

The Manager Of Tomorrow

HAROLD J. LEAVITT

I'd like to break an academic tradition in this talk by trying to stick to the subject matter. So instead of beginning with an apology for not doing what I am supposed to, I'll apologize for doing what I am supposed to, because that is something you probably don't expect from a college professor.

The letter inviting me to participate in this session asked essentially two questions: First, it asked, "What impact will technological change have on the job responsibility of tomorrow's line manager?" And second, "What role, if any, should management development play in developing tomorrow's manager?"

The hardest part is deciding what we mean by "Tomorrow," or at least deciding how far ahead one ought to try to look. But if we stay modest on that one and

talk about the next 10 or 15 years, then the other part of the questions seems fairly clear.

To both questions, I think the key answer is "eggheadism." That is, the job responsibilities of the line manager will change in a direction that will require him to be much more of an "egghead" than he is now. One major management development problem of the near future will be the problem of teaching people to be more effective eggheads without losing some other qualities already possessed.

I'd better quickly say what I mean by eggheadism. Essentially, I mean a more analytic background to decisions, and less "seat of the pants" feeling and judgment about what the right answer is; relatively more analyzing to guessing in the manager's job ratio, relatively

HAROLD J. LEAVITT is Professor of Industrial Administration and Psychology in the Graduate School of Industrial Administration at Carnegie Institute of Technology. He has served as Consultant to the European Productivity Agency and was Vice President of Nejelski & Company. He is author of "Managerial Psychology" (University of Chicago Press).

more use of knowledge, less of experience. I do not mean just mathematics. I mean more respect for and more ability to use analytic tools in solving problems — both human problems and non-human problems. All this amounts to, then, is the notion that management will become more scientific and less arty in the next couple of decades. Though this is no longer a new notion to most of us it is apt to be a moderately unpleasant notion because when we think of science we have to think of long and arduous training. When we think of art we at least like to think of natural impulsive behavior, for which long and laborious training is not really necessary. Any good artist will quickly point out that there is hard work there, too, but at least in our mythology it is pleasant for most of us to think of our management abilities as unique and individualistic and “natural.” We like to think that good managers are born, not trained.

It's probably useful to say a little bit about why eggheadism will become a more important base for managerial decision making, although the reasons are probably pretty clear to all of us by now. The biggest reason is simply that man's tools and man's knowledge about decision processes and about organization and about information are improving very rapidly. They are improving mostly because of the work of non-managers: engineers, mathematicians, psychologists, systems people, and other long hairs.

But the fact that most of the basic stuff is happening out there rather than within the industrial complex cannot be a source of comfort to the businessman. There are always a few

damn fool competitors who keep their eyes open on what's going on out there and grab off some good ideas which can be applied; and then before we know it the oldfashioned free-enterprise competitive force requires our company to start playing the same game whether they like it or not. So we have to get a computer too.

Moreover, one thing is just as clear is that people in business can no longer successfully act like they live in a different world from people in science or academia. A lot of the marriages between businessmen and eggheads have been shotgun marriages, but they are becoming very, very frequent. A lot of the talk prevalent ten years ago about academic longhairs and wild-eyed Ph.D.'s has been toned down considerably. In fact one of the responsibilities of the line manager of the future will probably be to know academics just as well as he knows customers or competitors or community leaders.

In effect, then, it's my argument that one large group of the changes that will take place in the next fifteen or twenty years will be stimulated primarily by events outside of management in the realm of science and technology. And that the impact of these developments will be to push the manager toward becoming something more of a scientist and technologist than he has characteristically had to be.

Now one may argue that science and technology have come into business before, and that the wise manager has been able to bring them into his firm in their applied forms without necessarily changing himself or his manner of managing. He has hired good tech-

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nicians and good scientists, and put them to work solving the problems he dictates. He has not in any sense had to become very much of a scientist himself.

I think that is true, but I think that this time it will be different. Some of my colleagues disagree rather strenuously on this one, but it seems to me that the kind of technology that will have the biggest impact in the next few years is somewhat different than what has come before.

The technology of the last half century that has applied to business has been of two general types: First there has been the technology that bears upon products. That kind has led to the entrance of the chemists and physicists and metallurgists into the industrial firm. In that case, the expert moved in and applied his knowledge to developing new or better goods or services for the firm. He was devising new ways of making things or new things to make. He was not devising new ways to organize or new ways to make decisions.

The other major kind of technology was really the technology of industrial engineering. That kind really did have impact on organization and decision making, but mostly at lower levels. When we got ourselves into time and motion study, and into studies of plant layout and production scheduling and such, we did affect the ways that the line manager operated, but mostly in the limited area of production and mostly in ways that had their biggest effect on hourly workers. Nevertheless Industrial Engineering did cause a kind of revolution in the responsibilities of, let's say, a production superintendent.

The pre-Taylor and post-Taylor generations were probably quite different. In the generation afterwards production superintendents had to know a good deal about industrial engineering techniques and possibilities that they didn't have to know before.

But the top managements of most firms were able to adopt industrial engineering methods without changing their own managerial behavior very much.

But the technology that's moving in right now seems to me to be much more revolutionary. For it is in large part usable as a technology for decision making. Given a large computer in this firm, for example, the manager has a multi-purpose tool that could help him to make decisions in almost any realm. It could help him, presumably, to make decisions about inventorying and warehousing, about marketing and selling, about production scheduling and purchasing, and even about matters of personnel and promotion. It can be thought of, in effect, as a major adjunct to his own brain. A kind of adjunct which seems to me to be quite different from anything that existed before. More importantly, if the tools are available for solving a problem systematically, there will no longer exist a reasonable excuse for solving them judgmentally or intuitively. If data are cheap and easy, the man who knows how to analyze them has a strong comparative advantage.

The Manager's Responsibilities

But to get more specific, let's talk about some more specific effects one

might expect on the job responsibilities of the line manager.

1. The first one is one that I have already implied, that the line manager will be more of a staff manager in the future than he is now. We usually think of staff people as the analysts, the thinkers, the putter-togethers of information, especially of long-term information. The line manager, on the other hand, is the actor, the decision maker, the quick thinker. My guess is that these distinctions will break down even further than they have in the past. So that thinking about and analyzing complex information both about short-run and long-run problems will be a much more routine part of the manager's job than it is now.

2. Secondly, I think managers are likely to find themselves making bigger decisions in the future than they do now. By bigger I mean decisions that are apt to have more influence on the outcomes of the company. This notion comes essentially from the notion that more information in organizations is likely to be available in central places in the organization than was available before. As a consequence, the kind of picture I get is of more big decisions, fewer scattered interdependent but not critical decisions.

We are seeing something like that already at lower managerial levels.

In some plants that are being automated, one of the outcomes is that the people running the automated operations now have larger and more complex sets of responsibilities, and their decisions have wider direct implications for the firm. The individual running large sub-parts of automated power

plants for example, has an awful lot of control over some awfully big and significant equipment. As a result, he is apt to have a paradoxical mixture of feelings. On the one hand, he is more responsible, more influential, more powerful. On the other hand, he is burdened with a ponderous and almost frightening load.

One cannot simply say that the psychological pressures upon him are greater or less than they were before, only that they are different. It is a more challenging, more fulfilling kind of decision making than the more routine, simpler kinds of things he did before. But it is also a more worrisome, more burdensome kind of situation than he had before. And from the point of view of the people who select or appoint him, their decision of which man to place on the job becomes equally more difficult and critical.

3. There is a third side to this issue, too. As more information on which to base decisions becomes available, and as it is more effectively digested with the help of modern methods, not only can decisions be made at different locations and can decisions of larger sizes be made intelligently, but the outcomes of decisions become more quickly and more accurately known. So managers in the future will learn faster than present day managers.

Part of the informational revolution we are undergoing is a revolution in the kind of feedback that is available to managers about the outcomes of their own decisions. The manager, and lots of other people too, are more likely to know more quickly whether or not the decision he made yesterday was indeed

a good one. To a surprising extent, such feedback has not been available for large classes of decisions in industry. Marketing and advertising decisions are a good example. And this absence of clear feedback has not only created problems and slowed down learning, but it has also provided protection for the decision maker. Because it was not obvious whether or not his decision was right, it was also not obvious whether or not he has done a bad job or a good job. Judgments had to be made of him rather than of the decisions. This amounts to saying that the manager of tomorrow is more likely to be in a clear and bright spotlight more of the time. When he strikes out, it will be easier to know that he has struck out. In a great many situations now, we never do know because of the obfuscating occurrences between the decision and the knowledge of its effects.

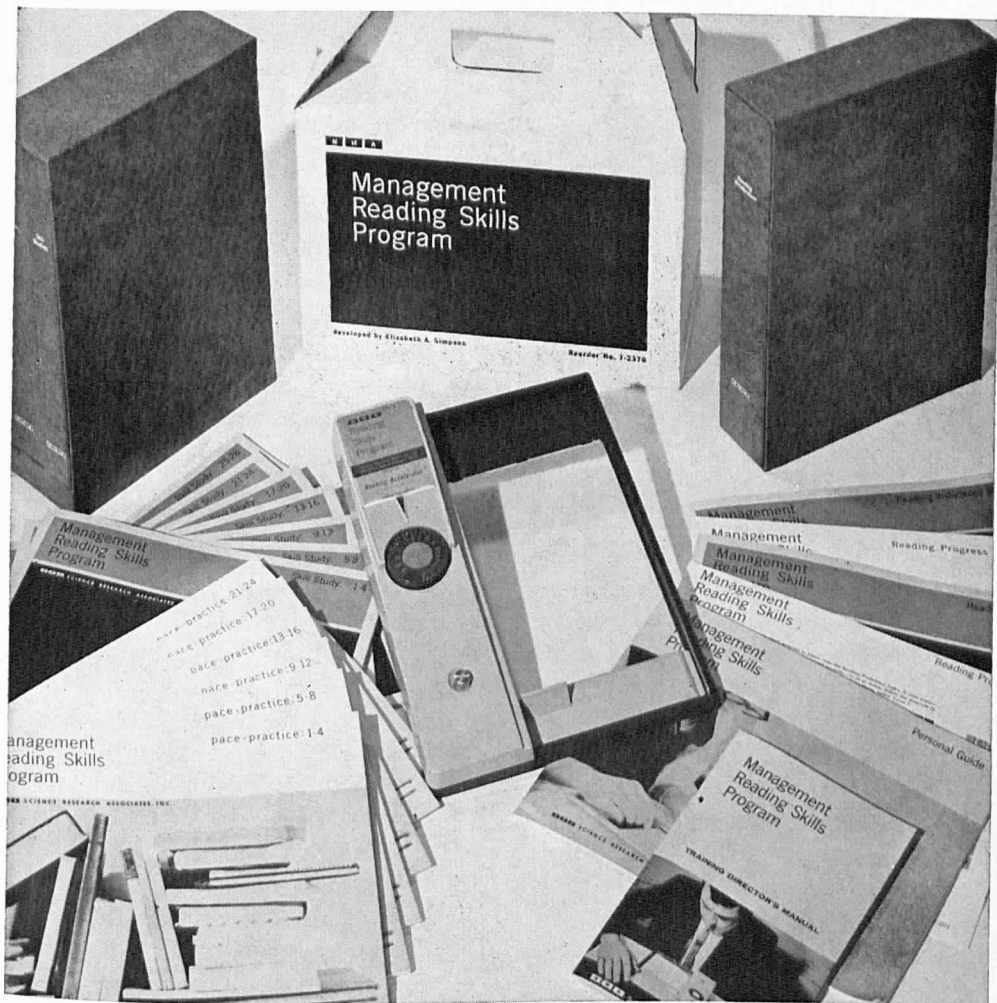
But the brighter side is the learning side. If we can discover the relationship between what we do and what happens, then, and only then, we can learn.

4. There is a fourth kind of major effect we can expect, but one that is harder to describe. It has to do with the extent to which the manager of tomorrow will have to make continuous rather than disparate decisions about his own organization. We have kind of assumed that the insides of organizations are static. Once we set up the organizational form, we expect it to last for a good long time. So-and-so reports to so-and-so, and so-and-so reports to somebody else. You might go over his organization chart once a year or there might be some major reorganization of the company in a crisis, but it isn't a day-to-day affair.

Of course, even today's manager has lots of day-to-day decisions to make about people within his organization. He worries about management development and about having the best people in the right jobs, and so on. But, in effect, one can think of the manager as trying to make decisions about people that will optimize his use of his present existing, fixed, organization form. The thing we can expect in the future, in my opinion, is a lot more fluidity in our organizations. Indeed the whole definition of what we mean by an organization is already changing rapidly and will change more. A decade or two ago, if I asked an executive to define what he meant by an organization, I think he would have answered in terms of the location of different responsibilities within his management team. He would have talked about subdivisions of jobs and the allocation of people to those jobs. In effect, he would have talked mostly about structure; about who has authority over whom and who has responsibility for what, and about who can communicate directly with whom and what the channels are by which A could communicate with C. These are structural thoughts.

More recently, we have added into these structural notions a lot more social relations and human relations kinds of ideas. So that some of us now when asked organizational questions think first in terms of human beings and their interrelationships, and we talk about participation and creativity and so on.

I think that recent technology has taught us that we oughtn't to consider organizations just as structures of com-



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munication and authority, nor just as human systems in which our task is to maximize human productivity; but rather as systems with those two characteristics and also with a third, technology. In effect, the manager of the future will, when asked about his organization, immediately call up visions of the relationship between structure and people and tools to get jobs done. And he will recognize that as soon as he tickles any one of these variables he will be affecting all the others. That is he will realize that if he changes people, (say Ph.D. researchers) this may have some real impact on what happens to his communications system and it may have some real impact on the ways in which he can use his technology. Conversely, if he brings in some new tools — say a computer — he will soon find that his structure may have to change if he is to get full use of the computer, may change his accounting system or the location of certain responsibilities or the distribution of authority, etc., and that also he may also have to change people — either the numbers of people involved, or the kinds of people involved, or the statuses and social relations of some of the people involved. And so on, all the way around the system. He will begin to think of organizations more and more not as static structures, not as primarily human phenomena, but as multi-variate systems involving human beings, structural properties, and technological tools, which must be kept in balance with one another to get particular jobs done.

The manager of tomorrow is going to look at the job to be done and then at his people, his tools and his existing structure; and any time there are

changes in any one of these he is going to have to make decisions about each of the others.

5. The outcome will be, I think, not only much more fluidity in what we now call organization, and much less concern about who reports to whom in any permanent sense, but also something else: much more differentiation. By differentiation, I mean much more variation in the kinds of sub-organizations one can expect to find in any given moment in time within a larger organization. I think we are breaking through the old notion that somehow there is a single best organizational shape. We have finally discovered that it was naive to think that we could set up an ideal model of an organization which would work for any task, any people, any tools, any time. Yet that is precisely what we have tried to do with our organization charts, our definitions of responsibility and authority, our job descriptions, and so on. My guess is that what is going to turn out to be most sensible is that we look first at the job and then at the available tools and at the available people and we then design organizational forms appropriate to those three interacting conditions. And that when any of those conditions changes we change our organizational form accordingly.

And since within large organizations, different parts of the organization do different jobs at different times, then it seems to me reasonable to expect that some parts of the organization are going to be designed very differently from other parts.

I expect to see research organized one way (most of the time), and manufac-

turing organized another (most of the time) and so on down the line. We should, therefore, expect to see people treated quite differently, and, people trained quite differently depending on where they sit in the overall company. There will probably be more fluidity and flexibility in areas like research and in higher levels of management, and more consistency in organizational form at production and relatively routine programmed levels. And if that's the case, I suspect the training gap between lower and higher levels will become a bigger rather than a smaller gap in future years.

The Role of Management Development

Let me turn quickly now to the second major question that was raised, the question of the role of management development.

1. If the general trend toward eggheadism is indeed true, and if the manager is going to have to make more analytic and more worrisome decisions than he made in the past; and if he is going to have to balance his organization as problems change or technology changes, then I think the first thing we can expect to see is that there will be more emphasis on educating and training him than there has ever been in the past. I think most of the emphasis, initially at least, will take place outside the firm (as it is already doing). That is, I expect that firms will be hiring finished eggheads rather than making their own. And that, conversely, the young man who wants to make good in the firm and is smart will stay out-

side of it longer than he has in the past. He won't just get a high school diploma, nor even just a bachelor's degree; but will probably stay on for a master's or doctorate in some appropriate analytic field, either business administration in its new form or systems analysis or some such appropriate area. Please note that I am not specifying math or physics or accounting. I don't think the manager of the future will, in our present understanding of the term, be any more of a specialist in that sense than he is today. He will still have to deal with a variety of problems and a variety of decisions. If he is a specialist, he will be a specialist at problem solving rather than a specialist in mathematics or chemistry or market research. He will be some kind of general analyst. Business schools are beginning to develop such analytic generalists. I might say immodestly under the leadership of Carnegie Tech.

2. A second problem that will arise is one that lots of us have kidded about, but it really may soon be upon us. It is the problem of obsolescence of the manager within his own career span. If, indeed, management will be more of a science than an art, and if it will depend more on the education and learning of the manager and less on his own guts, then everything suggests that, he will wear out fast. He will not be competitive with younger men after a relatively short time.

The reason is simple. It is that knowledge is compounding at a rapid rate. Even in such doubtful sciences as psychology, a ten-year old Ph.D. is likely to be pretty much overpowered by a good new Ph.D. And that ten years is

shortening by leaps and bounds. In a sense, this has always been a problem in management as in any other field. Us oldsters have always looked at the young men and seen in them some strengths and capacities that we didn't have. But those strengths and capacities have always been more than overbalanced by the experience and knowhow that we have developed within the firm. Now the relative value of more knowledge to the value of experience is changing. A little new knowledge may be worth a lot of experience.

If this projection is a fair one, one can see several alternatives. Either we push out the old managers more rapidly and push young ones in; or we try to retrain our managers and keep them up to date or we change our notions almost when a man should reach his peak of responsibility — pulling it back 15 years. Either one is possible, and I suspect that economic rather than humanistic considerations will govern. The costs of each is quite high. If our managers become obsolescent after ten years instead of after twenty or thirty, then we have to find something to do with them, or pay them more during their ten years in order to attract and hold them.

But if we choose to educate them, let's remember that the job is a lot more complex than the kind of retraining we have talked about before. We are really talking about re-educating them. We should be talking not about a minimal of an investment in six weeks in a university appreciation program, nor a refresher of three or four weeks in some specialized field, but about investment and reinvestment and reinvestment in

some much longer periods of educational effort on the order of one year in every five or six years.

Some firms have already begun to worry about this, by trying to set up post-graduate courses within the firm. But mostly we have not moved very fast in that direction. We have really not faced up to the dirty business of taking a forty-year old who is not a scientist and trying to teach him science. We have run "appreciation" courses in operations research or computer programming, but most of us have not taken as seriously the notion that at age forty we had better go out and really learn modern mathematics, and really learn something about operations research, and really learn something about modern psychology. It is hard and laborious and sweaty and time consuming.

Most of us are apt to feel it is almost a little unfair to expect that we should really learn brand new things at our age. We are apt to feel that we have earned the right to stop learning. Perhaps we have. But if we have we will pay for that right by giving way earlier to younger men.

I don't think we can ride it out that way. I think managers of this generation, like most scientists, are going to have to face up to the fact that they will have to get themselves re-educated in a serious, laborious sense every few years. I don't know how we are going to get managers to accept that notion, but as far as I am concerned it is the biggest problem of management development of the next decade. The problem is not to train new people nearly so much as it is to re-educate and re-re-educate re-re-

re-educate people coming into management now.

The personnel profession could be the prime movers, but I'll bet they won't take advantage of the opportunity.

Probably the old forces of competition will be the prime movers. Joe Blow, down the street, will innovate in this area. He will select people who are willing to be re-educated and he will invest in it; and then the rest of us including educators and management developers, will slowly get up off our tails and reluctantly admit that in this brave new world even old dogs just have to learn new tricks.

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