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Relations industrielles / Industrial Relations, vol. 38, n° 1, 1983, p. 120-141.

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This study aims first at identifying the state of the art of behavioural science applications and its achievements in Western Canada and at reflecting the different views of various parties towards behavioural science so as to help determine the applicability and practical value of behavioural science in the field of management.

Since the emergence of the human relations school in the 1930's theories and practices based on behavioural science findings have become more and more sophisticated. They have been widely adopted in North America, Europe, Japan, Australia and even to a certain extent in the Soviet Union. In the U.S., firms like General Motors, Proctor and Gamble, and Texas Instruments have invested heavily in behavioural science applications. For instance, in the organizational development field alone G.M., as of 1973, had some 125 O.D. change agents working full time in 55 G.M. plants in the U.S., Canada and overseas. J.F. Donnelly, President of Donnelly Mirrors, reflects this point of view:

"We continue to invest heavily on consulting service and training in the behavioural sciences because those investments succeed in payoffs more consistently than investments in equipment. In fact, we began to see that the more effectively we used behavioural science to engage our people, the more wisely we made our capital investment."

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Relat. ind., vol. 38, no 1, 1983 © **PUL** ISSN 0034-379 X

In contrast to this, there is another group of people who think investments in behavioural science applications are simply "fads", and some even assume that those who believe in using behavioural science are suckers for gimmicks. They believe that the research used to back up behavioural science applications is questionable in terms of internal and/or external reality. Furthermore, Dr. B. Staw notes that there is a bias in the selection of published research to favour both statistically significant results and reconstructed logic (1977).

Our "outsider" from China tends to view the controversies surrounding the application of behavioural science findings in North America organizations with much interest but also with mixed feelings and skepticism. The senior author, a behavioural scholar from the Shanghai Academy of Social Sciences, decided to conduct his own inquiry, in collaboration with a professor and a research assistant from the Faculty of Commerce, University of British Columbia.

The purpose of the study was first to identify the "state of the art" of behavioural science applications and its achievements in Western Canada; and second, to reflect the different views of various parties towards behavioural science so as to help determine the applicability and practical value of behavioural science in the field of management.

This paper summarizes the findings of a survey of some thirty Vancouver-based companies representing a wide range of business activity. Basically the survey consisted of more than fifty personal interviews with various officials form these companies. Personnel managers were most often interviewed. Top managers, line managers, and union officials were also included in the survey. The questions asked were based on a structured format that was held constant throughout the survey. The thirty companies can roughly be divided into twenty industry or product-related firms and ten service-related firms. Of the thirty companies, some twenty had more than one thousand employees while ten had less than one thousand employees. During the survey, the investigators also conducted a literature review and held discussions with academicians.

Generally, the trend toward behavioural science applications in Vancouver-based firms is growing. A professor of organizational administration in the U.B.C. Commerce Faculty noted that upon his arrival in Vancouver some fourteen years ago there were only two consultants in the field of behavioural science. Today there are dozens of such consultants. Indeed, we found that only four of thirty firms had no in-house behavioural science specialists.

For some large companies in the survey the message was clear, as expressed by a vice-president of a large forest products firm. He said the three main elements in the forest product industry are trees, cash flow and people. This realization has led to more emphasis on the personnel function. The spokesman from a second forest products giant pointed out that before 1975 top executives in his firm were skeptical about behavioural science. Since 1975 they have begun to take a more interested look at the human resource function and have budgeted some one million dollars annually towards human resource improvements. Medium-sized companies took a different approach. Although they have few behavioural science programs at present, they are prepared to put efforts in that direction in the future. A personnel executive in a medium-sized restaurant chain contends that while Canadian firms have lagged behind their counterparts in the U.S. in the application of behavioural science they are now narrowing the gap.

In terms of behavioural science applications, one can classify the surveyed firms as follows:

1. Extensive use — those firms that had a conscious and continued use of behavioural science principles. This was often supported by the use of professionals and formalized programs.
2. Non-systematic or unconscious use — those firms that relied on a more traditional personnel function. These firms would have few formalized programs and use only a few professionals.
3. Little or no use — those firms that used the personnel function for only the routine tasks. They may have perceived the need for more formalized programs but have not instituted them.

Of the thirty companies, seven seemed to fit the first category, eighteen companies fell into the second category and five feel into the third category. The findings of our survey will be summarized under the following topics: management style and organizational improvement, participative management, human relations training, and human resource management practices.

MANAGEMENT STYLE AND ORGANIZATIONAL IMPROVEMENT

It has been said that the major contribution that behavioural sciences makes to industry is to help managers derive new ways of looking at people, organizations and related problems. In a special research study for the American Management Association, Lynne Hall states:

"The strategic significance of this issue derives from two facts of life: (1) management no longer has traditional 'sticks and carrots' approaches available to it, and (2) management's credibility, authority and legitimacy will be increasingly derived from the consent (and the cooperation) of the managed. The manifestations of this issue will come largely in the form of demands for increased participation in discussions affecting all respects of work, reward, and the work environment. Therefore, the challenge will be in how much Theory X to abandon and how much Theory Y to introduce." (1980, p. 41)

Our survey supports this point of view. The Western Canadian president of a large oil company said, "The World is rapidly changing. The employee also changes. Our original policy manual, thick as it is, has become practically obsolete. Hammered by academicians, we gradually felt that profit was not our ultimate goal. We should let people have more freedom making decisions and more accountability." A president of an ocean towing company said, "My basic philosophy regarding the treatment of employees is to: (1) protect the dignity of the people, (2) handle employees with reason rather than by force, (3) move people to suitable positions, (4) pay attention to feedback. To push two-way discussion, face-to-face meetings are held from time to time." Management style was also the theme of the president of a major transmission company who stated, "Before, employees had no two-way communication with their bosses. One of my former bosses acted like a tyrant. After taking a course from the Banff School of Management I felt that was a perfect example of McGregor's Theory X management. Now that I'm president I feel that in order to keep pace with the environment I must move to more of a Theory Y pattern, to give employees more responsibility as well as accountability."[1]

In our survey there were some concrete examples of management style change and organizational improvement. A large heavy equipment firm seemed to be consciously trying to move away from the traditional style of management. The aim, as declared by this company, is to provide a work environment where the goals of the employees and the goals of the company coincide. Their motto reflects five overall objectives: quality, profit, growth, people and community. All the senior executives and managers have arranged to learn the basics of the behavioural sciences. The company believes as Napoleon did: "There are no poor soldiers, only poor officers." For instance, the company's policy is to set as few rules and regulations as possible. It uses an honour system to substitute for the time clock system.

1 According to McGREGOR, managers commonly adhere to one of two dichotomous theories. In essence, Theory X holds that the worker dislikes work, has to be driven or enticed to perform and is reluctant to assume responsibility. In contrast, Theory Y holds that the worker has a psychological need to work, is motivated by achievement, and achieves best when given a measure of responsibility.

An "Action Request" form is set up to encourage people to voice their opinions. Attitude surveys are taken every four years. The company's social responsibility extends to a program to increase the hiring of native Indians and handicapped people. A program to facilitate the movement of women into senior positions is also being formulated. This company's chairman of the board prefers to keep close contact with employees. He answers the phone himself and is confortable talking to workers on the floor of the production line.

Another interesting case is provided by a big construction firm. This company was founded by a strongly religious Christian family in 1910 and has enjoyed a long period of prosperous growth. As years passed its entrepreneurial style of management and its traditional organizational structure could not keep pace with environmental changes. Usually, a company which moves through the entrepreneurial phase to become a large corporation must pass a critical trouble zone. Those companies passing through this stress zone are called "threshold companies". In his article "The Case of the Floundering Founder", D.K. Clifford (1975) states that the single most difficult task facing these "threshold companies" chief executives are to revamp their own management role and style. No "threshold company" can sustain its growth without undergoing a series of structural changes to enable it to harness new skills and control its growing complexity. The son of the founder of the construction company was inspired by a seminar offered by the President of the American Management Association in the early seventies and set about to plan the structural changes required to help his firm move through its threshold phase. During a hiatus in Honolulu, the senior executive worked out a twenty-six point organizational development plan for his company, and despite opposition from a powerful group within the company, eventually forced this plan through after he became president. He used continuous consultation with a Chicago consulting firm to assume control and he finally changed the organizational structure to a more decentralized form. With the company's recent expansion to the prairie provinces such a change was necessary to insure a functioning organization. An emphasis on professional management also required the hiring of development specialists to ease the company's move towards professional management. The firm's first manager for organizational development has been given wide-ranging authority to facilitate this change.

We found another example of an organizational improvement program in a major privately-held airline. Known as the "President's Workshop", it is organized according to the principle of "shadow structure" or "parallel structure". Such a structure is made up of cross-functional teams with meetings to assess organizational practices and to recommend modifications. Due to the participation of various divisions of the whole organization, this "shadow structure" is able to encourage transmission of a wide degree of information from bottom-up, hence enhancing the flexibility and the problem-solving ability of the entire organization. At the same time it maintains and complements the original hierarchical structure. The assistant to the president of this firm said the company's belief is that "people will work to make the plan work, if they have worked to make the plans".

The objectives of the "President's Workshop" are:

1. To provide an ongoing mechanism for management development.
2. To provide a broad-based, "grass roots" input to the strategic planning process which circumvents the organization's bureaucratic "filters".
3. To stimulate management's thinking by providing fresh ideas and approaches to key organizational issues.
4. To develop an alumni group which can serve as a talent pool for task forces and study groups which can react effectively to policy initiatives.
5. To serve as an effective "pulse-taking" device on management's views and concerns.

The workshop consists of the president, all nine vice-presidents, and some twenty-five second line and third line managers from all points of the company's operations selected by turn. Each workshop has a central theme such as "productivity" or "scheduling" pre-decided by the President. A set of relevant pre-readings are distributed among the participants. The workshop lasts for three days and has one sub-problem that will be attacked by groups of five who will tackle that sub-problem according to their respective point of view. Based upon these opinions, the forces of group dynamics, and the ideas of outside consultants the workshop generates better methods to solve the selected problem. After the workshop, the participants will join the "Alumi". Feedback and a follow-up process are carried out from time to time.

According to Ouchi and Jaeger (1978), there is a new style in work organizations that combine the best of American and Japanese practices which they labelled as the "Z-type organization"[2]. They report that U.S.

2 A Z type organization is characterized by: long term employment; consensual decision-making; individual responsibility; slow evaluation and promotion; implicit, information control with explicit, formal measures; moderately specialized career paths; wholistic concern, including family. (OUCHI and JAEGER, 1978.).

companies like Kodak, Cummings Engine, IBM, Levi Strauss, and 3M exhibit many characteristics of this mixed model. Their rates of turnover are low, loyalty and morale are high, and identification with the company is reputed to be strong. In our survey, besides the heavy equipment company already mentioned, we encountered some other companies which seemed to be run along "Z" lines. These companies include a forest products firm, a real estate developer, an ocean towing firm and a steel fabricator. The president of the steel fabricating firm said that during the growth of his company the top management was strongly influenced by the Japanese experience. A two-way loyalty between labour and management is very much evident and life-time employment is deemed to be important. As a result of this, the turnover rate of this company has been less than one percent — way below the industry norm. There was only one one-hour strike throughout the fifteen years since the founding of the company in 1965.

Thus, considering these company experiences collectively, one seems justified in concluding that a gradual shift in management style is taking place; one in which greater credence is given to the behavioural science grounded assertions that the organization is a system of social relationships. Managers are now understanding how their actions impact on other members of the organization in terms of consequences such as satisfaction, job performance and human resource development.

PARTICIPATIVE MANAGEMENT

Canada's level of productivity has been estimated to be roughly twenty percent lower than that of the U.S. and more than thirty percent below levels in most other industrialized countries (Employers Council of B.C., 1981). In the past, increases in labour and capital costs were offset by productivity gains but in recent years slow productivity growth has caused unit production costs to climb more rapidly in Canada than in the U.S. Besides the increase of production costs due to strike stoppages, the amount of man-days lost due to absenteeism in Canada is approximately eleven times the total days lost due to strikes. People like R.D. Pollock, president of Canada Wire and Cable, stress that labour/management cooperation and industrial democracy programs may be the single most important remedy to Canada's productivity equation. Capital investment and technology could not be improved as fruitfully in the short term.

An important factor in the establishment of any form of participative management is the industrial relations system present in that country. In his book, *Industrial Democracy in Western Europe,* John Crispo (1978) categorizes industrial relations systems into three types: (1) the "integrating industrial system" as seen in West Germany, Austria, Benelux, and the Scandanavian countries. These countries have well organized employers' associations and union federations. Here both parties operate within the collaborative-consensual model of industrial democracy; (2) the "polarized industrial relations" model as seen in France and Italy. This system is characterized by ideological class conflict; (3) some combination of the first two systems, as exemplified by Britain. The prevailing Canadian system, as seen by Vancouver-based firms, is the third type. Employee participation is generally in the form of a joint labour-management committee as was present in about one-third of our sample population. This model would be appropriate for the North American labour relations system that has been relying on adversary relations and collective bargaining to a great extent rather than formalized programs of employee participation.

According to Chris Jecchinis (1981), the basic goals of worker participation are:

(1) Humanizing the workplace — to ensure that the human dignity of the individual worker is ensured by participating in decisions that affect his working environment.

(2) Promoting industrial democracy — to limit the absolute authority of employers by granting the workers a share in the management of the business.

(3) Familiarizing the workers with the various aspects of the enterprise — to give the individual worker a whole view of the firm's business. This would facilitate their sense of well-being and narrow the gap between union and management.

(4) Raising the productivity of labour — to give the workers more of a "real" interest in the firm and thus reinforce their incentive for increasing their productivity.

(5) Avoiding industrial conflicts — to work out problems and to make decisions that affect workers in collaboration with their representative before collective bargaining.

(6) Giving an ongoing basis for change — to maintain an open style of management to avoid decline and to keep abreast of new changes in the industry.

The general feeling among the personnel people we interviewed indicates that joint committees have had some positive results. For example, B.C. Hydro has three major groups at labour/management committees. They are: the joint Hydro-M.A.P.E.S. (management and professional workers) committee, the joint Hydro-OTEU (clerical workers union) committee, and the joint Hydro-IBEW (the electrical workers union) committee. All three serve as a channel of regular dialogue between workers and management. At the same time these have acted as a "safety valve" to enhance the bargaining relationship between labour groups and management. The committees usually meet on an ongoing and an ad-hoc basis to solve problems of mutual concern. A large mining organization reported that 340 problems had been solved by joint committees within thirty-three months since 1978.

Among the joint labour-management committees there is one prevalent type — the joint safety committee. Since it is required by provincial law, these committees exist in all the industrial product related firms. Because of joint efforts in inspection, safety education and problem-solving, accident rates have been visibly reduced since joint committees were established.

In the U.S., participative management has tended to be used as the foundation for job redesign, organizational development or improving the quality of worklife. Although it is not widespread in Vancouver-based firms, there are some noteworthy incidents of employee participation. For example, in a B.C. Forest Products mill in Mackenzie, B.C., a labour-management steering committee was set up with the assistance of a B.C. Research — Tavistock team (Bryant and Painter, 1977). The committee was comprised of two union representatives, two superintendents, the mill managers, and the head researcher. The goal of the committee was to redesign jobs with input from workers and management and to attack other problems concerned with lagging productivity. Between 1976 and 1977, production increased from 350,000 FBM of lumber per day to over 410,000 FBM — a seventeen percent increase in a short length of time. The absentee rate at the mill fell by over fifty percent. The turnover rate was reduced from two hundred percent to an annual rate of less than thirty percent. The rate of production in the experimental mill increased from a fifty percent level to a sustained seventy percent effeciency level.

Unlike European countries, worker representation on boards of directors has not been popular in Vancouver-based firms. We found only two examples, one at Kootenay Forest Products in Nelson and the other in the Woodwards department store chain. The Nelson company has had two worker representatives since the New Democratic Party government bailed out the company in the early 1970's. This form of industrial democracy was a condition of financial aid. The representation has continued with generally good results until the present time. Woodwards has one worker-representative on its board of directors. Additionally all the advisory council presidents meet jointly with the chairman of the board yearly, and one of the advisory council presidents sits on the board of directors for a term of one year.

Another type of employee participation is known as the advisory committee. Two companies that have advisory committees are Woodwards, as mentioned, and Whitespot (a fast-food chain). Both are non-union and one might speculate that these advisory councils take the place of a more formal union organization. At Woodwards each store has an advisory council made up of employee-elected members. The councils have both regular and ad hoc meetings to discuss problems they have seen and problems brought to them by fellow employees. Regular meetings with store managers allow for the connection to the eventual decision-making process. The absence of union-management conflict gives these meetings a definite hint of worker-manager cooperation. The actual real success has not, however, been measured in concrete terms. Whitespot Restaurants have an "action committee" for all their outlets. This joint committee like that at Woodwards, advises management on problems that affect workers and management.

Controversies over Participative Management

In recent years there has been a tendency towards compromise between labour and management, which is typified by the Experimental Negotiating Agreement in the U.S. steel industry. Speaking at the A.M.A.'s 48th Annual Human Resources Conference, I.W. Abel, the President of the United Steelworkers of America said:

"In my opinion we made labour/management history. For the first time, we concluded a complete, major settlement in a critical industry without the threat of an industrywide strike or lockout. This is a new, revolutionary event in the collective bargaining process because until now, it was assumed no equitable settlement of this magnitude could possibly be concluded without the threat of brute force dominating the talks." (1977, p. 42)

This feeling is somewhat shared in Vancouver-based firms. A number of people we met in our survey thought that, through participative management, a better opportunity could be achieved to understand the other party's position and thus possibly narrow the gap between labour and management.

In contrast was the point of view held by some union leaders. They thought that industrial democracy as another "trick" by management to get more out of the employees while paying them the same amount of money.

They have disclaimed reports of poor productivity and stated that the number of Mondays lost is decreasing. Moreover, they feel that the results of the experiments in participative management have been mediocre at best. The widely heralded results of Volvo in Sweden were, they believe, situations of selective results to prove stated hypotheses. When asked about the apparent success of participative management in German factories, they called the German situation a "special" case. They felt the extensive legislation that guaranteed representation and participation by workers could not be duplicated in B.C. or in any part of Canada due to a lack of consensus among the three main forces: government, business and labour. Without this tripartism any program of cooperation would be doomed to failure and collective bargaining would be all-important again. They emphasized that there is no nationally agreed-upon goal in Canada. People are happy with today's situation, i.e., the adversary system.

Among the management group, the expression of an anti-union feeling is also strong. Many managers blamed the union as the barrier to organizational or work improvements. Some of them said that the union only cared for their own power. Managers felt that the joint committees often turned into "bitch" sessions with endless complaints, crying for more money, and less worktime without the slightest consideration about the international competitive position of the firm. One might assume that the most likely reason that managers resist unions is not their impact on productivity, but their restrictive influence on managers' perogatives.

In summary, in B.C. both labour and management seem to be treating the concept of participative management with some interest, but with skepticism. In the absence of strong, overriding common goals present, deep-seated differences in perspectives are likely to prevent the widespread development of employee participation programs in the foreseeable future and the provincial government is not expected to take legislative steps to facilitate the adoption of such programs.

HUMAN RELATIONS TRAINING

Since World War II, training has become a multi-billion dollar industry in North America. Although we did not find a very large independent training industry in Vancouver, most firms place a heavy emphasis on human relations training.

Three types of human relations training methods are prevalent. They were:

(1) in-house training — usually a centralized department of specialists offering a variety of courses and consulting services to the whole organization.

(2) the use of educational institutions or commercial training centres — sending company personnel to attend outside seminars or short courses.

(3) tuition assistance — totally paid by company or percentage to be paid according to the mark received in a course.

All of the thirty firms made use of at least one of the above methods. In-house training centres tended to be more common in the larger firms. These big firms tended to have large centralized training departments with budgets running as large as $1,000,000. The smaller firms that also believed in the training of managers and compensated by using the last two methods to a great degree. Of the thirty firms surveyed, nineteen had some form of human relations course available directly in-house or on a formalized basis at another institution (we considered this the same as in-house). Most of these training departments followed basically a cafeteria approach such that a catalogue of courses was produced and sent to the company's managers. The managers, in concert with individual employees, would decide who would attend what course. The training departments would also formulate generalized courses for all new managers. Included in these would be some form of human relations training. These would be courses that were formulated as a response to some basic need identified by management and/or employees. These in-house training centres were usually staffed by professional specialists that served as consultants, trainers and human resource planners. These people often had backgrounds in the behavioural sciences.

Vancouver-based firms also made use of numerous academic institutions. In B.C. there are three universities and one technical institution that offer formal training in business leading to the degrees of B. Comm. (Bachelor of Commerce), B.A. (Business Administration), M.B.A., M.Sc. (Business Administration), M.P.A. (Public Administration), and a certificate in Administrative Management. Most of these degree programs are done on a full-time basis while some can be done on a part-time basis. These institutions along with twelve regional community colleges and the Banff School of Management offer their human relations courses to non-degree seeking students. In addition these institutions offer specialized seminars in human relations and other management skills. The human relations training mainly imparts the conceptual knowledge of the behavioural sciences. As an example of the type of human relations training offered by an academic institution, the Commerce Faculty Executive Program of U.B.C. is offering some eight seminars in human relations training for 1981. The topics covered include: the implementation of M.B.O., the implementation of a change in the work team, the evaluation of employee performance, the improving of individual performance, the training of the human relations trainer, the improving of negotiating skills and two seminars in increasing performance and commitment in the workplace. These seminars are from one to three days long and range in cost from $150 to $450 per person.

In-house training departments in business firms offer courses of the same nature. The largest forest products firm, as an example, offers some twenty courses in its training centre using a cafeteria approach. They include: three courses in the general field of administration, two courses in the fundamentals of supervision and performance management, three courses in problem-solving, two courses in career development, four courses in communication improvement, two courses in training and four courses in time and stress management. These courses run from one to five days and cost from $75 to $500 per person. The centralized training method ensures a wide variation in participants from all areas of the company. This firm's trainers feel that a diverse mix allows the participants the opportunity to learn more about the company's operations and themselves.

While almost all the firms have laid great emphasis on training little has been done to evaluate this training (Campbell, 1971; Goldstein, 1980). Len Founney, vice-president and head of the consulting services at the Industrial Supervisory Institute said, "Thousands of dollars are spent each year on training which is misdirected and ineffective." Some managers feel that training is a fad, and that there is no concrete evidence that trainees become more effective as a result of training. Employers rarely assess the economic payoff of training. At best they accept "consumer testimonials" by asking the participants if they enjoyed it or they simply collect the judgements of superiors, peers and subordinates about the change in the trainee's behaviour. In practice, cost-effectiveness analysis is hardly ever done on training programs. Now, executives are becoming aware of this problem. The personnel manager of the Bank of B.C. said that when he submitted his training budget for 1981 to the Board of Directors they asked him to present some proof that the expenses would be justified.

In the survey it was noted that the bulk of the training materials used by Vancouver-based firms were bought from American consulting firms like Wilson Learning and Xerox Training. These cost a great deal in foreign exchange. For instance, one large heavy equipment firm generally spends one-fifth of its total revenue each year for the purchase of a franchise and relevant corresponding materials from a U.S. training firm.

HUMAN RESOURCE MANAGEMENT TECHNIQUES USED

Behavioural Techniques

In general, behavioural techniques were found to be in limited and inconsistent use. "Behavioural techniques" are those practices that have been based on theoretical behavioural science principles. The survey's questionnaire contained several questions designed to identify all such techniques used in these thirty firms. The extent to which several of the better known techniques are used by the surveyed companies will be discussed.

Management by Objectives — This technique was not very popular in the thirty surveyed firms. Some of them complained about the large amount of paperwork required to keep up with the program. Companies like MacMillan Bloedel, Rivtow, Lafarge, and Scott Paper all had a form of M.B.O. down to the department or the first line supervisor's level B.C. Hydro has set up M.B.O. under the name of *work planning and review* because they want to avoid the "bad name" of M.B.O. Whitespot was the best example of a firm happy with its M.B.O. program. A personnel manager stated that when M.B.O. was first set up managers were nervous but at the end of the first year they found M.B.O., helped to improve the communication between manager and subordinate, the cooperation of subordinates, and the ability to focus on major problems. Now Whitespot is preparing to expand the M.B.O. program down to the employees' level.

Managerial Grid — The only use noted was at B.C. Hydro. This company had originally instituted the program in all divisions in 1972, but now it is only present in two divisions. The institution of managerial grid in all divisions resulted in a "spillover effect" that made its use quite effective. The drawing together of many managers, from vice-presidents to first line supervisors, in the managerial grid seminars brought all the company's diverse operational areas together. While the managerial grid implementation was not followed through to its ultimate conclusion, this "spillover effect" made the early phases very much worth the effort.

Sensitivity Training was used at MacMilian Bloedel during the period between 1974 and 1977. Due to no tangible results it was discontinued. Now the training department occasionally sends people to take sensitivity training outside. Other companies, like B.C. Telephone and B.C. Hydro have this "send out" option.

Job Enrichment and Semi-Autonomous Group — this concept has received intermittent attention from a few companies contacted in the survey. Companies like Shell Refineries have had programs to enrich jobs but as in the case of Shell, have had little success, according to one particular personnel manager. Molson Breweries has initiated a program in its packaging division on a trial basis. B.C. Sugar has tried to institute such a program but, according to a personnel manager, the union opposed it because it was not included in the collective agreement.

Job Rotation — the only instance of this was found at Belkin Packaging. This program was initiated on a small number of employees in a small department in one plant. Through the careful approach of the personnel manager the program was put in place without much opposition from the unions. In the short run, the production per person went down. This could probably be explaided by the fact that each person required time to learn unfamiliar jobs. The goal was, of course, to produce a long run increase in production by decreasing boredom. Whether or not this will actually happy can not yet be determined.

Attitude Surveys — the only company that used this program regularly was Finning Tractor. The Bank of B.C. used an attitude survey once called the Climate Audit Report. Whitespot found their annual attitude survey too complicated. Hence they received low response.

Other Practices — Other behavioural practices that were used by one or two companies were Likert's System 4 (B.C. Forest Products), Team Building (CP Air), Problem-Solving (MacMillan Bloedel), Human Resources Planning and Auditing (Bank of B.C., B.C. Telephone, and B.C. Forest Products) and Stress Management (B.C. Hydro).

The reasons why these behavioural techniques have not been particularly successful in actual business practice should be investigated further. In this survey we found clues to account for the apparent low success of some behavioural science applications. One such reason was the incorrect interpretation of the techniques resulting in incorrect implementation of the program. One consultant said he had suggested a method to a Vancouver-based firm to reduce absenteeism, which involved punishment. The company did not have enough knowledge about the underlying principles involved. In their implementation of the program the negative reinforcement used had little impact. The results were fruitless and as a result the program was discontinued.

A second reason for poor results is the existing power structure. Sometimes the implementation of behavioural science techniques have a negative impact on the existing perogatives of powerful executives. To protect their power positions they reject, or distort, new practices. Power equalization means real costs and risks to currently powerful people. Strategies that depend on these people voluntarily giving away power are not apt to be implemented, or in implemented, are unsuccessful.

Conventional Practices

"Conventional" here means those programs that are more traditional, have been in place for many years and rely basically on extrinsic rewards. These practices seemed, according to the managers interviewed, to be of little threat to them (implied, not stated), cost modest amounts, and provide returns in the form of increased employee motivation or loyalty.

Service Awards — all of the thirty companies had some form of service award for longstanding employees. These were awarded after appropriate lengths of service, usually twenty or thirty years, and some even after forty years of service. Valuable gifts are usually presented to employees in reward for their loyalty to the company. Some firms sponsor clubs for long-service personnel featuring annual banquets and the like.

Fringe benefits and Bonus Sharing — most of the Vancouver-based firms have levels of fringe benefits as extrinsic rewards. According to a 1978 report by Thorne Riddel Associates, Canadian employers paid more than $5,000 per employee per year for fringe benefits. Fringe items included such things as indexed pensions, pre-retirement, free flights, etc. Companies, like Woodwards, B.C. Sugar, Crown Zellerbach and Daon Development had some form of bonus sharing. Rivtow Straits has set up an employees' equipment investment corporation as a bonus sharing mechanism.

Shase Purchase was a widely used technique in such companies as Scott Paper, Crown Zellerbach, Daon Development, Afton Mines, B.C. Packers and Lafarge. Employees were counselled as to when they should purchase shares at low prices. The company often financed such purchases within restricted limits. This practice gives the employee the chance to share in the success of the company.

Performance Appraisal — is a widely used practice in Vancouver-based firms. These performance appraisal systems are applied using some standard form of graphic rating scale, often co-signed by the supervisor and the person appraised. These appraisal forms, while easy to administer are often not keyed closely to measured performance and thus are based on subjective judgment. Although behavioural scientists have developed more effective systems such as behaviourally anchored rating scales and assessment centres (cf. Beer, et. *al.,* 1978; Bray, et. *al.,* 1974) they are more costly and difficult to operate.

Personnel Testing — A Standford Professor (Mischell, 1978) in reviewing the evidence available in the mid-1960's concluded that personality tests rarely predicted specific behaviour in any situation, even the most trivial. But in our survey only two companies, Wilkinson Metal and B.C. Sugar, emphasized the accuracy in using personality tests. We were told by the Personnel Institute of Canada that the results of the Thematic Apperception Test they use for testing performance is ninety percent accurate. Recent Equal Employment Opportunity legislation in the U.S. is having a significant influence towards improving the validation efforts of companies using personnel tests in selection, placement, and promotion decisions. These influences are just beginning to be felt in B.C. but may be expected to intensify concommitant with human rights legislation.

New Practices of Growing Interest

Counselling — a considerable number of companies have set up counselling to help employees to solve certain problems such as alcoholism, drug addiction, financial, wife-beating, etc. Particularly, some companies like Lafarge and Canadian Forest Products have preretirement counselling. The Lafarge program tended to cover social security payments, company pensions, and other benefits provided by the employer after retirement. Canadian Forest Products hired outside consultants to give people suggestions and direction before they terminate their jobs.

Flextime — our survey showed that only two companies, Chevron Canada and B.C. Sugar, used flextime and only two companies, Afton Mines and Cominco, used "compressed weekends" with a 4-4 shift. Yet, these new work schedules have found great support with employees.

Right to Privacy — the trend in North America in the last decade has been to increase the employee's right to privacy. Information in the employee's files would be confined to such data as performance appraisals, medical history and salary. Certain information such as specific evaluation would remain in the employee file for only a prescribed period of time. Although little has been done legislatively in Canada we found that a few companies have decided to keep personal private records for only one year.

VARYING OPINIONS ABOUT BEHAVIOURAL SCIENCE

Behavioural science focuses on studying human behaviour in response to internal and external stimuli. It concerns all the factors that go into man's fundamental personality — his needs, emotions, thinking and ability to relate his thoughts and feelings. It is believed that with a group of these factors, human behaviour can be better understood and predicted.

The majority of the surveyed management group seems to be increasingly aware of the significance of behavioural science. More and more senior executives have been willing to spend their time and money to participate in behavioural science training and greater numbers of behavioural scientists have been employed by businesses to apply their professional knowledge to actual operations. At the same time, however, another group of managers still remains skeptical about the validity of behavioural science. They consider it as "academic jargon", "ivory tower talk", or even "bull shooting". A manager with engineering background said. "I believe in hard science. Behavioural science is strange to me, and I wouldn't like to be involved. Let the new generation handle it."

If these contrasting views be considered as the result of the difference in degree of knowledge of this discipline, the following arguments will deserve more attention.

(a) Among the trade unionists and labour relations specialists, some people hold that behavioural science always takes the management side and behavioural scientists are actually the servants of management. What they do is to help managers to manipulate people. In the mid 70's there was even a tendency of using O.D. as a weapon to weaken the strength of the union. These people argue that ideally behavioural science should be used to legitimize the better aspects of western culture so as to make organizations more humane. But unfortunately, management's use of behavioural science is too often tokenistic and biased. In the present situation only collective bargaining, not behavioural science can give the worker actual benefit and a real voice.

(b) Academicians with "left wing" views hold that behavioural science could not work under the capitalist system because of the socio-economic milieu and inherent power structure. Professor Nord, the author of the "Failure of Current Applied Behavioural Science — A Marxist Perspective" (1974) emphasized that "power equalization means real costs and risks to currently powerful men. Therefore M.B.O., participative management and other plans to move power lower in the hierarchy are bound to be subjected to continual counter pressure. When the interests of those near the top of the hierarchy are threatened, controls will be reinstituted and systems will be changed." He therefore stressed that without a radical change in this power structure, any human resource management program would be doomed to failure. Presumably behavioural science applications would be more effective in egalitarian societies.

(c) Among organizational behaviour scholars, most hold that behavioural science applications can be effective contingent on careful analysis of specific situations, i.e., what may work in one organization may not be appropriate for another. Contrary to the requirement for unique situational analysis and "tailor-made" applications, too many companies are seduced by slick advertising into adopting one or more of a wide and ever-changing set of packaged managerial techniques purportedly based on behavioural science findings. As a result, some companies experience disappointment and confusion. Such experiences are unfortunate but rather than discrediting legitimate behavioural science, serve merely to highlight the importance of careful professional application of validated findings. Thus, the development of behavioural knowledge, rather than being represented as the series of peaks and valleys accompanying faddish enthusiasm and disenchantment should properly be viewed as an evolutionary process of development -- often advancing at a rate somewhat slower than we would like. Nonetheless, over time this process of evolution can produce fundamental changes in the social fabric of a culture as witness the gradual movements in North America toward more participative forms of social interaction (eg., in schools, families, hospitals, and business organizations).

The above points are major controversies we found in the survey and literature review. Clarification of these controversies needs time and deeper investigation. In ending this summary we raise three questions for further study:

(a) Does behavioural science reflect valid and objective knowledge about human behaviour, or only manipulative information designed to help the elite class?

(b) What are the basic similarities and differences between Western and Marxian approaches to behavioural science?

(c) Are there any techniques of behavioural science that could be used in *any* social system?

Overall, the survey revealed a clear expression of need for better and more complete understanding of human behaviour in organizations. This may be taken as encouragement and challenge to both scholars and practitioners alike to work together in developing and field testing behavioural applications.

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Les applications du behaviorisme dans des entreprises de Vancouver

Depuis l'apparition des écoles de relations humaines au cours de la décennie 1930, les théories et les pratiques fondées sur les découvertes de la science des comportements sont devenues de plus en plus complexes. Elles se sont beaucoup développées en Amérique du Nord, en Europe, au Japon, en Australie et même en Russie soviétique. Aux États-Unis, des entreprises comme General Motors, Proctor and Gamble et Texas Instruments ont investi des sommes considérables dans les applications de la science des comportements.

Par contre, il y a d'autres groupements qui estiment que les investissements dans le behaviorisme ne sont que lubies et quelques-uns pensent même que les tenants de cette science sont des imposteurs. Ils croient que la recherche à laquelle on se livre pour rétablir les applications de la science des comportements sont contestables lorsqu'on les applique à la réalité tant externe qu'interne.

L'auteur principal, un savant en la matière de l'Académie des sciences sociales de Shanghai, a décidé de mener sa propre enquête en collaboration avec un professeur et un assistant de recherches de la faculté de Commerce de l'Université de la Colombie Britannique. Notre «étranger» de la Chine tend à considérer les controverses qui entourent l'utilisation des découvertes de la science des comportements dans les entreprises nord-américaines avec beaucoup d'intérêt, mais aussi avec des sentiments partagés et du scepticisme.

L'objet de l'étude était en premier lieu d'identifier les applications de cette science et de ses réalisations dans l'Ouest canadien et, en outre, de refléter les vues disparates de divers groupes à son endroit de façon à déterminer l'applicabilité et la valeur pratique de la science des comportements à l'intérieur de l'entreprise. L'article résume les constatations d'une enquête auprès de 39 entreprises de Vancouver représentant un large éventail de l'activité économique. Cette enquête a consisté en plus de 50 entrevues personnelles avec différents cadres de ces entreprises.

La majorité du groupe d'employeurs, qui ont fait l'objet de l'enquête semblent de plus en plus au courant de la signification de la science des comportements. De plus en plus, les cadres supérieurs étaient prêts à consacrer temps et argent pour acquérir une certaine formation en cette matière et beaucoup de spécialistes ont été engagés par des hommes d'affaires pour appliquer leurs connaissances au fonctionnement des entreprises. En même temps, un autre groupe de dirigeants demeuraient sceptiques au sujet de la valeur de cette discipline. Ils n'y voient que «jargon académique», «propos de tour d'ivoire» ou même «pur verbiage».

Si ces opinions contradictoires peuvent être considérées comme résultat de degré de connaissance différent du behaviorisme, les arguments suivants méritent, eux, de retenir l'attention.

a) Parmi les syndicalistes et les spécialistes en relations professionnelles, certains estiment que cette science se range toujours du côté des employeurs et que les techniciens en behaviorisme sont leurs serviteurs. Au milieu de la décennie 1970, il y avait même une tendance à l'utiliser comme une arme pour affaiblir les syndicats. Ces gens soutiennent que, idéalement, la science des comportements devrait servir à mettre en valeur les aspects les meilleurs de la culture occidentale de façon à rendre les entreprises plus humaines. Malheureusement, l'utilisation que l'on en fait est trop souvent symbolique et partiale. Dans la situation actuelle, seule la négociation collective et non la science des comportements peut donner aux travailleurs de véritables avantages et une voix réelle au chapitre.

b) Les intellectuels de «gauche» considèrent que le behaviorisme ne peut fonctionner sous le régime capitaliste à cause du milieu socio-économique et de la forme de pouvoir qui en découle. Le professeur Nord, auteur de *Failure of Current, Applied Behavioral Science. A Marxist Perspective,* (1974) a souligné que «la pondération du pouvoir comporte des coûts réels et des risques pour les puissants. En conséquence, la gestion prévisionnelle, la gestion intéressée et autres formules pour abaisser le pouvoir dans la hiérarchie sont destinées à être sujettes à des contre-pressions continuelles. Lorsque les intérêts de ceux qui sont au sommet de la hiérarchie sont menacés, les contrôles sont rétablis et les systèmes sont changés». Il souligna en outre que, sans un changement radical dans la structure du pouvoir, tout programme de gestion des ressources humaines serait condamné à la faillite. Il faut en présumer que les applications du behaviorisme sont plus efficaces dans les sociétés égalitaires.

c) Parmi les spécialistes en behaviorisme, beaucoup considèrent que les applications de cette science peuvent être efficaces dans la mesure où l'on s'appuie sur une analyse approfondie de situations spécifiques. En d'autres termes, ce qui convient dans une entreprise peut être inappropriée dans une autre. Au lieu de s'en tenir aux exigences d'une analyse individualisée de la situation et à des applications taillées sur mesure, trop d'entreprises éblouies par une publicité habile adoptent l'un ou plusieurs de toute une gamme instable de techniques de gestion entremêlées fondées sur les découvertes de la science des comportements. Résultat: certaines entreprises y trouvent désappointement et désillusion. De telles expériences sont malheureuses, mais plutôt que discréditer le behaviorisme normal, elles servent à mettre en lumière l'importance d'une application soignée de découvertes valables. Ainsi, le développement de la science des comportements, plutôt que de présenter une série de hauts et de bas s'accompagnant d'un enthousiasme extravagant et de désenchantement, devrait normalement être considéré comme un processus de développement en évolution qui progresse à un rythme un peu plus lent que nous l'aimerions. Néanmoins, avec le temps, ce processus d'évolution peut produire des changements fondamentaux dans le tissu social d'une culture, comme en témoignent en Amérique du nord les mouvements progressifs vers des formes plus engagées d'interaction sociale tant dans les écoles, les familles, les hôpitaux et les entreprises.

Par dessus tout, l'enquête révèle la nécessité évidente d'une compréhension meilleure et plus complète du behaviorisme à l'intérieur des organisations. Ceci peut être considéré à la fois comme un encouragement et un défi à tous les théoriciens et à tous les praticiens de travailler d'un commun accord au développement des applications possibles de la science des comportements.