990 is for secretaries and stenographers. Retail sales workers are second, followed by building custodians, cashiers, bookkeeping workers, and so forth. The new and emerging changes we develop, of course, will be in the kinds of equipment these "old" jobs will be using and the nature of their function. Secretaries will not be using green eye shades and quill pens. They will be using computerized typewriters and a whole array of modern technology. As you look over this list of occupations, however, there are very few job categories that you will not recognize.

We have spent a great deal of energy in this country in the last thirty-five to forty years looking for the new and emerging occupations. At the same time though, our real challenge has been improving the skills of people for the great array of jobs that already exist. Of course it is important for the researchers in the field to keep an eye on the new occupations and activities. I am not suggesting that we ignore the issue of new and emerging occupations. However, let us not be so overwhelmed that we believe they should be the major focus of our planning. Aside from the fact that the cutting edge of change is always important to monitor, new occupations will account for only a small part of the job openings that we can expect in the next decade.

Most jobs, even in dreadfully depressed areas such as New York or Cleveland, where there is low or no growth, will be provided by replacement needs. So if you are looking for where the jobs are going to be, look at where they are. Let us keep our eye on the replacement market.

QUESTIONS AND ANSWERS

Question: What are the implications for jobs emerging from the microprocessing and fiber optics fields?

There is no precise answer to that question. In reality, you are talking about products and not jobs. What kind of work will be done? Will the company manufacturing the product need a receptionist or require other conventional jobs? In light of the past, I suspect that a very substantial number of the jobs in new fields will be conventional. Will there be particular technical positions that require knowledge and skills in those avant-garde areas? Of course I really cannot answer the question by identifying occupations, but there will be significant changes. However, the bulk of the job openings will be where they always have been, in the conventional occupations.

Question: How valid are occupational forecasts? How can you tell if they are valid?

The best forecasts should have frequent revisions. However, forecasts are only as good as the people who work with them. The issue is not just one of the accuracy of the numbers stated in the forecast, but of the wisdom of the interpretation. The data are always stated, the sources, such as supply figures, are always given. But the state of the art of forecasting is still at a rudimentary level and must be dealt with carefully. For example, three identical occupational projections going to 1985 with different bases or "jumping off years" of 1974, 1976, and 1977, can yield wholly different interpretations. In 1975, the number of blue-collar workers dropped by 2 million. Projections from the bottom of that drop to 1985 show a certain rate of increase for blue-collar workers from 1976. However, if the 1977 base for projection is used, it shows that the number of workers does not rise as drastically; the rate of increase to 1985 is quite different.

Relationships such as these must be carefully interpreted. I would warn against using these numbers as printed. They may be the best you have, but they are just a guide.

Too much can be read into forecast data and projections. For example, a recent report on projections for health field needs takes a very pessimistic outlook. The same outlook is taken concerning the job market for college graduates.

My own viewpoint differs. First of all, the dynamics of the interchange between supply and demand are underestimated. Second, future changes in the impact of the number of persons entering the labor market are also underestimated. Four very significant numbers will, in my view, dominate the human resource field in the eighties: plus twenty-five, plus ten, minus five, and minus ten. Plus twenty-five is the 25 percent increase in persons entering the labor market during the first half of the seventies—the postwar baby crop. Plus ten is the percentage of increase in the second half of the seventies. The first half of the eighties will show a 5 percent decrease. The second half of the eighties will show another 10 percent decrease. In two decades, the labor market will swing from a plus 25 percent increase to a minus 10 percent decrease in the number of new entrants into the labor market. These numbers will certainly have an impact on labor market conditions.

Question: How, then, can we go out and collect useful data to plan vocational education programs? The studies done in the past have been practically useless. Do you see a movement toward bringing together state employment service personnel and vocational educators to help them understand the figures and apply them correctly to educational planning?

That is a most appropriate question. First, I would ask why you include the employment service personnel as if they were the only component on the other side of the balance sheet of the education/labor market nexus. They are a significant component—they have 1,900 or so labor market analysts around the country—but regrettably, many of their own people are only moderately well trained in dealing with market information, and particularly its application to educational planning.

Let me use an analogy from the medical world to answer the question. Your doctor will not even begin to talk to you until all the relevant data have been collected. My doctor will start by taking a series of x-rays and blood tests. Only when all the information is collected is there something to discuss. We collect data for the same reason as the doctor. When it is all before us, some decisions can be made about how to deal with the system under analysis. Is the medical art further advanced than the art of gathering and interpreting educational data? No, in both cases we have not advanced to such a state of the science that there is a standard technique for interpreting the data and arriving at an appropriate plan of action.

As for your question about what is being done to remedy this, in the last decade there has probably been more movement in the direction of interdigitating the disciplines of these two groups than ever before. For example, state human resource plans and projections are provided with some realization that they do relate to the concerns of educational planning. However, more and better labor market information needs to be applied to these plans. We can start looking at current employment statistics. We can obtain firm data, definite numbers from the unemployment insurance system. We can use these hard numbers as a physician would use the scientific data collected about your system to make a proper diagnosis. Occupational data and occupational projections are not good enough by themselves. What we really need is a linkage between the *disciplines* of statisticians, economists, and educators. We need a new languge that translates data for application for specific use. That would help planning in vocational-educational programs, as well as in other fields. Incidentally, this is going to be one of the major purposes of the Center for Labor and Urban Studies at the City University of New York.

Question: Would it be more fruitful if we were to try to search for a different Holy Grail—for new and emerging *skills* rather than new and emerging occupations?

My answer to that is yes. In the eighties, we are going to be relieved of the pressure of coping with human resource growth. It will give us the needed respite to focus on this topic. I suspect we will have to search for new skill requirements by examining skill changes in occupations and technologies rather than looking at employment figures. In reference to this, I would like to discuss one of my pet peeves from the sixties and seventies. During that period, everyone was referring to a skill gap. They were saying that the reason we had high unemployment was because people did not have the necessary skills to be employed. This, in my view, was nonsense. During this period we were overwhelmed with people, and we were not developing enough jobs in the economy. So no matter what skills you provided people with, they would not be employed once they acquired them because there were not enough jobs. The skill gap concept was also a myth in the sense that workers with similar skills are often paid at different levels. For example, an automobile worker is really no more skilled than a garment worker. Yet an automobile worker earns around $10.00 an hour, and garment

workers can barely earn enough in America to provide for their families in a large city. Why is this? Because the garment industry has had very little technological development. They still push the same push carts on Seventh Avenue in New York as they did when I went to work there thirty-five years ago. So the skill we expect the workers to learn must first be found in the processes of the occupation. We must focus on that grail of changing process, such as the tools used, and the way the work flows, and not so much on changing occupations.

Question: You said the unemployment problem will probably be eased by changes in demographics. What will be the impact of productivity and supply and demand factors on employment opportunities in the eighties? It seems as if you are saying that with the increase in aggregate demand, productivity will be restored naturally, and the only thing employers will need to do is provide skill training.

I said, just before beginning this talk, that every time I talk about inflation and productivity, I get a helpless feeling because I am talking in such simple terms about such complicated matters. Stating it simply, however, a lagging aggregate demand has always played an important role in a sluggish economy.

Let me refer back to the postwar baby crop. In the next ten or fifteen years, the people born during this period are going to be passing through the prime years of life. They will be in the thirty-three to fifty-year-old age group. This is a period of family formation, despite all the talk about the break-up of traditional family relationships. With family formation will come an enormous pressure for housing. The demand is going to be there, so the supply will have to go up as well.

Look at some relevant statistics. Do you know what happened in 1979 in this country? We had a near record number of marriages. It was at a higher level than any point since 1946. With this increase of marriages will come an increase in births. We will therefore be seeing an upturn in all those industries that relate to young people. If you want a prediction of the coming shortages, we will have a shortage of first grade teachers five years from now. This will be the effect of supply and demand.

Now if you look at the rate of inflation and at productivity data, it is easy to conclude that there must be some relationship between them, especially since we have had five or six straight quarters of productivity declines and inflation continues to rise. What all this means in terms of jobs and vocational/occupational training is this. With the decline in human resources, employers are going to be forced to develop workers' skills. This will be different from our skill development efforts in the sixties, which were derailed because they were taking place in a period of labor surplus. Skills development in a period of labor shortage will be very critical, because we will have to find ways to use our labor force more productively. Only in this way can we pay higher wages without increasing unit labor costs. These unit labor costs are, after all, what pushes up inflation. For example, if you pay a person who is producing 100 widgets $100, the unit labor cost per widget is $1.00. If you double that person's wages to $200 but increase the productivity so that 300 widgets are being produced, the unit labor cost goes down to $.67. Wages have doubled; unit labor cost has gone down a third. Of course this is very easy to do on paper, but very hard to accomplish in the work place and the economy, especially in the service occupations that have become so important. We must concentrate on productivity in the eighties.

Question: Are you suggesting that employers are resistant to vocational education and job development programs?

Many employers tend to resist new approaches. This is not true of all employers, only some. An example comes to mind. When the National Association for Businessmen started its Jobs program, the Chrysler Corporation participated. Six months later, the automobile industry started to go downhill and the first one to get rid of its Jobs program was Chrysler. In a period of pressure and overload, those wanting business and industry to adopt job development programs will not get the warmest of all responses. In the eighties, when employers *need* human resources, when there are labor *shortages,* employers will be generally more receptive to vocational education.

Before the most recent recession, I was referring to the new decade as the "elegant eighties." With the advent of the current recession, it does appear that the eighties are going to be a little late in getting here. In fact, the seventies will probably go down in history as the long decade, since the current conditions will stretch to about 1984. Sometime around the 1984 mark, however, we will finally begin to move demographically into the elegant eighties. I hope to be around, and I hope you will invite me back in 1990.

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