

## Worker Participation and Autonomy: A Multilevel Approach to Democracy at the Workplace

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### INTRODUCTION

#### *A 50-Year Perspective on Productivity and Worker Participation in Sweden*

The ideas of scientific management, the human relations movement, and the welfare state came to influence Scandinavian working life very much at the same time—after World War II. The ultimate goal accepted by politicians, management, and the unions was to raise the material standard of living and create resources for social reforms in society at large. Practically all means that increased productivity were accepted as long as they did not immediately threaten the physical health of workers. Social and psychological costs for the workers were neglected or simply not understood; in any case, increased wages and shorter hours of work were regarded as compensation enough for whatever constraint on the worker more rational production methods might imply. For the few who could not adapt readily to new demands “the good society” provided new opportunities in the form of retraining and relocation or, as a last resort, shelter and the means for a decent life outside the labor market.

The systems of ideas behind time and motion studies, “scientific” wage systems, theories of administration, and so on, on the one hand, and human relations on the other, are in themselves relatively separate. Human relations did not deal to any great extent with issues of technology and formal organization, just as scientific management generally neglected social and human issues. The two systems of ideas existed in a nonmediated relationship. For those who wanted to draw upon both sets of ideas in their practical work—as many managers did—this lack of a mediated relationship on the

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theoretical level led to one of two conclusions: that the ideas were compatible and could supplement each other, or that they were antagonistic. The first belief seems to have prevailed among Scandinavian managers in the 1940s, 50s, and early 60s. In practice, it often led to calling in human relations specialists to clear away or smoothen the social and human problems created by scientific management approaches to rationalization and work organization.

In Scandinavian research, the view that scientific management and human relations were antagonistic sets of ideas emerged around 1960. In the 1950s, a number of researchers had raised the question: Is it really possible that functional specialization, technical control, and so forth can be increased more and more without harmful social and human consequences? In Norway, one answer to this problem was given by Lysgaard (1) in his study of the "workers' collectivity." Starting from the informal relationships between workers that were demonstrated in the Hawthorne studies (2), Lysgaard elaborated these and pointed to the existence of a broader, more "political" workers' collectivity at the workplace. This collectivity emerges from the workers' need for protection against the demands and pressures of the technical and economic system. The collectivity develops joint norms, drawing not only upon concrete experiences in the workplace but also upon general political ideas, such as those found in socialism.

The 1960s also saw the emergence of a strong empirical tradition in Scandinavian work research, particularly in Sweden, starting from conceivable conflicts between the two systems of ideas (3, 4). This research established that the following conditions have negative effects on workers (5): machine pacing of work rhythm and technical control of work methods; monotonous, repetitive work activating only a limited part of total human capabilities; lack of possibilities for contact with other people as part of the ongoing work; piece-rate and related payment systems, which besides contributing to employee wear and tear, are often detrimental to the observance of safety requirements; and authoritarian and detailed control of the individual, be it through foremen or impersonal systems, e.g., computer-based planning systems.

The less content the work has—objectively—and the less the worker has control over planning and working methods, the less rewarding is the work situation and the more work is experienced as constrained and meaningless. This situation is bad in itself, because it means a lower quality of life. The effects are accelerated by the fact that dissatisfaction and strain may lead to impaired physical and mental health. People with narrow and constrained jobs also seem to take less part in political, social, and cultural activities outside the job. We know, furthermore, that the risk of being expelled (shut off) from working life is highest among people whose jobs are most difficult in terms such as those outlined above (6).

A system of nationwide collective agreements which regulated development in economic life emerged as early as the 1930s. After World War II, national collective agreements also included a system for joint consultation through Work Councils. Neither of these agreements foresaw a rising conflict between productivity goals and work environment. Workers' access to information and their consultative role in management decisions were not effective enough instruments for the workers to be able to counteract fragmentation of jobs and stress and alienation in the workplace. The workers' representatives in the Work Councils also had difficulties in informing the rank and file of what was going on in the meetings. The ordinary workers by and large felt

that they were rather powerless and had no say in their day-to-day activities. The emerging work research also demonstrated the powerlessness of the Work Councils and emphasized instead the importance of worker say on the shop floor for job satisfaction and well-being. In various research reports, claims were voiced on changes in job design to meet human needs and on a work organization based on autonomous groups.

Today the main problem is not to state the requirements of a more humane work organization—these have been put forward in much the same terms by many—but to develop strategies for bringing about such a work organization as a living and growing reality. In this respect, Scandinavia provides a fund of experience on which to draw. We can, for example, look back on comprehensive series of field research into new forms of work organization that are still unparalleled in other parts of the industrialized world. In recent years we have also seen the emergence of more total strategies on the level of society, founded on legislation and the commitment of public resources as well as on national trade union policies. To what extent have these various strategies been able to solve some of the problems involved? Let us take a look at the experience gained during the last 10 to 15 years with the various strategies that were applied during that period.

#### *Recent Efforts at Industrial Democracy in Scandinavia*

Field experiments with autonomous work groups and related forms of work organization emerged in the Scandinavian countries in the early 1960s. The development started with the Industrial Democracy Program in Norway (7-9). This program emerged as a collaborative scheme; the two main organizations in working life—the Employers Confederation and the Federation of Trade Unions—engaged in a practical effort together with researchers. The program was drawn up in terms of phases, the first dedicated to testing forms of work organization at specially selected work sites and the second to diffusion of the experience gained in this way. In the diffusion process, the employee and employer organizations were to play a dominant role, while the experimental phase would naturally be characterized by the researchers taking more of the initiative and generally showing a "high profile." A similar program emerged in Sweden, perhaps with somewhat weaker participation by the main labor market organizations.

These experiments and other efforts demonstrated the feasibility of autonomous work groups under varying technological conditions. They showed clearly that a change in people's immediate work situation is a necessary element in reforms concerning social and human problems in working life.

On the basis of these experiences, one can set forth the following proposals concerning autonomous groups: Work should be based on groups and not on individuals. The group should be given the responsibility for planning and performing work within a given area. The current division between planning and control on the one hand and execution on the other should be brought to an end, with planning and control restored to the primary work group. Foremen and technical experts should be geared to the needs and demands of the production groups—as resources for these groups—and not to functional requirements specified by higher organizational levels. A work organization that has such production groups as its primary building blocks seems to have the potential for counteracting problems of fragmentation and coercion, among

other things owing to the following properties of the groups: (a) in a group context, the individual can expand his or her possibilities for attaining some degree of freedom and competence through work; (b) opportunities for learning and for variation in work are improved; (c) the individual and the group can achieve improved control over the rhythm and methods of work; and (d) opportunities for contact, support, and solidarity among people are improved.

In addition to showing that this form of organization is a building block in the network of solutions involved in a reform of working life based on human and social values, the early experiments established that autonomous groups may be superior even from traditional economic and technological points of view. The demonstrative value of these experiments was, in other words, quite high. In spite of this, diffusion proved to be problematic. There are many reasons for this, though even those who are heavily involved in the work have not reached general agreement on the explanations. One set of reasons relates to conservatism and protection of established positions of power and control. Another important reason is that these experiments were based to a large extent on individual companies as the unit of change. This meant that nothing could be achieved that was not accepted by local management. Furthermore, it meant that the experiments were designed to achieve a growth process within the hierarchical boundaries of the local plant, with more limited emphasis being placed on learning and development among groups and collectivities of people encompassing several workplaces in different companies. This was especially significant for workers and the trade unions. A third reason for the lack of diffusion from the early work experiments is that it was not possible to generate a fruitful relationship between traditional characteristics of trade union work and organization on the one hand and what happened in the field experiments on the other. This was reflected—in Sweden as well as in Norway—in the difficulties the trade unions have had in relating to these projects. They have tended to sit on the fence with neither all-out commitment nor absolute rejection.

In Sweden, shop floor experiments under joint bodies from the central organization in the labor market (SAF-LO-TCO) soon showed the trade unions that this was not a way to reach their goal of "worker influence on all levels in the company." On the contrary, it became evident that development was confined to worker influence on the immediate job and that local management had no interest in furthering worker participation in more strategic management decisions. The shop floor experiments under the supervision of joint bodies faded away.

Instead, the ideas were taken up by the employers in a relatively one-sided effort at change. Numerous company programs have surfaced in Swedish industry, some with consultative support from the technical department in the Swedish Employers Confederation. Diffusion in Sweden was faster and more far-reaching than in Norway. This diffusion has yielded valuable experiences and concretizations. It must, however, be underlined that what was and is being diffused is something different from what was originally intended. While the programs originally were designed to do something about the basic problems of participation on the shop floor, as part of a strategy for developing employee participation also in the settlement of broader organizational issues and policies, the development in Sweden has been characterized by the "shop floor issues" being considered of exclusive importance rather than as stepping stones to other

changes. There has also been a clear shift away from human and social considerations toward such goals as improved productivity and reduced turnover and absenteeism.<sup>1</sup>

Moreover, the experiments often took place in close cooperation between management and the union local, but without changing the basic power structure. Through this strategy, management threatened to weaken the influence of the central trade unions. Under the traditional legal superstructure, management alone has control over issues of work organization. Therefore, any development, any contribution from the employees, would lie outside the domain where the central unions have any statutory authority or possibilities of safeguarding any progress. The fact that the central trade unions found it difficult to establish a reasonable relationship to these changes was one of the major factors behind the changes in the legislation regulating the Swedish Industrial Relations System that took place in the late 1970s.

The Act of Co-determination, made effective on January 1, 1977, opened up all areas of company life to trade union influence. It is a framework law that is supposed to be followed by central and local agreements between employers and the trade unions. Central agreements have been reached in the public sector, the cooperative sector, and the state-owned industries, but not in the private sector (except for banks and insurance companies). These agreements on co-determination cover such areas as personnel policy, work organization, and use of computers.

The Act of Co-determination has been put to practical test for only a few years, so it is too early to draw any conclusions. However, the application of the Act and its agreements until now show every sign of the trade unions' falling back on well-established collective bargaining traditions at the expense of building up knowledge and competence in the field of work organizations. Although a government sponsored but trade union-controlled research institute was created on the basis of the Act of Co-determination—the Swedish Center for Working Life—and although this institute was given large resources compared with other research organizations in Sweden, it has been very difficult for the trade unions to start concrete field experiments or to otherwise initiate research that deals with alternative models of work organization at the plant level. There are several circumstances that may partly explain this lack of development.

First, coinciding with the new Act, Sweden was hit by an economic recession; co-determination and its research resources became to a great extent fully preoccupied with plant closings, mergers, and restructuring of whole industries. Second, the employers have been reluctant to have researchers work at the plant level for the trade unions only; they have not been willing to experiment with the application of new technology or other forms of work organization under conditions outside their control. Third, the lack of trade union-inspired shop floor-level experiments is also a result of a centralized trade union structure and the fact that most central trade unions are only moderately interested in issues that cannot be handled through traditional methods of collective bargaining.

<sup>1</sup> From the management's point of view, worker influence limited to the shop floor may be of interest since it presumably leads to greater motivation and increased productivity. This strategy can, in fact, be said to underlie most organizational changes launched in Japan under the rubric "humanization of work" or "quality of working life" (10). There has often been little interest on the company's part in developing forms of decision making that give employees influence over larger issues.

The Act of Co-determination means influence for trade union representatives and not for the rank and file on the shop floor. The trade union representatives probably feel that their time is completely absorbed with negotiations in the field of co-determination and that there is little or no time left over for creative work at the shop floor level. So, ironically enough, legislation and negotiations based on these agreements seem to have absorbed the main part of trade union resources for work reform. Few resources have been left for initiatives on shop floor changes related to the organization of work and the application of new technology. To be sure, this reflects the priorities of the trade unions. However, it is to be expected that joint efforts on work organization will develop as soon as central agreements on co-determination are reached. The trade unions will then be in a quite different position compared to the situation in the 1960s and early 70s. In contrast to that earlier period, they will probably find it easier to relate to developments that encompass both participation through the system of representative democracy and various forms of changes in job content and worker influence on the shop floor. Large investments in training for this purpose are also being made.

#### *The Need for a Multilevel Strategy for Worker Participation*

A summary and discussion of research relevant to the discussion of a "participatory work environment strategy"<sup>2</sup> was presented to the 1976 Congress of the Swedish Confederation of Trade Unions (S).<sup>3</sup> In this summary, it was stressed that representative influence in various formal bodies and influence for the rank and file in their daily work must be regarded as two parts in an overall trade union strategy for industrial democracy.

Worker participation is a political goal, but also a means to come to grips with bad working conditions. Future efforts in the area of worker participation should therefore focus on efforts where these levels of influence are deliberately tied together. If the trade unions do not succeed in such efforts, there is a risk that the development of worker participation will be split into two separate parts: one bureaucratic part based on legislation and collective bargaining that seeks to increase the influence for the trade union as an organization in economic life, and another part dealing with worker participation at the shop floor level that concerns the ordinary worker in his daily activities.

Following only the first line of development, the trade unions will soon run into the same problems found with the German *Mitbestimmung* and the Yugoslav *Self-Management*. That is, they will be regarded by the rank and file as part of the control system of the company without any basic possibilities—or even interest—to look after the everyday working conditions of the rank and file. This will create great difficulties in relation to their members.

<sup>2</sup> The term "participatory work environment" was introduced to the author by Professor Hy Kornbluh of the Institute of Labor and Industrial Relations, University of Michigan, Ann Arbor. The term encompasses both work environment and worker participation issues, and focuses on worker participation as a means of dealing with work environment problems.

<sup>3</sup> The Congress is the highest decision-making body of the Confederation of Trade Unions. It meets every fifth year and determines policy issues for the coming five-year period.

The shop floor-type of development is of interest to management particularly because of the increased intrinsic rewards and increased motivation to work that might follow from increased participation in matters related to one's job and working conditions. If management alone is allowed to control this development, its psychological forces will be used primarily for productivity purposes and not for purposes of creating a more democratic working life. As indicated earlier, many signs show that this split in worker participation strategies is exactly what is going on in Sweden right now.

The Almex case, on which we shall report and comment here, constitutes an example of a trade union-based strategy for the development of a democratic work organization where co-determination in representative forms and autonomous production groups have been united. It is a local initiative which demonstrates an understanding of the need to "marry" shop floor influence and influence for the trade union to each other. Through this multilevel strategy, it represents an answer to some of the limitations of the shop floor-level approach at the same time as it creates a functional relationship between co-determination and direct democracy on the shop floor through a system of autonomous groups. The Almex case demonstrates what might be achieved in many companies under a legislation on co-determination, provided the workers want to push the development of a democratic work organization on the shop floor. The fact that the changes taking place at Almex started and reached their present state before the Swedish Act on Co-determination shows that far-reaching developments in industrial democracy can be reached without any legal support under especially favorable conditions. But society and wage earners cannot rely on benevolent management and unusual local competence for industrial democracy to develop. It is obvious that legislation on co-determination might stimulate and facilitate similar change processes elsewhere. Moreover, legislation and/or agreements on co-determination would probably have helped speed up the changes in this case. It should also be stressed that local developments without any anchorage in the legal superstructure are very vulnerable and often dissolve when the first enthusiasm has cooled off. As soon as a central agreement on co-determination is reached, it would therefore seem necessary and natural to attach the local agreement at Almex to this agreement as a support and shelter for what has been achieved.

Thus, we believe that legislation and/or collective agreements are necessary conditions for a more widespread development toward industrial democracy to take place. At the same time, however, we feel that the main lesson to be learned from the Almex case is that the most important conditions at the workplace are related to the will and effort that can be mobilized among the workers themselves to create their own change process. To involve ordinary workers in a change toward increased control over production, and more challenge and more learning opportunities in their work, takes a much deeper effort than the changes that can be laid down by legislation and collective agreements. A variety of means must be applied, and these means must be interrelated in a consistent and meaningful way. The Almex case points to the importance of changes in work organization being engineered by the workers themselves. In this case, no outside experts or "change agents" were used. Our role as researchers has been only to describe and analyze what had already taken place in order to make it possible for people outside Almex to learn from the experience.

*Brief Description of the Company—AB Almex*

Before examining the system for a democratic work organization at Almex more closely, it may be useful to have some details about the company, its products, size, economy, and so forth. Almex started as a family company in 1946, producing a portable mechanical ticket machine for use on buses and other forms of public transportation. In 1946, serial production began (Model A). Since this time, new models have been developed, including a ticket-cancelling device which checks tickets electronically (Model A). Annual sales exceed 2 billion Sw. crowns. Over 90 percent of total production is for the export market, the active marketing area being some 40 countries. The company has been expanding both in sales and personnel every year since 1973, and is presently regarded as one of the most profitable companies in Swedish industry.

The company is divided into sales, technical, and administrative divisions. The technical division consists of production, material control, service, and three research and development departments. The autonomous departments are found primarily on the production and service sides.

Autonomous work groups have been introduced into the following departments: M-assembly (April 1976), Service shop (October 1976), Inspection (November 1976), Tool shop (January 1977), Packing (March 1977), Planning group (white-collar workers) (May 1977), Experimental shop (September 1977), and A-assembly (November 1977). In addition to these departments, Electronic parts, Electronic testing, and a subdepartment of the engineering shop function similarly to the autonomous departments, although they lack a formal agreement.

**DEMOCRATIC WORK ORGANIZATION AT ALMEX**

The organization of work at Almex is characterized by employee influence at all levels of the company. The strategy for development of a democratic work organization is based on the principle that true autonomy at the production group level requires that employees have the right of co-determination when it comes to the more sweeping decisions made by the company, such as those involving finances, technology, personnel policy, work organization, and production planning. Employee co-determination in these more general matters is seen as an essential condition for autonomy at the production group level, which would otherwise be limited to mere job details. The soundness of this principle is supported by evidence from various experiments with autonomous work groups, where employee influence most often extends only to certain aspects of the way each person carries out his own job (6).

Almex is an example of what could be called a multilevel effort. Changes in the work organization have been initiated from below by the Metal union local. The aim has been to link together representative co-determination in strategic decisions and autonomy at the shop floor level.

Co-determination constitutes the framework and prerequisite for autonomous work groups. Through the system of autonomous work groups, all employees become directly involved in the democratic organization of work. The connection between co-determination in strategic management decisions and the autonomous group system therefore becomes a crucial feature of the attempt that Almex represents. It is this feature

that distinguishes Almex from a number of other companies that have autonomous work groups. From the outset, this connection was assured by the fact that elected union stewards also served as "contact people" in the autonomous departments, i.e., they represented the group in its contacts with other parts of the company. Due to the gradual increase in union involvement on the part of most of the workers, however, it has been possible to elect contact persons from outside the group of elected union stewards without jeopardizing the connection between the autonomous production groups and the union.

*Co-determination*

Co-determination at Almex takes both a representative form and a less organized form. The representative form is reflected in the following three bodies: the board of the company, which meets about five times a year; the financial committee, meeting five to ten times a year, where not only economic questions but also topics such as efforts in other countries and incoming orders are discussed; and the health and safety committee, meeting four to eight times a year, where the employees are in the majority and where questions concerning the work environment, machine acquisitions, rebuilding, etc. are taken up. The less organized form involves informal contacts between elected union stewards and management in the course of the day's work. It is this informal day-to-day type of co-determination that is most important and that proves the strong position of the Metal local in the company. The formal aspect of union influence does not differ significantly from that found in most other companies in Sweden today under such laws as the Act of Board Representative, the Work Environment Act, and the Act of Co-determination. Undoubtedly, however, the workers at Almex have a greater say in these formal bodies than is normally found in Swedish companies due to the strong position the Metal local has in the company.

It is difficult to briefly describe how co-determination works. Instead, we shall cite some examples that illustrate how co-determination manifests itself in the areas of personnel policy, foreign investment, and technology development.

In contrast to the official policy of the Swedish Confederation of Trade Unions (LO), the Metal local at Almex has all along considered it very important not to make any distinction between work organization and personnel matters. Recruiting, transfers, and the creation or elimination of positions are regarded as aspects of work organization. Thus, within the framework of union influence on work organization, a written agreement has been adopted that sets the rules for employee influence over what are traditionally viewed as personnel matters. This agreement is formulated as follows: "Representatives from the trade union locals are to be included when deciding on issues involving personnel management, such as personnel planning, recruiting, introduction of new employees, training transfers, staff development and internal information" (November 1977).

<sup>4</sup> Health and Safety Committees are required at every Swedish workplace exceeding 25 employees under the 1978 Act on Work Environment. Under this Act, workers have the right to be informed and to check plans, drawings, and regulations for buildings and machinery.

The reasons behind not accepting any distinction between personnel policy and work organization are several. Among the most important is the fact that the Metal local wishes in this way to work against "elite recruitment" to production groups, and to prevent these groups from eliminating people who for some reason are not able to live up to the group norms for achievement or cooperation. This is a criticism often directed against autonomous work groups, which is sometimes justified (11). There is another important reason for maintaining the connection between personnel policy and work organization. Otherwise, the company can—either intentionally or not—start recruiting people for executive positions who do not accept a strong influence from the employees and may therefore systematically work against the development of a democratic work organization. This has happened in some places where autonomous work groups have been formed (9). The company can also, by establishing new positions in the organization, increase its control over production. On one occasion, both of the union locals at Almetex (Metal, SIF) jointly opposed the creation of a new administrative managerial post. At first the position was not filled, and later the job description was changed to take into account the specific features of the autonomous group system. It was also decided—in accordance with Metal's wish—that the duties of the production manager were to be "tuned up" (i.e., reassessed) after six months.

When new workers are being hired, representatives from the Metal local are always involved. When there have been more applicants than vacancies, the union has played a decisive role. The contact person and other employees from the affected production departments are also involved. Orientation to the autonomous groups system and its relation to co-determination, as well as training in union matters, is organized by the union and performed during paid working hours.

Another issue in which the Metal local has been able to exert influence concerns investments abroad. Metal's policy is to maintain employment in Sweden. Thus the union local is very critical of plans to take production abroad and has in several instances been able to alter the company's investment plans in this respect. At the same time, Metal is aware of the necessity of expanding into new markets and has in fact stimulated such development in cases when management did not believe deadlines could be met. The critical factor here seems to be the workers' better knowledge of the actual situation in the production departments and the flexibility created by the autonomous group system.

The workers are also aware of the necessity of keeping pace with technological development. This pressure from the workers has contributed to a product development where the company today is well ahead of its competitors. The workers are also closely following developments in production technology and are in a position where they have access to all relevant information about computers and other forms of new work methods. Through co-determination, they will be part of the decision making on these issues.

### *The Autonomous Group System*

In negotiations between the Metal local and the company, an agreement on autonomous groups was reached in 1976. The rights and power of decision making in the autonomous work group were outlined in 11 points, among which the following are the most important:

- After internal discussions, the group makes all decisions within its area of competence that do not interfere with the decision making of other groups.
- Each production group is collectively responsible for production assignments.
- A supervisor appointed by the employer is replaced by a "contact person," a member of the group, elected by and responsible to the group.
- Supervision and the internal distribution of work are decided by the group.
- The production group must cooperate in all directions. Technical experts and sales personnel cannot give orders to the group, but should reach joint agreements.
- The group is responsible for the training of its members, job rotation, and development of production methods. Technical experts should be asked to assist the group in these matters.
- The group must consult the production manager if agreed upon production plans are in danger of being jeopardized, or if there are serious disturbances in production flow, supplies, etc.
- If the group cannot solve its internal conflicts, any group member is free to bring the problem to the trade union local and/or the production manager.

This agreement was applied initially only to a single department. It was understood, however, that other departments could reach similar agreements if and when they wanted to. Since that time, similar agreements have been negotiated for eight out of 11 production departments. Local trade union policy is that the initiative to join the autonomous group system should come from the workers in the various departments. The trade union then helps to negotiate an agreement with management.

Although not part of the agreement, there are also ideological and other important features of the democratic work organization. Among these are the following principles:

- The autonomous group system is a collective work form based on equality of membership and entitlement. It is accepted that people are different and that some people produce more than others. No comparison should be made between individuals, and existing wage differences should be abolished.
- The autonomous group system is based on group work and collective responsibility. People are developing through their relations to other people at a pace they determine themselves.
- Every member should be given the opportunity to learn all the tasks within the group's working area. This increases the flexibility, overview, and strength of the group, at the same time as it makes work more intrinsically rewarding.
- The group cannot recruit new members and replace workers without the consent of the union. The group should be encouraged to give shelter and support to members with social or other types of problems.

### *The Functioning of the Autonomous Groups*

*Planning.* Planning and purchasing may involve difficulties for the autonomous work groups because of the large number of individual items produced and the many variations that exist for each type of machine. Production planning takes place primarily

through informal contacts (in A-assembly through regular meetings) between the production manager, the planning department, and the contact people in the assembly department. The contact people approve the production schedule which the planning department has drawn up. In the case of unusual orders, or when the question of overtime comes up, the production group involved is always to be contacted before the production schedule is prepared. Sometimes a production group is consulted before certain orders are accepted, since it is the group that has the best overview of the situation.

*Organization and Distribution of Work.* The functioning of the autonomous groups varies according to the nature of their tasks, their size, and their "history" within the autonomous group system. M-assembly has been built up around the idea of autonomy. The organization of work is very flexible and varies depending on the size of an order and the number of different types of machines involved. This flexibility has been made possible by the fact that practically all of the nine people in the group are able to perform all the tasks. A-assembly, with 16 people, is a relatively large department where people have worked at the same tasks for a long time. They have not yet succeeded in achieving an organization of work as flexible as that in M-assembly. Some people in A-assembly have shown a certain reluctance to "let go" of what they consider as "their" job, and they also feel a certain amount of insecurity about learning something new. It seems obvious that the size of the department has contributed a great deal to the somewhat slower pace of progress. New hires, however, are taught to assemble the whole machine. Eventually this goal will be reached for all employees.

The inspection department performs two roles: checking incoming details from subcontractors and checking complete machines ready for delivery. Before the department joined the autonomous group system, more qualified measurement was performed by a few specialists. The group organized early on a technical school using technical experts as teachers. Today all 12 workers are able to perform all tasks, which has meant increased capacity and increased quality of work. The service department maintains and repairs machines sent in by the customer. The degree of skill and independence has remained relatively great. The department has also taken over customer contact with all Swedish customers.

*Further Development of Work Methods.* Working in an autonomous group means a process of constant learning for the employees. However, formal training in connection with autonomous work groups has taken place only in the service shop and in inspection. In inspection, a comprehensive training program was carried out on the initiative of the employees and the union local. Union representatives underscore the fact that a prerequisite for autonomy in inspection was that the employees there received some formal training so they would be able to handle the more difficult inspection tasks. In the earlier supervisor-type of organization, the skilled tasks were assigned to only a few people. The training was arranged by the Metal local in cooperation with the employees of the department, and drew upon the knowledge about testing techniques that technical experts possessed. From the beginning, this training was conducted partly during free time; despite that fact all employees participated. The program demanded a considerable effort from many workers, especially since they had not taken part in any similar training previously. The course included both a theoretical review of testing techniques

and practical exercises in the use of various measuring instruments, e.g., microscope, projector, electronic clock. One result of this training is that inspection work has become more comprehensive and skilled and—according to the employees in the group—more careful. In M-assembly, the testing of machines has been made a part of the autonomous work group's responsibility. The group, in cooperation with the engineers, has worked out a test program for all machines. Other changes made by the employees include organization of an intermediate supply depot, revised work routines, and administrative simplification.

*Contact Persons.* An important part of the agreement on autonomous groups was the replacement of the traditional supervisor with a contact person selected from among the group members. A contact person is appointed only in the larger autonomous departments (A- and M-assembly and inspection). Rotation of this office has occurred in two of these departments. In the future, the group members will review the duties of the contact person twice a year and perhaps select a new one. Should special reasons arise, a new contact person can be appointed at any time during the term of office.

The contact person has primarily played a unifying role. His or her assignment includes keeping in touch "upwards" in the company—particularly with planners, the production manager, design engineers, and purchasers—on those matters that are common to everyone in the group. This does not preclude any employee in the group from making such contacts himself. The contact person conveys the information he gets "downwards" to the employees in the department. Since the contact people have usually been elected union stewards, they have also answered for union information and for contacts between the production group and the union board.

The union representatives emphasize that the importance of the contact person in an autonomous work group should not be exaggerated. They agree with management that there should be such a person in all the later autonomous departments to assure a desirable degree of order in the group's transactions with its environment. But it is also important that this duty rotates, and that the contact person not act unnecessarily as a channel for those contacts that could as well be taken directly with or by the worker involved. As the others in each autonomous work group have become more knowledgeable and involved, and as the white-collar employees (often at the urging of the contact person) go directly to the workers of a department, the function of the contact person has gradually become less critical.

The tasks of the contact person are in some respects similar to those that have traditionally been assigned to a supervisor. One may therefore ask what the difference is, and whether it is not irrelevant to an employee if he has a contact person or a supervisor. The latter view is one that some white-collar workers—in particular the former supervisors themselves—express. Nearly all employees in the autonomous departments (but significantly fewer in the other departments) perceive a distinct difference between the role and function of a contact person and a supervisor. The difference they point to can be summarized as follows: (a) a contact person is chosen—and can be dismissed—by the workers in the department, whereas a supervisor is appointed by management; (b) a supervisor has closer ties to management; and (c) the supervisor's assignment consists of checking up and monitoring, making it difficult to include him in the group on the basis of equality.

The job of contact person has until now meant a lot of extra work and stress, and is therefore regarded as a demanding one. One reason for this is the service function that the contact person performs for the employees in his work group. However, the job of contact person also means a vote of confidence from the others in the group, as well as interesting, important assignments. Thus, serving as a contact person involves not only strains but also significant social rewards. There are no material rewards.

#### THE PROCESS OF GROWTH TOWARD A DEMOCRATIZED WORK ORGANIZATION

The autonomous groups and co-determination were introduced and developed out of a situation that was characterized by the following features: a paternally ruled enterprise with a low-wage policy and a small number of skilled workers; a piece-work system, which created arbitrary wage differences both within and between the various departments; worker dissatisfaction with the trade union local, the affairs of which for the most part were handled by a single person; and no employee influence on personnel policy, transfers, or the like.

Prior to the development of autonomous groups, solutions to these problems were sought by each worker individually. Through good contact with the foreman, some people succeeded in getting better jobs and better pay, but that did not solve the problems for the workers as a group. What has been termed the "workers' collectivity" (1)—that is, a set of generally accepted norms that emerged from the workers' need to protect themselves from the pressure of the technical/economic system—was very weak.

Primarily as a result of a strong sense of dissatisfaction with the union's role, some workers began in the early 1970s to spend more time together on the job and to discuss union matters. They soon found out that the problems were not individual but rather collective problems. These workers decided that something had to be done about the situation, and support was quickly forthcoming from other employees. The result was that, in 1972, a new board was elected to lead the union local. A strong workers' collectivity was beginning to emerge which saw the trade union as its leadership and as an instrument for change.

Due largely to greater confidence in the new union stewards, interest in the union grew rapidly. This was evident in increased participation in union meetings. At the same time, the union stepped up its level of activity; among other things, study circles were arranged and union assignments were distributed more widely. This increased interest in the trade union can be attributed mainly to the democratization of the union's work and the increased strength and influence of the union in management questions, especially personnel matters. Democratization of the union's work involved a wider distribution of union assignments and also meant that the union stewards regularly went around to the various departments and talked things over with the workers. The union thus became better informed at the same time as confidence in the union among the workers increased. Negotiations were carried out by a "trojka"<sup>5</sup> whose composition was changed from time to time in order to maintain the confidence of the rank and file. The increased influence of the union in management questions proved to the employees that the union

was now better able to represent their interests. This greater influence was due to several interrelated factors, including better knowledge among union stewards acquired both through training organized by the national union and through informal study groups, the experience of sitting on the company board, and several strikes or open conflicts with management through which the trade union was able to advance the cause of the workers. Practically all the workers were involved in these conflicts, and for many it was their first collective action. Since the outcomes of these conflicts were favorable to the workers, they also demonstrated the strength of the trade union and of the workers' collectivity.

It is difficult to determine how and when the idea of autonomous work groups arose. However, the increase in the level of union activity and the democratization of union work must be regarded as essential prerequisites for the development that took place at Almex. Increased solidarity and a greater feeling of unity among the employees were also very important. Between 1972 and 1975, the Metal local arranged several study circles in which a nucleus of active workers participated. The circles dealt with industrial democracy issues and helped the workers to analyze their own work situation and—most importantly—develop a sense of community. Through this study, they began to see alternatives to the existing work organization and understand the ways in which they must operate for changes to get under way.

When these active union members had agreed to try to create a more democratic work organization, and when support for this was forthcoming from the locals of both the union of Clerical and Technical Employees in Industry (SIF) and the union of Foremen and Supervisors (SALF), the next step was to take these ideas to the company.

Early in 1976, following a decision in the Work Council,<sup>5</sup> a task force was formed to discuss the possibility of a new work organization. The task force consisted of two people from the SIF local, two from the Metal local, one from SALF, and two company representatives. The Metal local was strongly supported in this task force—as it was later in the implementation of autonomy—by the representatives of SIF. This united front on the part of blue- and white-collar workers was very unusual at the time and has probably been of great importance in the development of autonomy at Almex. The most significant result of the efforts of the task force was the decision to introduce autonomous production groups in the assembly departments. This effort was to follow the guidelines for autonomy that had been discussed and agreed upon in the task force.

When the representatives from the Metal local saw an opportunity to introduce autonomy in one of the assembly departments, it became obvious that some form of organized training involving people from various levels in the company was going to be necessary. This training should focus on organizational principles and show management and white-collar workers that an autonomous group system could be advantageous not only to the workers but to the company as a whole, including middle-management and technical experts. The training package, prepared and administered by Metal local, contained the following items: a review of different theories of organization; a discussion of the current work organization at Almex; a discussion of the wage system,

<sup>5</sup> The central agreement on Work Councils is today replaced by the Act of Co-determination and its various agreements.



planning, and leadership; an outline of a new work organization for the company; and a discussion of the role of the union in this new work organization.

Autonomy was first introduced in M-assembly and then extended to other departments step-by-step, with the employees in each department setting the pace and playing an active role in the change. Although active union members try through discussions in the various departments to stimulate an interest in and push for autonomy, it is the workers themselves who decide if and when autonomy is to be introduced. Once a department has decided that it wants to be organized into an autonomous production group, the union stewards participate in the negotiations with management and help to draw up an agreement on autonomy in keeping with the wishes of the department. In this way, the union has succeeded in combining active guidance and coordination of the development of autonomy with letting each department act independently in this matter.

This has important consequences for both the form and the future of autonomy. But it is no doubt a problem that the autonomous group system does not comprise all production departments in the company. The conditions for autonomy and for choosing not to join the system of autonomous groups are dealt with in the next section.

#### CONDITIONS FOR A DEMOCRATIZED WORK ORGANIZATION AT ALMEX

In addition to the circumstances and activities already described, the possibility of developing a democratic work organization is dependent on the technical/economic as well as the social-psychological conditions that exist in each particular case. The technical/economic conditions include the following factors: nature of technology and production; organizational structure; company size; degree of planning and control; marketing situation and dependence on customers; owner structure, competitive and financial situation; and the composition of the worker population in terms of education, nationality, and so forth. The social-psychological conditions affecting the development of a democratic work organization include factors such as people's outlook, attitudes, and opinions.

#### *The Technical/Economic Conditions*

Among the more important overall conditions existing in the company in the early 1970s, several deserve particular mention. The company has gradually succeeded in strengthening its position with respect to its competitors, and has been continuously growing since its start. Production is to a large degree determined by customer orders. It is essential to be able to accept quick orders and to adapt production to customers' wishes. Both of these factors necessitate a flexible production apparatus. In addition to these general conditions, it is important to take a look at the impact that certain special conditions (such as those relating to technology, planning, wage policy, and customer demand) have had on the development of a democratic organization at Almex. The possibility of implementing such an organizational form can be limited or even precluded by centralized, detailed planning and firmly steered production, whether this stems from management, the wage system, technical considerations, or a combination of these factors.

The conditions at Almex with regard to planning and production control are favorable for the introduction of autonomous work groups. Technical control of production at Almex has never been strong. The low level of mechanization and the manual "craftmanship" involved in much of the work has made it impossible up to now to impose a detailed control system in accordance with the traditional methods of scientific management. It is also difficult to determine exactly how much time each work operation takes, since assembly requires constant fitting and adjusting. Moreover, due to customers' demands, a large number of machine variants are produced. These conditions—together with a poorly organized piece-work system—are the main reasons why piece-work wages were dropped in 1972 and replaced with hourly wages for all blue-collar workers. Time wages—in contrast to piece rates—are probably an essential prerequisite for group work based on cooperation and the sharing of experience. In many experiments with worker participation, in Scandinavia and elsewhere, the wage system has proved to be an obstacle to flexibility and cooperation within the group. Group piece rates or bonus systems may also lead to group pressure to get rid of weaker members who do not contribute as much to group efficiency.

The impact of the wage system for autonomy is confirmed by the workers. In our interviews, 65 percent of workers were of the opinion that equal salaries are a necessary prerequisite for creating autonomous work groups. There are still wage differentials in the autonomous departments—even if they are decreasing—but these are relics of the era before autonomy.

Customer determination, which leads to a large number of variations of each type of machine, together with differences in the size of orders, makes detailed planning difficult. In addition, shortages of items provided by subcontractors often arise and cause planning problems. All this means that production must be flexible.

The nature of the work has meant that many employees—even though they are not skilled workers in a formal sense—have acquired both skills and an ability to view production as a whole. These skills and abilities have been an important prerequisite for participation in the planning of production and therefore for the democratization of the work organization.

#### *Social-Psychological Conditions*

The social-psychological conditions for autonomy include self-confidence, interpersonal relations, and a sense of responsibility. Virtually every worker interviewed was of the opinion that good relations with one's fellow workers are a necessary condition for autonomous work groups to function. This already existed in those departments where autonomy has been introduced; in addition, the feeling of unity was strengthened by the discussions that preceded the changeover.

There are several departments at Almex that are not autonomous. When one takes a close look at the resistance to and doubts about autonomy that exist among these departments, the psychological factors seem to be the most significant. The reasons for opposition to autonomy can be summarized as follows: (a) fear that the work group will not function democratically and that a few people will dominate the department; (b) fear that conflicts will arise in the work group; (c) concern that certain people will misuse the freedom implied in autonomy; (d) personal insecurity due to a lack of technical skills

and self-confidence, which means that people are afraid to take responsibility and make their own decisions; and (e) a sense that the present work organization is something that cannot be changed.

Naturally the employees in the nonautonomous departments are influenced by the experiences of their fellow workers in autonomous work groups. We shall therefore turn now to an account of the consequences of the democratized work organization in order to understand what it has meant to the workers as well as to the company.

## CONSEQUENCES OF THE DEMOCRATIZED WORK ORGANIZATION

### *Introductory Methodological Remarks*

The theoretical and metascientific basis of our approach implies that the change process at Almex cannot be regarded as an "intervention" whose effects in various areas can be easily read off from interviews and statistics. Both the autonomous groups and the company must be regarded as open systems which interact with the environment and adapt to new realities in a dialectic and unstructured way.

Nevertheless, our task is to analyze this process in a way that can give some understanding to others of what has happened, why it happened, and what main consequences can be traced back to the change process or some aspect of it. In doing so, we have turned to the literature in a fairly open search process, looking for those theories and concepts that we believe contribute to an understanding of what has taken place at Almex. This method contains an inescapable element of subjective choice in conceptualization. Other observers of the same organizational events might have preferred to use other concepts and to stress other outcomes or aspects of the change process. The analysis presented herein is also incomplete in many ways, not the least with respect to explicit reference to earlier research. For a more comprehensive account of our theoretical anchorage, readers are referred to the main report (12).

Data have been collected basically on a qualitative basis, through interviews, group discussion, and informal observation virtually every day during one year. In the first round, workers who had joined the autonomous group system were interviewed. These interviews were open-ended, following only a checklist prepared in advance. Issues brought up during the interviews that were not foreseen were recorded and added to the checklist for the next interview. Working reports were prepared on four different occasions and shown to the workers for their comments and suggestions.

The second round of interviews was built on the first. From these results and earlier research considered relevant, a questionnaire was constructed which was used in personal interviews with all workers in the production departments. These interviews were designed to capture—both in qualitative and quantitative terms—the possible differences in attitudes and evaluation between workers who had joined the autonomous group system (60 workers) and those who had not (40 workers). In this way, we felt it would be possible to get a somewhat clearer understanding of the autonomous group system as part of the democratized work organization, whose other part—co-determination—is valid for the whole company. Existing differences between workers in autonomous and nonautonomous departments cannot, however, simply be interpreted as effects of the autonomous group system owing to various types of

selection mechanisms operating in this case. We shall discuss these problems at various points in the text.

Our analysis dealt with three different areas: consequences for the workers; consequences for middle-management and technical experts; and consequences for the effectiveness of the company. [We will comment here on the role of middle-management and technical experts, but will not analyze the new work organization from their perspective. This is a substantial part of the main report (12), however.]

### *Consequences for the Workers*

Our analysis deals with outcomes on three different levels: the worker as an individual, the worker as a group member, and the worker as part of a collectivity.

The analysis of the worker as an individual is based on two main concepts: identity and self-confidence. The concept of identity was never referred to explicitly by the workers. We use it, however, since we believe it is a concept that captures changes in the perceptions about oneself that many but not all workers displayed. It is a cognitive concept that answers the question: Who am I? And we will try to show that many workers changed their answer to this question in the course of the growth toward democracy at the workplace. The concept of self-confidence is an affective concept. It was very often referred to by the workers in describing how they felt since becoming part of a democratized work organization.

*Identity.* Changes in identity or perception about oneself touch upon several different aspects of the democratized work organization. First are identity changes related to an increased area of competence due to the autonomous group system. Among other things, this means workers have acquired technical skills of greater depth and variety, since all group members are invited to learn all jobs within the group's working area. In addition, there has been increased participation in planning for production and personnel, and increased participation in decision making on the group level as to volume, pace, internal distribution of work, and the solution of various production problems arising during the day. Second are identity changes related to membership in a group with new and enlarged functions. The autonomous groups have meant increased group influence in relation to higher hierarchical levels. Technical experts can no longer give orders but must act as advisors and seek joint agreement. Moreover, the entire production group, not the individual worker, is responsible for production volume and quality. Responsibility for production in this case does not mean that the group has to fulfill a certain quota as a result of negotiations. Instead, group responsibility for production is generally accepted by the workers as an integral part of the autonomous group system.

A third identity change is related to membership in the trade union. This is due to the trade union's role in the change process and the fact that the union is regarded as an instrument for expressing the values and needs of the rank and file. The following aspects of the change process and its monitoring seem to have been of special importance for the identification of the democratized work organization with the trade union: (a) the development toward democracy at the workplace was originated and has throughout been engineered by a democratized trade union local, in close contact with the members; (b) as part of making the union local more democratic, trade union

procedures have been simplified and assignments spread among a greater number of people; (c) union stewards were elected contact people for the first autonomous groups in order to keep a close relationship between autonomy on the group level and co-determination in management decisions; (d) autonomy on the shop floor is viewed as part of a trade union strategy for increased worker say in the company as a whole; (e) various collective actions demonstrated the strength of the trade union and of the workers' collectivity to both management and individual workers; (f) the trade union organized training activities on the job, including both general training in democratic work organization and technical training for some of the departments; and (g) the union organized study circles in leisure hours that have been of great importance for self-esteem and fellowship among the workers. The best illustration of this aspect of identity change is the increase in attendance at trade union meetings from 3 to 4 percent in 1972 to 70 to 80 percent in 1977. Because of this large attendance, workers have been able since 1978 to negotiate five union meetings per year during paid working hours. Everyone present at work that day participates in the meeting.

*Self-confidence.* This was the most commonly used expression when workers tried to describe how they felt about the change and what the increased autonomy has meant for their personality. By self-confidence, they meant the following: you feel confident about yourself; you know what you want; you feel you are able to do things yourself; and you feel that you are not inferior to other people "higher up" in the organization. This increased sense of self-confidence was observed in three ways. First, fellow workers and technical experts reported that workers take more initiative, act more independently, and are generally more active since the introduction of autonomous production groups. Second, this was noted in interviews in which virtually all the workers reported greater self-esteem. The major reasons given for increased self-confidence (as compared with the nonautonomous departments) were the following: you are a member of a group which discusses production problems, makes joint decisions, and takes responsibility for its work; you are supported by a strong union that has influence on the running of the company; and you are not supervised or controlled in a detailed manner. Third, researchers observed that workers explicitly want to take increased responsibility for production. The increased influence through the autonomous group and through union co-determination makes increased responsibility appear not as a burden but as a means to increased freedom and self-esteem. One-third of the workers said increased independence and responsibility were the most important aspects of the change: "It is we, the workers, who make the decisions about production." "We are responsible now." "We are on our own." "Nobody tells us what to do. Of course that leads to increased self-esteem."

*Job Satisfaction.* In the previous sections, several aspects of increased job satisfaction have been demonstrated in relation to the democratized work organization. These aspects are above all increased "craft pride" and a sense of increased satisfaction with the fact that the production group is capable of taking responsibility for "its own work." Both these aspects show that the democratized work organization has increased workers' sense of worth and dignity. This section briefly touches on another aspect of job satisfaction—the value work has for the individual worker.

We tried to get an understanding of the value of work to each worker by asking people if their job in general provides financial rewards only, or if one also feels that some personal satisfaction can be gained from the job. This question has been asked in a number of other studies of industrial work. These investigations found that, on the average, 60 to 65 percent of Swedish industrial workers have an instrumental attitude toward their present job, that is, they value their job only for the earnings it provides. The more predetermined, controlled, and repetitive the work is, the more widespread is this instrumental attitude (4).

At Almex, we compared autonomous and nonautonomous departments. Our expectations were that the instrumental attitude toward work would be significantly less common in the autonomous departments. This did, in fact, prove to be the case. Only 20 percent of the employees in the autonomous departments, compared with 50 percent in the other departments, felt that the benefit from their job was mainly the money earned. We cannot be sure, however, if this difference depends on the fact that people's outlook has been changed by autonomy, or if those with a noninstrumental orientation toward work to a greater extent have sought employment in the autonomous group system. Qualitative data from the interviews, however, clearly support the conclusion that autonomy does change people, and that in the course of this process people start to view their work and what it means to them in a different way. We have also found support for this interpretation from studies in other companies. The same question about job satisfaction was asked in connection with an experiment in autonomy in some departments of the Swedish Tobacco Company (13). After a four-year-long experience with autonomy, most workers in these departments changed to a less instrumental view of their job.

*Stress.* In this section, we shall make use of Frese's treatment of the phenomenon of stress in working life (14). Frese gives a very general definition of stress, viewing it as something caused by conditions that the individual experiences (evaluates) as threatening and "repugnant" (aversive). He argues, like many others who write about stress (15, 16), that the consequences of stress depend on the degree to which the individual can control the stress-creating conditions. Frese stretches the notion of control to include the individual's influence over such company matters as personnel policy, production policy, investments, company formations, and marketing mechanisms.

Our main concern was whether, and to what extent, autonomy has increased the psychological pressures on the individual worker. This has been shown to be the case elsewhere (13). Democratization has unquestionably meant that the autonomous production groups, together with the local Metal Worker's Union, bear a greater responsibility for production quality and output, personnel policy, employee training, and coordination of the work of the various departments. This increased responsibility is a challenge, but it also puts greater demands on individual workers to take the initiative in contacting people and to cooperate with others. It further involves some additional work (administration, replenishment of parts and materials, etc.) and, in certain situations, a work speed-up. The fact that production is stressed by the customers' orders also causes an extra strain, since delays can result in the company's losing future orders or being subject to claims for damages.

The increased stress that we have been able to detect has mainly been associated with periods when the autonomous groups have had difficulties meeting their production commitments. Problems have been caused, for example, by inadequate planning, defects in materials, and delivery problems, which in turn have led to production delays. The workers' strong sense of responsibility and desire to prove the effectiveness of the autonomous group system have meant that everyone has tried hard to meet the production deadlines anyway. Certain "pressures" from production management, especially in the form of insinuations about the inefficiency of autonomy, have also tended to lead to a certain work speed-up in such situations.

For the shop stewards and contact people, democratization has often entailed great psychological pressures, not only because of the additional work load which their assignments involve, but especially because of their increased responsibilities in such areas as personnel. In the case of the local union board, collective leadership has helped counteract the psychological pressures associated with negotiation situations. As for the contact people, they have often received support from some of their co-workers in their dealings with company representatives.

To determine whether autonomy has led to increased psychological stress, we had to rely primarily on the workers' own feelings. A comparison was made between the autonomous and nonautonomous departments, but these results must be interpreted with caution since there are differences in the working environments in the departments, e.g., noise level and monotony, that may impact on stress. In the autonomous departments, 16 percent of the workers said they felt very often or quite often that they had too much to do, while the comparable figure for the nonautonomous departments was 10 percent. Nonetheless, the latter workers experienced the most psychological stress: 18 percent of those in the nonautonomous departments reported experiencing stress very often or quite often, compared with 7 percent in the autonomous departments. This apparent contradiction may possibly be explained by reference to the meaning of autonomy in this case. The fact that one occasionally has a high work load is seen as an inevitable consequence of the autonomous group system, i.e., autonomy has a price in terms of increased responsibility for production. Through autonomy, however, this increased responsibility and temporary periods of stress and overtime are perceived not as something imposed on workers by an authoritarian system, but as part of the pride in being able to manage production oneself. There is a trade-off between autonomy and responsibility for production. Through the joint system of co-determination and autonomous groups, the workers and their union are able to control where that trade-off is going to be.

Another way to gain an understanding of job-related stress is to study its effects off the job (17, 18). Only 2 percent of those in the autonomous departments reported having trouble relaxing after leaving work, while the corresponding figure for the other departments was 9 percent. Similarly, 72 percent of those in the autonomous departments reported never having trouble relaxing, compared with 51 percent of the others.

The same trend is suggested by the answers given to the following question: Does it ever happen that you are so tired after the day's work that you have trouble doing something else like getting together with friends or spending time on some hobby? This statement was considered true very often or quite often by only 2 percent of those in autonomous departments, compared with 22 percent of the other workers. This was

never true for 54 percent of those in the autonomous departments but for 31 percent of other workers.

All of the figures cited above confirm what we were able to ascertain qualitatively from our interviews and observations: namely, that autonomy has *not*—except on a few specific occasions—resulted in increased psychological stress. On the contrary, it appears that psychological stress has decreased as a result of autonomy. There seem to be several reasons for this. The autonomous group can influence both production output and planning, and this has given workers a better understanding of the production process as a whole and made it possible for them to organize and plan their work better. "It has been calmer now when we can work at our own pace," reported one worker. "When we are missing parts, we can redistribute the work and get ahead with pre-assembly or something else. . . . This makes things less hectic," said another. According to a third, "At the end of a period there's always a lot of stress, but we try to plan things so it won't be that way." Moreover, the autonomous production groups, in cooperation with the local union, can regulate the assignment of both production work and personnel among the departments. This makes it possible to get help during peak periods and to avoid having to sit around with nothing to do when lengthy production delays occur. As one worker commented, "When we had little to do here and A-assembly had a lot to do, we could help them out."

Autonomy further provides more chances for individual self-determination when it comes to planning one's own work and choosing work methods, for example. "It doesn't matter so much if you have a lot to do as long as you get to decide yourself how to do it and have an overall idea of what's going on," said one worker. "I know roughly how many machines I've got to make, and therefore I know when I have time to take a break," commented another. Autonomy has made the work more challenging, thus it is experienced as less monotonous. For this reason, autonomy has reduced the feeling of being understimulated (underutilized), which can also give rise to stress.

The greater strength and increased influence of the local union has made all employees feel more secure with respect to such changes as cost reduction measures, technical development, personnel lay-offs, and transfers. One of the workers interviewed observed, "I think that the company would find it hard to put through something that the union opposes. This gives us some security." The greater strength of the union, together with the system of autonomous groups, has meant less supervision and control by management, even for the employees in the nonautonomous departments. Another worker pointed out, "You notice that complaints about us come through the union now. . . . That's good since it's easier for the union to stand up to such things. And we also get a chance to come up with an explanation." Less supervision has also given the workers more chance to move about freely in the company.

Furthermore, cooperation and collective sharing of responsibility in the production groups has led to greater solidarity, which in turn affords added support to the individuals in the group. This support has been especially important to those who found it hard at the beginning to work independently, and to those who have made technical mistakes in their work for which the group has had to take collective responsibility. Autonomy has also made it easier for people to cooperate and to organize the practical details of the work. This point was made in one of the interviews: "The worst thing is when someone sitting ahead of you keeps on snatching the machine you have just

finished. We have agreed that we won't do this. We don't want to make anyone feel a lot of pressure unnecessarily."

The notion of stress can also be related to both identity and self-confidence. A professional identity based on skills, experience, and self-determination results in a feeling of self-assurance, which in turn diminishes the feeling of stress. Knowing that one can manage the job at hand is a characteristic of skilled workers. It is easy to observe this sense of assurance—"mastery"—among true craftsmen. Such a feeling of confidence that they can manage the production demands is also clearly discernible among the workers in the autonomous departments at Almex. A strong degree of self-confidence counteracts stress. One feels less anxious about making a mistake, and better able to stand up to criticism for those mistakes one does make. This self-confidence and the consequent decrease in stress it brings with it has been expressed by the workers in the autonomous departments at Almex as a feeling that "people dare to stand by what they do" and that "everyone has a right to make a mistake."

#### *The Democratized Work Organization and the Union*

Autonomy, union consciousness, and union power are complex relationships that mutually reinforce each other. For example, it is clear from the material already presented that it was increased union consciousness, in combination with the democratization of union work, that paved the way for the autonomous group system. However, once autonomy has been introduced and becomes understood as part of a trade union strategy for increased worker influence, the idea spreads and further deepens people's interest in the union.

While we are aware that union consciousness and autonomy affect each other profoundly, we shall concentrate here on only one aspect of the interrelationships—how autonomy influences workers interest in union policy. The workers in both the autonomous and nonautonomous departments were asked about their interest in union matters. Their responses are given in Table 1. The table shows, first, that there are few people who claim to lack all interest in the union, and, second, that interest in the union is greater in the autonomous departments.

Union involvement can be assumed to have increased in the entire company as a result of co-determination and the introduction of autonomous groups. As was pointed out

Table 1

Interest in the union among Almex workers, autonomous and nonautonomous departments

Department	High level of interest (%)	Some interest (%)	No interest (%)
Autonomous (N = 55)	36	61	4
Nonautonomous (N = 27)	11	78	11

earlier, participation in the meetings of the Metal local increased over a five-year period from a few people to a regular attendance of about 70 percent. Since 1978, the Metal local (and since 1979 the SIF local as well) have been granted the right to hold union meetings during paid working hours. The local agreements give both Metal and SIF the right to five meetings a year. Both the local and the company stress that this is a shared interest, since it is one way to be sure that information gets out to all employees. For the Metal local, it is regarded as a great strength that decisions can be made at meetings where virtually all the workers are present. For some years, the Confederation of Trade Unions in Sweden has been demanding the right to hold meetings on paid time. Almex is one of the first companies in which this right has been granted. It should be emphasized, however, that increased involvement in union affairs is connected not only to autonomy, but also to the union's role in co-determination. Successful worker participation in strategic decisions through co-determination has stimulated curiosity and interest among the rank and file in matters that are broader than those directly connected to daily work in the production group. Once again, the dynamics of the multilevel approach which Almex represents are demonstrated.

As noted, union interest is greater in the autonomous departments. This manifests itself among other things in the fact that workers from the autonomous group discuss union matters and, according to the union stewards, ask for union information more often. This difference in level of interest cannot be viewed solely as a result of autonomy, however, since autonomy has been introduced in precisely those departments where interest in union matters was greatest. Moreover, in certain cases, people involved in the union have applied for jobs in the autonomous work groups. The following aspects of the autonomous group system can nevertheless be assumed to have had a positive influence on union interest. First, the autonomous group system is often experienced by the workers as part of the union's effort to increase industrial democracy. This almost daily experience makes the relation between the autonomous group system and the overall trade union strategy very clear. Second, workers in the autonomous groups take part in decisions involving production planning. Through this participation on the group level, their interest in influencing more sweeping company decisions is increasing, since they come to learn how these larger issues affect their immediate work situation. Third, the autonomous group system is an expression of the union's power. Through the close relations that exist between the groups and the trade union board, the union's role in co-determination is made very clear to the ordinary worker. And fourth, participation in union-organized courses among workers who come from the autonomous departments has strengthened the union's image. During 1979, two study circles were arranged with a total of 30 participants. There have also been educational activities over the weekends, where people have performed plays, read worker literature, and discussed union problems.

A genuine interest in union matters does not necessarily lead to active involvement in the form of taking on union assignments or participating in the union's educational program, however. There are many obstacles to participation, including lack of self-confidence, unfamiliarity with speaking before a group, and a feeling of not knowing enough, either about the trade union or in general. Autonomy has proved to be especially effective in removing these more "personal" obstacles to participation in union activities.

There are large differences between the autonomous and nonautonomous departments in the way the union is perceived and evaluated. In the nonautonomous departments, a more "traditional" understanding of the union's main responsibilities—wages and working environment—predominates. The reasons employees in the nonautonomous departments give for membership in the union often have to do with the security that membership affords. In the autonomous departments, people are more inclined to emphasize the collective strength and solidarity that union membership represents. Among these people, being a member of the union is regarded as natural for workers. This is not always the case among those working in nonautonomous departments, however. One can say that the union is perceived by those in the autonomous departments as being more of an offensive instrument for influencing the general conditions in the company.

The union local at Almex has been involved in a long cooperative effort with management related to the development of autonomy. At the time autonomy was introduced, management had an open attitude toward the demands for a more democratic work organization. Support for these demands came especially from the president. This interest in autonomy still exists, and, if anything, seems to have deepened over the years.<sup>6</sup> Are there not risks from the workers' standpoint in such close collaboration? In the general debate on industrial democracy, the following reasons are among those given for unions not to take part in such collaboration: (a) it is a way for management to split the union or assure higher profits; (b) if the changes succeed, management takes the credit, but if they do not succeed, then the union gets the blame; (c) there are no guarantees that the results will be lasting, since management can break agreements when it wishes; and (d) cooperation will erase the boundaries between workers and managers, in that the union officials will lose their identity and come to be regarded more as a part of the company's control apparatus.

Only one of these objections can be said to have had any relevance to the situation at Almex—namely, that the change has meant lowered costs for the company. Union representatives feel that there has been a corresponding gain in the form of increased interest in the union; moreover, they feel that it is wrong to use promises of higher pay to interest workers in autonomy. Furthermore, the union local has emphasized that cooperation takes place on the basis of each side's own interests and does not preclude conflicts or offensive actions. Nor is it likely that the autonomous group system can be abolished by management, at least not in the short run. For one thing, there is a local agreement underlying the system of autonomous groups. For another—and this is surely more important—a majority of the employees in the autonomous departments say that they would be prepared to go on strike to preserve autonomy. The risk that cooperation will bring about a split between union officials and members has been counteracted at Almex by democratizing union work and making extensive information available. In terms of the latter, the agreement to hold union meetings during paid working hours is considered a big help.

<sup>6</sup> Since this was written, Almex has taken on a new managing director and a new production manager. It remains to be seen whether these leaders will be able to understand the benefits of the democratic work organization.

Most of the workers, and indeed all of those in the autonomous departments, are in favor of the form of cooperation that the union has had with the company. The workers' opinions are mirrored in the following quotation from a worker: "It is obvious that if both sides are on the same track, then there isn't anything wrong but if the company wins advantages at our expense, then it is another thing!" In the nonautonomous departments, however, there are a few workers who are critical of the union local's close collaboration with management. The reason for this difference in attitude is probably that the employees of the autonomous departments can see more clearly how union co-determination influences and is a prerequisite for autonomy in their own department. In the nonautonomous departments, on the other hand, people are less interested in—and in a few cases directly opposed to—the autonomous group system and union co-determination affecting their own work situation.

About 80 percent of workers agree that the union at Almex has become stronger as a result of the development of a more democratic work organization. Autonomy and the changes in the union's role in the company have contributed to a heightened trade union/political consciousness among many employees. Autonomy is important not primarily because of an increasing interest in and motivation for work, but because it has made it possible for many people to identify positive changes at the workplace with trade union policy and power. One manifestation of increased union consciousness is greater demand for increased worker influence.

#### *Demand for Increased Worker Influence*

We have tried here to underline the dynamics of the multilevel strategy and to show that co-determination and autonomy are viewed as parts of the same ideology, mutually reinforcing each other. We have also stressed that the autonomous groups are learning organizations. Through the demands and responsibilities of the group, workers increase their technical and social skills. But the autonomous group system is also helping people to see the relation between their immediate work situation and more sweeping issues in the company, and teaching them to see how they can influence strategic decisions on these issues. In this section, we shall look at the perceived relationship between these various levels of worker participation, concentrating on the demands for increased worker influence created by the autonomous group system.

Table 2 shows what demands the workers make for increased worker influence, including both the issues that they want to influence themselves (level of the individual) and those they want the union to help decide (collective level). According to Table 2, the demands for worker influence in practically all areas are greater in the autonomous than in the nonautonomous departments. This is true for demands for individual influence as well as collective influence through the board of the union local. The only exceptions are input on new appointments and the choice of an immediate boss; here, those in the nonautonomous departments are more interested in individual input than in increased influence through the Metal local. In the autonomous departments, where union say on new hires is already strong, people are much more interested in a union board influence. Those issues in which workers in the autonomous departments want to have a greater say themselves are all related to the job and the work environment, e.g., issues

Table 2  
Demands for worker influence, autonomous and nonautonomous departments

Issue	Autonomous departments <sup>a</sup>		Nonautonomous departments	
	Want to influence themselves (%) <sup>b</sup>	Want union board to influence (%) <sup>b</sup>	Want to influence themselves (%)	Want union board to influence (%)
Rebuilding, furnishing	84	16	43	6
New appointments	9	84	14	17
Internal recruitment to the department	58	40	31	14
Selection of immediate boss	—	—	34	11
Selection of higher managers	29	51	14	29
Training	55	36	26	11
Finances, investments	9	82	3	26
Planning material supplies	73	18	31	0
Choice of machines, tools	82	15	40	6
Production volume	76	11	17	6
Production development	7	47	3	26

<sup>a</sup>Dashes indicate not applicable. An immediate boss in the sense of a supervisor appointed by the employer does not exist in the autonomous departments.

<sup>b</sup>Percentages refer to positive responses to each alternative. Workers may check both alternatives.

concerning the work premises, planning and material supplies, recruitment and training, selection of machines and tools, and production volume. Even in the nonautonomous departments, a relatively large percentage of workers want to be able to influence these conditions themselves, but roughly twice as many in the autonomous departments demand such influence.

When it comes to demands for worker influence on more general issues, two important aspects may be underscored. First, with a few exceptions, workers in both autonomous and nonautonomous departments transfer their demands for worker influence to the trade union (collective level). Workers in the autonomous groups to a somewhat greater extent want an increased say as individuals in these issues, but it is not a very clear and strong tendency. On the basis of an earlier hypothesis (18), it had been reasonable to assume that increased influence on the shop floor would have increased demands to participate in more sweeping decisions, not only for the workers as a collectivity but also for oneself, because of the greater understanding created by autonomy of the relations between more sweeping issues in the company and one's own immediate work situation. Even if the results are not contrary to this hypothesis, it seems reasonable to interpret the findings to mean that the trade union local in this case has succeeded in tying co-determination and autonomy to each other in a way that is satisfactory to the ordinary worker in his day-to-day activities. He feels that the trade union local is really arguing his case. Using an earlier terminology, the trade union local is perceived as a true representative of the workers' collectivity.

The second important aspect is that demands for collective worker influence on more general issues are only weakly developed among the nonautonomous compared with the autonomous departments. A good illustration is the way people view finances and investment: only one out of four workers in the nonautonomous departments wants the union to have an influence on these issues, compared with about four out of five workers in the autonomous departments.

By and large, we feel that these results support the assumption that worker say on job-related decisions creates increased demands for the workers to be able to exert influence on more comprehensive decisions (7, 18). Whether these demands are expressed in demands for oneself or for representatives for the workers seems to depend on the intricate relationship among factors such as technology, company size, trade union efficacy, and—in this case—the relations between the trade union local and rank and file through the autonomous group system.

#### *Effectiveness of the Company*

One of the aims of this report, agreed upon by the steering group, was to see how the changed work organization has affected productivity. It was agreed that this task should be assigned to a joint management-worker task force. No reliable statistics have been produced, but there is consensus between management and workers that productivity has not declined. Instead of talking about productivity, we shall use the broader term "effectiveness," which relates to the company's general goals, including quality and service, and its informal and flexible way of working. Effectiveness can thus be regarded as a composite of the following factors: product quality, customer service, flexibility, initiative taking by the employees, and capacity to meet deadlines. The results presented below are based on the judgments and assessments of the managers responsible for production. The workers' own evaluations of the same phenomena are in general more positive.

The responsible managers judge that the quality of the work done has not deteriorated as a result of autonomy. They think it is too early, however, to judge whether the quality has improved, since such a judgment must be based on complaints from customers, need for repairs, and so on. In statements made six months later, top management admits that product quality is likely to have increased. Customer contacts in the service department, which is the department that has the most contact with customers, have also improved, in the opinion of the department manager. The production manager feels that flexibility has increased, both within and between departments. The ability and desire of employees to take the initiative seem to have increased following the introduction of autonomous work groups. There are a number of examples of how employees in the autonomous departments have taken the initiative in order to avoid production delays, and of how they have put into effect improvements and administrative simplifications of various kinds. Also, the workers' general attitude to the company seems to have become more positive as a result of the democratic work organization. There are, for example, considerably more people (94 percent) in the autonomous departments who would advise a friend to work for Almex than in the other departments (55 percent).

## SUMMARY AND CONCLUSIONS

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We have tried here to summarize a report on a trade union-based strategy for democracy at the workplace. From this larger report we have chosen to describe and comment upon: (a) a local co-determination system that is more far-reaching than the central agreements in Sweden based on the Act of Co-determination of 1977; (b) the ways autonomy (direct democracy) and co-determination (representative democracy) in combination have led to important changes for the employees in their daily work and to important changes in the relation between workers, the union, and management; (c) how the change process came about and was engineered; and (d) how this has been a positive experience for almost all employees in the autonomous production groups.

We have described an effort, comprising all organizational levels, to democratize a work organization, and we have stressed the interdependence between worker influence at the levels of co-determination and autonomous work groups. Also, we have stressed the importance of democracy and high member involvement in union work. However, Almed shows certain conditions that make it impossible to automatically transfer the experiences to other companies. These conditions include: customer-ordered production; a low degree of mechanization in combination with little dependence on traditional time and methods studies; complex manual work with a good overview on the part of the workers of the entire production process; and a successively strengthened position on the international market. The importance of continuing profitability and growth must also be stressed. While these conditions are not necessary for the introduction of autonomous work groups, we think that the actual structure of the autonomous production groups is influenced by these facts. There are other conditions in other enterprises, and the structure of the autonomous groups must be based on these conditions. Nonetheless, Almed's development toward a more democratic work organization has many characteristics that seem to be important for other unions to observe and possibly to even copy under very different circumstances.

Based on the Almed experience, we conclude that the following factors are necessary for democracy at the workplace: (a) union co-determination in strategic decisions in the company; (b) introduction of a system for autonomous production groups; (c) a conscious connection between co-determination in strategic decisions via the union representatives and direct participation by all workers in the autonomous production groups; (d) constant opposition to unnecessary hierarchies and unnecessary formal means of control; (e) democratization of the union administration; (f) trade union education, partly to build up knowledge but also to establish solidarity against elite recruitment and tendencies to push out nonconformist workers; (g) a training program inside the company but run by the unions to propagate the value and nonthreatening character of a democratic work organization throughout the firm; (h) good cooperation between the different unions in the plant; and, finally, (i) active participation of all workers in the change process.

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