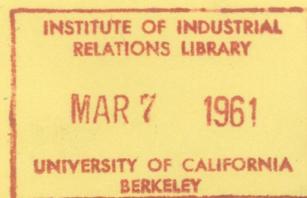


**RESEARCH DEVELOPMENTS
IN
PERSONNEL MANAGEMENT**

Institute of Industrial Relations (L.A.)
University of California
Los Angeles
1960



See Errata

RESEARCH DEVELOPMENTS
IN
PERSONNEL MANAGEMENT

Reports on recent research in the social and behavioral
sciences pertinent to the field of personnel administration

(Proceedings of the Third Conference, held on the Campus of
the University of California, Los Angeles, February 3-4, 1960)

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ERRATA

<u>Page</u>	<u>Line</u>	
3	3	"employeer" should read "employer"
9	1	"Schlicter" should read "Slichter"
10	3	"even total" should read "even in total"
22	5	"resort to strikes, and the things of the past" should read "resort to strikes, violence, and the things of the past"
25	20	"then" should read "them"
44	5	"change, I suspect" should read "change, and I suspect"
46	17	"There other cases" should read "There are other cases"
48	1	"there a wide vaierty" should read "there is a wide variety"
72	14	"now" should read "not"
97	8	"has" should read "had"
97	13	"early in 1950's" should read "early 1950's"
101	9	"Not only are their wide" should read "Not only are there wide"
104	1	"final on highest" should read "final or highest"
110	17	"expresses" should read "expressed"
118	11	"There two things" should read "There are two things"
120	11	"individuals studies" should read "individuals studied"
125	24-25	"Wiley directly to Smith ... for the spigot" should read "Wiley went directly to Smith ... for a spigot"
137	20	"not" should read "now"
138	25	"delegating as" should read "delegating as much"
151	4-5	"confidence managers" should read "confidence if managers"

F O R E W O R D

The improvement of policies and methods in personnel management inevitably depends upon research, whether it be carried on by company, government agency, or university. And, like other aspects of management, the administration of employer-employee relationships becomes more productive as the field's own distinct body of knowledge grows.

Holding this premise, the sponsors of the Conference on Research Developments in Personnel Management have sought to achieve three aims in presenting this event:

1. To accelerate the application of the fruits of research by making available to personnel and industrial relations professionals at one convenient time and place reports on some of the most significant studies currently being conducted.
2. To promote the performance of research by organizations of all types.
3. To provide the leaders and members of research projects a vehicle for making known results of their work.

On the pages which follow are the presentations made at the Third Conference on Research Developments in Personnel Management, held at the University of California, Los Angeles, February 3 and 4, 1960.

Benjamin Aaron, Director
Institute of Industrial Relations

C O N T E N T S

THE ROLE OF RESEARCH IN THE PROGRESS OF PERSONNEL MANAGEMENT. . . .	1
<u>Orme W. Phelps</u> , Professor of Industrial Relations, Claremont Men's College	
THE IMPACT OF TECHNOLOGICAL CHANGE: THE AGREEMENT IN THE PACIFIC COAST LONGSHORE INDUSTRY	19
<u>Paul St. Sure</u> , President, Pacific Maritime Association	
THE IMPACT OF TECHNOLOGICAL CHANGE ON WAGE AND SALARY ADMINISTRATION.	30
<u>R. Thayne Robson</u> , Acting Assistant Professor of Economics, University of California, Los Angeles	
HOW UNIONS LOOK AT TECHNOLOGICAL DISPLACEMENT	42
<u>Melvin Rothbaum</u> , Assistant Professor of Economics, University of California, Los Angeles	
TRENDS IN PROFESSIONAL EDUCATION FOR MANAGEMENT	51
<u>Thomas H. Carroll</u> , Vice President, Ford Foundation	
A NEW LOOK AT STAFF-LINE RELATIONS.	71
<u>William F. Whyte</u> , Director, Social Science Research Center, Cornell University	
THE AGING WORKER AND THE PENSION PROBLEM	86
<u>Margaret S. Gordon</u> , Associate Director, Institute of Industrial Relations, University of California, Berkeley	
HOW TO BUILD PRODUCTIVE WORK TEAMS.	105
<u>William C. Schutz</u> , Lecturer and Research Educator, School of Education, University of California, Berkeley	
AN ACTION RESEARCH PROGRAM FOR THE PERSONNEL MAN	120
<u>William F. Whyte</u>	
THE FUTURE OF PERSONNEL MANAGEMENT.	145
<u>Dale Yoder</u> , Professor of Industrial Relations, Stanford University	

THE ROLE OF RESEARCH IN THE PROGRESS OF PERSONNEL MANAGEMENT

Orme W. Phelps

I have seldom been asked to discuss a topic which can be as succinctly and at the same time as adequately disposed of. I can do it with a word. The role of research in the progress of personnel management is indispensable. I will go further. If research and the application of its results are not made primary with practitioners as well as scholars, the art of personnel management will be stultified (that is, dishonored, made to look foolish--and be foolish) and any possibility of attainment of professional status by the members of the trade will disappear. Each branch of the great liberal pursuits which have contributed to the rise of civilization--the law, medicine, science, literature, the creative arts--rests on a huge and ever-growing foundation of self-examination, criticism, restatement of objectives, testing of results, controversy, and--eventually, to some degree at least--synthesis. No human activity worthy of being regarded as a calling can escape this responsibility. The responsibility may not be met. There are plenty of cases on record where the members of an occupation have avoided, prostituted, or simply overlooked the intellectual challenge afforded by their work. This challenge may not appeal to personnel managers or their staffs or the people who define their duties. That is a question you and your associates will have to answer, not I. However, if the answer is negative, personnel management will be a way of making a living but not a profession.

I shall therefore phrase the basic question this morning in reverse terms: Is personnel management worthy of research? Or am I

unduly dignifying a relatively minor staff function in the organized sectors of society by comparing it with the great liberal professions whose achievements are studied in all the principal centers of learning and whose traditions of service regularly attract a dedicated following of talented people? I call to your attention that in the not-so-distant past some parts of the great liberal professions were neither great, liberal, nor professions. Personnel management is a relative newcomer to the occupational scene. Eventually, it will probably command the same respect from society that its members demand of each other and themselves. I therefore suggest that the ultimate criteria will be the nature of the functions performed and the qualities of mind and character required.

Is personnel management worthy of research? I pose four tests: First, are the matters dealt with sufficiently important to society to justify the prolonged attention of first-rate minds? Second, are these matters too complex and intricate for off-the-cuff, rule-of-thumb solutions? Third, do the long-run prospects indicate an intensification of the importance of personnel problems and an increase in their complexity, or the reverse? And finally, but not necessarily last in importance, are the standards of training, the conditions at entrance, the work environment, and the prospects of ultimate reward such that really high-grade talent will enter the field?

In a society as literate as ours, much depends on the meaning of words. A rose by any other name may smell as sweet, but the term "personnel management" as it is frequently and vulgarly used is one thing, whereas defined differently it is quite another. I find myself

constitutionally unable to accept the idea of personnel management as a limited group of miscellaneous functions still unilaterally determined by the employeer--a concept which has grown up in certain sections of the literature and has also been embodied widely in corporate organization during the past 25 years. (At times, this semantical game has taken some strange twists. I can refer you, for example, to one large corporation, the leading producer in an important industry, in which the "personnel department" handles labor relations--negotiation, interpretation, and administration of the agreement with the union--and the "industrial relations division" concerns itself with noncontractual employee services). As an interested observer of the labor market for roughly a quarter of a century, I can understand the natural history of this development, but the logic of its continuance escapes me. I would hope that a part of the role of research into personnel management would be to bring about a unification of the field--a synthesis, if you will, of the findings and interrelationships of "personnel management" (defined narrowly), industrial relations, human relations in industry, and any other allied disciplines which bear directly on the basic problem of the allocation and use of manpower resources.

My own view of the personnel function is as broad and as deep as the implications of the program you have in your hands. To begin with, it includes the management of people wherever organized activity occurs--in public agencies, private firms, and nonprofit institutions. (Some of the latter, parenthetically, to wit, educational institutions, where my own personal experience is concen-

trated, are as much in need of research and rationalization as labor-management relations or the civil service. I trust that for your own enjoyment you have or will read Caplow and McGee's The Academic Marketplace. You may not find it enlightening, at least in the customary sense of "making clear or simple," but it is a rather captivating partial description of the way one segment of the labor market works.)

To continue, I regard the personnel function as applying at all levels and in all divisions of the organization: in the shop, in the office, to technical, supervisory, professional, and executive personnel; within the bargaining unit as well as outside it; under formal civil service as well as under patronage (and there are some surprises to be discovered in this area); under so-called "academic freedom and tenure" as well as under the rigid rules of personal conduct and decorum to be found in the armed services. The structuring of the markets may differ, the scope and character of the services may change, but the basic problem of attracting and holding qualified people and providing them with the tasks, equipment, and personal satisfactions necessary to efficient performance, is still there. It may be as critical with engineers as in the secretarial pool, on the Far Eastern desk in the State Department as in the shop at Bethlehem Steel.

This central question of the complex of values necessary to the proper allocation and use of manpower in a system where the career choices are essentially voluntary is the key referent of the personnel function in America. It seems to me to be the unifying

principle which may be used to bring into focus all the dimensions of the huge, sprawling, variegated aggregation of 70-odd million individuals who make up the labor force, each of whom--like you and me--inhabits his own private universe of hopes, fears, aspirations, and frustrations, and who tries, with greater or less success, to contribute his bit to the structuring of his own personal segment of the labor market in order to augment his security, or maintain his mobility, or raise the horizon of his opportunity, or perhaps all three at once. It is a fascinating and exciting conception; it is also disorderly, confusing, bewildering; and at times, it is disturbing and depressing. Nobody understands the labor market in its entirety, and I know of nobody who is completely satisfied with the way it works. The criticisms range from Erich Fromm's dismissal of the whole business as a mechanism for manipulating the "alienated mass man, headed in the same direction of human automation as the whole society" to very specific and pointed charges of individual or group ignorance, negligence, selfishness, and corruption. It is surely one of the major roles of research into personnel management to try to make sense of the mass of as yet uncoordinated data, theory, hypothesis, and value judgments which fill the existing literature and make life difficult for simple-minded instructors whose main job is to help college students find their way around.

One fact we cannot escape: the kind of society we live in--and this includes not just industry, but also government and the private, nonprofit sector of schools, churches, hospitals, and the like--is founded directly on the free labor market. It is a great experiment.

If the market works well, our institutions will function smoothly and efficiently; if it works badly, we will have frustration, conflict, and waste of resources. I can think of few sets of problems more worthy of the combined attention of scholars and practitioners if the general welfare is to be served.

In dealing with the first test--importance--I have made a beginning on the second--complexity. Are these matters too complicated and technical for prima facie solution? Or, to put it the other way around, is the main need for men of good will rather than men of learning? I think we can find proponents for this point of view--quite a few of them, in fact. Of course, the dichotomy is false. The well-filled brain does not necessarily mean an empty heart; I would rather think they go together. The question properly stated is: Is good will enough? Will it serve in the absence of specialized knowledge?

It is now more than 50 years since Frederick Taylor made his celebrated attack on rule-of-thumb management. Today, whether we like it or not, we live in a scientifically managed world. And again whether we like it or not, I think no one can doubt the close relationship between the principles he enunciated and the objective he had in mind: efficiency. The disagreement with Taylor, which arose first from organized labor and was picked up later on by the human relations theorists, did not arise out of his logic but was aimed at the root of his system--his value judgments. The "new look in labor" came from the selection of a different basis for judging employer-employee relations. The new basis was "morale" and the cardinal virtue today is justice; and most of the structuring of the

labor market in the past 50 years has been aimed at a "fair break" for the worker rather than a maximizing of output.. Tick them off: the civil service in public employment; formal and informal tenure systems in nonprofit agencies; job control and work rules in the organized casual trades; seniority rights, the grievance procedure, and the arbitration in industrial employment; and a network of public law, federal, state, and local, prohibiting discrimination, protecting labor organization, providing unemployment compensation and pension rights.

Can the line officer--in industry or government or the university--who is faced with an issue of hiring, discipline, promotion, transfer, compensation, or what have you, rely confidently on his sense of "what is right" in the situation, without professional advice? I say flatly that in wide ranges of employment, embracing the bigger organizations and the most critical occupations, he does so at his peril. In industry, the limiting factors of statute and administrative law, the labor agreement, the grievance settlement, and the arbitration award, are in themselves enough to thwart the memory of the most indefatigable supervisor, no matter how good his intentions or how consistent his homework. Outside the bargaining unit, corporate personnel policy--much of it influenced very directly by what goes on inside the bargaining unit--increases in volume from year to year and grows more technical as time passes. If you include in the supervisor's complex of desirable knowledge the current discoveries and practices in the psychology of human relations, group dynamics, small group behavior, etc., the possibility of error is not just added to, it is multiplied.

What we are witnessing--again, whether we like it or not-- is the progressive transfer of personnel functions from line officers to professional specialists. This has long since become the case in large areas of the public service, sometimes with anything but happy results. It is now occurring in industry--again, not always with completely happy results. The personnel man, whether he is located in a department of personnel or of industrial relations or is a shop steward in the plant or is an arbitrator called in to settle a grievance, is more and more being called upon to assess the situation, accumulate the necessary data, and in fact make the decision as to the correct action to take. In numberless thousands of cases today it is a joint decision, concurred in by representatives of both management and the union. The fact of joint decision merely underscores its technical foundation, in contract and precedent within the plant.

Just about 20 years ago, in a book called Union Policies and Industrial Management, the late Professor Sumner H. Slichter of Harvard University first used the term "industrial jurisprudence." It described the complex of work rules built up by unions to protect their members from competition by unorganized workers, from the introduction of laborsaving machinery, and to rationalize layoff and recall under seniority. That discussion, although not yet of voting age, sounds dated today. But the idea of an "industrial jurisprudence" does not. The accumulated body of classified and indexed arbitration awards published by the Bureau of National Affairs in its Labor Arbitration Reports provides a foundation for a much more binding industrial jurisprudence than anything Professor

Schlichter had in mind when he wrote. We have today a system in which a significant shift of position by a prominent arbitrator may result in a whole new line of reasoning in subsequent disputes of the same type.

I refer you, for example, to Arbitrator Sidney Wolff's rejection of the "good faith" doctrine in contracting-out cases, found in Celanese Corporation of America (14 LA 31, 1950). Only nine months previously, Arbitrator Whitley P. McCoy had reported, in International Harvester Company (12 LA 707, 1949), that "in not a single [decision indexed under subcontracting] has the arbitrator held that in the absence of a specific contract provision restricting the Company's right to subcontract work, there is such a restriction." Nevertheless, Wolff ruled that "the Company does not have the right... by unilateral action and without joint bargaining, to diminish the scope of the bargaining unit by transferring jobs, which under the recognition clause belong to members of the Union, to others outside the unit." The agreement, said he, must be read as a whole, and he quoted with approval Mr. Justice Cardozo:

The law has outgrown its primitive stage of formalism when the precise word was the sovereign talisman, and every slip was fatal. It takes a broader view today. A promise may be lacking, and yet the whole writing may be "instinct with obligation," imperfectly expressed. (222 N.Y. 88, 91)

Labor Arbitration Reports are required reading for anyone who wants to know what is going on in personnel management under the labor agreement. Nevertheless, the awards currently published there are merely the tip of a very large iceberg, most of which is out of sight and unavailable to personnel men or research investigators. Not all

arbitration awards are published, and nobody knows whether the sample is small or large, representative or unrepresentative. However, there is little doubt that, even total, they are a modest percentage of all grievance settlements, which must run into the hundreds of thousands annually throughout the country. This is the great unmapped wilderness of personnel management. For example, I do not know personally of a single detailed study of the grievance experience under a major agreement. Yet this is where "personnel management" under the labor agreement takes place. This is where the contract is spelled out and its clauses translated into job assignments, bumping privileges, schedule preferences, promotional decisions, overtime rulings, disciplinary actions, and the like. I should like to think that it will be a part of the role of research into personnel management to survey this area, among others, classify the data found therein, and publish the results for the benefit of students, scholars, and coworkers in the field.

Can the line officer be expected to assimilate this information, along with other phases of company personnel policy, and make uniform decisions throughout the organization which will stand the scrutiny of the union, arbitrators, and public agencies such as the NLRB? If he can, he will be good, especially if he also has other duties to perform as well. I do not think he can; from my limited observation, he tries to less and less; and the outcome is that decision-making in personnel matters is rapidly becoming the province of the professional specialist.

And what of the future? Here we can do no more than extrapolate present trends, bearing in mind that the most crucial characteristic of the 20th century is the rapidity of social change. The official population prediction for 1980 (20 years away) is 245-260 million (taking the middle two of the Census Bureau's four series, and keeping in mind that all previous postwar estimates of the Bureau have eventually been proved ultraconservative). Pushing this ahead another 20 years, we come upon a population estimate of something like 350 million, give or take a few tens of millions, by the year 2000. Whether for the new century or for the next two decades, this leaves little room for any lessening of the pressure on public facilities (schools, hospitals, governmental agencies, communications networks) or on public budgets. It suggests a continuance into the indefinite future of what I once heard Sir Henry Clay, the British economist, call "the horrors of full employment." Put more prosaically, if present governmental policies are maintained, it means dealing with a tight labor market for some time to come.

In the private sector, few people have had the temerity to prognosticate, except in generalities. One who has is the president of the University of California. In a brief pamphlet entitled "The Prospects for Wages and Hours in 1975," Clark Kerr anticipates that (1) hours of work will be substantially shorter, perhaps a 1700-hour year instead of a 2000-hour year, which means a 33-34 hour week; (2) there will be a major transformation of wage structures (accompanying similar transformations of industrial organization), with skill margins reduced and disagreeable jobs upgraded; (3) real income of

employees will rise faster than ever before; (4) there will continue to be a "mild" inflation; and (5) "these prospective changes will involve some turmoil in the industrial relations arena."

To these forecasts I suggest you add a third, of your own. Will the scope and/or intensity of government intervention into employment matters rise or decline? Public policy decisions, whether by statute, court decision, or administrative regulation, have been at the root of the most important structuring of the labor market in this country. I have watched this take place for the last 25 years (and noted the 12-year wave length for prime federal labor legislation: Wagner Act, 1935; Taft-Hartley Act, 1947; Labor Management Reporting and Disclosure Act, 1959). I have observed that each step in the process carried further than the one before and was accompanied by anguished cries from one side or the other to "go back," and I have yet to see an important relinquishment, either in area or activity.

We come now to the fourth test for the proposition that personnel management is a distinct field of professional specialization worthy of research. Personnel management is done by personnel managers. Under my definition, this includes--and it is part of the difficulty--directors of industrial relations, union representatives at all levels of contract negotiation and administration, arbitrators, mediators, and consultants. It necessarily and unavoidably involves the close collaboration of line officers of every type. The work may be stimulating, the challenge may be stirring, the opportunities for technical virtuosity may be everywhere;

but if the practitioners themselves are unconcerned with implications or with frames of reference, if they are under no compulsion to fit their activity into the great drama of human society, then research in personnel management will be unrewarding and sterile--as sterile, for example, as I think some of it is at present--and no one will suffer the consequences more than those so engaged. The question then is: Will the people employed in personnel work measure up? They will if, first, standards of theoretical (pre-employment) training are made uniform, rigorous, and thorough; second, entrance requirements are carefully watched and strictly enforced; third, a research approach is not only tolerated but encouraged; and fourth, the long-run possibilities in terms of self-respect and community recognition are adequate.

Are the standards of preparation adequate? Cast your mind's eye quickly over the pre-practice requirements of doctors, lawyers, engineers, CPA's, even nurses and laboratory technicians. Does personnel management have even as rigorous standards of apprenticeship as the bricklayers' union? I suggest that until it does, it will not be regarded widely as a skilled trade, nor should it be. There used to be--and I suppose still is--a tendency for practical people to decry both theoretical training and formal apprenticeships, the one as a period of visionary stargazing with a minimum of "usefulness" to the student and the other as more a means of excluding surplus journeymen from the trade than of assuring competence. As one who has served his apprenticeship (not in bricklaying, but in academic life), I say this is error. At least, it is error if

what is desired is a serious commitment to a lifetime pursuit which has stood the test of reflection and self-doubt. It is in the period of study and preparation that the would-be professional frames his conception of the field in which he plans to work (and study), develops his theoretical apparatus, and fits the postulates of his material into his own personal cosmology. If he is properly directed, he will read widely in the research literature of the field, and his conceptions of what the field offers in terms of intellectual challenge will be set by what he finds. I put the question to you: Upon contact with the treatise literature as you know it--in the current journals, monographs, etc.--will the best minds be drawn into personnel management, or will they turn to more subtle, more taxing, and more promising questions of man vs. man or man vs. the universe? Although indirect, I suspect that we have here one of the foremost roles of research in the progress of personnel management--the positive or invidious selection of potential leaders at a crucial point in the choice of a career.

I pass quickly over the issue of enforcement of entrance requirements to the trade. Nevertheless, they will ultimately be crucial to the quality of personnel admitted. Whether you take your analogy from the Brotherhood of Carpenters or the American Medical Association, the record is clear that no skilled occupational group has been successful either in raising standards of competence or building a tradition of prestige, without close supervision of qualifications establishing the right to work.

However, it is in the work environment itself that the role of research becomes decisive; in my opinion, this is the crucial area for the future. I refer you back to my original proposition. Unless personnel people of all ranks and classifications become research-minded and are able to persuade the line executives with whom they deal to permit and encourage a research approach to personnel problems, they cannot help but stultify themselves, and a great opportunity to contribute to human understanding and organizational effectiveness will be lost.

At this point, it becomes obligatory upon me to indicate what I mean by "research." There are many definitions to choose from. One of the more colorful is the version supplied by James Farrell, author of the Studs Lonigan novels. Farrell said research was "spending \$30,000 to find the location of a house of ill repute that everybody knew was right around the corner all the time." Now, in spite of its facetious character, I think this remark puts its finger on one of the values of research. My own experience in matters of this sort--and I am not now referring to the location of houses of ill repute, but to things that "everybody knows" to be a fact--is that they are often not so at all. To take the Farrell case, upon investigation the object might turn out to be a drugstore or billiard parlor or a perfectly inoffensive roominghouse, the location could very well be not just around the corner but several blocks away, and it might easily turn out that the "everybody" was the speaker alone and did not reflect any general consensus whatever. I submit that almost anyone who has had the job of tracking down

rumor, supposition, or guess (in the investigation of a grievance, say) and distinguishing it from fact will agree with me.

Research, however, is not just problem-solving, important as the latter may be. It is more, and the substantive difference between the two distinguishes the professional man from the nonprofessional. The management of personnel is a broad and eclectic field of activity; it employs a variety of disciplines: psychology, economics, law, statistics, industrial organization, institutional analysis, and many others. Research is possible at all levels and dimensions of the labor market. My definition is therefore broad and general, but specific on three counts. It consists of: any systematic investigation of a problem, within a broader frame of reference than the problem itself, and publication of the results. I place major emphasis on the last point. Publication makes possible the achievement of purpose emphasized in the dictionary definition: "investigation...having for its aim the revision of accepted conclusions, in the light of newly discovered facts." This is enough. If the activity is important, if the means employed and the objectives aimed at are of sufficient subtlety to attract and hold the attention of first-rate minds, and if the practitioners in the field continually test and revise their conclusions in the light of newly discovered facts, professional status is not far off.

One attitude which will inevitably emerge from research activity as postulated above, whether as a condition precedent or as a result, is worth mentioning. It is the quality of "disinter-

estedness," which may be freely translated as "fairness," "impartiality," or "unrelated to personal advantage." This is the characteristic of the professional, and while an ideal not always capable of realization in a world full of controversy and human imperfection, it is a necessary element in all codes of professional ethics. There is a hazard involved. For the personnel worker, who will necessarily be an employee in most cases, it implies a set of standards derived from his technical knowledge and training which may or may not coincide precisely with those of the organization for which he works. This is an occupational hazard of the professional adviser. It is usually outweighed by the long-run prospect of gains to the organization from improvements in morale and gains to the adviser in self-respect and recognition by his associates.

In any event, unless I am badly mistaken, the personnel manager has time working on his side. The trend of developments in the labor market in the recent past and in the foreseeable future seems to me to be capable of but one interpretation: more structuring, greater complexity, constantly increasing public intervention, and the steady accumulation of a body of practice and precedent without knowledge of which the value judgments of employees and the organizations representing them cannot be brought into juxtaposition with the needs of employers, public and private. Personnel management is a very young occupation; it is strictly a 20th century phenomenon. Few areas of activity have expanded more rapidly, more controversially, or under greater pressure. It is

hardly surprising that there are lacking most of the accoutrements of professional status: the honorific title, the sacred writ, the all-powerful professional association, the rigid and limiting entrance qualifications. Nevertheless, the fundamentals are there. How they are made use of is mainly up to the practitioners now occupying the field and the newcomers who are induced to make it a life work. Now and then they will be assisted by scholars who find it an absorbing area for study and teaching. As a marginal member of the latter group, I offer you my best wishes.

THE IMPACT OF TECHNOLOGICAL CHANGE: THE AGREEMENT IN
THE PACIFIC COAST LONGSHORE INDUSTRY

Paul St. Sure

The Pacific Maritime Association is an employer association, having within its membership about 150 steamship companies, both foreign and American flag, stevedoring companies in the various ports of the Pacific Coast from Seattle to San Diego, and terminal operators who likewise are engaged in handling cargo. We have the responsibility as an association of negotiating labor agreements with the International Longshoremen's and Warehousemen's Union, which has jurisdiction over all cargo handling in Pacific Coast ports, as well as with the so-called offshore unions of the Sailors, the Firemen, the Cooks and Stewards, the Masters, Mates and Pilots, the Marine Engineers, and the Radio Operators Association. All these contracts are on a coast-wide basis and cover all maritime operations in the continental Pacific Coast area.

I think that I'm on this program for the purpose of presenting, as the television fellows say, "a case in point," because we have recently negotiated with the International Longshoremen's Union a contract based upon the concept that labor and management will jointly try to find the answers to the impact of mechanization or even automation upon the work force.

This is remarkable not solely from the point of view of the management approach and the union approach but rather because of the long history of conflict in the maritime industry in this area. As you know, for some 25 years the waterfront of the Pacific Coast, and particularly the waterfront of San Francisco, has been the symbol of conflict and

resistance and, in the old days, even bitter and bloody fighting. San Francisco has had its share of bad reputation, I think, largely because the headquarters of the union is in San Francisco and the headquarters of most steamship companies are in San Francisco. But the same atmosphere, the same areas of conflict, have been operative up and down the coast, at least until recently, to the extent of making too many headlines and developing some serious work stoppages.

The earlier employer-union conflict in this field, and particularly the 1934 strike, resulted in the establishment of a rotary hiring system on this coast, the decasualization of longshore labor, the joint dispatch of union men to a job on a ship-by-ship basis, and a system of equalization of earnings for the men who rotate within the so-called pool of registered longshoremen. These, I can assure you, were great innovations at the time they were imposed upon the industry, particularly since, along with the imposition of these conditions by a federal board, the six-hour day was established for longshoremen on this coast.

I mention these things because they are unique in industrial operations so far as I know. Certainly they are unique in the maritime industry and are peculiar to this coast. I think to an even greater degree, they are unique in comparison to the normal operation of a business, such as a factory, a service industry, or a retailing or wholesaling operation.

One of the things, of course, that is unique is that we don't have a work force in the usual sense of the employer having a work force that reports each week or each Monday morning or each day, with some expectation that the same workers will return until they are separated. For every cargo, every ship, we have a different work force out of the rotary hiring

pool. This is carried to the extent that the longshoremen feel that they are working for the Association. Indeed, they have reason to, because they report to a different employer as many as three or four times a week, depending upon the loading of the ship and its departure.

The Association, in order to try to implement this unusual hiring method and procedure, maintains a central pay office. Each week we accumulate the payrolls of the various stevedoring or terminal companies, the time records, with IBM equipment in every port, and we prepare the necessary deductions and the paycheck adjustments. A single paycheck is issued to the longshoreman by the Association whether he has worked for one stevedore or for six, during the course of the one-week pay period.

From the view of the employer group with which the longshoremen deal--and I am stressing that side of the story--we have many diverse interests as well. We represent foreign-flag operators who operate through agents in this country with owners abroad. We represent the offshore subsidized American-flag operators who have government support in their operation by way of a reimbursement of payroll differential as against foreign flag. We represent what is left of the coastwise operators, and there are very few of them, who sail up and down the Pacific Coast only. We represent what we call the noncontiguous domestic trade to Alaska and to Hawaii, and what few ships remain in the so-called intercoastal trade. These people, I can assure you, have varied interests, both competitively as among themselves and as among the different trades by reason of the nature of the operations and the ports at which they call.

All of this was brought together by government direction. I stress that, because this group of employers is not a voluntary association. It

has more the character of an involuntary association, although in later years I think the voluntary character of the group perhaps is emerging despite differences that do occur. The voluntary character of the group is emerging by reason of the need, as an industry, to solve some of our industrial relations problems without resort to strikes, and the things of the past that did no one any good.

The earlier relationships between the unions and the employers were pretty bitter, but I think it's worth noting--and this is frequently forgotten--that the last longshore-maritime strike on the Pacific Coast occurred in 1948. That's rather a long record of peace in an industry of this kind, as contrasted, for example, with the Port of New York. There have been two major longshore strikes on the East Coast in that port in the last six years. With some pride, I call your attention to the relative peace on this coast because I think that you're likely to forget it in thinking back to the days of the conflict in the past.

Now perhaps we could make an exception for the Port of Los Angeles. The Port of Los Angeles has had and still has a continuing problem of endeavoring to get back to a more stable operation in the light of current attitudes because of the carry-over of 20 years of bad practices on the part of both the employer and the union, some of which are pretty hard to eradicate.

So much for that subject, which could take a considerable amount of talking about. Now to come to our more recent negotiations and the approach which has been made in this new contract. I think it should be indicated that for years the longshore contract on this coast has carried a provision which said in effect: The employer has the right to introduce laborsaving

devices and equipment; the union agrees there will be no interference with the introduction of such laborsaving devices or equipment; the employer has the right to determine the number of men who will be employed on a new operation; and, in the first instance, the union has the right to object to the new operation if the introduction of the laborsaving device or method substantially affects the earnings of the longshoremen on the Pacific Coast, in which event the union has a right to grieve and to go to arbitration to determine some method of correcting the maladjustment which followed from the introduction of laborsaving devices.

This was a good, pious kind of a declaration. Actually, the union over the years has been able to directly control the rate of production. Employers have agreed to many restrictive practices which ran completely counter to the declaration I have just cited. The net result was that in the industry there has been little change in the way of laborsaving devices or equipment, and what little has come in has been pretty effectively sabotaged by the union. We did make a switch from certain types of hand-stowed cargo to bulk operation, but we found that one of two things followed: we had no fewer men on the job as a result and we had an added investment in equipment, or the union saw to it in many operations that the tonnage handled per hour was no greater with the mechanization than it had been before. This wasn't true in all instances, but it did have a tendency to slow down the introduction of any laborsaving methods of operation in this rather creakingly archaic industry.

Two or three years ago, it became evident that the pressures of increased costs, the demands of government (because the government has a stake in this industry by way of subsidy), and the demands of shippers

would require that something be done to improve, to make more efficient and consequently less costly, the handling of cargo in the Pacific Coast ports. There was beginning to be discussion of automated ships. There was beginning to be a discussion of more practical things such as containerized cargo. I say more practical because they seem easier to comprehend. I guess automated ships are a possibility and are probably practical too in the future. In any event, there was a continuing underground rumor or ground swell within the industry that things were in prospect which would change, of necessity, the old methods of man-handling and hand-stowing cargo if the industry was going to survive.

In 1956, we discussed with the international officers of the ILWU what some of us foresaw as the future of longshore work and suggested to them that in the foreseeable future the economic pressures on the industry could result in the elimination of dock work to a large measure; in the elimination of a large portion of the hand work in the holds of the ship and the substitution of machinery; in the substitution of large containers for the single packages; and that we felt that something ought to be done about facing up to this problem in connection with our bargaining picture.

The union's first reaction was that we should take a look at the clause in our contract which provided that the Longshoremen could only grieve in the event the introduction of laborsaving machinery affected the total earnings of longshoremen on the Pacific Coast. They said, "This is pretty unrealistic because if a single operator mechanizes his total operation to the point of eliminating several hundred longshoremen, the union would have a very difficult time proving that the elimination of these 100 men had a substantial effect upon the total earnings of the longshoremen in the entire Pacific

Coast area. This would be so difficult to measure, it would be perhaps so minor a thing in the total pooled operation of employment, that you could two-bit us to death. You could put in a little here, a little there, and at no single time would we be able to demonstrate the overall effect".

We agreed with them that we would not interpret the clause as it was written, but would allow them in any individual operation to negotiate or grieve as to the effect of a particular device at a particular location. But we and they very quickly found that this wasn't the answer, because to negotiate a separate condition of employment or a separate method of compensation for a single operation in a single port or a single company would disturb the entire wage relationship of all the rest of the work force as well as the competitive situation between companies. Mind you, always in the background is this rotating pool of workers who are dispatched on the basis of the low man out. The man with the lowest earnings is the first man dispatched to the next job.

So we then began talking generalities and we asked the International Union whether or not it would agree with us that we could realistically begin to plan for a change in operation, increased efficiency, the removal of restrictions, and the introduction of laborsaving devices with assurance that the union wouldn't sabotage then as they have so effectively done in the past. They said, "That's a good question. We'll answer it for you at our next conference. But," they said, "before we get the answer, we have a question to ask of you. If we effectively agree to permit the introduction of laborsaving devices and the removal of restrictions, will you as employers agree that you will negotiate with us for a share of the savings that result to you from the point of view of payroll costs and the removal of men from the work force?"

After a good deal of soul-searching and looking back over our shoulder at the National Association of Manufacturers and others who oppose this type of discussion, we agreed in 1957 that, as a matter of principle, if the union would permit us to introduce laborsaving devices without resistance, we in turn would agree that as the facts became known, as the results became apparent, we would negotiate with the union to find the solution for the problem of displaced manpower.

In 1958, we again discussed the problem. By this time there was a beginning of change in the industry itself with a great deal more discussion about the shape of things to come. The union at that time agreed that the starting point for the ultimate discussion was to measure the things that we had at the present time. This may sound singular, but this industry to this day has no measurement of productivity under its existing operating conditions. But we agreed with the union again as a matter of signed and formal memorandum that there should be a bench-mark measurement made, that we should then develop through the process of bargaining a formula for a new method of compensation.

Our discussions ranged from incentive programs, to severance of people from the industry, to earlier retirement, to a guaranteed annual wage, to the shorter workday, without commitment to any one of these topics. We then undertook to do the first job of making a study of the shape of things as they then were, the good and the bad--both included.

By 1959, the pressures of new operation had become too great to simply continue talking about it without trying to find the solution. Although we were still in agreement (we still are as far as the principles are concerned), the union said, "Too many containers are now appearing on

the docks, too much new equipment is being purchased or is on order or actually in operation, and too many of our men are losing work opportunity. Unless you have an answer, we're going to have trouble."

Well, we didn't have the answer, and we didn't even have the preliminary measurements. After suggesting a number of expedient solutions, no one of which made either the union or the employers happy, we arrived at the very practical but in some quarters greatly criticized solution of saying to the union, "We recognize that something has happened here. We can't measure it yet, nor can you. We also are prepared to reaffirm and make an earnest payment to show our good faith, but we need more time to complete the studies, as do you. Therefore, we are proposing, for the sole purpose of buying additional time, to pay into a fund a total of a million and a half dollars which can be utilized by the union for purposes it sees or deems to be proper. We'll put some restrictions on the thing if you can't deal with it, but this will pay for whatever change has occurred up to now, as well as whatever further change may come in the industry between now and June, 1960."

We both agreed that this is a stopgap adjustment. We need the year, and perhaps more than a year, to complete the studies that are necessary for an end result that makes sense.

Now at the risk of shortening this story too much, in order to avoid intruding upon the time of the others, I can simply tell you that as of now we have engaged in, at long last, a seriously purposed and well implemented research program. It's probably 40 years too late, but it won't be too late to bring about the results that have to be found--the solutions, or the conclusions, or the theory.

Specifically, we were able to borrow from the Department of Labor the services of Dr. Max Kossoris, who is the regional head of the Bureau of Labor Statistics and a well-known man in this field. He is on leave from the Department of Labor for one year, heading up the initial research on measurement data, which is now in the process of being accumulated. In addition to that, the industry has become suddenly so aware of the need for research in this general field of human relations, industrial relations, collective bargaining patterns, and the peculiar problems of the maritime industry on this coast, that we have appropriated the sum of a quarter million dollars a year for the purpose of establishing a continuing research program in this field.

The unusual thing about this is that we appropriated the money before we were quite sure what we were going to research, but we have reached a commitment and that's an important thing, if we measure things in dollar values. We have the money. Now all we have to do is complete the job.

We go into bargaining again next April or May with the union. I doubt that we will be in a position to come up with answers that are satisfactory to them or to us. But we have assurance against industrial conflict on two scores: one, we've nailed down the principles; two, we've agreed that if we can't find the answer, our contract nevertheless has three years to run. We can either reach another expedient solution, we can go to arbitration, or we can find a method of extending the time for study without either side feeling that the other side is in bad faith.

We think we've made, particularly against the background of relationships in this industry, a major forward step that's right; certainly it's

in the field of the discussions that you're going to hear during the next two days in this conference. As I said, I have presented to you a case in point: the kind of thing that in this important field of personnel management or industrial relations, or whatever you choose to call it, requires a great deal more attention than it has been receiving in the past.

THE IMPACT OF TECHNOLOGICAL CHANGE ON WAGE AND SALARY
ADMINISTRATION

R. Thayne Robson

The topic assigned to me today is "The Impact of Technological Change Upon Wage and Salary Administration." At the outset of this discussion of technological change, it is well to reflect upon the impact of rudimentary technology on some aspects of human existence as described in a letter appearing in the Manchester Guardian. It was from a bricklayer in the Barbados to a contracting firm, and the letter goes as follows:

Respected Sir: When I got to the building, I found that the hurricane had knocked some bricks off the top. So I rigged up a beam with a pulley at the top of the building and hoisted up a couple of barrels of brick. When I had finished the building, there was a lot of brick left over. I hoisted the barrel back up again and secured the line at the bottom and then went up and filled the barrel with extra bricks. Then I went to the bottom and cast off the line; unfortunately, the barrel of bricks was heavier than I was and before I knew what was happening, the barrel started down, jerking me off the ground. I decided to hang on and half way up, I met the barrel coming down and received a severe blow on the shoulder. I then continued to the top, banging my head against the beam and getting my finger jammed in the pulley. When the barrel hit the ground, it bursted its bottom, allowing all the bricks to spill out. I was now heavier than the barrel and so started down again at high speed. Halfway down, I met the barrel coming up and received severe injuries to my chin. When I hit the ground, I landed on the bricks, getting several painful cuts from the sharp edges. At this point, I must have left my presence of mind because I let go the line. The barrel then came down, giving me another heavy blow on the head and putting me in the hospital. I respectfully request sick leave.

Hardly a week passes in which we are not reminded that changes in the stock and quality of our modern technology are occurring more frequently and with more far-reaching effects

than at any time in our history. The recognition that these changes are taking place prompts us to wonder about the state of our knowledge regarding the problems created by technological change. Whatever one concludes about the state of our present knowledge on these problems, we know more now than was the case just a few years ago.

There seems to be a general recognition, first, that substantial and continuous improvement in our technology is indispensable to continued economic growth and development; second, that technological changes tend to reshape the environment in which we live and work, thus changing human behavior and institutions; and third, that the changes are of sufficient importance to warrant constant study and review.

Since the end of World War II, a good deal of effort has gone into the study of the impact of technological change upon almost all aspects of employer-employee relations and upon the organization and management of work and workers. The research has been prompted by two considerations: first, concern for the workers, their job opportunities, their skills and adjustment; and second, the realization that the continued success of a great many business firms will depend, in the long run, upon their success in reaping the benefits of technological change. Students of personnel administration have devoted much discussion to such topics as the impact of technological change upon employment opportunity, employee attitudes, unrest in the work place. Much less attention has been devoted to the impact of technological change upon the administration of wages and salaries. This is a little surprising in view of the fact that most experts

on personnel administration repeatedly emphasize the contributions which a good wage and salary program can make to the attainment of maximum worker efficiency and low unit cost. It is often claimed that the wage and salary program can serve to impede or facilitate worker acceptance of technological change, and control to an important degree the benefit the company receives from making technological changes.

A survey of the problems created for wage and salary administration by technological change might cause us to wonder whether our knowledge, tools, and methods are keeping pace with the problems. No definite answer will be forthcoming on this broad question today, but I do want to review briefly in the time available some of the broader conclusions and findings from recent research efforts conducted by myself and others. In particular I will discuss the impact of technological change upon methods of wage payment and upon the evaluation and classification of jobs.

A few general propositions can be set forth about both of these problems. From the viewpoint of wage and salary administration the term "technological change" usually means changes in job content. Sometimes the changes are big and dramatic, while more often they are rather small and have only limited effects upon job content. But it is the numerous small changes which aggregate over time that have been the biggest headache for wage and salary administrators, industrial engineers, and management generally. It is hard to make general statements that hold for

all technological change because there are so many different kinds of technological change, with a consequent variety of effects upon wage and salary administration. Thus, my discussion will apply to most, but certainly not all, of the technological change taking place today.

Wage Payment Methods

A large number of people have observed the common sense conclusion that technological change seems clearly to modify the performance of work in ways that influence the choice of the method of wage payment. At the risk of oversimplifying the relationship between technology and wage payment method, I want to indicate a few of the very basic conclusions of recent research on this score. There seems to be fairly general agreement that most technological change results in a reduced effort burden for the employee, with the machine carrying more of the burden, and that with the shift in burden from employee to machine goes a shift in the control over the rate of production from man to machine. Also passing from the man to the machine is much of the control over the quality of the product. These changes have led many companies and researchers to conclude that the traditional wage incentive program is less appropriate for modern technology when viewed from the employer viewpoint.

Recognition of the change in the role of traditional incentives has focused attention upon changed attitudes toward incentives by unions, by some groups within the work force, and by management. The unions in many instances have shifted from policies of opposing

traditional incentives to policies of encouragement. Where machines control the rate of production and carry much of the effort burden, and where improvements in machines are expected or in some cases developed by the workers on the job, some unions have abandoned the traditional opposition and shifted to acceptance or even the active support of incentives. This shift in union attitude is prompted by the belief that workers can capture more of the gains of technological change under wage incentives than is the case with day work.

A second change observed in plants where automatic equipment is found is the increased importance of maintenance, material handling, and shipping employees. In some cases these so-called "indirect" workers play a greater role in determining plant efficiency than do the production or direct workers. While maintenance work, for example, assumes greater importance, it is still not sufficiently repetitive and standardized to lend itself to coverage under the direct incentive plan.

From the changes outlined thus far one would expect that firms would try to abandon the traditional type of incentive program with advancing technology. While definitive knowledge is not available, most informed writers and the studies on which I have worked show a trend toward such abandonment. It should be noted that several cases have been found where the attempt to maintain the traditional incentive plan in the face of rapid technological changes resulted in demoralized incentive plans, with workers receiving very high wage rates that were out of line

with the competition in nonincentive plans. The traditional incentive plan seems not to lend itself to adjustments sufficient to accommodate the changes in modern technology.

Now, it would be inaccurate for me to leave you with the impression that the incentive program is a thing of the past. Up to now I have purposely used the words "traditional incentive plan" in analyzing the change. In recent years, many firms have developed new incentive plans both on an individual and on a group basis which are designed for the age of modern machines. Some of these new plans have shifted emphasis completely. They are designed to promote maximum equipment utilization rather than maximum worker effort. Under this type of plan workers are rewarded for paying proper attention to the machine. In some cases these are reverse incentives, with workers penalized if the machine falls below an expected normal production. To the extent that the machine approximates 100 per cent of utilization the worker draws a reward. The obvious and interesting point here is that when the machine is down and the worker is exerting effort to restore operation, the wage rate is lowest, and when the machine is functioning perfectly and the worker is standing by, the wage rate is highest.

Another approach to the replacement of traditional incentives is sometimes referred to as programs of union-management or employee-employer cooperation. The Scanlon Plan is one of the best known and seemingly most successful programs of this type. Under this plan workers receive, as a replacement for incentives,

a basic hourly rate of pay plus a bonus on a group basis for increased productivity due to greater effort or improved methods. While there does not appear to be any major shift to this type of program, its popularity seems to be steadily growing.

Several recent studies have concluded that day-work systems of wage payment are better suited to the accommodation of technological change than are incentive programs. Two major reasons are given to explain the alleged superiority of day work. First, it is suggested that method changes are easier to make under day work because the change does not usually have an immediate impact upon the earnings of the workers. The second reason given is that management has greater freedom and success in establishing and adjusting work standards under day work. In evaluating these conclusions some attempt should be made to distinguish between the big changes in technology as contrasted with the small changes. A detailed analysis of this problem has not yet been done.

I think it is only fair to say that the conclusions on incentives and day-work systems of wage payment come from studies which are incomplete. Much more work must be done before these conclusions can be accepted without qualification. At the risk of appearing a bit contradictory, let me suggest two additional observations. The first is that the research work to date does not reveal any clear relationship between the level of technology and the method of wage payment. Most of the research deals with making changes in existing systems. Second, the whole problem of the significance of the differences in wage payment methods is still open to debate and every wage payment method has its staunch defenders.

Technology and Job Evaluation

In the area of evaluating jobs, technological change is clearly having a substantial impact. The rate at which new and changed jobs occur with new and unique job requirements is a demonstrated fact. Whether jobs are evaluated formally or not, the traditional factors used to rate jobs have taken on new meaning and different emphasis. There can be little doubt that the necessity to deal with sizable changes in job content over time has been a big factor in the move toward the simplification and rationalization of internal wage structures. As a general rule, the simpler the wage structure, the less severe will be the impact of technological change on wage and salary administration.

Technological change may increase, decrease, or leave unaffected the skill and responsibility required in performing the job. Some people, such as James R. Bright, have concluded that automation and technological change should result in a "downgrading" of jobs where many of the factors traditionally used for evaluating jobs are reduced or eliminated. Yet, all available studies show clearly that there has been relatively little "downgrading" of jobs. On the contrary, jobs affected by technological change more frequently than not are upgraded. Why is it that technological change which has reduced the skill requirements of a job has resulted in only rare downgrading and in frequent upgrading of jobs? One immediate answer coming from recent studies is that the skill content of the job increases in that both the machine operator and the maintenance man must have increased knowledge and training,

which is skill of a different sort. Second, the more complex machinery is considered to impose much greater responsibility on the worker, which seems to be increasingly recognized in rating jobs. Operating bigger, faster, and more complex machines has had this effect, for example, in the steel, paper, and printing industries.

A third reason is that many new jobs are created, as distinct from changed jobs. My own research indicates that new jobs are often established to allow for promotional opportunity. One general impact of technological change which can be surmised from the foregoing is that plans get out of date when the basis upon which jobs are evaluated is changed. Under these circumstances, the original statistical fit of the plan is distorted, necessitating a basic revision in the evaluation or classification plan or the adoption of a new plan. In the revision of old plans or the adoption of new ones, jobs can be adjusted to change by red circle rates and relative upward job movement, and factor weights and application can be revised.

Once again, the simplified evaluation plan in hand with the simplified wage structure seems to be more adaptable to technological change. On balance, technological change has been a major factor in the increased use of job evaluation to simplify wage rate structures from a large number of job rates to a relatively small number of labor grades with associated wage rates. The establishment of stable and acceptable internal rate relationships makes for easier and more successful adjustment to technological change. There are some exceptions to the conclusion regarding the use of job evaluation to simplify and stabilize wage structures. In

the case of many craft jobs, there has been some tendency for jobs to become subdivided.

We cannot pass by job evaluation without noting the increased concern over the probable necessity to assign higher weights in evaluating jobs to "dirty" or "hazardous" conditions. It is feared that as modern technology places more and more workers in jobs with good working conditions and with low effort requirements, it will become difficult to attract people to the menial and undesirable dirty jobs which even now are mainly held by minority groups for whom better jobs are not available.

Certain conclusions can be set forth regarding recent research in the area of salary administration, or more particularly as to the forces that will shape policy on salary administration. Myers and Harbison in their study, Management in the Industrial World, conclude (p. 38) that "as industrialization advances, the proportion of managerial resources in the labor force of the industrial society must increase. Economic progress, to the extent that it is associated with industrialization, is made possible by a substitution of both capital and management for labor." They further suggest (p. 24):

If the machinery and processes themselves are complicated, engineers, chemists, or other technical staff specialists are required. To the extent that machinery may displace unskilled or skilled labor, it usually requires greater investment in personnel who specialize in planning, production scheduling, engineering, and "control" of all kinds. Thus, an additional cost involved in investment in modern processes or laborsaving machinery is that of procuring and developing the managerial resources necessary to utilize and control it. If a business organization must employ a battery of technicians to supervise and control more complicated processes, it also needs more experienced and expensive top management to coordinate their activities and to plan for future development.

It is in the area of salary administration for engineers and scientific and managerial personnel that our tools and methods of wage and salary administration are probably applied with the least success. The trend seems clearly toward the hiring of more and more people in the salary categories. With research, and development, and specialized management functions, new and unique jobs are being created at an extraordinarily rapid rate. The problem of relating these jobs to the labor market is more difficult than in the case of production and maintenance personnel. Furthermore, the development of successful job evaluation or classification programs has lagged behind the work done for other groups of employees. Yet the hiring of managerial and scientific personnel in large numbers necessitates a rational salary structure. There has been relatively little research on salary administration beyond the description of the plans of a few companies. Such surveys as have been done tend to support the same conclusions as have been reached regarding the wage administration of production and maintenance workers. Since it is almost impossible to make really good salary surveys related to comparable job content, and since the development of unique talents may remove many people from the influence of market forces, the solution seems to be the development of and reliance upon formal job evaluation programs for salaried people.

One final conclusion seems to follow from the above. Given the nature and extent of technological change, wage and salary administration programs will need to be reviewed thoroughly and frequently, and more time and effort will be required in the

administration of wages and salaries. To answer our earlier question, our tools and methods need not be inadequate for the problems we face, if adequate study is undertaken to evaluate the problems and the methods, and if personnel men will recognize the impact which technological change has upon their wage and salary programs.

HOW UNIONS LOOK AT TECHNOLOGICAL DISPLACEMENT

Melvin Rothbaum

While unions have always been concerned about technological change, their anxiety today appears to me to be more widespread, more widely articulated than it has been perhaps in any other period. Union research departments are engaged in studying these problems. Union conferences are being partially or wholly devoted to them. Union publications are featuring articles on technological change, particularly in regard to the displacement problem. And perhaps most significant, union leaders at all levels appear to be genuinely concerned not only in their formal statements but in their informal discussions. The depth of union concern is enhanced by both the variety and the unpredictability of the consequences of this change. The most obvious impact of the insecurities flowing from technological change lies in the employment impact. There is very often a numerical loss of jobs to the particular plant; there may be a shifting pattern of jobs which results in occupational obsolescence; and these are still the core of the problem today. But to the sophisticated, well-informed union leader this is only the beginning of the problem.

For example, take the problem of plant location resulting from automation in a specific industry. The result may perhaps be a greater centralization of operations in order to take advantage of productive opportunities for expensive equipment and the latest technology. The movement of General Electric's appliance plants

into Kentucky is certainly one example of this. The centralization of small parts production in the auto industry is another. But these plants may not have to be located near great population centers as their direct labor requirements decline. This means that the union will be faced with problems of organization and servicing in areas without a long tradition of unionization. Thus, the problem of plant location alone, perhaps a minor aspect of technological change, faces union leadership with problems in the composition of membership, servicing, and organizing.

One could go on to dozens of other areas in which problems flow rather directly from automation or other aspects of technological change. It may be that seniority units have to be broadened to protect older workers when job requirements of the new technology require somewhat greater flexibility than in the past. What kind of seniority units are politically feasible? How can they be sold to the membership? Can the politically feasible unit be sold to management in the process of collective bargaining? Similar problems arise in regard to wage-setting.

Will the new alignment of jobs create jurisdictional problems with other unions? Will the increasing skill content leave industrial unions open to raids by craft unions? Obviously one could spend a whole morning on these and related problems alone. The main point is that technological change, as we know it, first of all has an impact on a wide range of union activities: on job tenure, status, and dearly held union policies. Secondly, these problems are extremely complex. Third, as a result of these two

factors the analytical and political ingenuity of unions will be severely strained in handling them. And finally, the whole area is surrounded by uncertainty so that strategy in planning must wait upon further developments. Only a group of people who thrived on uncertainty and change, I suspect American mythology exaggerates the size of this hearty band, would fail to be apprehensive at the prospect that union leadership currently faces.

Having discussed some of the reasons for union concern about technological change, let us turn now to the research aspects. What precisely are the policies that unions have adopted toward technological change?

It is possible to identify one set of cases, a relatively rare set, in which the union has been in outright opposition to technological change itself. This is most likely to happen among craft unions where the change may affect their total membership, and thus shift work out of their jurisdiction, rather than in industrial unions where the most likely effect is that work will be shifted within the unit. The Painters and their refusal to use new sprayguns at one period of time, the Teamster locals that limited piggyback arrangements in some parts of the country, the refusal of the Butchers to handle pre-packaged and pre-cut meats, are examples of this kind of opposition. Sometimes the refusal has come about through a refusal to change work rules, sometimes by applying prohibitive wage rates, sometimes through control of the putting in of the equipment itself, and sometimes through refusing to make changes in seniority or other policies necessary

to allow the device to be economically used. On occasion this refusal may be coupled with a positive program to denigrate the new process. For example, in the building industry the Lathers and Plasterers have run a rather extensive advertising campaign against dry wall construction. The "Knock on the wall" campaign has been a deliberate attempt to cut down on consumer buying of a new product.

More often unions accept the technological change and cooperate in the adjustments that have to be made--the Carpenters, for example, in the use of portable power saws; the Mine Workers, who have not only accepted but have probably encouraged technological change. Those cases in which unions have encouraged technological change are perhaps more frequent than one might suspect. Here the union actually goes to some trouble to see that technological change takes place. Usually one finds that there are certain economic problems that the union and the company face and that technological change is the answer to the preservation of employment opportunities. In the needle trades, the ILGWU and the Amalgamated Clothing Workers have provided engineering expertise if they feel that a firm can be salvaged. The Teamsters, in some cases, have encouraged the use of sleeper cabs and waived seniority rules so that these cabs can be used. In the printing industry the Pressmen have encouraged employers to add offset equipment to compete with lithography. And there are numerous shops where some general plan for sharing gains is in operation and where there is continued union cooperation in cutting costs--for example, Scanlon Plans and others of a similar nature.

Another set of cases involves union adjustment to the technological change. Here there are important changes to take place and the union seeks a tailor-made solution that will allow it to get some of the gains that result from the technological change. Many of these problems revolve around who shall actually do the work. For example, there may be a change in the kind of skill or responsibility involved, without diminishing the general level of that skill, and some decision has to be made as to the proper person to fill the job. The recent dispute in jet planes between the Pilots and the Engineers is of this type. The Pilots fought for the addition of a third pilot though they didn't oppose the technological change itself or push for a reduction in hours.

In other cases the union may have a clear jurisdictional right but have problems about supply in the particular skill. The Printing Pressmen have run into this sort of problem, and the Plumbers are looking into it currently. There other cases in which the technological change alters the seniority district. In this case, the decision depends to a great extent on the political arrangements within the union where the locus of power happens to be. If the split is bad enough, the union may bow out altogether in regard to policy.

In those cases of technological change where reorganization of the work is desirable, one runs into numerous disputes about proper scope and responsibility of the particular job--for example, the refinery mechanic problem in the petroleum industry, where

the craft groups are being asked to accept a rather broadened definition of the craft job within the refinery. Whether they accept depends to a great deal on the background of the group and the political problems that it faces.

Where the technological change reduces the skilled worker's responsibility, it is unlikely that any satisfactory solution will be found, since the union may well try to force the use of journeymen and the employer can use less skilled workers for this particular type of work. In some other cases, the interest is not so much in who shall do the job as in the kinds of wage adjustments that will take place. This is especially so when the skill is raised or where there is a rather significant increase in productivity. Thus in the automobile industry there have been new categories such as automated mechanics which are designed to raise the wage rate for these particular groups. In the case of the airline pilots, the wage effect of the technological change has been built right into the wage formula. In other cases the interest is mainly in preventing displacement or in making displacement less painful than it might otherwise be--for example the case on the Canadian railroads in which the question of firemen on diesel engines was settled by a long-run attrition approach to the problem is one of the more recent and interesting aspects of this type of problem.

Finally, the interest may basically be in helping displaced workers get other jobs. Here the fight may be for severance pay, and this is most likely to take place when a majority of the workers are not affected. The problem now is, on the margin, to provide some kind of bonus to the displaced worker to help him over the period when he is looking for a new job.

Thus, there a wide vairyety of attitudes toward technological change on the part of the unions. It seems clear in reviewing these that the crafts are more likely to oppose technological change than industrial unions; but within the industrial union it is just as likely that one group will make gains while another group loses. In short, for the industrial union it tends to balance out within the unit itself, while for the craft union, on the other hand, losses may well be total losses to the particular craft unit. Where there is stiff competition between companies or crafts you are more likely to get acceptance or encouragement. Thus, in the needle trades and in many companies using plant-wide incentives there have generally been economic problems for the industries that the union has to consider in making its policies. In the case of the Carpenters' willingness to take up the power tools, this involved basically competition between carpenters and bricklayers and plasterers for specific types of work.

Perhaps the most important thing is the nature of the technological change itself. The more jobs it affects the less likely it is to be acceptable. If it affects the degree of skill but not the kind, perhaps there will be somewhat less trouble. If it affects the kind of skill, then the problem is extremely difficult and you are more likely to run into union opposition. This is because the change in kind of skill brings about occupational obsolescence for the workers and also jurisdictional problems between unions. In reviewing current attitudes of unions toward technological change and some of the analytical aspects behind this, I think we find that there has been greater adaptability on the part of the union movement than we've seen historically. The very growth of the industrial union has insured a more reasonable attitude toward technological change.

If one tries to figure out a balance sheet for the union attitudes toward technological change, it can only be done in a very general way. First, we can say that the union has created some internal wage distortions. Second, there have been some cases of make-work practices. On the other side of the ledger, the union has greatly eased the hardship through planning and gradual introduction, severance pay, retraining, and job priority rules. The optimum rate of introduction of technological change is a very difficult thing to discover. There is no reason particularly to believe that the rate at which private industry chooses to innovate is an optimum rate, because the innovator bears only the private costs of innovation and not the social costs that are involved for the workers or the community. The union undoubtedly does slow down technological change. Whether it slows it down to the optimum or beyond the optimum is impossible to say.

To conclude this subject, it seems to me that the wide variety of union reaction to technological change should lead one to avoid dogmatic positions as to the possibilities of union adaptation to technological change. Certainly it would seem to me to pay management to consider the specific problems and to do research not only on the technological aspects of technological change, such as cost, staffing, training, and so forth, but also on the union-oriented aspects of technological change: the political problems, seniority problems, jurisdictional problems, and the changes in the kinds of skill that will result. Such research on the

part of management may enable it to devise workable and acceptable plans involving retraining, classification changes, severance pay, sharing of the gains, and other means that will help the union sell the changes to its members. Certainly the unions have shown that under some circumstances they are quite willing to go along with technological change, and in fact encourage and support it. It may be that this support under some circumstances has to be bought. The price may well be worthwhile. This is a decision that has to be made in the particular case. Mr. St. Sure, in the Pacific Coast longshore analysis, indicated the way in which that industry is finally handling a rather long-run problem of union opposition to technological change. The fund that they are setting up may well be the answer. In meat packing, money has also been set aside through collective bargaining for study of the problems of technological change. Perhaps we are at this point reaching a breakthrough in collective bargaining, which will see the exploration of new and fruitful approaches to this long-range problem.

TRENDS IN PROFESSIONAL EDUCATION FOR MANAGEMENT

Thomas H. Carroll

One of my colleagues at the Ford Foundation likes to play a game called "What time is it?" The game consists of taking the titles of recent articles in professional journals and titles of articles written two or more decades ago and shuffling them. The object of the game is to unscramble the articles according to when they were written. It is designed to show whether research in progress is geared to the major problems of the day or whether there is a substantial lag. The titles of the papers on this program easily establish our place as a conference on "Research Developments in Personnel Management" and the time as the present. It is my assignment to step out into the broader field of trends in professional education for management. I will limit myself almost exclusively to activities at institutions of higher learning.

Research serves well as my point of departure. As President Julius A. Stratton of MIT said in his inaugural address last June:

An inner thirst for knowledge and understanding draws men to research; but it is incumbent upon the universities, upon industries, and upon government to provide a soil and climate in which research may flourish.

Our presence here today at a conference on "Research Developments in Personnel Management" attests to our recognition of the importance of research. The report of the 1956 inaugural conference of this series stated:

The improvement of policies and methods in personnel management inevitably depends upon research, whether it be carried on by company, government agency, or university. And, like other aspects of management, the administration of employer-employee relationships becomes more productive as the field's own distinct body of knowledge grows.

And the aims of the conference were enunciated as follows:

1. To accelerate the application of the fruits of research by making available to personnel and industrial relations professionals at one convenient time and place reports on some of the most significant studies currently being conducted.
2. To promote the performance of research by organizations of all types.
3. To provide the leaders and members of research projects a vehicle for making known the results of their work.

These were and remain most commendable purposes. In particular, I applaud the goal of promoting the dissemination and application of research results.

Research in any phase of business administration is of comparatively recent origin. The early studies of the operations of business firms were largely descriptive. Research of a more fundamental nature probably originated with Frederick Taylor and the scientific management movement in the 1920's. By means of time and motion studies, production tasks were broken down into component parts and subjected to measurement. As a result, a number of discoveries were made that led to increased efficiency. This early work was concerned with the worker primarily as a physical instrument of production.

Present-day studies of the effective use of personnel concern themselves with vastly more than the crude physical aspects of the problem. They are involved as well with the motivational and cognitive aspects of human behavior. The progress of research in this and other phases of the business enterprise called into question the adequacy of the prevailing concepts of education for management.

This nation has witnessed a spectacular growth in higher education for business. Nearly one current college graduate in seven is a major in business administration; one out of five for male students only. The total number of degrees awarded in this field is exceeded only by those in education. This growth in the magnitude of the field has made the solution of the problems of business education all the more urgent. After a decade or more of ferment following World War II, many schools of business administration entered a period of fundamental reappraisal. Clark Kerr, president of the University of California, has stated: "Schools of business administration across the nation are trying, sometimes almost desperately, to find their souls." 1

Two developments in the international sphere added new dimensions to the problem. The first is the emergence of the United States as the recognized leader of the free world. The less developed countries have come to look increasingly to this nation for assistance in their drive for economic advancement. In the process we have become mutually aware of the critical role of management. In their recent book entitled Management in the Industrial World, Harbison and Myers conclude:

The lesson which the essays on particular countries emphasize is that an **industrializing** country must make an increasing investment in the generation and development of technical and managerial resources if it hopes to match the achievements of the advanced industrial countries. This is one of the

1 Clark Kerr, "The Schools of Business Administration," an address published in New Dimensions of Learning in a Free Society (University of Pittsburgh Press, 1958), p. 63.

clear imperatives of industrialization. Although we can see the future industrial society only dimly, with the promise of computers which think and the prospect of the automatic factory, the importance of high-level manpower will increase relatively, and the institutions to generate it will have to meet the challenge. The second half of the twentieth century, even more than the first half, will be an era of technical and managerial brain power in the service of an industrial society.²

Second, Russian achievements not only in science but also in economic productivity shook the complacency of those who had no worries about our economy and its management. In the face of the Russian challenge, it became clear that business could not rest on its laurels but must be alert increasingly and unceasingly to new methods of achieving improvements in performance.

The Ford Foundation has been actively engaged in strengthening education for business since 1954, when its Program in Economic Development and Administration was established. As part of that ongoing program, a comprehensive survey of business education was commissioned in 1957. As many of you know, the study was conducted by Robert A. Gordon of the University of California at Berkeley and James E. Howell, now of Stanford University; it was in progress over most of the past three years. A complementary study of education for business was carried on simultaneously under the supervision of Professor Frank Pierson of Swarthmore College, with the financial support of the Carnegie Corporation. Although the two study groups worked independently, they

2. Frederick Harbison and Charles A. Myers, Management in the Industrial World (McGraw-Hill, 1959), pp. 132-33.

cooperated in the exchange of information. They have re-examined the organization and functioning of business firms for the express purpose of establishing on a modern basis the range of activities and responsibilities involved. They have devoted a considerable period of time to a critical investigation of the varieties of business education presently offered in colleges and universities. Both reports have been published recently. Neither is an official expression of the thinking of the trustees, officers, or professional staff members of the sponsoring foundation.

Both foundations share the hope, however, that through broad dissemination and discussion of the findings of these studies, a constructive contribution will be made to the future development of business education. Accordingly, the Gordon-Howell report, entitled Higher Education for Business, has been made available by the Ford Foundation without charge to deans and faculty members of schools of business administration, as well as to college and university presidents and trustees and liberal arts deans. In a further effort to promote discussion of the issues and recommendations raised by the reports and of others that may emerge, a series of regional conferences for selected participants is being held this winter and spring. One will be held here in California--at Palo Alto--in a few weeks; invited participants will include general educators, business educators, and business executives.

What are the findings of these studies on the present state of business education? I should like to mention only three. I think they are of particular interest. I state them boldly with the full

realization that there could be numerous provisos or qualifications. Except for a relatively few institutions, business schools are characterized by (1) an excessively narrow and vocational approach, (2) a failure to incorporate in their programs training in the fundamental disciplines relevant to the professional field, and (3) an absence of orientation toward research. On the basis of these findings, recommendations for improvement have been made. These represent the pattern that is already in existence in the leading schools and is spreading fairly rapidly. In short, business schools generally are now, as I see them, in a transitional stage from the vocational orientation of the past to the rigorous professional status of the future. In increasing numbers they are re-evaluating their aims and programs. Although they have the common objective of providing training for careers in business, no single curriculum can serve all needs. It is up to each institution to determine the optimum curriculum in terms of its own requirements, resources, and opportunities.

What are some of the new approaches that will characterize business education in the sixties? First, there is in process a substantial movement in the direction of less specialization and this is likely to continue. The tendency is to substitute a few basic courses dealing with broad areas of managerial decision-making for the multiplicity of specialized courses. We can expect more emphasis on courses in administration and organization, economic analysis and quantitative methods, and less on highly vocational courses such as "Retail Drug Advertising."

The precise content of the so-called core curriculum will depend upon the level and purpose of the particular program. The appropriate curriculum for an undergraduate program will be different from that for a post-bachelor-level professional program. At the undergraduate level, the curriculum for a business major in a liberal arts college will be different from that for a student enrolled in a business school at a university. At the graduate level, the master's program will be different for an institution which requires an undergraduate preparation in business from one which requires, or at least recommends, an undergraduate preparation in the liberal arts or in a broadly-based program in engineering.

All undergraduate business programs must concern themselves with providing a liberal education. It is the conviction of my colleagues at the Ford Foundation and myself that this can be accomplished either in a liberal arts college or in a professional school of business. Accordingly, we have supported the experimental efforts of two undergraduate liberal arts colleges, Grinnell and Drury, to develop appropriate business courses for the liberal arts setting. At Grinnell, a series of five courses is offered by the Department of Economics for students who plan to enter a business career.³ The courses are liberal in every sense and each is considered to be an appropriate elective for the student who does not plan a business career as well as the student who does. The Drury program is directed specifically to the

3. The courses are: accounting, the capital market, industrial organization, administration, and the business enterprise.

liberal education of students who are specializing in business administration. In both cases, the underlying premise is that an understanding of business as one of the principal institutions of our contemporary society is an essential part of the general education of every college graduate.

In addition to these experiments in liberal arts programs, we are also supporting an experiment in the integration of business and nonbusiness courses at the undergraduate level within a business school program. At Northwestern University the curriculum is being revised in the direction of a greater emphasis on a liberal education than is the case with any other undergraduate business school. Under the new program, the undergraduate student at Northwestern may even elect a nonbusiness field as his principal area of concentration. Four interdisciplinary courses have been developed and are required of all business students: quantitative controls, human relations, business problem analysis and reports, and competition of ideas in a business society.

The present standards for membership in the American Association of Collegiate Schools of Business require that at least 40 per cent of the curriculum for the bachelor's degree be taken in subjects other than business and economics. Gordon and Howell recommend that this requirement be increased to not less than 50 per cent. Most of the outstanding schools now meet this recommended level. But numerical requirements are not the important element. What is important is that the business and nonbusiness courses in the curriculum be equally broad in outlook and equally rigorous in analytical content. The manner in which a course is taught will have a great bearing upon its liberalizing effects upon the student, whether it be a course in English or in business law.

The post-bachelor program in business administration is not faced with the necessity of providing a liberal education as such. Rather the objective of the master's degree in business administration is to provide a suitable preparation for a business career. A greater amount of specialization is in order, but the danger of excessive specialization is still present. "Preparation for a business career" is frequently conceived of as vocational training, particularly for the first job. This kind of preparation is more suitable for on-the-job training than for the campus. The objective of the master's program should be to provide the fundamental knowledge that will be useful in more than one phase of business, for different business needs as they emerge, and for the future development of the individual in his business career.

What are the features of the new master's degree programs? First of all, they are broader and more uniform in content. Gordon and Howell report that a substantial concensus already exists for a core that would cover the following areas: (1) organization, administration, and human relations; (2) quantitative methods; (3) some or all of the functional fields--production, marketing, and finance; (4) national economic analysis; (5) the legal, political, and social framework of business; and (6) business policy. Your own field of personnel management is covered under organization, administration, and human relations. Similarly, statistics and accounting are covered under quantitative methods.

A second feature of the new curricula is that they are becoming increasingly rigorous in content. They are no longer geared to a how-to-do-it approach. Instead, the emphasis is on providing training

in the fundamental analytical tools that are essential to the solution of a wide variety of business problems.

These changes are not confined to a few of the "big name" institutions. For example, the proposed new master's program at the University of Kansas breaks with traditional methods and incorporates new concepts in their most advanced form. The first-year program is devoted entirely to the study of the behavioral sciences, economic analysis, and quantitative methods. It is designed to provide a grasp of the basic concepts and tools of business administration. The second year of the program is conceived of as the "applied" year in which the knowledge gained in the first year will be used in courses in production, marketing, finance, and organizational behavior. This is indeed an ambitious, bold, and laudable venture, to which the Ford Foundation has given its enthusiastic support.

To a large extent the changes now taking place in business education are the result of ideas developed in doctoral programs during the past few years. Doctoral programs are directed toward preparation for teaching and research in business administration, rather than for the practice of business as such. New ideas developed at the doctoral level will inevitably have an impact on the fundamental character of future business education and ultimately on business practice. For these reasons, the Ford Foundation has attached particular importance to doctoral programs and has worked most closely with them. What new trends have we observed at that level?

First, the notion that the doctor's degree in business is a teaching and research degree is in itself a considerable step forward.

Prior to World War II, it was most commonly treated as simply an advanced professional degree, desirable for, but not in any way essential to, either the practice of business or teaching. We now recognize that the doctor's degree is just as important for the business faculty member as it is for his university colleagues. To ensure that promising potential business faculty members are given every opportunity to acquire this desirable "terminal training," the Ford Foundation established in 1955 a program of doctoral fellowships in business administration. This is the only national fellowship program devoted primarily to the furtherance of business education. To date, awards have been made to over 180 doctoral fellows in business administration.

Second, the concept of what constitutes research in business administration is undergoing a radical change. Studies of the operations of business firms go back to the late nineteenth century.⁴ The usual method involved the examination of existing practices with a view to determining the best of them. Bureaus of business were established in part to serve business by conducting studies along these lines. Such research is of great value in spreading knowledge and understanding of good business practice. It is not, however, the type of research that characteristically opens up new areas, new fields of knowledge. It is what we would now call either descriptive or applied research, as distinguished from basic research.

4. Howard R. Bowen, The Business Enterprise as a Subject for Research, Social Science Research Council, Pamphlet 11, May 1955, p.5.

Basic research (some prefer the term fundamental research) involves a continuing search for new approaches, new ideas, and new methods, or new combinations leading to new knowledge. As I have mentioned, basic research in this sense originated with Taylor's work in the 1920's. In the 1930's another phase of research in industry was developed by Elton Mayo and his associates at Harvard. Their research, based on experiments at the Western Electric Company by a combined team from the company and the university, was the origin of a new field which came to be known as "human relations in industry."⁵

From these comparatively recent beginnings, there has developed the considerable body of literature which now exists in the field of organization theory. A survey of this literature may be found in the recent volume by Herbert A. Simon and James G. March entitled Organizations.⁶ Simon, March, and their associates at Carnegie Tech are deeply involved in the problems of organizational structure, administrative behavior, and so-called cognitive aspects of decision-making.

A significant factor in the development of a research orientation in business education is the establishment of management programs in institutions basically wedded to science and technology. The Graduate School of Industrial Administration at Carnegie Tech is the sturdy "child" which seems to be leading them. This year it will celebrate its tenth anniversary. The Carnegie program is heavily committed to

5. Fundamental Research in Administration (Carnegie Press, 1953), p. 18.

6. Wiley, 1958.

basic research in quantitative methods and in the social and behavioral sciences, using the business firm as the focus of the research. The Carnegie group has already had a profound impact on the concept of business education as well as upon the field generally. In this sense it parallels the effects of the earlier development of the clinical approach through the case method pioneered by the Harvard Business School. The industrial management programs at MIT and Purdue and the Case Institute program in operations research represent other successful combinations of business administration with engineering approaches.

Basic research in business administration has been greatly strengthened in recent years through the more effective use of quantitative methods. There has been a marked increase in the use of mathematics and statistics both as an aid to decision-making in industrial operations and as a powerful tool for research on the business firm. We now take sample surveys and market research for granted. It is easy to forget that their use was virtually unknown a few decades ago. Similarly, the application of sampling methods to accounting problems is now coming into widespread use. Scaling and psychological measurement, operations research, and simulation of complex organizations are among the newer techniques which are finding increasing application to business problems. Some of these methods are feasible, of course, only with the use of high-speed computers.

There have been two major Ford Foundation actions designed to promote the use of quantitative methods in the study of business. The first was the establishment of an Institute of Basic Mathematics for Application to Business. It provides a one-year training program

for selected professors of business administration. It is located in Cambridge, Massachusetts, where it has access to the resources of Harvard and MIT, and Professor Howard Raiffa of the Business School and the All-University Department of Statistics at Harvard is its director. The staff of the institute is drawn from a number of universities and from the research staffs of business firms. There are 41 fellows from 35 universities in attendance. The objective is not to set education for business in an operations research mould. It is, rather, to enable leaders in business education to know what the potentialities and limitations of mathematical methods as applied to business problems are.

The second action is the establishment here in Los Angeles of a Western Management Science Institute in cooperation with the Western Data Processing Center at UCLA. The center was established in 1957 jointly by the university and the International Business Machines Corporation. The purpose of the Foundation grant was to provide a demonstration of the potential use of quantitative methods and of electronic computing machines in research on management problems. It will make possible training institutes, research consultation, and computer services for faculty members of participating institutions in a 13 state western area. This is an excellent example of a cooperative financing arrangement, with a business firm, a private foundation, and a state-supported educational institution combining to promote teaching and research.

We need to achieve greater recognition of the fact that significant contributions to basic research in business administration have been made by persons and institutions outside as well as inside business

schools. The relevance of economics to business problems has always been apparent; indeed, business administration has sometimes been thought of as synonymous with applied economics. The relevance of other social sciences has been rather widely recognized only in the last decade or two. A growing number of psychologists, sociologists, political scientists, and anthropologists--as well as mathematicians--have found that their explorations have led to the door of the business firm, and many are now devoting their efforts primarily to the study of business problems. The "industrial psychologist" and the "industrial sociologist" are now familiar figures.

To stimulate increased interest in the world of business as a subject for research by social scientists, and to encourage a greater appreciation on the part of faculty members in business administration of the potential contribution these underlying disciplines offer, the Ford Foundation initiated a multiphase program in 1957. As one phase of this program, three social scientists were commissioned to make surveys of the relevance of research and methodology in their particular disciplines to business problems. They were Professor Paul Lazarsfeld of Columbia in sociology, Professor Mason Haire of the University of California at Berkeley in psychology, and Professor Robert Dahl of Yale in political science. A book containing these essays will be published by the Columbia University Press later this month under the title: Social Science Research on Business: Product and Potential. Complimentary copies will be made available through the Foundation to faculty members and advanced graduate students in business schools and social science departments in the hope that new and fruitful research developments will be encouraged.

The new behavioral and quantitative methods are indicative of the transformation of the study of business administration from an essentially descriptive to a more scientific approach. To a large extent these developments are still in the experimental stage but it is only a matter of time before they may be expected to be assimilated into business curricula generally and ultimately into general business practice. In some few instances business firms have already gone ahead of all but the most promising schools in these new developments.

The impact of the new developments on teaching methods is already apparent. It is generally recognized that the teaching method which has exerted more widespread influence than any other in this field is the case method developed at Harvard. The Pierson study shows that, historically, the introduction of this method did more to invigorate academic preparation for business than any other single development.⁷ The case method established the concept of managerial decision-making as the foundation of business education. A comprehensive knowledge of the operations of the firm from an overall management viewpoint was emphasized.

Formidable new weapons are now being added to the teaching arsenal to serve along with the case method to aid in the development of orderly analytical problem-solving ability. Chief among them is the "business game," pioneered by a few institutions including UCLA, which simulates business situations with or without electronic computers; it adds

7. Frank C. Pierson and others, The Education of American Businessmen (McGraw-Hill, 1959), Chapter 3, "History of Business Schools."

dynamic dimensions to problem-solving. Other methods include role-playing, laboratory experimentation, and other forms of simulation.

To speed the process of assimilation of these and other new developments in business education, the Ford Foundation has taken a number of steps in addition to the wide dissemination of the two volumes I have mentioned. Since 1955 we have sponsored summer seminars in New Developments in Business Administration for selected business faculty members. These have been conducted by an interinstitutional faculty under the general direction of the Carnegie Graduate School of Industrial Administration and of the School of Business at the University of Chicago. Next summer a third will be offered under the supervision of the University of California at Berkeley. Last fall the Foundation sponsored a colloquium for new deans of business schools to acquaint them with new research developments. They met on the Dartmouth College campus for a week of discussions with those who are pioneering the new approaches.

These developments are still largely confined to the United States. The graduate school of business administration is primarily an American phenomenon. Other countries have been slow to accept as important the provision of professional training for management. The recent achievements of business schools in the United States have raised the prestige of the field abroad, and for some time foreign students have been coming to this country in large numbers for graduate training. Now foreign institutions of higher learning are establishing their own business programs. Visiting American faculty members have been of great assistance in the early stages, but local facilities still do not

exist for training permanent faculty members. To my knowledge there is as yet no doctoral program in business administration, as such, outside the United States. The Ford Foundation announced last week a training program keyed specifically to the problems of business and industrial growth in less-developed countries. The new program will provide post-graduate training for teachers of business administration from less-developed countries of Asia, Africa, and Latin America, where efforts to generate business and industrial growth have been impeded by the acute shortage of managerial skill. The program will be centered at Stanford University under a seven-year grant of \$3.5 million, but graduate business schools of other major American universities will participate, including, we expect, the one here at UCLA. Representatives of several graduate business schools will comprise an advisory committee to plan and carry on a periodic evaluation of the program.

It is expected that when this program is in full operation, up to 60 participants will be admitted each year. Candidates for admission will ordinarily be nominated by their home institutions. In addition, American universities with experience in assisting business education abroad will be invited to nominate candidates for the program. Students will spend about nine months at Stanford and three months as visiting faculty associates at cooperating American business schools. The purpose of the three-month residency is to help narrow the gap prevalent in many less-developed countries between business teachers and the business community. Participants in the program will have an opportunity to observe the active concern leading American business school faculty

members take in the practical dynamics of the business world.

Teaching materials for the program will be developed initially from the body of research on economic and business development that had accumulated in recent years at American university centers and graduate schools of business. The bulk of the research product from these two sources has not been brought together and translated into teachable form. Thus, in addition to creating an advanced curriculum specifically related to the needs of business teachers from less-developed countries, the program should result in the production of teaching materials highly useful to foreign teachers in their own classrooms as well as to teachers in American business schools concerned with foreign and international business operations.

We are, in my opinion, on the threshold of further great changes in business administration. I have indicated some of the lines along which we can expect these changes to occur in the next decade. As these concepts spread, they can and should be adapted and improved. New ideas which are not yet on the horizon will undoubtedly emerge. Possibly a way will be found to combine business and public administration in a really effective way. Failure to achieve this integration to date is one of the most disappointing aspects of the current outlook in management education. As Donald K. David pointed out at the Fiftieth Anniversary of the Harvard Business School:

The prime necessity for the business man today is to weld to his economic prowess a similar drive,

skill, and creativity in his dangerously neglected social and political functions. (Italics in original)⁸

Unfortunately, it has been the rare business executive whose education provides him with the type of training he needs to combine with his business experience in attempting to fulfill his social and political responsibility. Continued failure to meet this challenge could be seriously detrimental to our interests at home and abroad.

It is our solemn responsibility to maintain, even increase, the momentum that business education has now achieved. It will require establishment of and adherence to rigorous standards of teaching in our colleges and universities and full support of basic research. It will require of business management qualities of mind which Alfred North Whitehead prophetically pointed out 30 years ago. At that time he stated that the business mind of the future would have to have the capacity to see beyond the routine of management and to comprehend "the complex flux of the varieties of human society." He went on to point out that this would require many elements of discipline, scientific and sociological. I would like to conclude with a final quote from this great philosopher:

A great society is a society in which its men
of business think greatly of their functions.⁹

8. Donald K. David, "The New Relationship of Business to Society," published in Management's Mission in a New Society, edited by Dan H. Fenn, Jr. (McGraw-Hill, 1959), p. 67.

9. Alfred North Whitehead, Adventures of Ideas (Mentor, 1958) p. 104.

A NEW LOOK AT STAFF-LINE RELATIONS

William F. Whyte

My remarks today will not be based upon any specific field study I have undertaken concerning staff-line relations. Over the years, I have dealt with staff-line relations incidentally as I have been focusing on other problem areas. This has given me a fair amount of case material that I have never sought to bring systematically together.¹

Recently, in connection with a book I am writing, I undertook to tie together what I knew regarding staff-line relations. The experience was at first a most humbling one, for I soon realized how little I knew. I still feel humble regarding the inadequacy of my own knowledge, but, as I look around me and read what has been written, I am coming to believe that nobody knows very much concerning this topic. Therefore, there seems a chance that I may make a small contribution and at least focus attention on points where knowledge is needed.

How much of our thinking on staff-line relations is based upon research findings? Very little indeed. There have been a few research studies and still fewer good ones on this topic. Melville Dalton's Men Who Manage² is an outstanding exception to this generalization,

1. I am also indebted to Ralph Campbell, Felician Foltman, Henry A. Landsberger, Emil Mesics, Frank B. Miller, and Robert Risley for stimulating my thinking along these lines.

2. Wiley, 1959

but even this book does not focus primarily upon staff-line relations but rather deals with a number of different types of relations within management.

The literature that we do have is largely of a normative character. That is, instead of concentrating upon what goes on in staff-line relations, the literature concentrates on telling us what should go on. Furthermore, most of this literature is based on ideas that developed many years ago out of experience with military and production organizations in periods when these organizations were characterized by an overwhelming proportion of operating or line positions, compared to a very few staff or specialist positions. This made it possible to conceive of staff people as serving in advisory capacity to the line, being consultants in their special fields but now having authority to determine the actions that should be taken.

New Organizational Situations
Require New Formulations

As we move away from the type of organization of traditional management thinking, we have increasing difficulties in applying the old staff-line conceptions to the new organizational patterns.

Consider the case of a large commercial airline. Some of my colleagues who have been engaged in management development activities with such a company tell me that it is extremely difficult if not impossible to apply traditional staff-line distinctions to some of the units of such an organization. For example, the customer service department sounds like a staff department. On the contrary, this department in the particular airline I have in mind does not just advise other organizational units regarding desired standards

of customer service. The department is responsible for fixing the standards itself and is also responsible for the enforcement of the standards.

A research and development organization defies one to apply the old staff-line terminology to it. Unfortunately, so well entrenched is the terminology that we find it applied nevertheless, with most confusing results. For example, consider such an organization now being studied by Richard Ritti. Here the so-called line people are primarily engaged in the development of ideas, which is usually considered a primary responsibility of staff people. Who are the staff people in this situation? Are they advisers to the line? In most cases, they are not. They are simply individual contributors who have shown enough ability so that it was assumed they deserved one or more promotions. Either there were not enough supervisory positions available or it was assumed that the individual could be more valuable working directly on his job, and, to reward him for his contribution, he would be given the title of staff engineer or, a step higher, advisory engineer, although he would continue to work like others on the so-called line under the direction of a project manager.

Literature of staff-line relations has also failed to give much attention to the relations between the main office and the field in large organizations. We generally look at the situations in which the staff man is subordinated to at least a plant manager, though he may do a good deal of his work with people of lesser status in the line organization. But what of the relations between staff people

in the main office and operating management out in the plant? This is the problem area only beginning to get attention, and here again we may cite the Dalton book.

The old concepts have suffered even in production organizations through the increasing complexity of the management organization, as it has developed in recent years. Now the staff people are no longer a few lonely individuals surrounded by the line. In large organizations at least, staff departments have grown to considerable size, and there are many specialities represented by their individual departments. Each specialty develops its own program and system for carrying it out. It is unrealistic to regard these staff activities as simply advisory and carrying no authority. We often see control involved. For example, on matters of wage and salary administration, the line man might have to get the approval of personnel people before getting a certain wage or salary change put into effect. He doesn't just consult people. They tell him whether he can or cannot do it.

On the Nature of Authority

What is authority? In spite of the fact that the word "authority" is a central concept in most discussions of staff-line relations, it is rare indeed that we find any attempt to define the word--or at least to define it in terms so that we can use it in behavioral observations.

For my purposes, there are three aspects of authority worth distinguishing: initiating, blocking, and exercise of sanctions. I am not trying to use these concepts to show what authority "really is" but rather to indicate ways in which behavior often pointed to by the word "authority" may be more usefully talked about. In the case of each of my three concepts, I am referring to units of observable behavior.

Initiating behavior involves A telling B what to do, and B carrying it out. Blocking behavior occurs where A tells B what A wants done, B tells him he cannot do it or get it done, and it is not done. (The wage and salary example cited above falls in this category.)

In all forms of collaborative human activity, the exercise of sanctions is involved or potentially involved. However, the sanctions may be exercised directly or indirectly. If A wants B to do something, A often finds it useful to be able to reward B for compliance, or punish B for failure to comply. In some situations, A is in a position to bring the sanctions to bear directly. In other situations, he must proceed indirectly through letting others know either what a good job B is doing or what a bad job B is doing.

In some organizational situations, this distinction between direct and indirect exercise of sanctions provided a means of distinguishing between relations within the line and staff-line relations. A line man, for example, is generally in a position to bring sanctions directly to bear upon his immediate subordinate. A staff man is not generally in the position to exercise sanctions so directly.

We should not use the distinction between direct and indirect sanctions simply for the purpose of distinguishing among organizational positions. It is just as important to examine whether or not sanctions are brought to bear as to know the channels through which they flow. This is illustrated by the case of Harry Holmes, a vice-president for industrial relations, and one of his plant managers. Harry was a man in his sixties who had come up through the ranks in the company and acquired a tremendous respect on the part of workers and managers alike. The plant manager was consulting Harry on an action he wanted to take. Harry advised him that the action would be unwise. The plant

manager persisted, rephrased all his arguments, and said he was determined to proceed. Harry shook his head once again and said:

"If that's the way you feel about it, go ahead. It's your decision to make. But that sure is going to get you into a lot of trouble."

The plant manager thought it over some more and decided not to do it after all. Harry Holmes told us the story to show that he only served in an advisory capacity to the line. The plant manager was free to accept or reject his advice. Now, just how it looked to the plant manager, I don't know in this case, but I know that situation well enough to imagine what must have been going through his head. If he went ahead, he knew very well that Harry Holmes would take no action to stop him, because Harry was very conscientious about avoiding the exercise of authority. If he went ahead, and the plan worked all right, then there was nothing to worry about. On the other hand, if he went ahead and the labor relations difficulties anticipated by Harry Holmes did materialize, what then? The general manager would ask him why he hadn't consulted Harry Holmes on this matter, and he would have to admit that he had consulted Holmes but had refused to take his advice. Or the general manager would ask old Harry why he hadn't advised the plant manager. Harry wouldn't want to hurt the plant manager, but he was an honest man, and he would have to say, "Well I told Joe that that would lead to trouble, but he was determined to go ahead anyway." Or words to the effect.

In this example, it hardly helps to explain the situation to say that Harry Holmes served in an advisory capacity. On the other hand, it would be equally misleading to say in this instance that

Harry Holmes was exercising authority. In this situation, Harry Holmes was in a position where, whether he wanted to or not, he brought sanctions to bear--indirectly. The sanctioning power of Harry Holmes derived only in part from the formal position he held. At least as important was the set of relations he had developed with the top management people and union leaders over the years. This suggests that we can understand the initiating, blocking, and sanctioning behavior among individuals only as we examine the network of interpersonal relations into which they fit.

Instead of seeking to determine who has authority and who is an adviser, we need to return to a more elementary level and ask ourselves, in the relations between A and B, what are the conditions under which A can initiate for B or block an action that B plans to initiate?

A Framework of Concepts

If we are to look at human relations in this way, we need a set of concepts to do it with. Those who are familiar with my own writings will not be surprised to find me suggesting activities, interactions, and sentiments as the key concepts of this analysis. Activities involve the things that people do. Interactions involve the way people relate to each other: the frequency of their contacts, who initiates the interaction, and who initiates an activity change. Sentiments refer to how people feel about other people and the world around them. Some refer to these as attitudes. As we examine activities, we are concerned not only with describing what is done but with noting the values that are put on various activities by the people involved. Is the activity rewarding or punishing? And for whom?

With such concepts, we should be able to make progress in describing more effectively what happens in staff-line relations and in explaining to some extent why it happens. For a more complete answer to the why question, we would have to add the social characteristics of the people involved in the relations--matters such as age, sex, ethnic identification, education, and so on. In the limited time I have, I shall not undertake to deal with this dimension, which has again been very well handled in the Dalton study.

Applying the Conceptual Scheme

In this attempt to apply my thinking to the staff-line problem I must deliberately limit myself to relations at the plant level and in manufacturing or chemical process operations where I have the most experience. I can only hope that this approach will be useful in other types of organizations. I am also limiting myself to situations where the specialist is expected to initiate activity changes for the operating man and to provide specialized knowledge for him.

Before we bring these two men together, I should make a general theoretical point regarding the patterning of interactions and activities. Research suggests that people tend to become accustomed to a certain regular pattern of activities that they carry out. This does not mean that changes in activities will not sometimes be welcomed, but it does suggest that a new type of activity must somehow be fitted into the old pattern and that this requires an adjustment which is often difficult.

We find also a tendency for the patterning of interactions. This means that the individual becomes accustomed to interacting

with a certain number of other individuals with a certain frequency from day to day and with a certain balance between the interactions he initiates and those to which he responds, and so on. This is not to say that A must interact with B exactly six times per day if their sentiments toward each other are to be maintained. It does mean that if several days go by without any interactions at all and then A initiates 12 interactions to B in one day and 20 the next, he would do well to anticipate difficulties between them.

One aspect of the common difficulties between specialists and operating men is that the intervention of the specialist upon the operations tends to be sporadic. The operating man develops his own pattern of daily activity and his own pattern of interactions with superior and subordinates. In many situations, the specialist is free to move over a wide geographical and social area so that he may interact little if at all with a given operating man over a long period of time. If he then suddenly begins concentrating on this operating man's area, with frequent initiations of interaction and frequent efforts to induce changes in activity, it is only natural to expect the operating man to react negatively. We are accustomed to thinking of the specialist as the innovator. He may often be regarded as the disruptor, but, we may ask, is this disruption a necessary concomitant of innovation?

In many situations, we see the specialist's contacts with the operating man limited largely to two types of functions: inspection and innovation.

Inspection involves determining whether the operating man is doing what he should be doing--and reporting on this to higher levels. Nor is this function limited to situations formally defined as inspection. The personnel man and the engineer and other specialists often have occasion in their contacts throughout the plant to observe conditions that they consider not appropriate for the operation in question. Shall these be reported to higher levels? If so, the specialist shows that he is alert in looking out for the company's interests and may perhaps anticipate a reward for that, but, at the same time, he brings down negative sanctions indirectly upon the operating man.

In innovation, the specialist is trying to get the operating man to do something differently or at least to accept some changed process, machine, or method, in his area of responsibility. Who gets the rewards and punishments in this type of situation? Frequently, we find that the punishment of having to go through a difficult adjustment process is monopolized by the operating man, whereas the reward of credit for generating and implementing a new idea is monopolized by the specialist.

If we examine the relationship in these terms, it is a wonder that cooperative activities between operating men and specialists ever develop. In deed, they do not when the specialist carries out his role in the terms just described.

Fortunately, there seems to be a different way of going about it. As I have examined those specialists who did seem to get along with operating people, it seems to me that they have proceeded in a manner that can be described in terms of four general points:

1. The specialist seeks to build up a certain frequency and regularity of interaction with the operating man before seeking to bring about any innovations.

2. This means, in effect, that the specialist does not simply cook up his innovation in his own mind and then move right in and try to bring it about. Instead, he deliberately withholds his innovating efforts until he has established a personal relationship which will make them more acceptable.

3. Before he seeks to innovate, the specialist concentrates on familiarizing himself with the operating man's situation and problems. Some of this is done through observation, but a good deal of it is done through interviewing. This means, in effect, that the specialist gets the operating man to explain his situation as he views it himself.

4. The specialist tries to build his innovations into a pattern of reciprocal initiation and exchange of valued activities. That is, he is not exclusively asking the operating man to change his behavior. He is also providing opportunities for the operating man to call for help from the specialist. This reciprocity I shall explore at greater length later.

A Case Example

What this means in action can best be explained perhaps through describing a case: the development of the industrial relations program of Creole Petroleum Corporation under the direction of Milton Hagen. When I spent a year at Creole Petroleum in 1954-55, I found them so well organized with the various personnel programs

thought to be representative of the most modern conceptions of personnel administration that they were often referred to as a model in this field. Less than ten years before, the Creole personnel program had consisted of little more than employment offices and some labor relations activities. How such a well-rounded program developed in such a short time is certainly a story that cannot be told completely in a few minutes, but we can point to several significant aspects of the development.

Hagen arrived in Venezuela shortly after the close of World War II. In a sense, we might say that he was given a free hand to set up a modern industrial relations program, but he was wise enough to realize that a free hand from above can never secure cooperation from below. His first weeks and months on the job were spent in observation and consultation. He went around and talked with management people from high to low levels about their problems and what he and his department might do to help them. On the basis of this experience he developed a list of priorities--approximately ten activities that he hoped eventually to establish. But--and this is important--he did not then start on instituting number one, which he considered the most important. The first move was made on the point that ranked five or six on his list: a safety program.

It came about in this way: One day, as Hagen was talking with a key man in top management, that executive expressed great concern over safety problems. He had just heard a report from the field that an oil worker had been killed in an accident. At this particular time, Creole's safety record was not good, and the executive expressed him-

self vehemently that these fatal accidents were occurring entirely too often. What to do about it? Through what he had learned in his period of consultation and observation, Hagen had a plan ready, and he now laid it out on the table.

The first step would be to demonstrate top management's great concern for safety. This would be done through a series of meetings throughout the oil fields, and these would be conducted by this particular executive in question, assisted by Hagen and by the district superintendents in the particular areas. The meetings would be concerned not only with showing top management's interest but also in canvassing the men in the field for ideas regarding an action program. On the basis of what came out in these meetings, the Industrial Relations Department would undertake to develop a specialized safety program, working closely with operating management. Needless to say, Hagen already had a number of ideas as to what would constitute a good safety program, but he withheld these from the discussion until there had been a full opportunity to canvass the problem in the field discussions.

The result of this development of a safety program was a drastic reduction in lost time and fatal accidents so that today Creole has an exceptionally good safety record. However, we are not now so much concerned with the substance of what was accomplished as we are with the way it was accomplished. We are also concerned with the pattern established on one program, for that led to effective action in others. Naturally, as the industrial relations people showed that they could respond to needs expressed by operating management, the industrial

relations people found other opportunities to institute other programs on Hagen's list of priorities.

Reciprocities Further Considered

I have been saying that relationships between specialists and operating men should be based upon exchange: each man must do something for the other if the two are to work effectively together. What can a specialist offer the operating man? The services may fall in three categories:

1. He may help the operating man toward achieving the officially accepted objectives of his unit.

2. He may help the operating man toward the achievement of his personal goals. These are sometimes closely related to point one above, but sometimes they have nothing to do with that at all.

3. He may help the operating man to evade and manipulate rules, regulations, and procedures that are imposed from above.

Point one above presents no policy problems. The behavior indicated under point two may give rise to ambivalent feelings on the part of both specialists and operating people. In any organization there will always be ways in which an operating man can achieve his own personal goals without regard to the official goals of the organization and sometimes in direct opposition to those goals. This kind of thing is well described in Dalton's study. The usual reaction to the discovery that an individual is exploiting his organizational position for his own benefit is to think in terms of punishment and policing action. I suggest that this can be no adequate answer to a phenomenon that naturally arises under a given

set of conditions. The problem for management is to establish conditions where, in so far as possible, able men can achieve their personal goals through making their maximum contribution to the organization's objectives. Where this situation does not seem to exist, I suggest that management had better look at the structure of the situation and not just concentrate upon the personal morality of individuals.

Behavior under the third point is much more common than many management people would like to admit. Furthermore, let us not automatically condemn behavior of operating people in evading or manipulating the rules, regulations, and procedures imposed on them from above. And let us not automatically condemn the specialist who aids them in this process. We often find that this process of evasion and manipulation is only a realistic response to a situation in which strict adherence to directives and procedures would result not only in failure of the individual to achieve his personal goals but also in failure to achieve the official objectives of the organization. Where widespread evasion is found, this suggests a lack of adjustment between rules and regulations and established procedures and the behavior realistically needed to achieve organizational objectives. This suggests the need for management to re-examine these various directives and procedures in order to achieve a more effective relationship between official policies and effective behavior.

THE AGING WORKER AND THE PENSION PROBLEM

Margaret S. Gordon

The striking growth of private pension plans during the 1950's is, by now, a thoroughly familiar phenomenon. At the beginning of the decade less than 10 million workers were covered by private pension or deferred profit-sharing plans. By the end of 1958, estimated coverage had increased to 19 million workers and was still expanding rapidly. Although the latter figure represented only about 28 per cent of the civilian labor force, it accounted for approximately 45 per cent of potential private pension plan coverage--that is, of nonagricultural employees in private employment (excluding railroad workers, who are covered by the Federal Railroad Retirement program).

A good many pension experts are predicting that, although coverage will continue to grow, the rate of expansion is likely to slow down considerably. As Holland has put it, "the more likely situations for the extension of pension plans have already been tapped; and only the harder cases remain."

My own guess is that, although the rate at which new plans are adopted or old ones are expanded is likely to slow down appreciably, the proportion of workers covered by pension plans will probably continue to grow at a fairly rapid rate, largely because of the marked shifts that are occurring in the structure of employment. White-collar employment is rapidly gaining ground over blue-collar employment, and, indeed, in the last three or four years there has been no net increase in total blue-collar employment in the nation as

a whole. Under the influence of automation and other technological changes, many of our large mass production industries have reached a stage at which total employment of manual workers is declining. During the 1960's, there will probably be a moderate expansion of blue-collar employment in most nonmanufacturing industries and in a few of the more rapidly growing sectors of manufacturing, but there is little doubt that the most rapid gains are likely to occur in white-collar jobs.

Although the proportion of blue-collar workers covered by pension plans increased impressively during the 1950's, white-collar workers are still considerably more likely to be covered by a pension plan, at least in the larger metropolitan areas, where the Bureau of Labor Statistics has been collecting data. This means that, even though pension plans spread at a less rapid rate, the proportion of workers in covered employment is likely to increase.

Implications for the Aging Worker

What are the implications of the continued expansion of pension plan coverage for the aging worker? With the rapid growth in the number of workers aged 45 and older in the labor force, this has become a question of considerable concern. A less sophisticated audience might well wonder why the question should even be raised. If more and more older workers can look forward to private pension retirement benefits that will materially supplement their social security benefits, how can anyone doubt that pension plans are a net advantage to the older worker?

In this audience it is scarcely necessary for me to point out that, in the view of many labor economists and other experts, the rapid growth of private pension plans has not been considered an unmixed blessing for the older worker. One of the first labor economists to express grave doubts about certain implications of the post war drive for private pensions was Clark Kerr, now president of the University of California. Speaking before the National Industrial Conference Board in 1949, Kerr emphasized a number of disadvantages of private pension plans, some of which are particularly relevant to the problem of the older worker: (1) the impairment of employment opportunities of older jobseekers, since the higher costs of covering older workers under some types of pension plans will enhance the reluctance of many companies to hire them; (2) the interference with labor mobility, growing out of the fact that workers with pension rights that are not vested will be reluctant to shift jobs; (3) the tendency for compulsory retirement policies to be associated with private pension plans; and (4) the serious obstacles to achieving coverage for sizable groups of workers, particularly those in small firms and those in industries characterized by short-term or casual employment, with the result that there are wide disparities in prospective retirement income between these groups of workers and the more fortunate workers who can be readily covered.

In some respects, Kerr's indictments would be less valid today than they were in 1949, partly because vesting provisions have become more prevalent; in others, they would be equally forceful. What I should like to do is to evaluate his four points in the light of recent

research findings and of changes in private pension provisions during the 1950's.

Pension Plans and Older Jobseekers

There is little doubt about the widespread reluctance of employers to hire older workers. So much has been spoken and written about this problem that there is little need to dwell on it here. There is also little doubt that pension plans tend to enhance the reluctance of employers to hire older workers. But it would appear that the influence of pension plans may have been overemphasized in some discussions of the problem.

The Seven-City Study of problems of older workers, conducted by the U.S. Bureau of Employment Security in 1956, indicated that 25 per cent of the workers hired by firms without pension plans were aged 45 or older, as compared with only 14 per cent of those hired by firms with pension plans. But the study also showed that larger firms were much less likely to hire older workers than smaller firms, and that larger firms were also considerably more likely to have pension plans. It was not clear to what extent the apparent influence of pension plans on hiring might have been at least partly attributable to differences in size of firm.

When the Institute of Industrial Relations (at Berkeley) interviewed a sample of about 65 employers in the San Francisco Bay area at some length several years ago, we found that the influence of pension plans was one of the reasons most frequently mentioned by representatives of the larger firms for refusing to hire older workers. Even so, it should be noted that representatives of some of

the larger firms indicated that their pension plans were only a very minor influence, if any, on their hiring practices and that other considerations were much more important in explaining their reluctance to hire older workers. The study seemed to indicate clearly that, among the larger firms, the whole constellation of modern personnel practices--hiring at entry rates, training programs, orderly wage and salary increases within a classified structure, and emphasis on promotion from within--tended to militate against hiring an experienced older person. Pension plans were simply a part, and not necessarily the most important part, of this broad pattern.

Nevertheless, it would be a mistake to ignore the fact that pension plans do figure prominently in the minds of a good many employers as a deterrent to the hiring of older workers. Some management representatives emphasize the point that pension costs tend to be substantially higher for those who become members of the plan at a relatively late age, while others emphasize the point that an employee who enters the plan at an advanced age will not accumulate enough years of service under the plan to qualify for adequate retirement benefits, or will not be eligible for retirement benefits at all under eligibility requirements that call for a minimum number of years of service.

Pension costs. On the matter of pension costs, I am impressed with the lack of adequate and readily available information on the manner in which age differentials in pension costs will differ under various benefit formulas and financing methods. Even the supposedly authoritative report on Pension Costs in Relation to the Hiring of Older

Workers, issued by the U.S. Bureau of Employment Security in 1956, seems to me to be misleading in certain respects. And most books on pension plans simply do not focus on this issue directly at all.

The inescapable fact seems to be that pension costs are usually somewhat higher for those who enter the plan at a comparatively late age, and often substantially higher, for a number of reasons. But the differential will tend to be less marked if retirement benefits are related to years of service, if the plan has vesting provisions, and if the benefit formula calls for relating benefits to final earnings or highest earnings. It is also extremely important to recognize that the differential will be influenced by the actuarial assumptions on which the cost estimates are based--particularly assumptions as to future interest rates, withdrawal rates, and changes in life expectancy. It is sometimes argued, for example, that because many actuaries make little or no allowance for future changes in life expectancy, they tend to understate true pension costs for younger workers as compared with older workers.

When contributions to a pension fund are made on a flat cents-per-hour-per-worker basis, as under many negotiated plans, there is, of course, no apparent cost differential based on age. Even here, however, the age composition of the covered group will clearly influence the adequacy of the pension benefits that can be purchased with the available funds--along with turnover rates and other factors.

If we are to be in a position to arrive at sound judgments on the question of pension costs, we need far better information on how age differentials in costs will differ under various combinations

of provisions and under various sets of actuarial assumptions. And then, even if it turns out that pension costs are somewhat higher for older workers under a particular plan, we need to consider the question as to whether those higher costs may not be offset by other factors, e.g., lower turnover rates for older workers.

This brings me to the point at which I'd like to air my "pet peeve" in relation to the research and writing that has been done on the employment problems of older workers. It seems to me that virtually every discussion of the issue is plagued by a piecemeal approach. Various questions are raised as if they were totally unrelated to one another. Are pension costs higher or lower? What about the costs of other fringe benefits? What about absenteeism rates? What about turnover rates? And what can be said about the relative productivity of younger and older workers?

What we need is some studies that would shed light on the combined influence of all these variables. Such studies would have to be based on careful analyses of cost and productivity data for particular firms. The critical difficulty of developing adequate data on the productivity of individual workers--where incentive payment plans are not used--might at least partially be overcome by using detailed supervisors' evaluation forms. This technique would probably have to be used, in any event, if such studies were to be made of white-collar workers.

I'm not at all sure what such studies would show, though I strongly suspect the results would vary somewhat for different occupation groups. But suppose, for purposes of discussion, that, for

at least some occupation groups, it appeared to be uneconomical, on the average, to hire jobseekers above a certain age. Would the employer then be well advised to enforce a rigid policy of hiring no workers above that age? I would urge that the answer is no. For if there is one clear finding that seems to have resulted from research on job performance and age, it is that individual variations in productivity within age groups are likely to be higher than differences between age groups. A finding that relates to variations in average job performance in relation to average labor costs by age does not, logically, provide support for a blanket rule of refusing to consider highly qualified older jobseekers.

Years-of-service provisions. I shall deal more briefly with years-of-service provisions of pension plans and their impact on hiring policies. The reluctance of a large firm to retire a worker with only a token pension, or with no pension at all, is understandable. But this consideration carried more weight several decades ago, when social security benefits were unavailable, than it does today, when almost every retiree will qualify for social security retirement benefits. Clearly, also, it would carry even less weight if social security benefits were more nearly adequate. Despite the fact that OASDI benefit levels have been substantially improved during the 1950's, the average single retired worker receives only about \$72.50 a month, and even those who are coming on the rolls at the present time are receiving only about \$82 a month, on the average.

Whether it is wise to include provisions in private pension plans that require a minimum of, say, ten years of service before an employee will be eligible for any pension benefits is a debatable question. Even more debatable is the question as to whether such requirements should be used as a basis for rigid policies of refusing to hire a worker who is less than ten years below the normal retirement age. Our San Francisco study indicated that a few large firms with this type of pension plan provision were hiring workers in the critical age bracket but making it quite clear to them that they would not be eligible for a pension.

The fact that a rising proportion of pension plans are including vesting provisions will, of course, tend eventually to ease this problem. To the extent that older jobseekers have pension rights that have accrued in previous jobs, the prospective retirement benefits from this source can be added to any prospective benefits from a new job.

Pension plans and Labor Mobility

In a dynamic economy, the efficient utilization of manpower resources depends to a large extent on the willingness of workers to shift from contracting to expanding industries and from areas of declining employment opportunities to areas of rapidly expanding opportunities. Yet research on labor mobility has indicated clearly that most voluntary job-shifting, even in an era when pensions and other fringe benefits were less prevalent than they are today, occurred among comparatively young workers. And the young worker for whom retirement is a distant prospect is not likely to be overly

concerned about pension rights and, in any case, probably has not worked long enough for any one firm to have accumulated appreciable pension rights.

It is basically for this reason that I am inclined to think that the impact of pensions on voluntary labor mobility has been exaggerated. Furthermore, a number of recent studies have cast doubt, in various ways, on the widely accepted notion that pensions have interfered materially with voluntary labor mobility. Robert Tilove, in a study for the Fund for the Republic, emphasizes the point that older workers are not likely to be very mobile, in any event, and goes on to call attention to the way in which early retirement features of pension plans may actually facilitate shifts of older men out of jobs that are taxing their strength into lighter jobs. Arthur M. Ross, in a recent article in the American Economic Review, points out that those who view the alleged decline in labor mobility with alarm are forced, for want of more adequate data, to rest their case that a decline has occurred on changes in quit rates in manufacturing. Yet, if cyclical fluctuations and disruptions brought on by major wars are ignored, it is clear that any long-term decline in quit rates has been quite moderate and can be largely explained by (a) the failure of manufacturing employment to expand in recent years and (b) the associated aging of the manufacturing work force. In a very different type of study, based on interviews with workers in firms with and without pension plans, and as yet unpublished, Herbert Parnes has found that the influence of accumulated seniority far outweighs any influence of pension rights as a deterrent to voluntary labor mobility.

If it is difficult to demonstrate that pensions have interfered appreciably with voluntary labor mobility, it is not difficult to build a strong case for the vesting of pension rights to protect the economic position of those older workers who are forced to shift jobs involuntarily. The older worker who loses his job because of a plant relocation, merger, business failure, or because the introduction of automation or other technological improvements has closed out an entire department, is likely to find, in many cases, that he has lost all his pension rights. And there is a good deal of evidence that the frequency of such involuntary job separations has been increasing.

Pension Plans and Compulsory Retirement Policies

We come now to the relationship between pension plans and compulsory retirement policies. There is little doubt that the association is a close one, and it scarcely needs belaboring in a conference of experts on personnel problems. Very few firms that have not adopted pension plans have a formal retirement policy of any sort. Retirement tends to occur on an ad hoc basis, usually when the worker becomes too old or too ill to keep on with his job. A few large firms that lack a pension plan provide individual retirees with pension benefits on a basis of need, but such policies are comparatively rare.

The introduction of a pension plan means the inauguration of a formal and orderly retirement system, and in the great majority (one New York study indicated seven-eighths) of single-employer unilateral plans, some type of mandatory retirement provision is adopted. Further-

more, there is little or no evidence of any trend away from mandatory retirement provisions in this type of plan, although there is a good deal of variation from firm to firm in the rigidity or flexibility with which retirement at the mandatory age is enforced.

Negotiated pension plans are somewhat less likely to include involuntary retirement provisions. Even so, a recent BLS study indicated that three out of five negotiated plans provided for involuntary retirement, and that there has been no significant change in this proportion in the previous six years. However, there is some evidence that there was something of a trend away from compulsory retirement provisions--and toward later compulsory retirement ages--under the so-called "pattern" plans, in the late 1940's and very early in 1950's.

On net balance, however, it seems clear that the percentage of workers affected by compulsory retirement provisions has increased substantially during the last decade, along with the growth of pension plans, even though it still represents a minority of all workers.

There is probably no issue of personnel policy on which management attitudes vary more widely than on the question of compulsory retirement. To some extent these differences are related to differences in the age of the firm and the rate at which its employment is tending to expand or contract. The older the firm, and the less its employment is expanding, the more likely it is to favor compulsory, or even automatic, retirement. But differences in attitudes toward retirement policy cannot be fully explained on these relatively objective grounds. Some managements have a strong attitudinal

predilection for a fixed retirement age, with few or no exceptions allowed, on the ground that (a) such a policy is relatively easy to administer, (b) once established, it tends to be accepted by employees, and (c) there are as yet no satisfactory objective criteria for determining which employees should be continued on after the conventional retirement age. Other employers take an equally firm position in favor of a flexible retirement policy on the ground that it (a) contributes to employee morale and (b) permits the employer to retain the services of those workers who maintain a high degree of efficiency well beyond the conventional retirement age.

If management attitudes toward retirement policy vary widely, so do those of workers. And yet, despite a good deal of research on this question during the last decade, we still have an incomplete picture of the factors that influence employee attitudes toward retirement. One finding that has been quite clearly established is that the closer a worker gets to the age of retirement, the more likely he is to resist the idea. Some studies have also suggested that attitudes vary widely by occupation, but the Cornell retirement study--one of the largest-scale studies to date--suggests that prospective retirement income has a more important bearing on attitudes toward retirement than occupation. Those older workers who anticipate a reasonably adequate retirement income are much less likely to have negative attitudes toward retirement than those who expect a seriously inadequate retirement income.

Union policies toward the issue of compulsory versus flexible retirement also vary widely, depending to some extent on the age composition of the union membership, the employment situation in the industry, and

other factors. On the whole, most unions have tended to oppose compulsory retirement provisions during the last decade, or to press for a later compulsory retirement age. But there has been growing evidence of a recent shift in sentiment toward compulsory retirement--and at earlier ages--in union circles in the last few years, under the influence of heightened concern over unemployment. In an environment in which the expansion of blue-collar employment has slowed up appreciably, there are indications of a return to the prevailing sentiment of the 1930's, in favor of compulsory retirement of older workers in order to improve employment opportunities for younger workers.

It is clear that, if present trends continue, the question of how to meet the problem of impaired employment opportunities for many groups of manual workers is likely to be an important issue in labor-management relations during the next decade, as yesterday morning's session clearly suggested. Whether office automation will result in a similar trend for clerical workers is not yet clear. In any event, there is likely to be pressure from the younger members of a good many unions to hasten the retirement of older members.

If this occurs, it is to be hoped that the alternatives will be carefully weighted and examined. What is needed, above all, is a flexible approach by both management and labor to the problems of technological change and declining employment in particular industries. The mechanization fund recently established for the West Coast longshoremen, and the agreements recently negotiated between the Armour Company and the meat packers and between the railroads and the Brotherhood of Maintenance of Way Employees, represent examples of flexible approaches.

And even if it appears in some industries that the retirement of older workers should be speeded up, alternative methods of achieving this result should be carefully explored. There is some evidence, for example, that employees tend to retire comparatively early in firms that have both flexible retirement policies and relatively generous retirement benefits. Thus the question may well be raised whether it is better to encourage earlier retirement through compulsory retirement policies or through more adequate retirement benefits.

One point that is frequently overlooked in discussions of retirement policy is that age 65 has been regarded as the conventional retirement age pretty much throughout the present century, and yet average life expectancy, even at age 65, has been increasing. In the face of this trend, does it seem wise to consider lowering mandatory retirement ages? Or would it not seem more appropriate to consider gradually increasing them? One advantage of this procedure, clearly, would be to reduce the cost of pension plans as currently constituted and to open up the possibility of utilizing the released funds for more adequate benefits.

Incomplete Coverage and the Problem of Equity

We come now to the fourth charge levied against private pension plans in relation to the aging worker--the obstacles to covering workers in small firms and in industries characterized by short-term, casual, or seasonal employment. In an environment in which private pension plans have been encouraged in a variety of ways as a major part of the American effort to provide income security in old age, the aging employee of a firm that is unlikely to adopt a pension plan is in a very real sense the "forgotten man." And in a significant sense

his employer is also a "forgotten man." Although the development of common trusts has made it somewhat more feasible for small employers to consider pension plans, a good many small employers are caught in a situation in which assumption of the sizable costs associated with a pension plan is not very practical unless their competitors are also adopting plans. I have discussed this situation with a number of small employers who can see the need for a more adequate retirement income for their employees but are hesitant to incur the costs involved.

Not only are there wide disparities in prospective retirement income between workers who can anticipate private pension benefits and those who cannot, but, as you are well aware, there are wide differences between the benefits available under various plans, even for workers at comparable earnings levels.

My guess is that this problem is likely to move into the forefront of public discussion in this country in the next decade, as it has recently in Great Britain. There are at least three alternative ways in which it can be met: (1) through a policy of drift, in which case pension coverage will gradually be extended to a slowly rising proportion of workers now excluded but will still leave sizable groups uncovered; (2) adoption of a policy similar to that enacted into law in Great Britain in 1959; or (3) liberalization of social security benefit levels to the point at which prospective retirement income for those who must rely almost exclusively on these benefits will provide a modest, but adequate, level of retirement income.

Clearly I am not particularly enthusiastic about the first alternative. As between the second and third alternatives, I suspect there

will be a good deal of debate on both sides in the next few years, and I am not prepared at the moment to argue for or against the British solution.

What the British have done is to superimpose a supplementary graduated retirement benefit scheme on their former system of flat benefits. Retirement benefits that are related to earnings will be paid on that portion of an individual's income between 9 and 15 pounds sterling a week. (Average earnings are approximately 12 pounds a week.) However, private pension plans--which cover approximately the same percentage of workers in Britain as in this country--may contract out of the government scheme if they provide supplementary benefits that are at least as generous as those provided under the government program. Furthermore, private pension plans must provide for transferability of pension rights whenever a worker shifts jobs. It will be readily seen that the contracting out provision is very similar to the procedures under our California temporary disability insurance program.

Whatever approach is adopted, it is apparent that social security benefits cannot be substantially increased without an increase in the costs of the program. But, in this connection, I would suggest that there are several points that are frequently overlooked. In the first place, the original \$3,000 ceiling on annual taxable earnings under the 1935 act included the total earnings of all but a tiny fraction of American workers, whereas at present about half of all regularly employed men earn more than the current \$4,800 ceiling, while about a fourth of all covered workers earn more than \$4,800. This means that as the system has matured and as social security tax rates have been

increased, total social security contributions as a percentage of total payrolls have not risen in the same proportion. This consideration needs to be kept in mind in connection with discussions of the extent to which social security costs have increased and are likely to increase in the future.

The second and much more important point is that we rarely stop to consider, in hardheaded business terms, how much it costs not to have a more adequate social security system. For example, a good many firms that do not have private pension plans keep a few elderly employees with failing physical and mental capacities on the payroll long after they have ceased to be of any real value to the firm, simply because the employer knows that the social security benefits these employees would receive in retirement are grossly inadequate. In some cases, as I have previously suggested, the firm will retire the employee with an individually negotiated pension designed to close the gap between social security benefits and minimal income needs in retirement, but often this solution is postponed until the employee is obviously too old and infirm to continue working. These procedures clearly cost money, and it is this type of expense that I have in mind when I refer to the cost of not having an adequate social security system.

Perhaps there is no better note on which to end this discussion than to look for a moment at the other side of the coin. As a management group, you are well aware of the fact that, if adequate social security benefits are costly, so are adequate private pensions. Given an economic environment in which long-run inflationary trends are expected to continue, there will be increasing pressure for pension

benefits that are based on final on highest earnings, rather than on average earnings throughout the employee's period of service. As a member of the California State Employees Retirement System, I am well aware of the advantages of this type of benefit formula, and I am also well aware of its relative costliness.

What I am suggesting is that during the 1960's there will be strong pressures in favor of strengthening private pension benefit structures and also strong pressures in favor of strengthening the social security system. Management groups will be in a position to influence the decisions that affect relationships between the two systems. My main point is that the decisions need to be made on the basis of a careful examination of the relative costs and the relative advantages of the various alternatives available.

HOW TO BUILD PRODUCTIVE WORK TEAMS

William C. Schutz

This morning I want to talk about three topics: (1) two phases of group productivity--motivation and compatibility, (2) some theoretical considerations for composing groups, and (3) some applications of this theory.

Motivation and Compatibility

It is important to distinguish between the motivation of a work team, and the compatibility within the team. These two aspects are by no means identical, although they are interestingly interrelated. Members of a team may be highly motivated to accomplish a task, but incompatible. In a case like this, not even a mutiny can be performed successfully by the team. On the other hand, a team with low task motivation but high compatibility would be very likely to perform a successful mutiny--they are not motivated in the way the captain wants them to be, and they are able to get together and decide on the united action of a mutiny.

The following remarks concern primarily the compatibility of a team, that is, the degree to which its members will be able to do whatever they themselves want to do, even if what they want to do is against "company policy." We can speak of productivity, in this connection, as the degree to which any group can approach its own optimum performance, toward the goals the group members have set for themselves.

Although motivation and compatibility are different, each affects the other in various ways. We know, for example, that many

"symptoms" among workers, usually classified as loss of motivation, can be traced directly to incompatibilities within an organization. Such symptoms of loss of motivation include a worker being absent or late with more than usual frequency, great physical fatigue toward the end of the day, discovery of a number of outside demands on a worker's time that prevents his spending quite as much time on the job as he originally would like to have done. These are all very common instances of worker behavior which reveal loss of motivation, and in almost every case such behavior can be traced back to an incompatibility within the working organization itself. In other words, if there is interpersonal friction--dissatisfaction with the way in which this individual is being treated, the way in which he is involved in decisions that affect him, etc.--one of the most common ways in which this gets expressed is some form of loss of motivation. So we may say that motivation is definitely influenced by compatibility, and very greatly so.

Conversely, compatibility is affected by motivation. We have done a number of experiments which reveal strikingly that a fundamentally compatible group will do even better under conditions of high motivation.. On the other hand, fundamentally incompatible groups do better under conditions of low pressure than under high motivation and pressure. Thus, the experimental evidence contradicts the common conception that the compatibility of a group is really not very important if the group must accomplish a particular goal in a short time under pressure. Even if it is very important for everyone on the team to get a job done rapidly and effectively, the fact remains that it must be done someone's way; that is, several people make suggestions and the group must decide

whose suggestion they will accept and whose they will reject. To the degree that the interpersonal problems are unresolved, pressure to make the decision quickly makes productivity even worse.

In summary, motivation and compatibility are both different and related. Motivation affects compatibility and compatibility affects motivation, but a compatible group is not necessarily a group that will do what you want it to do. In other words, a compatible group is not the same thing as a motivated group, if motivation refers to the goals of the company or the boss.

Theory

Let's now suppose that compatibility is in fact related to productivity in the way that I have described. How can one go about building a compatible and therefore productive team? I think there are two things to consider: first, the dimensions of the total interaction among people that are important in determining compatibility, and second, in terms of these dimensions, the structure of the group--the relationship among the people with respect to these dimensions.

The folklore is full of references to interpersonal dimensions. The two things most often said about them with respect to compatibility are "birds of a feather flock together," and "opposites attract." These apparently contradictory maxims don't help a great deal. However, perhaps there is some truth in both. One might ask along what dimensions birds of a feather really do flock together, and along what dimensions opposites really attract. First, however, one must find the dimensions. When psychologists work on problems like defining various kinds of interpersonal relations they talk a good deal about dimensions such as

dominance, surgency, introversion, extroversion. Someone recently factor analyzed all the studies which have come up with dimensions of personality, and he found that the smallest number of dimensions they would reduce to was 59!

Clearly, we can't work effectively with 59 dimensions. What I would suggest is that if one examines the studies that have been done in the areas of small groups, parent-child relations, psychoanalysis, juvenile delinquency, etc., one finds a surprising convergence of the dimensions dealt with. In practical terms, there seem to be only three dimensions--or, at least, three is the optimal number in the sense that in order to predict, or do anything practical, using more than these three dimensions will not improve the prediction very significantly and using less than these three will not give very adequate prediction.

In other words, in considering how to put together work teams it is important to find out how people relate to each other, the causes of interpersonal friction, and the factors which enable people in fact to work together. The three dimensions which seem important, and upon which everything in the literature seems to converge, I have called inclusion, control, and affection.

Inclusion is the desire to be in contact with people--simple contact, having nothing to do with the quality of the interaction. It refers to the degree to which one likes to be with people, to mingle with them, to be in their company, and the degree to which one likes to be alone, isolated, and more private. Closely related to this, but on the level related to feelings, is the desire and need for recognition, for gaining attention from people, for being noticed among the crowd.

We all have needs for this kind of recognition to some extent. We could make a continuum from one extreme of inclusion, the isolate, to the other extreme, the enmeshed person, and everyone would fall somewhere between, indicating the point at which he feels most comfortable dealing with people.

The second dimension, control, has to do with the degree to which one likes to control the behavior of other people. At one end of this continuum is complete control, an autocratic kind of behavior toward all other people. At the other end is behavior lacking in any kind of control, which we might call abdicatoric. The abdicator abdicates any control at all and does not want to take responsibility or make any decisions whatsoever regarding other people. Here again, each one of us has a position between these extremes in which we feel most comfortable in dealing with people. The deeper feelings relating to this behavior have to do with the need for respect and competence. Just as in the inclusion area, where we all have some desire and need for recognition, in the area of control we need respect--to be considered competent, potent people who are capable of doing things. We express this need by taking on responsibility and performing in such a way as to indicate that we really can do things.

Affection, the third dimension, has to do with the degree to which we like to have close, personal relations with other people--the degree of intimacy with which we feel most comfortable. At one end of this continuum is the person who likes all his relations to be impersonal and distant, who does not get close but remains more or less task-oriented with all the people he knows, and who does not really like to confide

or get personal with anyone. At the other extreme is the individual who likes to get very deep and confiding and intimate with many people. Here, too, we all have a point along this continuum at which we feel most comfortable. The feeling associated with this behavior has to do with the need to be loved by people.

These, then, constitute the three dimensions that I feel are sufficient for talking about and doing a good deal of predicting about the composition of work teams. In addition, if we want to talk about the interaction between people on these dimensions, we must consider two aspects of each: what I do to you, and what I want you to do to me. The first we'll call the "expressed behavior." The second we'll call the "wanted behavior." We can then talk about any one of the three dimensions in terms of whether it is expressed or wanted.

To get back to the folklore, let's now consider what all this has to do with birds of a feather, or with opposites attracting. As an example, let's take the control dimension. Within the dimension, four types of person are possible: high on both expresses and wanted control; low on both expressed and wanted control; high on expressed and low on wanted control; and high on wanted and low on expressed control.

The person who both wants and expresses a great deal of control is the prototype of the military man who likes to give orders, and who also likes to be given orders. The person low on both is the anarchist-- someone who likes neither to give nor to receive orders, but likes to have a very laissez-faire kind of relation. What would we predict about whether these two people would get along well together? One would

guess that they probably would not. That is, the high control person would like an atmosphere in which there is a good deal of structure--in which there are rules, there is a clear-cut division of power, and people are given orders and take orders. The low control person would not like this at all. He would prefer no structure and would want neither to give nor to take orders. Therefore we may assume that these two people would have interpersonal difficulties.

If we take the affection area, the same thing holds true. A person high on both expressed and wanted affection would prefer an atmosphere of closeness and warmth, while the person low on both would like things always to be very impersonal. Again, we would expect these two people to have trouble getting along.

On the other hand, if we took two people both high on expressed and wanted affection, they would be very likely to get along well. Both want the same warm atmosphere, with a lot of exchange of affection. The same would be true for two people who are low on expressed and wanted affection--both of these people would like a very impersonal atmosphere, and therefore should get along well. From this point of view, then, we can say that birds of a feather do, indeed, flock together. People who like the same types of interpersonal atmosphere will probably get along well. We call this "interchange compatibility," referring to the amount of give and take, or interchange, desired in a given dimension.

Again taking the control dimension to illustrate, let's consider the other types of people: a person who is high on expressed and low on wanted control; and one who is low on expressed and high on wanted

control. The first would be the kind of person who likes to give orders but not to take them--a dominant person. The second is submissive--he does not want to give orders, but to be given them. This looks like a case of opposites attracting, because if someone likes to be given orders and someone else likes to give them, the chances are that it will work out pretty well. That is, they're going to satisfy each other's needs.

On the other hand, if you take two people who both want to take orders but not to give them, there is likely to be trouble. We would expect in this case that nothing would ever happen. They would both be waiting for someone to do something and no one would take the initiative. This is what we call "apathetic incompatibility." By the same token, two similar people at the other extreme would both be people who want to give orders and who don't want to take them. We would call this "competitive incompatibility"--no one will do anything that the other person wants done. Here it looks like the "opposites attract" maxim is in fact the most appropriate one. That is, if we want two people to get along, one person should want to give orders to the degree that the other wants to take them. In contrast to interchange compatibility, we refer to this as "originator compatibility," referring to the fact that one person is an originator and the other a receiver.

We can say, then, that the resolution of the apparently contradictory folk notions about compatibility would be that birds of a feather do flock together with regard to interchange compatibility, or the atmosphere within which the relationship is to exist. On the other

hand, with regard to originator compatibility, "opposites attract" seems to be more true.

Applications

So far now, we have three dimensions of interpersonal behavior, and some general ideas about how people fit together on the dimensions. The dimensions, again, are inclusion, control, and affection, and the ways in which they combine can be summarized under the terms of originator and interchange compatibility. This begins to suggest a way of composing work groups. If we can in fact put together people who fit each other's needs with respect to these two kinds of compatibility, then we are on our way to getting work groups that will be effective. However, before we are ready for group composition there is one additional element to be considered, the structure of the grouping.

It would be incomplete and inadequate to say that all that is required for an effective work group is to get a lot of people who are compatible with each other according to this method. It doesn't work that way really. When a group is formed a hierarchy quickly develops, and this has to be dealt with also. In order to work on this I have used a concept called "focal person." The term "leader" is of limited value because it has taken on so many different meanings that it becomes almost more trouble to use than if we just forgot about it. The term "focal person" is much more flexible and allows for different kinds of things than we now include under the title of leadership. One important thing about a focal person is that he always has that role relative to a particular group. In other words, one individual can be focal (that is, the person around whom a group will form) for one set of people and not

for a different group. This is a common thing in all our experience. Baseball managers might be a good example here: Casey Stengel did very badly with Boston and Brocklyn, but then he came to the Yankees and did very well. It may be that the player quality is different, but it may also be that there was something about the teams that made Casey Stengel effective in one group and ineffective in another. If we want to find a focal person, then, we have to talk about him in relation to other people. This gets away from the trait theory of leadership which says that if you have certain characteristics you will always be a good leader, which we know is true only to a very limited extent.

Suppose we want to develop a group around the affection dimension, in which people are high on affection and like a close, personal group. In order to get a focal person for such a group, we would want to choose someone who is high on affection, so that in terms of the interchange he is compatible with the rest of the group. He should probably be low to medium in the control area and fairly high on inclusion. What we want to do is to make the dimension that we choose the salient one for the group so we don't want to have very strong feelings in the other areas that might dilute the central relation around which we want the group to form. We know from recent experience that one can compose groups to be interested in and talk about a particular kind of area. For example, if you make a group of people who are all high on affection, or all high on control, and that is their only interpersonal characteristic in common, the chances are very high that the group will form and interact almost exclusively around that area. Last summer at the Western Training

Laboratory in Human Relations, we tried this, composing a number of groups around a particular dimension, and by and large that is what happened. The group, for example, that was composed of people very high on expressed and wanted control did almost nothing for a whole ten-meeting workshop except talk about and work out the problems of authority, relations to the boss, competition, feelings of inadequacy, etc. On the other hand, a group composed of people very high in affection discussed almost entirely expressing feelings, how to accept warmth, and the expression of personal things between group members. It really is possible, then, to compose groups in such a way that one can be relatively sure they will interact around a particular dimension that they have interpersonally in common. Therefore, a person who is in tune with this particular area, and also has some other characteristics like being somewhat more assertive, is very likely to become the focal person. This person is the one who will hold the group together, even though he may not necessarily show leadership behavior as we ordinarily think of it.

Another thing we found in our experiments, when we composed groups of five people, was that it was very important to have a main supporting member. It wasn't enough to have just this one focal person no matter how good he was. He needed a lieutenant, so to speak. He needed someone to act as a buffer between him and the group, to support his ideas, to be almost the power behind the throne. With a focal person and a main supporting member, a very stable five-man group developed--one which fairly quickly acquired the structure that we had hoped for and maintained it.

There is a related study, by Fred Fiedler, which concludes that the two main people in the group must have a constant personal distance between themselves and the group. If the focal person is very close to the group and likes to be very friendly, then the main supporting member should be the tough guy and keep a distance between himself and the others. Whereas if the focal person is himself distant, the main supporting member should be closer to the group.

The personality traits of the people in the group can be quite varied. The primary thing is that they should be in the same area around which the group was formed: control, inclusion, or affection. What we actually did, experimentally using these ideas, was compose some groups to be compatible and some incompatible, and make the prediction that if we put them through a whole series of different kinds of tasks the compatibles would perform at a higher level. We were careful at the beginning to make sure that the groups were equated for intelligence and any abilities that would be required in performing the tasks. One experiment involved four groups of each kind and the results were very clearly positive. The four compatible groups outperformed the incompatible groups by a very wide margin over the period of ten meetings. It was interesting that they started out about equal and, as I mentioned earlier, as we increased the pressure on the two groups the compatibles got better and the incompatibles got worse, so that the difference between the two groups at the end was very, very marked. To make sure of this, at the end we took pairs of groups, one compatible and one incompatible, and put them together in a contest to find out which would win in a face-to-face situation. Out of

eight contests, seven were won by the compatible group. We repeated the experiment at Harvard with a group of freshmen, and added a few slight differences, but the results were the same. We ran them for 14 meetings and here, too, the compatibles did much better overall than did the incompatibles.

There is thus mounting evidence that one can compose groups that will be more productive, using this theory plus a knowledge of the persons' individual characteristics before they get together. The general technique of this composition is to give one questionnaire, called the FIRO-B, which measures the expressed and wanted aspects of inclusion, control, and affection, and then to use formulas which give originator and interchange compatibility to compose the groups. The technique is very simple in that the test takes only 10 to 15 minutes and gives all the information you need, unless you want to take into account intelligence or ability factors, which are also very easy to obtain. The test is described in more detail, along with most of the ideas discussed so far, in my book FIRO: A Three Dimensional Theory Of Interpersonal Behavior.¹

From a practical point of view, if all this is true, what does it mean? One thing it can mean is that in any situation in which you are free to select a new group, with a little added effort you can compose a group which is much more likely to be compatible than if it is done randomly. For example, if you are just beginning on a job and have to acquire a whole new crew, by using this 15 minute test you can greatly increase the chances that the crew will work well together. If you compose your groups randomly, you will probably get about 50 per

1. Rinehart, 1958.

cent compatible groups and 50 per cent incompatible. Using the method I have described seems to increase the compatibles to about 70 to 75 per cent.

If, as is more usual, you don't have the opportunity to start a new group but you simply want to replace someone who has dropped out of a group, by testing the whole group and getting a list of new candidates for the position you can make a choice which will ~~maximize~~ the probability that your replacement will fit into the group.

One final thing--what happens if you can't change the group that is incompatible? Suppose that your group isn't getting on, and you can't do anything about it. There two things you might do. One is to make a mechanical change by attempting to change the job in such a way that the interaction between the members of the group is lessened. This follows the finding that increased pressure reduces productivity in incompatible groups. It turns out that if you simply decrease the amount of interaction among the members, the effect of incompatibility on productivity is reduced. In other words, if the group members have nothing to do with each other, if they are completely isolated, their relations are minimal and therefore not particularly relevant to their productivity. What you have done is make them not a group.

The other thing you can do is more direct. This has been worked out here at this institution, UCLA, under the title "sensitivity training"--an attempt to get the group, as a group, into some kind of an experience where they will be able to talk to each other freely and to reveal the problems they have with each other and try to work them

out overtly. In other words, if there is anything that can be done about problems in a situation of this sort, it can only be done if the problems are brought out in the open. If they remain covert, one is virtually helpless to attack them. More and more in industry, as well as in other areas, people are finding it very helpful to get together groups of people under a trained person to try to talk to each other in such a way that they can reveal exactly how they feel toward each other. This, I think, has the characteristics of a cold shower. When one approaches it, it is with great trepidation because we're brought up to feel that you shouldn't really tell people how you feel about them. The initial impact is really very startling and shocking, especially when people tell you that you talk too much or have some other unpleasant characteristic. Then, when it's all over, you feel great and relations are usually much closer.

AN ACTION RESEARCH PROGRAM FOR THE PERSONNEL MAN

William F. Whyte

Can we apply human relations research findings?

I shall not undertake to answer that question in general terms. Let me instead present to you a case study in which research findings were applied. This may be of special interest to our conference, for the key figure in application of the findings was the personnel manager of the organization in which the research was done.

I am here reporting on a study carried out some years ago, and yet the report should be a fresh one, for I have seen nothing like it in print. In fact, we would have got into print with it long ago, except for the problem of maintaining a confidential relationship with the organization and individuals studies. We feel now that a long enough time has passed so that we can discuss the case rather fully without danger of identification.

The organization involved was a 400-room hotel in a large metropolitan center. The project had its inception when I gave a talk in the Tremont Hotel ¹ reporting on some of the findings of a research program on human relations in the restaurant industry. James Smith, vice-president and general manager and active operating head of the Tremont, was in the audience. He was a self-made man, having started work at the age of 13 as a dishwasher and having risen exceedingly rapidly so that he was half owner of the hotel before he was 40.

1. Names of the organization and of individuals (except our project staff) have all been changed.

Smith was a man who liked to try out new ideas, and the sorts of things I had to say were apparently quite new and unfamiliar to him. Furthermore, while the hotel was immensely profitable in this war boom year of 1945, it was also beset with severe human relations problems.

Smith approached me after the meeting to talk about these problems. He told me that the hotel was currently without a personnel manager. Would it be possible for me to recommend to him a man who had been trained in the kind of research I was then involved in at the University of Chicago? Our further conversation revealed the fact that there had been three men in the personnel manager's position in hardly more than a year's time, which suggested that the job was rather a hazardous one. I told him that I was not prepared to recommend anyone simply for the personnel manager's position but that I would make him a counter proposal. If he would agree to (and finance) an action research program, I would recommend a man to carry on the research and also one to implement the action program. I would myself be willing to serve as director of the research and consultant to hotel management in connection with this program. Smith agreed to the proposal, and we began work in mid-July of 1945.

The Action-Research Team

As a result of this agreement, Meredith Wiley became responsible for the action program, his salary being paid directly by the hotel. The field research staff consisted of Edith Lentz, who spent full time at the hotel but was on the payroll of the University of Chicago--on funds provided by the hotel.

We arranged that the field research notes of Edith Lentz should be made available to Wiley and sent to me at Chicago, and were to be seen by no one else. Similarly, whatever notes Wiley was able to find time to write, under the pressure of his personnel duties, would be

available to Edith Lentz and me and no one else.

As director of research and consultant, I spent a day each month at the hotel. Miss Lentz spent two days each month at the University of Chicago, except on occasion when Mr. Wiley came down for a consultation. This meant that the research director and staff people were together every two weeks. There was also frequent communication by letter, along with research reports.

What were the Problems?

The main problems of the Hotel Tremont at the time of the launching of our study can be summed up under five headings:

1. Labor turnover. During the preceeding twelve months, labor turnover in the hotel had been 250 per cent, or slightly over 20 per cent per month. There was, of course, a wide range of variation from department to department. In some groups, such as telephone operators, there was hardly any turnover. In other groups, such as dishwashers and miscellaneous kitchen help, the hotel was hard pressed to keep anyone on the job for more than a few days. However the figures might have been explained, it was evident that the working force was too unstable to make for efficient operation. The high turnover was also symptomatic of a low level of employee satisfaction. Absenteeism was also a serious problem.

2. Factional strife. When Mr. Smith came in to take over as top operating manager of the hotel, he brought with him a number of executives who had served under him in the hotel that he left. These people were widely referred to as "the Smith crowd," and those who were not a part of it assumed that this "crowd" had the inside track

with Mr. Smith. The hotel is a sensitive organism involving complex interdepartmental relations. We found serious frictions at many points, whether or not connected with "the Smith crowd" problem.

3. Autocratic supervision. Management's direction was autocratic at the higher levels. Some of this autocratic approach was observed also at lower levels in the organization, but we also found many lower-level supervisors who were weak and indecisive, apparently feeling caught between pressures from the top and resistances of the workers. Organizational channels were not observed--at least on the way down.

4. Unclear lines of authority. Many people did not know to whom they were responsible. In some cases, two or more people were giving orders--sometimes conflicting--to the same individual.

5. Union grievances. It was not so much the existence of grievances as the lack of any adequate means of handling them that presented a problem. Stewards in the various departments felt powerless to take action, and therefore the grievances all went to business agents who had responsibilities all over the large city. These men in turn had difficulty in handling problems with hotel personnel, so that often a grievance, after a long delay, would reach the office of the hotel association, where a man who knew very little about the Tremont itself would try to handle it.

Beginning in Food Service Departments

We began the project work within the food service departments for two main reasons. In the first place, Edith Lentz and I were fresh from a year of field research studying restaurants. In the second

place, we learned that two thirds of the hotel's revenues came in from food and drinks, which suggested that a start in this area would bring us to grips with important problems.

After our general introduction to the hotel personnel, Edith Lentz began work in the Coffee Shop, the lowest priced of the three dining rooms. She observed the waitresses at work and interviewed them and their supervisor to learn their conception of their problems.

On the average, the girls in this room were younger and had less restaurant experience than those in the other two dining rooms. They were attempting to cope with a steadily expanding volume of business, without any formal training for the job, and under heavy pressure of disapproval from Mr. Kraus, the resident manager. He considered their performance inadequate and told them so flatly in several departmental meetings.

Miss Paris, the dining room supervisor, was fairly popular with most of the girls, but she was working under extreme nervous tension. She reported that she knew Mr. Kraus considered her too soft on the girls, and she was trying to speak to them more sharply about their short comings, but this was not easy for her.

The waitresses felt that management had no interest in their problems. Symbolic of this lack of management interest was the problem of the water spigot. Every time they needed to fill up their water pitchers, they had to walk about a hundred feet away from the dining room to the nearest water spigot. They had raised this problem months before but had been told that nothing could be done until the hotel's ambitious renovation program had been completed. Meanwhile, as business

steadily increased, the girls had to make more and more trips to the distant water spigot at every meal.

It was not our aim to have the research findings simply presented to Miss Paris or anyone at a higher level. Since one of the main problems involved the pattern of interaction between supervisor and subordinates, we felt it important that actions taken by the supervisor should grow out of some face-to-face discussion with her subordinates.

Armed with Miss Lentz's notes and analyses of the Coffee Shop situation, Wiley himself began interviewing Miss Paris and consulting with her on what she might do. When she herself suggested that she might try conducting a weekly discussion meeting with her girls--although she doubted her ability to do this effectively--Wiley encouraged her strongly to proceed and discussed with her how such meetings might be handled. He also sat in on the first meetings, so that he was in the position later to compliment her on the way she conducted them and also to provide further suggestions regarding techniques.

The waitresses reported later to Miss Lentz that their weekly meetings had completely changed the emotional atmosphere of the dining room. They felt under less tension and able to do a more efficient job. They also commented on improvements in the organization of their work that had grown out of these meeting discussions.

The new water spigot was the most concrete of the improvements. After this had come up in the first meetings and had been discussed further by Wiley with Miss Paris and with the hotel engineer, Wiley

directly to Smith to present the case for the spigot that would be conveniently located at the edge of the dining room. Wiley was able

to make Smith see that the spigot had a symbolic as well as technological function. As long as nothing was done about this pressing matter, the girls would be convinced that management did not really care about their problems.

Smith readily saw this point and added that perhaps the planned renovation of the hotel had been used as an excuse for failing to pay attention to immediate problems. There was no need for the spigot to await the whole program, and he ordered it immediately installed.

While relations improved within the dining room itself, the waitresses continued to complain about friction in the kitchen. Miss Paris wondered whether a discussion meeting with the chef might help. While he encouraged her to think along these lines, Wiley recognized that such a meeting would be effective only if the chef knew how to respond to the girls' criticisms. The first time Wiley discussed the possibility of such a meeting with the chef, he found that the chef had no conception of the problems of the girls or of the possibility of such a meeting. Wiley therefore let the matter rest for a short time. Only after he had had two more meetings with the chef and had discussed the matter thoroughly did he feel that such an interdepartmental meeting should be undertaken.

This interdepartmental meeting proved to be a turning point in relations between the Coffee Shop and the kitchen. Thanks to Wiley's preparatory work, the chef entered the meeting with some conception of the types of criticisms that would be directed at him, and he was able to receive these criticisms in a receptive and unemotional manner. Wherever he could promise action to remedy a problem, he did so, and

later, of course, he followed through. On some problems, he felt there was no action he could possibly take. In these cases, he responded by explaining to the girls the kitchen situation that prevented him from taking action.

Even in the course of this single meeting, a remarkable change took place. The girls began the meeting by voicing their complaints with a great deal of vigor. As the meeting proceeded and the chef responded skillfully, the emotional level of the meeting appeared to drop. The waitresses accepted without question the chef's statements in those cases where he said he was unable to act. Furthermore, toward the end of the meeting they were suggesting to each other actions they might take when in the kitchen so as to make the job easier for the kitchen personnel. The girls testified later that their relations in the kitchen had markedly improved, and the chef spoke with great satisfaction about the improvements that he himself saw.

The roles played by Lentz and Wiley in this discussion process become clearer when we compare developments in the Coffee Shop and between Coffee Shop and kitchen with the situation in the Zebra Room, the hotel's top-status dining room. Before Miss Lentz had had an opportunity to undertake any interviewing there and at a time when Wiley still was a relative stranger to the department, the department head arranged a meeting at which his waiters and waitresses directed their own complaints to the chef. While they reported feeling better after this meeting, the chef felt quite bitter about the way he had been taken to task, and we were unable to find any concrete changes that had grown out of the meeting. It appeared that the waiters and

waitresses, not having had the opportunity to drain any of their feelings off in interviews and in their own group meetings, had poured on to the chef such an aggressive attack that he was unable to respond as he had in the Coffee Shop. This suggests that just calling meetings is hardly an answer.

Later in the course of the project, we found serious problems involving the food checkers and waiters and waitresses. As we had found in our restaurant industry study, the checker tends to be a focal point of friction. While this is often explained as due to the personality of the given checker, we feel that the nature of the job itself can account for most of the friction observed.

The checker performs two functions, which differ substantially from one another. On the one hand, she does the clerical job of ringing up on her machine the various items on a girl's tray and recording the amount of the bill on the check given her by the waitress. On the other hand, she is an inspector, empowered by management to inspect the tray to see that the food and utensils are arranged properly, that the portion of meat has parsley on it, if that is called for, and so on. If she finds anything wrong, she can send the waitress back to the kitchen.

This combination of functions may give the waitresses little difficulty at times of slow business, but at the height of a rush hour in a busy restaurant, the situation becomes quite different. The waitresses are standing in line to get through the checker stand. The mere waiting process can allow the hot food to cool and the cold food to warm up. If, in addition, the girl is sent back to the kitchen,

her whole work schedule is thrown off, and she may fear trouble with customers and her supervisor.

In the Tremont case, this particular friction point was made much more serious by a lack of adjustment to the steadily growing volume of business. One checker stand served three dining rooms. With her spare time, the checker was expected to answer the room service telephone and write the orders for that department on checks which she passed along to waiters or waitresses in that department.

A few hours of observation by Miss Lentz at the checker stand during rush periods were enough to reveal the work flow problems. In addition, she interviewed the checkers and their supervisor to get their ideas about possible improvements. Following the brief study period, Wiley began consulting with the immediate supervisor and with other management people regarding the changes that might be made. Out of these discussions, backed up by the research findings, grew two main changes. A second checker stand was established so that the traffic could be divided and rush hour pile-ups avoided. The room service telephone was located elsewhere, so the checkers were not burdened with this duty.

The effects of these changes were immediately apparent. The most experienced and efficient checker had been on the verge of quitting before this study began. Now she commented,

Honestly, you have no idea how different it is. It's just a new job altogether, that's all. It isn't only that the work is cut almost in half, either, but the confusion is so much less. You see when all the dining rooms were busy at once, before this new stand opened, half the waitresses would go in one direction when they left the stand and the others would want to go to the other.

They were forever getting into each other's way and we were always afraid of trays upsetting or food splashing over the dishes. Not only that, but we didn't have time to be polite to people. The room service phone would ring all the time and we were just too busy to be courteous. I admit it, I know myself I just had to be short with people. We tried to cut out every unnecessary work to save time. Now--oh, I feel swell today. It is like heaven, really it is.

A waitress reported the prevailing view of the waiters and waitresses in this fashion:

Say, that new checker's stand is swell, isn't it? That certainly made a big difference in our service. Gee, we used to have to stand around and all the food would get cold while we waited. Then the customers would gripe. It wasn't our fault, it was just that we had to wait out at that checker's desk. I'm sure glad this new desk is in operation.

Other Studies

From the foods service departments, the research moved on into the housekeeping department and then into the front office. I shall not undertake to review these particular studies in detail, since they involved some of the same aspects already dealt with.

The housekeeping study added one new element worthy of attention: the resolution of a problem of conflict within department management through altering the organizational structure. This seemed to be an instance of "the Smith crowd" problem, since Mr. Kane had come in with Mr. Smith from the previous hotel, to assume a superior position over Mrs. Grellis, the former manager of the housekeeping department. Miss Lentz and Wiley worked very closely with both individuals, as the departmental study progressed, and they finally arrived at a solution to one of the conflict problems through a change in the structure. While

Mr. Kane retained overall responsibility for the department as a whole, he devoted his attention primarily to the house men and the cleaning of the public rooms, while Mrs. Grellis carried on the direction of the work of the maids in the sleeping rooms. Presumably this change would have been strongly resisted by Kane if it had been proposed without consultation, but the process of discussion led him to accept it and to be happy with it.

While the project undertook no special study of union-management relations, that problem area came up in nearly every department studied. As our understanding of the organization increased, Wiley was able to take initiative in the union relations, so that grievances now were brought directly to him, and he worked with the supervisors and department managers in resolving them. This new organizational procedure was greeted with satisfaction on the part of the stewards and business agents for the union and on the part of the hotel management. Grievance pile-ups were no more.

Top-Level Problems

Constructive changes in organizations at low levels usually can only be made if changes are also introduced in behavior at higher levels. At the same time, our ability to induce changes in higher levels may depend in large part upon our ability to effect constructive changes at lower levels. In a project such as this, we were working simultaneously at department levels and at the levels of resident manager and of vice-president and general manager. Since both areas of activity cannot be described simultaneously, I have begun with the departmental studies. I now proceed to describe the problems and the changes introduced at the

higher levels, but the reader should recognize that we were concerned with these top-level activities at the same time as we were operating directly at the departmental levels.

Smith was an impatient, imaginative, and hard-driving executive. Every now and then he took actions that resulted in serious human relations disturbances, and yet it was he who brought our program in and it was his support throughout that was the necessary condition for its effectiveness.

The resident manager, Mr. Kraus, first seemed to us the primary stumbling block in our progress. A former Austrian army officer in World War I, he had later had 20-odd years of experience with a hotel auditing firm. This had involved moving around from place to place, spending a week or two with each hotel, inspecting the books, revising the accounting and cost control system, and telling management people who should be fired or transferred. Kraus had never had to stay in an organization to carry out these changes until, shortly before we began our work, he was brought in by Smith as resident manager. A more inappropriate background of experience for management is hard to imagine.

Kraus used to spend at least half of each working day patrolling the hotel. When he observed anything not to his liking, he took immediate action, issuing direct orders to anyone from the lowest employee to his immediate subordinates and sometimes discharging employees on the spot. We found cases where the immediate supervisor of the discharged employee did not discover for several hours that the individual was not just absent.

Kraus believed that people were inherently lazy and had to have the riot act read to them every now and then, individually or collectively. To get the flavor of Kraus, consider one observation of him in a Coffee Shop waitress meeting.

The meeting was called for three o'clock but it was twenty minutes after three when Kraus finally arrived. His face was red and he came in without a smile and started speaking before he sat down. The girls were jittery and none of them had eaten since before eleven o'clock that morning .

Kraus:

Well, let's get this thing going. I have another meeting after this one. (He sat down.) We're spending a lot of money to make this place over and to improve the service to the customers. So far as I can see our efforts have been positively wasted. We ask for your cooperation and what do we get? Nothing! This has got to stop. All of you are making good money here and you seem to think, "Why should I worry about the customers?" Things have got to change around here. This hotel is not going to be run for the employee's benefit anymore. It is a place of business and it's going to be run that way. If any of you don't like it, get out! We don't want you here! etc., etc., etc.

He went on to warn them of specific sins, such as swearing in the kitchen, forgetting to present the customers with a sales check, and so forth. With each recital of their wrongs, he would say they must do better or be fired.

After he relieved his mind, he called on Miss Paris to speak. She tried her best to imitate his attitude, but as she was by nature a gentle person, it seemed completely incongruous. She said in bullying tones,

I have a setup here on the table. Please study it. Goodness knows you ought to know by now how to set a table, but evidently some of you must be reminded. Another thing, I want you to cooperate with each other more. Why can't you work together? You should help each other without being urged.

Kraus interrupted:

Don't make that a request, it's an absolute command! No cooperation, out you go. Is that clear? And don't think I don't mean it, because I do!

We were anxious to see what effect, if any, this meeting had on the Coffee Shop and so hung around to get repercussions.

The person most strongly affected by it was the supervisor, Miss Paris. She took to heart every word Kraus had spoken. Instead of being a pillar of strength and calm, which was her usual contribution to the department's welfare, she became highly nervous and demanding.

Several days later, she commented:

I know Mr. Kraus was right the other day. We don't do as good a job as we should. I don't know what to do, I keep telling them over and over but they never seem to change. Mr. Kraus said we must keep pounding till the girls finally learn right from wrong. I have tried to be nice to the girls. I don't know, I just don't know. They have been so upset since the meeting the other day, and yet they have had it coming. They don't do as well as they could. Mr. Kraus thinks I'm too soft and I believe I am too, but what are you going to do?

What she did was to begin "pounding" on the girls on every possible occasion. She jumped them for lateness, for untidy appearance, for slow service. The girls in turn became jittery and began to make more mistakes than ever. All the things that Mr. Kraus had warned them specifically about began recurring. For instance, swearing at the cooks. He had been adamant about that and had pointed his finger at one culprit, roaring, "and I mean you!" Three days later this

same girl broke down in the kitchen again, got into a fight with the cooks, and ended up telling the chef off. Another waitress, who had wondered (with tears in her eyes) why Mr. Kraus had stared at her the whole time during the meeting (he hadn't), simply failed to show up for work several days later, and didn't even phone in. One of her closest friends said,

That isn't like Helen. It just isn't Helenish. I was out with her last night and she seemed all right then. The only thing she said was just that there had been so much tension this week.

Asked what she meant by tension, she said,

Oh, having a person watch you all the time, that makes you nervous. It has been worse in the kitchen lately, too.

One of the most capable waitresses started going to the doctor.

It's that throat of mine again. It was all better, I thought, but I've been so nervous all week and I couldn't imagine what ailed me. Then I talked to my doctor and he said it was probably my throat so I'm going over to see him again today.

The next day this girl tripped and fell with a heavy tray of dishes. All the girls complained of tension and it was a good week before the normal equilibrium was restored.

The project's first effort to reform Kraus took place a month after work had begun. For one of my monthly visits to the hotel, Smith called a meeting of his management people and asked me to talk to the group. Ostensibly my remarks were drawn from our restaurant research, but they were specifically aimed to meet the problem of Kraus. On a blackboard, I sketched the pressures affecting the waitresses from customers, cooks, checkers, and from the whole line of authority above

them. I ~~dwelt~~ at some length on the nervous tension experienced by waitresses and the effect this had upon their performance as well as upon their satisfaction with the job. I emphasized strongly that waitresses needed to be relieved of pressures from higher levels and to have open to them a channel for communicating on their problems up the line.

Following this presentation, there was a group discussion. Kraus himself had little to say, but Smith strongly endorsed the point of view I had expressed, and others followed his lead.

Apparently this meeting indicated to Kraus that his reading-the-riot-act approach was no longer in favor. This behavior ceased. Up to this point, we had succeeded in blocking Kraus but not in rechanneling his behavior. For weeks, Wiley sought to establish a relationship such that the two men could work together. Our theory at this point was that Kraus himself had problems within the organization. Particularly, we knew that he was not a member of "the Smith crowd" and must be insecure, with some members of that "crowd" at lower levels bypassing him in reporting to Smith. We reasoned that if Wiley could encourage Kraus to talk out his problems, the two men would be ~~able~~ to reach an understanding. This personnel counseling approach simply did not work. Kraus would not stand still long enough to be interviewed.

At first, Kraus had been wary of Wiley, apparently wondering what kind of a threat a new man could pose to him. When weeks passed and Wiley took no aggressive action, Kraus concluded that Wiley was a weak individual and that he need pay no further attention to him. In fact, he began telling other executives, "If you want something of the

personnel office, don't go to Wiley. He's a dope. Take it up with Miss Dickson (personnel assistant)."

Wiley at last decided to take the bull by the horns. The immediate occasion for the encounter was an order Kraus had given to transfer the Zebra Room waitresses into the King Cole Room and to transfer the King Cole waiters into the Zebra Room. It was a Kraus theory that a really high class restaurant required waiters. This move had been taken without any consultation. The waiters and waitresses who were affected were up in arms and protesting to the union. Wiley necessarily became involved in the problem at this point, but he used the problem as a means of pointing out to Kraus that the personnel department could not straighten out personnel problems when such arbitrary actions were taken without any consultation. Things would run more smoothly if the two men could work together. The meeting continued stormily for some minutes, but the final outcome was an implicit treaty of peace, with Kraus agreeing to work with Wiley.

From this point on, Kraus and Wiley worked closely together. We cannot say that Kraus became transformed into an outstanding executive, and yet the changes achieved were indeed sweeping. No longer did he read the riot act to individuals or in meetings. He was not willing to let his subordinate supervisors hold discussion meetings without his presence. When he did attend, we found him actually learning to listen to what people said and to respond to their problems. Furthermore, he now observed the channels of the organization so that workers and supervisors no longer had to fear the direct intervention of the big boss. These changes in Kraus were essential for the process of stabilizing the

organization and for working effectively with supervisors at lower levels.

Results

We cannot show results in productivity in such a case, for the revenues of the hotel depended to such a large extent upon the state of general business activity in the community and responded to many other factors than the state of relations within the organization. Perhaps the most marked index of change is found in the records of the labor turnover. Within 18 months after the beginning of the project, turnover had dropped from over 20 per cent per month to 6 per cent, at about which point it leveled off. So far as we know, other hotels in the city did not experience a similar drop in the same period, but we are handicapped in demonstrating this, for other hotels did not keep turnover records.

Perhaps the best demonstration of effectiveness is found in the comments Edith Lentz picked up from workers right up to top level. There was an almost universal appreciation of an improvement in the quality of interpersonal relations. People reported that their jobs were more satisfying, that they experienced less nervous tension. Without having any direct measure, Smith was convinced that these changes also contributed to better relations with hotel guests and therefore to the profitability of the enterprise.

The Role of the Personnel Man

The project evolved a new role for the personnel man. On the one hand, he handled the routine functions of his office, delegating as

as possible to his assistant. On the other hand, he served as a consultant on human relations problems.

We defined human relations problems broadly. The personnel man dealt with changes in the organizational structure, altering or clarifying lines of authority. He dealt with changes in the work flow and in the technology--as in the cases of the water spigot and the checker stands. He rechanneled the handling of union-management relations.

There was no formal training program in the hotel during our year of research, and yet it might be said that the personnel director was functioning as a trainer a large part of the time. The group meetings he stimulated can be regarded as training sessions. Training was by the case method, but in this instance the cases did not come from Harvard or Cornell but grew out of the research project itself. The cases discussed were those cases that immediately concerned the people carrying on the discussion. Wiley coached the supervisors so that they would be able to handle these training sessions more effectively.

Wiley and Lentz, working together, were able to provide supervisors with feedback on the effectiveness of their own supervisory efforts. For example, after sitting in on the first group discussion meetings in the housekeeping department, Edith Lentz interviewed a number of the maids. On the whole, they were enthusiastic about the new approach, but some of them felt embarrassed and put on the spot by certain remarks that had been made by Mr. Kane or Mrs. Grellis. Wiley was able to report to Kane and Mrs. Grellis just what it was that had upset these women, without revealing which individuals had given

them this criticism. Observation of later meetings indicated that the organization of the discussion was much improved in these respects.

Playing the Personnel Man's Role

Looking back over this case, I would describe the personnel man's role in the following six respects:

1. Keeping confidences. The notes of the field researcher and of the personnel man were not available to anyone within the organization, no matter what his authority position. (Mr. Kraus made several attempts to see the notes and was refused.) Similarly, neither Miss Lentz nor Wiley ever identified a particular individual as the source of a complaint. Reports to higher management on individual consultations always involved the presentation of general ideas, distilled out of the statements of particular individuals. If such confidential relations cannot be maintained, then employees, supervisors, and managers themselves will not be willing to talk their problems over freely with the personnel man or with the research worker.

2. Blame or interpretation? The personnel man seeks to avoid laying the blame for the problems he finds on particular individuals. Instead, he seeks to understand the bases of human problems and to interpret this understanding to supervisors and managers. His first responsibility is to understand why people behave as they do and to communicate this understanding to those having responsibility for parts of the organization.

3. Working with the man most immediately responsible. Wiley's efforts at all times was to work primarily with that supervisor immediately responsible for the problem area. As much as possible, he

avoided placing himself in the position of reporting errors and inefficiencies to the top. Through working closely with the departmental supervisor, he was able to help that supervisor to improve the performance of his department. Then Wiley, in reporting to the top, was able to describe progress being made as well as problems encountered. This made it possible for supervisors to look upon Wiley as someone who could help them to do a better job.

4. Consultation with the top man. Mr. Smith naturally wanted to be kept informed regarding the progress of his program. Wiley sought to meet this need by letting the boss know what department was being worked in at a given time and, in a most general way, what he hoped to accomplish. He sought to avoid pressure from the boss to give him information regarding the details of any given study or action program. He led Smith to expect that fuller reports would be presented when the action program was underway.

Wiley also sought to alert Smith regarding any anticipated developments of major importance to the hotel. For example, on one occasion, Wiley advised Smith that he should be prepared for a major clash between Resident Manager Kraus and the new chef. Smith appeared to pay no particular attention at the time, but when, several weeks later, the clash did occur, Smith recalled the prediction and gave Wiley credit for it. This appeared to be a major turning point in the relations between the two men. Wiley gained prestige as a man able to foretell the future. (Actually, this was not a very difficult feat, for anyone who was close enough to observe the two men in action would have realized that a major clash was unavoidable. However, the

fact that Wiley did not have a special crystal ball does not affect our analysis. The prediction had its effect.)

Wiley also sought to help the top executive to understand his own impact upon the organization. In this he was not as completely successful as in some other respects, as we shall show in the book we are publishing on the case as a whole.

5. Presentation of data. With Wiley, consultation did not involve simply presentation of advice on the supervisor's problems. Direct advice from the personnel man was minimized. Instead, he emphasized the presentation of data illustrating the problems of the department. He then discussed these problems with the supervisor and encouraged the supervisor himself to suggest what might be done. In many cases, it was the supervisor who came up with an idea that formed the keystone of the action program in his department. Wiley did not aim to solve the human problems himself. Rather, his objective was to build a problem-solving organization.

6. Responsibility for rewards and punishments. Wiley avoided getting directly involved in the administration of rewards and punishments for supervisory and management personnel. We believed that this should be the responsibility of the operating executives. Of course, our program had an important impact on the administration of rewards and punishments. As we got our program established, it became apparent that those who were able to lead their units according to the pattern we were seeking to establish would be rewarded, whereas those who did not follow the pattern would run into negative sanctions. However, it was Wiley's effort constantly to help people fit into this pattern

so that they themselves could earn the rewards from the operating executives.

The Role of the Research Director

At the beginning of the program, the research director was vital to the progress of the personnel program. As Wiley became more firmly established, my role became less and less important.

At first it was important that I could discuss things with Smith at a time when Wiley was still seeking to establish a sound relationship with the top man. This consultation was particularly important in meeting Smith's impatience. I had told him at the outset that it would take several months before he could see any results. Each time I visited the hotel, he wanted to know what had been accomplished. In the early stages, I sought to give him the impression that things were indeed moving even before results showed, and he was willing to wait and not to put pressure on his personnel man for more obvious action.

The outsider also performed an important role, particularly in the early stages of the project, in giving the research worker and the personnel man some perspective on what they were doing and some encouragement. They were at first in a very lonely situation where outside support seemed important.

I sought to dramatize for the hotel management the kind of program we were developing. The first important move came with my first management meeting in which I discussed the pressures coming down on the waitresses and thus sought in effect to insulate them from the pressures of Kraus. Smith's strong endorsement of this presentation meant in effect that our approach was accepted as company policy. In later

meetings, whenever we had something to report from our research, I made an effort to give as much credit as possible to the supervisors and executives who had worked with us. Smith followed suit, openly congratulating them on what they had accomplished. In other words, I sought to show people that if they fitted in with the pattern we were developing, they would be rewarded. This apparently helped to assure general cooperation.

THE FUTURE OF PERSONNEL MANAGEMENT

Dale Yoder

From the first session of this conference we have found ourselves struggling with semantics. The distinction, if any, between "basic" and "applied" research troubled Dr. Carroll, Dean Jacoby, Professor Whyte, and several commentators. Dr. Carroll also noted his concern about the possible confusion of "training" and "education"; we must tell him that personnel men have known for years that the proper term here is "development." When what had been called "training" for production workers and foremen was first applied to managers, this semantic problem was quickly solved for us. Training, we learned directly from top line executives, is what you do to dogs. Men develop. Education helps them develop. The word "professional" also generated discussion among our research reporters. Still another difference of meaning arose when "liberal education" was mentioned in the discussion of training, education, development, or whatever we were talking about in the excellent second session of this conference.

Perhaps the most confusing "word" problem in our discussions arose out of the frequent substitution of the term "business" for "management." They are not the same. Businessmen may or may not be managers. Managers may or may not be businessmen. Personnel men learned a generation ago the importance of accurate job descriptions, job specifications, and job titles. We have used the techniques of research to discover what personnel men are and do. We know, too, the difference between "personnel" and "labor relations."

Much of the argument about whether managers should be professional evaporates when the job description of a manager is carefully studied. Future managers, it seems clear, will have to become professionals if they are to measure up to their responsibilities. The future of management can be put this way. Free societies will find specialized, competent managers for both private business and public agencies. It is important to note that the manager's job is much the same in the Navy base at China Lake and in Sears Roebuck or U.S. Steel.

What will be the role of businessmen in the years ahead is much less clear, for business appears to be a hybrid of accumulation and investment and conservation of property, at least as close to economics as to business.

The same confusion is inherent in another subject of great interest in this conference--comments on business schools. Most of the schools, Stanford and UCLA excepted of course, don't know whether they are educating for careers as managers in private firms or public agencies, or for careers as acutioneers, financiers, or buccaneers. In many schools, the same core group of required courses is prescribed for the boy whose career plan is to inherit, or marry, and invest a family fortune and for the boy who aspires to become general manager for J.C. Penney. In this confusion it is not surprising that many critics think the best education is one they regard as "liberal."

One more "word" problem may deserve brief comment in this summary: the definition of the term "research." In our opening session, Professor Phelps started this contest of definitions with his quotation from Studs Lonigan and his emphasis upon systematic analysis and publication of

results as essential elements. Let this summarizer add the suggestion that research need not be vast and monumental. Every member of this conference can and should participate in it. And let me add, also, one more definition, that of the Nobel Prize winner, Dr. Albert von Szert-Gyorgi, who says, "research is to see what everybody else has seen, and to think what nobody else has thought."

One added comment on research. As every speaker here has noted, it is essential. Further, it must be reported. Moreover, this is precisely the place to report it. To this summarizer, however, it seemed that too much of the past two days was devoted to talking about reporting and not enough to getting down to the meat of the matter, the actual research.

So much for the preliminaries and general observations. Let us get on with our crystal ball and look at least a little way into the future. Let us note first that the direction of research is in itself a forecast of future trends. With that in mind, we have provided you with an outline of the "dimensions of manpower management" (Chart A). First please note the two dimensions of this chart. Note the usual functional divisions on the left margin. These are not new to you. You use some such outline every time you prepare a budget. Now look at the levels of concern across the top. This measure is in effect a gauge of penetration, of depth of insight. Applied research may give attention to only the two left-hand columns. Basic research looks for the "why" in columns 3 and 4.

What is important to note in the papers of this conference is the trend to move, in our research reporting, over toward the "why" questions--

the area of policy and philosophy. That is a certain sign of the professionalization of our field. For the distinction between the technician and the professional is precisely that the latter seeks to know why. The technician knows what to do for the standard situation and how. He has acquired the skill to do it. The professional knows what and how and why. Our research is tending more and more to seek and to find answers--at least tentative answers--to the why in manpower management.

You have before you a second outline (compliments of Stanford) to illustrate this trend and direction in industrial relations research (Chart B). Note well the new and changing theories of work and organization that are attracting ever-increasing attention. Each outlines a plausible explanation, a tentative conclusion. Note the models illustrated on the right-hand portion of the chart. They are the results of research and the stimulus for and source of additional studies.

New theories emerge as older theories are tested and found wanting. Each new theory creates hypotheses for further testing through research. This brings us rather directly to the question of the future and where we go from here. The best evidence on that is where we are headed. Our direction can be summarized as follows:

1. We may confidently expect the personnel or industrial relations field to lead the rest of management in future management research. That it has done so for several years should be evident. Manpower managers and their colleagues on the campus have done and are doing more research and more penetrating, basic research in the problems of managing than any other branch of management. Industrial relations managers, more than those in any other managerial positions, have applied the tools of research to the complex problems of organizing and leading in modern private and public organizations.

Personnel management has taken the lead in investigating the basic structures of organizations. It has probed far beyond the simpler surveys and descriptions of current practice that characterize far too much of what has been called management research. It has combined the analyses of the behavioral disciplines in attacks on the complicated problems of working organizations. It has developed up-to-date theories as sources of new hypotheses to be tested in further research. As (Chart B) indicates, modern manpower management has identified major elements in industrial relations systems and developed models of work and organization theory to explain the evident changes in these elements.

2. Because it has led and will continue to lead in research, the personnel field will help management as a whole to move toward professional levels of performance. Personnel managers have demonstrated that professional competence is a sound basis for acceptance and status in work organizations of free men. Such specialized competence is probably the only basis on which managers will continue to be granted the leadership sanction in modern free, democratic societies. Personnel managers will continue to improve the never-ending management development programs which alone can provide the necessary specialized competence for all managers.

3. Because it leads in research, the personnel field will also become the central element in the new collegiate management education that has attracted such keen interest in these sessions. Dr. Carroll has already made his ten-year forecast of what will happen in management education. He clearly stated the new emphasis on research. (Incidentally, one difference between his forecasts and mine is the fact that he may have enough money to make his come true.)

In what are called "schools of business," the industrial relations field has been distinguished by its research interest and activity for almost 20 years. Only in industrial relations have special research centers, institutes, and sections sprung up from coast to coast. Similarly, in none of the usual functional fields--finance, marketing, production--have research reporting conferences like this become an accepted part of the educational job.

While other "business" fields were leaning almost entirely on the single discipline, economics, for insight into their problems, industrial relations has been codisciplinary in its studies. While other fields were "teaching" prospective managers by encouraging students to analyze cases as a mental exercise and to discuss them in terms of traditional folklore and prejudice, the personnel field has been studying and investigating and developing and testing new theories. (Some critics of management education, incidentally, have been so steeped in the historic monodisciplinary approach to management problems that they haven't understood what was actually happening in industrial relations.)

4. Finally, the future of personnel management will probably see its practitioners becoming the real philosophers and hence the leaders of management in the free world. The top executives of far-sighted firms will be drawn increasingly from the ranks of manpower managers. Note that the language here refers to the "philosophers of management." They will not be the philosophers of business. Perhaps economists will take that role.

This last prediction of the future of personnel assumes a positive, affirmative answer to Professor Phelps' question as to whether the field can draw the best minds. It can because it must. The competition of

Communism can't be met with semiskilled, unprofessional managers and managerial leadership. Work groups of free, mobile, sophisticated workers in a democratic society will not continue to grant the sanction to lead to jacks of all trades. They can only follow with confidence managers have and can demonstrate real professional competence. Free societies must provide as competent leadership in employment and work as in science. Nothing less than professional management can be adequate in the international competition of the years ahead. Personnel managers have a long head start. They must--and you and I know they will--continue to advance along the road so well defined by continuing learning and personal development. Personnel must--and will because it must--lead management in the free world to great research breakthroughs in the understanding of working and living in peace and prosperity and productivity in the years ahead.

General Theories of Industrial Relations

Major Elements
in

I. R. Systems

Theories

- 1. Workers and Working Careers - - - - - Work - - - - -
- 2. Employment Structures: - - - - - Organization - - - - -
 - a. Communications - - - - - (for work)
 - b. Authority
 - c. Status
 - (May include unions)
- 3. Government - - - - - Political Intervention

- 1. Maximum Output -- Productivity (Quantity and Quality)
 - 2. Maximum Use of Highest Potential
 - 3. Minimum Energy
 - 4. Maximum Worker Satisfaction
-
- 1. Security Complex (Economic, personal)
 - 2. Opportunity for "Personal Appreciation"
 - 3. Acceptability of Authority Structure
 - 4. Acceptability of Status Structure
 - 5. Acceptability of Mission
-
- 1. Success in Total Mission (Including perpetuation of organization)
-
- 1. Acceptability of Mission
 - 2. Effectiveness of Structure for Communication
 - 3. Acceptability of Authority Structure
 - 4. Acceptability of Status Structure

Major Dimensions of Manpower ManagementManagement
Functions

	Levels of Concern			
	Problems	Programs & Practices	Policies	Philosophy
1. Policy Determination Individual Bilateral Public				
2. Organization and Administration				
3. Labor Relations Negotiation Administration				
4. Staffing Job Analysis Staffing Schedules Recruiting Selecting Placing Orienting Transferring Promoting				
5. Developing Personnel Appraisal Training and Development Counseling				
6. Incentivating Economic Maintaining Interest and Attitudes				
7. Review and Audit				
8. Research				

Chart A