

SUNREG: Sunshine Regions or Sunset Regions?

A thematic network for co-operation between trade unions and universities on technological developments for sustainable growth and employment creation in the regions of Europe.

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ABSTRACT

SUNREG has been a two year project funded by the DGXII TSER programme. The partners were trade union confederations and universities drawn from four EC regions. This action research project was based on a series of research circles directly involving workers from the manufacturing, financial services, and the public sectors, in each of the partner regions. The focus of the project has been to consider the affect of technology and technological change on jobs and employment.

The principal conclusions of the project are:

- Research circles are a valuable way of bringing people together to look at their work experience and future prospects.
- Action research and action learning can usefully be brought together.
- Some theorists and practitioners are so steeped in complex analysis of technological change that they have lost focus in their primary definition of 'technology'. Those who see themselves as passive victims of technological change, have seen no value in reflecting on the meaning of technology.
- It is the organisation of work and not technology that is the key thing influencing the type and levels of employment, working conditions and workers' ability to influence decisions.
- The SUNREG project has shown that its research circle methodology can be useful in informing workers and their trade unions about important aspects of the work process, thereby making their trade union policies and actions more coherent and effective.

A number of implications for policy changes throughout Europe have arisen from the project. The principal ones are:

- Statutory rights across Europe for workers' participation at work, through a single channel, where trade union recognition exists.
- Extra resources for management training.
- Resources to finance research circles as an educational and research tool.
- Encouraging a multiplicity of mechanisms, peer group meetings, and ad hoc committees to investigate the specific issues concerning a piece of technology.
- The creation of publicly funded institutions whose function would be to advise employers and trade unions as to potential courses of action given the direction and rate of technology, with the aim of maintaining competitiveness.
- Trade Unions need to improve their organisation, communications, education,

and membership activity. They need to be better informed and more proactive.

1. EXECUTIVE SUMMARY

1.1 Introduction

The SUNREG project covers four EC Regions: Yorkshire & Humberside and South-East England in Britain; South East Brabant in Holland; and Catalonia in Spain. In each region a university was twinned with the regional trade union organisation, establishing a relatively unusual example of collaborative research between such organisations. At the end of the project these partners were: Yorkshire & Humberside TUC and Sheffield Hallam University; Southern & Eastern Regional TUC and the University of North London; the FNV and Fontys Hogescholen; and CONC-CERES (CC.OO) and Barcelona Autonomous University.

1.2 Objectives

The aims of the project were:

- to establish the SUNREG network, initially based on the four partner regions;
- to help lay the bases for broader EU developments at the level of regional trade union - university networks;
- to develop structural linkages and communication channels between SUNREG and other EU actors to disseminate project findings on technological developments for sustainable growth and employment creation;
- to offer proposals for the development of products, services and information projects capable of moving from R&D implementation across the EC;
- to contribute to the strengthening of economic and social cohesion with a team of action research partners - by combining grassroots trade unionists and supportive academic institutions, the project would enhance trade union understanding of the EU and its goals;
- to strengthen the role and impact of the European social science research community, by drawing out new technological developments and by building accessible linkages between the academic and trade union worlds.

1.3 Project Results and Methodology

1.3.1 Action Research

SUNREG was conceived as an action research project. The first section of Chapter 3 in this report discusses action research as a method of inquiry and evaluates the SUNREG project against various criteria.

Several definitions of action research are described, but a minimal definition would contain two essential points: first, action research is a rigorous, systematic inquiry through scientific procedures; and second, participants have critical-reflective ownership of the process and the results. This sets action research apart from the classical experimental approach, with its 'ceteris paribus' clauses. Instead it is an iterative method in which research feeds back into further action.

It is shown that the SUNREG project is an example of critical/emancipatory action research and can be assessed by comparison with fifteen criteria which provide an independent 'measuring stick' developed outside the project. The assessment is based on the experience of SUNREG collaborators in the different regions across Europe.

1 Action research demands an integral involvement by the researcher in an intent to change the organization.

The nature of SUNREG, with its eight partners, numerous work sites and several individual trade unions, makes this a complex matter. There is no simple answer to the question of the change sought, nor the organisation(s) affected. Nevertheless, the intent to change has been a feature throughout the project, identified at several levels - within the organisations where Research Circles have been used, within the partner organisations, and within the European Union.

2 Action research must have some implications beyond those required for action or generation of knowledge in the domain of the project. It must be possible to envisage talking about the theories developed in relation to other situations.

The specific domain has been the research circles, but the intention throughout has been to draw wider implications at both a practical and a theoretical level. These implications relate both to the use of research circles and to the potential for action research involving trade unions and universities. Ideas are generated in the circles that are capable of generalisation and ideas from outside the circle are introduced. It has been important to make explicit to participants that the research circles are not working in a vacuum, but can learn from and inform others.

3 As well as being usable in everyday life action research demands valuing theory, with theory elaboration and development as an explicit concern of the research process.

An explicit concern of the research process has been to gain greater understanding of the use and potential of research circles. It should be noted that there was a tension between the two levels of action research - at the level of the whole project, and at the level of the individual research circles. The participants in the latter focussed on their own situations, with wider developments being left to the researcher as a quite separate entity.

4 If the generality drawn out of action research is to be expressed through the design of tools, techniques, models and method then this, alone, is not enough. The basis for their design must be explicit and shown to be related to the theories which inform the design and which, in turn, are supported or developed through action research.

The SUNREG project was set within the wider framework of critical/participatory action research, and provides a basis for drawing lessons applicable to the development of this method.

5 Action research will be concerned with a system of emergent theory, in which the theory develops from a synthesis of that which emerges from the data and that which emerges from the use in practice of the body of theory which informed the intervention and research intent.

The evidence gained through the project has been used to examine, and challenge, existing theory. For example the argument that technology allows more flexible working and the workforce becomes multi-skilled is strongly questioned by the evidence, particularly in the financial services sector.

6 Theory building, as a result of action research, will be incremental, moving through a cycle of developing theory to action to reflection to developing theory, from the particular to the general in small steps

The cycle of action research followed in the project has been a fundamental, and at times problematic, element of the programme. An important tension between the dynamics of action research and the requirements of a funded collaborative project has to be recognised. As the project has developed it has become apparent that several aspects of the original design required modification.

7What is important for action research is not a (false) dichotomy between prescription and description, but a recognition that description will be prescription, even if implicitly so.

The project is 'engaged' in the sense implied by this statement. There has never been any notion of 'value free' activity. But again there are tensions raised by the nature of the project.

8For high quality action research a high degree of method and orderliness is required in reflecting about, and holding on to, the emerging research data and the emergent theoretical outcomes of each episode or cycle of involvement in the organization.

The overall structure of the project has facilitated this. The regular meetings between partners have given us the opportunity to discuss emerging findings, and to consider the interplay between the themes identified at the outset of the project.

9For action research, the process of exploration of the data - rather than collection of the data - in the detecting of emergent theories, must be either replicable, or, at least, capable of being explained to others

The production of Working Papers and Research Papers during the project, as well as overall reflective papers, have been the basis for explaining the link between data exploration and emergent themes. A crucial difference between action research and other methodologies lies in the fact that the researchers do not just collect data; they also explore and examine it with those who generate it.

10 The full process of action research involves a series of interconnected cycles.

The project has proceeded through interconnected cycles, with the periodic meetings providing both the opportunity for reflection and the opportunity to plan ahead.

11 Adhering to characteristics 1 to 10 is a necessary but not sufficient condition for the validity of action research.

While the overall project fits well into the characteristics defined above, the experience of the research circles fits less well. This relates not to the methodology itself, but to the fact that certain parameters are predefined by the overall research programme, and by the need to maintain comparability across the regions.

12 It is difficult to justify the use of action research when the same aims can be satisfied using approaches [such as controlled experimentation or surveys] that can demonstrate the link between data and outcomes more transparently. Thus in action research, the reflection and data collection process - and hence the emergent theories - are most valuably focussed on the aspects that cannot be captured easily by other approaches.

Only an action research approach could have addressed the objectives of the SUNREG project. Nevertheless, within this overall method, other approaches have been used - e.g. surveys, statistical analysis, and comparative work.

13 In action research the opportunities for triangulation that do not offer themselves with other methods should be exploited fully and reported.

Triangulation has occurred in several ways:

- the exploration in four diverse regions;
- the use of several research circles from different industrial sectors;
- the use of secondary material;
- the exploration of findings in conjunction with a wider group of participants invited to each conference.

14 The history and context for the intervention must be taken as critical to the interpretation of the likely range of validity and applicability of the results of action research

The timing of the project has proved critical, coming as it does at a time when both the European Union, and the United Kingdom [where four of the eight partners are located] are experiencing major changes and rethinking of policy, both in relation to social partnerships and in relation to regions.

15 Action research requires that the theory development which is of general value is disseminated in such a way as to be of interest to an audience wider than those integrally involved with the action and/or with the research

Dissemination to a wider audience has been a major consideration throughout the project, and was of course one of the primary motivations in establishing it.

This section concludes that SUNREG has operated effectively as an action research project, although there have been limitations which were perhaps inevitable given the multi-organisational nature of the project. The objectives of SUNREG fit well with the types of change which are generally recognised as being identified with participatory action research.

1.3.2 Research Circle Methodology

The second section of Chapter 3 provides an analysis of Research Circles - the SUNREG project's chosen methodology. These were to be set up in three economic sectors - manufacturing, finance, and the public sector - within each of the partners' regions. This section concentrates on a comparison of the experiences of research circles in Catalonia with those in South East England. Similar experiments were attempted on two other European Regions, Yorkshire & Humberside (UK) and South East Brabant (Netherlands), but these were less successful, encountering difficulties of various kinds. It is reported how it was much easier to set up research circles where the environment was favourable to trade union activity. In other words, where the employer's policy is based on recognition, consultation and participation and the trade union has a similar approach. However, it was also possible to set up research circles in adverse circumstances, although with a different organisational model, a different dynamic and much more limited aims.

The goal of the SUNREG project research circles was to apply action research to the study of technological innovation and the changes in the organisation of work and working conditions which have been taking place in European enterprises over the past decade. The objective was to guide research circle members in such analyses and to seek alternative solutions. It is argued that research circles are therefore an instrument for change involving all the workers in a particular firm or workplace, on the one hand, and an observatory for investigating and discovering the meaning of the changes underway, on the other.

The research circles were organised in accordance with the following general principles:

1. The groups' dynamics are determined by their self-organisation and planning of the work.
2. The starting point for discussion in the circles is a description of the jobs being done by the group members, followed by a description of the company or institution as a whole and finally a description of the firm's relationship with its environment.
3. Circle members must take the initiative in identifying the problems stemming from how their own jobs are organised and what they involve, analysing the causes of these problems, how they might be tackled and how they might be changed, as well as the obstacles to such change.
4. Circle members must gather information on jobs, how the production process is organised and the enterprise as a whole.
5. The information and documentation collect by the circle members must be discussed and processed in the research circle.
6. Other more traditionally academic methods of analysis may be introduced by the experts whenever it appears necessary and appropriate within the overall theoretical framework.
7. Researchers and experts also take part in the group process providing direction, data analysis, and supplying specific knowledge. They do not always have to be entirely neutral.
8. The guidelines for conducting discussions in research circles must not be rigid, as situations may vary from one company to another and from one job to another.
9. In order to ensure that the information generated by the research circle is systematically recorded, the discussion must be tape-recorded.

The composition of the research circle was generally as follows:

- Members of the company or workplace union branches;
- Officials from the relevant union federations;
- A university-based research expert;
- A research assistant.

However, the composition of the circles can also vary, as happened in Britain, where non-academic industrial relations experts were involved.

The Research Circle Method

It is shown that research circles, by getting workers to discuss, gather information and compare what they have found, enable the workers to reconstruct their previously existing perception of reality. This action research method has motivated the research circle members and encouraged them to participate. This participation is also a source of social recognition and prestige among their fellow workers, creating of a climate of confidence, and strengthening and enhancing the relationship between workers and their trade unions.

Problems of Research Circles

One problem is the composition of the circles. If the group lacks cohesion, if members have little or no trade union experience, it is extraordinarily difficult to build a dynamic circle and stimulate involvement. In such cases the experiment is unlikely to be very successful. However, the key to involvement may not always lie in trade union membership. Involvement may also grow out of the organisational structure of the workplace.

On the other hand, if the group has already been operating as part of a workplace union branch or as members of a work's committee, a different dynamic is created. The action research method is useful in that the interaction, the dynamics of the meetings, participation or simple involvement may help to strengthen the group's position. It can assist in reinforcing group identity and cohesion.

Limitations of the action research method are also discussed, such as the question of obtaining certain types of information which are beyond its scope, are extremely technical or require highly sophisticated procedures. On the other hand it is shown that research circles can be particularly successful in dealing with topics where an immediate, subjective perception of reality is important.

Research Circles, Management Policies and Labour Rights

There is a discussion of these issues which were specially prominent in the British research circles both in Yorkshire & Humberside and South East England. Where a research circle is established in a favourable management context which encourages employee participation and consultation, it tends to function successfully as a group. More importantly, a research circle can furnish knowledge on the effects of technological innovation, suggest improvements in how work is organised and put forward alternatives for better communication.

The less friendly face of industrial relations was also seen in the British experience. The management policy at Co-Steel Sheerness (South East England) was aggressive and intimidating, based on an anti-trade union, free market authoritarianism. The problems was therefore not so much one of being able to set up a research circle, as an issue of trade union representation and workers' collective bargaining rights.

The experience of the British research circles has revealed the existence of an industrial relations approach by management that is decidedly unfavourable to worker participation. This appears to be related to the greater incidence of free market policies and the absence of statutory labour rights.

Another factor which has a bearing on the establishment of research circles is the legal and institutional context. It can either facilitate the constitution of such circles by affording them legal protection in matters, such as the right to information, consultation and participation, or else put serious barriers in their way by failing to guarantee such rights. Other obstacles which have been encountered are more of a cultural or political nature, or due to the existence of small firms with a high labour turnover, low trade union membership, lack of a collective organising tradition or a paternalistic management style. This was the case in the Netherlands, where the attempt to set up research circles was hampered by choosing small enterprises. An additional difficulty may have been the seemingly more institutional approach of the unions.

Defining Research Topics

This section goes on to argue that the topics to be studied by research circles should not be rigidly defined from outside, i.e. by the union or the university researcher. In most of the circles the members redefined the topics as initially proposed in accordance with their own particular problems. In this way the general themes suggested at the project's outset - technological innovation, work organisation and the environment - were adapted to suit the specific circumstances of each circle.

In order to be able to translate research topics into action, it is essential that the study themes are defined in accordance with the agenda for trade union activity in the company in general, and not in abstract and from the outside. In Britain and the Netherlands, however, the research agenda, and how to approach it, had to be defined by the researchers and trade union officials. The reasons for this are described as being the lack of self-organisation of the workers or that their capacity for achieving trade union representation was extremely limited.

1.3.3 Technology Assessment

This section contends that attempts to use technology assessments by trade unions and workers has been extremely limited in the past. In most cases technology has been seen as work independent, developed by specialists, and knowledge of it retained by companies to gain a competitive advantage. It argues that the experiences of the last decade seem universal throughout Europe. A common feature is that technological changes go hand-in-hand with other large scale trends which affect working life:

- New forms of work organisation, breaking down big firms and big units into smaller ones. This can take place within the firm or be external to it through outsourcing. New Information Technology enables firms to keep control and at the same time to participate in more networks than ever before.
- New employment opportunities are likely to develop outside the bigger firms, whereas changing or adapting skills is more likely to be observed within the bigger firms and organisations. Where employment is shrinking it seems that the opportunities for training are higher than where employment is expanding. This is mainly due to the lack of scale, skills and time within these smaller enterprises.
- Generally, trade unions are stronger, both in terms of membership and influence in bigger

firms. This means that they have to develop new types of instruments and new strategies when confronted by the process of change in order to prevent job losses or to ensure that workers have opportunities to adapt to the new technologies. However, industry based unions face another problem since the industry or sector is not necessarily the best place in which to organise workers' response to technology. A regional or indeed, international approach may be required.

Therefore, the central question is no longer: Can workers assess and use technology in their own interest? Instead it has become: How and where can unions create new platforms for assessing and influencing technology, in a rapidly changing field of employment, public/private and inter-firm relations? The answer is twofold:

- Unions will have to use their expertise, strength and positions in the bigger firms where they operate; and
- They will have to construct new action fields and instruments to answer the new challenges. Regional partnerships with others could be the way forward.

This section concludes that for trade unions wishing to deal in their own way with technology assessments, this is an essential combination. Assessing technological changes coming from the bigger firms (highly unionised, but not big employment creators) could lead to a technology assessment strategy for a select few, or to a strategy focussed heavily on expected future job losses. On the other hand, concentrating on regional networking, without a strong base in the bigger firms and industries could result in unions losing their ability to make collective bargains on employment, pay and the quality of jobs.

1.3.4 Technology: Workers' Perspectives

This section describes how the SUNREG partners have worked closely with hundreds of workers in a research relationship that was very much rooted in the workplace. Through the research process the workers with whom we collaborated described experiences and deepened their understanding of technology as it related to their work, their workplace, their industry and their lives. Through the dialogue established in the research circles and through the processes of inquiry that were fostered and facilitated by the action researchers, workers developed their own 'independent' analyses of the relations of production in their workplace, and of the dynamic forces at work in economies.

The research circle methodology employed in the project required participants to look afresh at their world of work. After encouraging participants to express their initial views it is essential that participants should ideally discard preconceptions, prejudices and ideology when commencing their reflections and dialogue, introspective or otherwise.

The SUNREG project was determined to engage the real world in a meaningful sense. The research was premised on a determination to regard workers as potential "experts" about their workplace. It was our explicit aim to collect and generate new information and knowledge directly from workers. This was 'research with workers', not observational research about workers.

Workers in every workplace studied reported technological change at their place of work, but in vastly differing degrees. Workers in the finance sector felt as though they were being subject to a technological storm, where the pace of change was universally rapid. Workers in the public sector reported different experiences. Those in a public information service, who were using Information and Communication Technologies for the delivery of their service, had experiences which were directly equivalent to workers in telephone banking. Workers in manufacturing reported a lesser degree of change, most of it being relatively small scale.

It is clear that technology change has precipitated redundancies, increased in work intensity, imposed shift working and flexible working, changed working environments, changed the required skill levels (both up and down), created pay differentiation, and eroded negotiated terms and conditions. Workers refused to reflect on the role of technology in the workplace in isolation from the organisation of work. Indeed, in no research circle was technological change identified as being the primary issue of concern. The primary issues were always material ones, and technological change was seen as important only in that it facilitated the reorganisation of work.

The overwhelming experience and analysis of the workers from the research circles is that it is the employers who reap the benefits of technological change in the workplace and that workers bear most of the costs. Thus, the anticipated benefits of technological change are unequally distributed.

In 1997 the European Commission published a Green Paper, “Partnership for a New Organisation of Work”. It is a vision of how the most successful companies of the future will be characterised by high quality specialised products, high technology, high productivity and highly flexible and adaptable to innovation. They will also be characterised by high skills, high employment standards, high wages, job security, a learning culture and flexibility for employees. Thus, the interests for employers and employees are envisaged as being mutually achieved in a production coalition of interests predicated on the explicit application of leading edge technologies.

The experiences and analyses of the workers in the SUNREG research circles can rarely be reconciled with the Green Paper’s vision. Nonetheless, many workers expressed a great deal more positive affirmation of technological change than may have been predicted. There are a number of possible reasons for this: technology may be viewed as a progressive force; and it may improve health and safety. Other workers have a far more pessimistic view, experiencing destabilising changes, or technological innovations which had not improved the products nor the service to the customer.

Key determinants which impact on perception in the workplace are workers’ assessment of their job security and whether a culture of change exists. Change in a workplace which is used to stability, insecurity of employment, a lack of control over the processes of change and an environment of adversarialism, were described as generating negative perceptions of technological change.

Negotiating and Managing the Process of Technological Change

It is shown that one of the most consistent findings from workers in the research circles was that they believed that process of technological change in the workplace had altered the 'balance of forces' between the employer and employees. The cause in this increase in management dominance was due partly to a diminution of the centrality of labour to the production process. The more sophisticated the technology the more marginalised workers felt. Secondly, it was felt that the more sophisticated and constant was management's control over worker's performance, the more the balance of forces swung to the managers.

In the workplaces we studied there existed a variety of possible mechanisms to represent workers' interests in the management of the process of technological change, but in general, the level of participation or even of mere involvement of workers in this process of change was reported as being very weak. Workers reported that in most workplaces the trade union had been a source of representation on the issue through collective bargaining . However, workers frequently argued that the trade union had not regarded technological change as a high priority issue. Where collective bargaining had occurred on technology change, it was regularly felt that union strategy had been to negotiate the price of the change for the workers that remained and to concentrate on health and safety factors. Indeed, union officials confirmed that technology change had not been a priority, that organisational change had been regarded as far more significant and that the fundamental impact of technology change as facilitating organisational change had rarely been appreciated.

1.4 Conclusions and Policy Implications

1.4.1 Conclusions

Chapter 4 of this report contains the project's conclusions and policy implications. It starts by stating that SUNREG has been an ambitious action research project, in that it covered four European regions and used a particular action research method, namely research circles. It recognises that the project has not fulfilled all the original objectives, but notes that it has brought together several hundred people, primarily trade unionists and academics.

The regular meetings between participants has proved immensely valuable, with regional comparisons revealing both similarities and differences. The conclusions in this chapter may be summarised as follows.

1. It is possible to undertake action research across boundaries. Indeed the very diversity of experience between the regions has proved beneficial in the learning process.
2. A network has been established, consisting of numerous links: between trade unions and universities; between trade unions and research institutions; and between trade unions and trade union confederations. We suggest that the European Trade Union Institute could provide an important role in facilitating the establishment of further networks and contacts.
3. Although funding for this project has now ended, SUNREG will continue with work on specific things, such as exchanging information and experiences about regional developments and the further development of the use of research circles, including their use

in the education field. One of the project's Dutch partners has plans to put forward further funding proposals.

4. People are positive if given the opportunity. Research circles are a valuable way of bringing people together to look at their work experience and future prospects. As the social dimension of the European Union develops, these types of opportunity need to be expanded.
5. Cooperation works. National borders can be overcome, but need investment in both time and money to eliminate technical obstacles such as computer languages. The SUNREG project has proven the value of trade union and university collaboration, demonstrating the benefits of working together in a new way to produce a new kind of product. The SUNREG network has developed linkages and communication channels with a wide range of institutions and individuals.
6. The objectives of an initiative need to be clearly and narrowly defined. Resources are critical: the promotion of the practice is difficult, and only those who have been fully involved may be in the position to comprehend the potential.
7. The role of a catalyst in the promotion of such projects is recognised. Tribute is paid to the project's original co-ordinator, the late Colin Randall, whose energy and vision brought the SUNREG partners together.
8. It is argued that the project's experience shows that action research and action learning can usefully be brought together. Regular meetings between the partners were the 'learning sets' of the project. These coincided with open meetings where others in the region could hear about the project's work.
9. The project makes no great claim to have contributed to producing a dialogue between the social partners, one of the original aims. Our experience shows that where such dialogue exists already, our research methodology has been successful. Where such dialogue does not exist, and/or where trade union organisation is weak, the research circle methodology has generally failed.
10. On the subject of technology, the principal focus of the project, it is contended that many people have lost sight of the key questions. Some theorists and practitioners are so steeped in complex 'down the line' analysis of technological change that they have lost focus in their primary definition of 'technology'. Others, passive victims of technological change, have seen no value in reflecting on the meaning of technology.
11. The project has shown that it is the organisation of work and not technology that is the key element influencing the type and levels of employment, working conditions and workers' ability to influence decisions.
12. For workers to have a voice in the changes that are being made, to develop the Social Dialogue and to build a meaningful Social Europe, real, as opposed to formal, trade union

organisation is necessary. The SUNREG project has shown that its research circle methodology can be useful in informing workers and their trade unions about important aspects of the work process, thereby making their trade union policies and actions more coherent and effective.

13. It is recognised that research circles cannot replace strong trade union organisation in the work place to deal with the management of change. They can, however, become a mechanism for indirect input since they can increase workers' understanding of the work process and the organisation of work.

1.4.2 Policy Implications

The implications for policy changes throughout Europe that have arisen from the project are described in this section.

- There is a need for statutory rights across Europe for workers' participation at work, through a single channel, where trade union recognition exists.
- Extra resources for management training are required.
- Resources should be made available to finance research circles as an educational and research tool.
- The dissemination of models of good practice and evidence of intervention are needed.
- Encouraging a multiplicity of mechanisms, peer group meetings, ad hoc committees, etc. to investigate the specific issues concerning a piece of technology.
- The establishment of publicly funded institutions which are regionally or sectorally based, whose function would be to advise employers and trade unions as to potential courses of action given the direction and rate of technology change in a region or sector.
- Trade Unions themselves need to improve their organisation, communications, education, and membership activity.

2. BACKGROUND AND OBJECTIVES OF THE PROJECT

The background of the SUNREG project was set out in a discussion paper entitled "Islands of Innovation". This was presented to the project's first working conference at Northern College, Barnsley (UK) in September 1996.

The paper may be summarised as follows:

- Technological developments are proceeding at a very rapid pace, with many of them based on Information and Communication Technologies (ICTs).
- The driving force behind these developments is the pursuit of profit by private capital.
- In Europe most of these developments take place in islands of innovation within favoured regions.
- Decision making is a top down process which primarily seeks to meet the needs of individual companies (i.e. private capital).
- The developments take place in a largely closed world where, in order to maximise profits, secrecy is paramount and where there is widespread use of patents. Consequently there is little diffusion of the innovations to other areas of the economy.
- Any benefits that arise from these developments are generally confined to the favoured regions.
- Within this process there is no, or very little, scope for input from workers' organisations such as trade unions.
- The process generally has a deleterious effect on employment levels and the organisation of work. It also has serious implications for the types of products, services and production processes that result and which are not necessarily in the best interests of individuals, nor of the community as a whole.

The aims of the SUNREG project, as described in the paper, may be summarised in the following terms:

- To establish an ongoing network of trade unions and universities to engender debate and challenge the approach to innovation described above.
- The network will not only analyse and evaluate existing technologies, but in making proposals and in drawing conclusions, it will draw on the hidden and ignored

knowledge of workers. However, it is recognised that workers may also lack scientific and technical knowledge when decisions are being made, especially about the possible alternatives to a proposed course of action. This consequently has implications for worker training and education.

- One of the main aims of the project is to improve social cohesion and to promote socially useful products and production processes. There is a huge gap between the potential of technology and what it actually provides.
- SUNREG will seek to build bridges to the islands of innovation for trade unions to take part in two way communications, and also so that innovations may be generalised and diffused.
- Although the driving force behind these islands of innovation is to be found in private capital and its pursuit of profits, it is acknowledged that there can be a political side to the process. Therefore to change the goals from profit orientation to incorporate a wider view, with a more open decision making process, broad shifts in power and decision making will be required.
- SUNREG's results will be those of the workers involved in the project. The aim must be to encourage workers to create and maintain a long term vision of the future.

The aims of the project are more formally described in the technical annex to the contract with the EC.

- To establish an ongoing SUNREG network, initially based on four partner regions in three member states (Catalonia, Spain; South East Brabant, Netherlands; South East England, UK; and Yorkshire & Humberside, UK). The network would be open to the active participation of trade union and university colleagues from across the EU and will continue to link these social partners and aid action research co-ordination after the first TSER grant ends.
- To help lay the bases for broader EU developments at the level of regional trade union - university networks and, possibly, Technology Action Research Observatories.
- To develop structural linkages and communication channels at local/regional levels between the SUNREG network and other EU actors, agencies and networks to disseminate project findings on technological developments for sustainable growth and employment creation.
- To offer proposals to national, regional and local governments, the EC and potentially to interested enterprises for the development of products, services and information projects capable of moving from R&D implementation and application across the EC.
- Contribute to the strengthening of economic and social cohesion within the EC by working on critical socio-economic themes, utilising a wide range of academic

disciplines, with a unique team of action research partners. By combining grassroots trade unionists and supportive academic institutions the project will enhance trade union understanding of the EU and its goals.

- Strengthen the role and impact of the European social science research community by demonstrating its socio-economic relevance, both in terms of drawing out new technological developments which can improve economic competitiveness and working/living conditions, and by building accessible linkages between the academic and trade union worlds.

3. SCIENTIFIC DESCRIPTION OF THE PROJECT RESULTS AND METHODOLOGY

3.1 INTRODUCTION

SUNREG was structured to cover four regions, two in Britain [Yorkshire & Humberside and South-East England] plus South East Brabant in Holland, and Catalonia in Spain. In each case a university was twinned with the regional trade union organisation, establishing a relatively unusual example of collaborative research between such organisations. First there will be a brief consideration of the background to the project, followed by a discussion of action research theory. The SUNREG project will be assessed as an action research project and the contrasting experience of Barcelona and the British partners in establishing action research groups within workplaces will be considered, setting this within the wider context of industrial relations.

There were originally nine partners involved: CONC-CERES (CC.OO) and Barcelona Autonomous University from Catalonia in Spain; the FNV and Fontys Hogescholen from South East Brabant in the Netherlands; Southern & Eastern Regional TUC and the South Bank University in South East England; Yorkshire & Humberside TUC and Sheffield Hallam University in Yorkshire & Humberside (UK); with the Centre for Alternative Industrial and Technological Systems (CAITS) as the co-ordinating partner. Since the project commenced CAITS has lessened its involvement to that of an observer, with the Southern & Eastern Regional TUC taking over responsibility for co-ordination. In addition, South Bank University has been replaced by the University of North London. SUNREG is the only project to involve active participation by Trade Unions in a subject of vital concern to everyone working - or seeking work.

The project began with three principal objectives. The first was to develop a network involving innovative action-research links between trade union bodies and Universities across European regions which will facilitate the transfer of scientific and technological knowledge and material resources between universities, research centres, workers' organisations and other 'end users'.

Second, it was concerned to explore ways in which these linkages can be opened up more to maximise their use by workplace and community bodies, beyond the ambit of the originating project partners, thereby enhancing European social cohesion and helping to combat exclusion. Finally, there was a concern to outline a range of socially-useful and environmentally sustainable programmes - intimately linked with employment creation and life-time learning and vocational education and training - based upon a closer understanding of the expressed needs and social knowledge of working people themselves.

These aims were to be achieved by dividing the project's work into four distinct areas spanning its two year period:

- 1 regional and sectoral socio-economic analyses;
- 2 technology assessments;
- 3 action-research using research circles;
- 4 academic and trade union collaboration, with the enhancement of co-operative networking across EU regions.

The four project regions have very different histories and traditions of economic growth, political involvement, and trade union organisation and density. Consequently, there are, today, considerable differences between the regions. Due to the different methods of compiling statistics, and differing cultures in each of the countries involved, it is difficult to make comparisons. There are, however, some significant similarities:

- The growth of part-time and temporary work, as well as some very small businesses of one or two persons and employment disguised as self-employment, make for an alarming increase in casualised work.
- Unemployment continues to be a major problem (South East England 10%; Yorkshire and Humberside 13%; South East Brabant 9%; Catalonia 17%). It is also contributing to pushing down the pay and conditions of those in work. Indeed real unemployment in all regions is higher than the official figures.
- Psychological pressures and work intensification are put upon the remaining workforce. An increase in illness and accidents is one result of these pressures. Feelings of insecurity and alienation may also result from these pressures.
- The causes of unemployment appear to relate more to reductions in staffing due to organisational change rather than technology on its own. Clearly cyclical economic factors are an important determinant in the 1990s.
- Casualisation also has links with the skills gaps mentioned in all of the reports prepared by each region. Employers have little interest in training temporary and part-time workers. However, the local, regional and national governments are not providing sufficient education nor training for their economies.
- The two British regions show the greatest effects of privatisation and deregulation, but the English disease of marketisation is spreading and is a major contributor to the casualisation in all the regions.

The need for the SUNREG project is clearly demonstrated by our regional surveys. "Good jobs", and the proper training that go with such jobs, are in relative decline across all the regions. We hope, therefore, to have played a small part in suggesting improvements through the results of our work.

Case studies in three sectors were planned to be set up in each of the regions. The

sectors were:

- 1 Manufacturing;
- 2 Finance;
- 3 Public Services.

The methodology used was to set up research circles in these industries, based on the Swedish model. These were to be comprised of workers in the chosen enterprises within each industry, plus a researcher from the project. Thus from the start SUNREG adopted a humanistic approach, directly involving workers in the project's work.

3.2 ACTION RESEARCH: THEORY, PRACTICE, AND TRADE UNION INVOLVEMENT

SUNREG was conceived as an action research project. It is necessary, therefore, to explore the nature and development of action research as a method of inquiry. A number of approaches are outlined, and action learning is also introduced into the discussion. The discussion then focuses upon participatory action research and critical [or emancipatory] action research, and it is argued that action research involving trade unions is best done within the framework that these two approaches provides. There are however considerable problems in achieving this, which are discussed and illustrated in relation to the experience of the SUNREG Project.

The History of Action Research

Action research has developed from a number of scientific and social sources, and has become prominent as a method in education, in industry, and in community development [the latter in both urban and rural settings]. The lineage of action research stretches back at least to Kurt Lewin, and his work in Group Dynamics; some would argue that it goes much further. For example, McKernan [1991:8] states that there is evidence of the use of action research by a number of social reformists prior to Lewin.

Despite the clouded origins of action research, Kurt Lewin, in the mid 1940s constructed a theory of action research, which described it as "proceeding in a spiral of steps, each of which is composed of planning, action and the evaluation of the result of action" [Kemmis and McTaggart 1990:8]. Lewin argued that in order to "understand and change certain social practices, social scientists have to include practitioners from the real social world in all phases of inquiry" [McKernan 1991:10]. This construction of action research theory by Lewin made action research a method of acceptable inquiry. [McKernan 1991:9]

Action Research: What is it?

McKernan [1996] has brought together several definitions of action research. Thus Rapoport states "action research aims to contribute both to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint collaboration within a mutually acceptable ethical framework". Halsey defined action research as a 'small-scale intervention in the functioning of the real world. . . and the close examination of the effects of such interventions'. On the basis of these and other definitions McKernan proposes a 'minimal definition of action research', which he sees as stressing two essential points: first, action research is rigorous, systematic inquiry through scientific procedures; and second, participants have critical-reflective ownership of the process and the results.

Action research has been identified by Gill and Johnson as "a valuable variant of the quasi-experimental approach" [1991:57]; they contrast the approach, in an industrial setting with 'pure' research, and with consultancy [see Table 1].

This immediately identifies the more active role of the 'client'. It also sets action research apart from the classical experimental approach, replete with 'ceteris paribus' clauses. Instead it is an iterative method in which research feeds back into further action [see Figure 1].

The timing of cycles can vary. Some action research projects have long cycles in which the action and research phases are relatively distinct; others interweave the two very closely. Furthermore, there can be action research within action research, as has been the case with SUNREG, where the whole project has been one of action research, but within that a specific action research approach has been tested.

The literature suggests that action research has achieved much greater recognition in the fields of education and community work than it has in relation to organisations. Thus Maruyama comments: *"In the field of education a sequence of events transformed action research from a set of approaches driven by university type researchers to research initiated and conducted by practitioners. . . . Part of this transformation results from consideration of power and status issues, part as a response to what are seen as egocentric and ethnocentric perspectives of researchers, . . . part from a grass roots orientation that argues that those best able to change a situation are those involved in it and who understand it best, and yet another part is drawn from arguments that the best way to get individuals in applied settings to commit themselves to change is to make them the initiators of the change."* 1996:93] One element of the argument here is that action research merits greater consideration in organizational activity than has to date been the case.

Table 1 : Action Research Compared

STAGES	ACTION RESEARCH	CONSULTANCY	'PURE' RESEARCH
Entry	Client or researcher presents problem. Mutually agreed goals.	Client presents and defines problems.	Researcher presents problems and defines goals.
Contracting	Business & psychological contracting. Mutual control.	Business contract. Consultant controls client.	Researcher controls as expert. Keeps client happy. Minimal contracting.
Diagnosis	Joint diagnosis. Client data / researcher's concepts.	Consultant diagnosis, often minimal. Sells package.	Researcher carries out expert diagnosis. Client provides data.
Action	Feedback. Dissonance. Joint action plan. Client action with support. Published.	Consultant prescribes action. Not published.	Report often designed to impress client with how much researcher has learned and how competent s/he is. Published.
Evaluation	New problems emerge. Recycles. Generalisations emerge.	Rarely undertaken by neutrals.	Rarely undertaken
Withdrawal	Client self-supporting.	Client dependent.	Client dependent.

Gill & Johnson

Figure 1: The 'Moments' of Action Research			
	RECONSTRUCTIVE		CONSTRUCTIVE
DISCOURSE among participants	4 Reflect	∩	1 Plan
PRACTICE in the social context	3 Observe	♁	2 Act

Source: Carr and Kemmis 1986:186

Types of Action Research

So far action research has been considered in broad terms: it is now appropriate to recognise the differences which exist. A number of authors have identified three major approaches to action research: Scientific-technical or positivist; Practical-deliberative, mutual collaborative or interpretivist; Critical-emancipatory or enhancement. This distinction has its inspiration in the work of Habermas.

The three categories are summarised in Table 2. The types of action research which flow from each will now be explored in turn.

Table 2: The Categories of Inquiry				
<i>Interest</i>	<i>Knowledge</i>	<i>Medium</i>	<i>Science</i>	<i>Fundamental Interest</i>
Technical	Instrumental [causal explanation]	Work	Empirical-analytic or natural sciences	Controlling the environment through rule-following action based upon empirically grounded laws
Practical	Practical [understanding]	Language	Hermeneutic or 'interpretive' sciences	Understanding the environment through interaction based upon a consensual interpretation of meaning
Emancipatory	Emancipatory [reflection]	Power	Critical sciences	Emancipation and empowerment to engage in autonomous action arising out of authentic, critical insights into the social construction of human society

Source: Based on Carr and Kemmis [1986] and Grundy [1987]

The Technical Interest: Scientific-technical or positivist action research

Early advocates of action research such as Lippitt and Radke in 1946, Lewin in 1947, Corey in 1953, and Taba and Noel in 1957 put forward a scientific method of problem solving. [McKernan 1991] The underlying goal of the researcher in this approach is to test a particular intervention based on a pre-specified theoretical framework, the nature of the collaboration between the researcher and the practitioner is technical and facilitatory. The researcher identifies the problem and a specific intervention, then the practitioner is involved and they agree to facilitate with the implementation of the intervention. [Holter and Schwartz-Barcott 1993:301]. The communication flow within this type of research is primarily between the facilitator and the group, so that the ideas may be communicated to the group [Grundy 1982:360].

A project guided by technical action research will have the following characteristics: the project would be instigated by a particular person or group of people who because of their greater experience or qualifications would be regarded as experts or authority figures. Technical action research promotes more efficient and effective practice. It is product directed but promotes personal participation by practitioners in the process of improvement. "It fosters the disposition characteristic of the artisan within the participating practitioners" [Grundy 1987]. This approach to action

research results in the accumulation of predictive knowledge, the major thrust is on validation and refinement of existing theories and is essentially deductive [Holter et al 1993]. This is the approach which has kept closest to the legacy of Lewin.

The Practical Interest: practical-deliberative, mutual collaborative or interpretivist action research

In this type of action research project the researcher and the practitioners come together to identify potential problems, their underlying causes and possible interventions [Holter et al 1993:301]. The problem is defined after dialogue with the researcher and the practitioner and a mutual understanding is reached. "Practical action research seeks to improve practice through the application of the personal wisdom of the participants" [Grundy, 1982: 357].

This design of action research allows for a more flexible approach, not available in the positivist paradigm. "Indicative of this flexibility is the frequent use of 'interpretive' as an umbrella term that comfortably accommodates interactive and phenomenological perspectives" [McCutcheon and Jung 1990:146].

The Emancipatory Interest: Critical-emancipatory or enhancement action research

Emancipatory action research "promotes emancipatory praxis in the participating practitioners; that is, it promotes a critical consciousness which exhibits itself in political as well as practical action to promote change." [Grundy 1987:154] There are two goals for the researcher using this approach, one is to increase the closeness between the actual problems encountered by practitioners in a specific setting and the theory used to explain and resolve the problem. The second goal, which goes beyond the other two approaches, is to assist practitioners in identifying and making explicit fundamental problems by raising their collective consciousness.

The approach to action research that emerges from these considerations is illustrated in Table 3, which is based on work by Grundy [who collaborated with Carr and Kemmis in exploring the implications for action research of the criteria above], and by Hart and Bond.

Participatory action research [PAR] bears a close resemblance to the method being articulated here. Maguire [1987] identifies three types of change sought in participatory research:

- I. development of critical consciousness of both researcher and participants;
- II. improvement of the lives of those involved in the research process;
- III. transformation of fundamental societal structures and relationships.

Table 3: Types of Action Research			
	<i>Technical/Experimental</i>	<i>Mutual-Collaboration</i>	<i>Critical / Emancipatory</i>
<i>Philosophical Base</i>	Aristotelian Newtonian	Historical-hermeneutic	Critical Sciences
<i>Means of Power</i>	Hierarchy, Control	Equalist	Control [by those not controlled] Political
<i>The nature of reality</i>	Measurable, reductive	Multiple, constructed, dialogic	Multiple and constructed, rooted in social, economic, and political
<i>Problem focus</i>	Defined in advance. Relevant to social science / management interests, or most powerful group. Success defined in their terms.	Interpreted in situation participant experience. Different interpretations of success.	Emergent from members' experience and negotiated in the situation based on values. Competing definitions of success.
<i>Relationship between the knower and known.</i>	Separate	Interrelated	Interrelated, embedded in society.
<i>Focus of collaboration theory</i>	Technical validation, induction	Mutual understanding, new theory, inductive	Mutual emancipation, validation, new theory, inductive, deductive
<i>The nature of understanding</i>	Cause-effect	Interpretive	Interpretive within socio-political network
<i>Purpose of research</i>	Discovery of laws underlying reality	Understand what occurs and the meaning people make of phenomena	Understand, challenge, and change to greater humanity
<i>Educative base</i>	Education based on identifying causal relationship and/or overcoming resistance to change	Reflective practice	Consciousness raising and empowerment
<i>Individuals in Groups</i>	Researcher/manager formed. Closed group with fixed / selected membership	Participant formed. Negotiated boundaries with shifting membership	Natural or negotiated boundaries with fluid membership
<i>Change Intervention</i>	Top-down to test / generate theory. Problem to be solved in terms of research / management aims	Redefined, Process driven. Problem to be solved in the interests of research and practice	Problem to be explored as part of process of change, developing an understanding of meanings of issues in terms of problem and solution
<i>Cyclic Processes</i>	Identifies causal processes that can be generalised	Identifies causal processes that are specific to problem and/or can be generalised	Recognises multiple influences on change
<i>Research Relationship</i>	Distinction and research distinct, with differentiated roles	Distinction and research merged	Distinction and research integrated, with shared roles

Source: developed from Grundy [1987] and Hart and Bond [1995]

The Three Approaches Compared

It is not in the methodologies that the three modes of action research differ, but rather in the underlying assumptions and world views of the participants that cause the variations in the application of the methodology [Grundy 1982:363]. "The differences in the relationship between the participants and the source and scope of the guiding 'idea' can be traced to a question of power. In technical action research it is the 'idea' which is the source of power for action and since the 'idea' often resides with the facilitator, it is the facilitator who controls power in the project. In practical action research power is shared between a group of equal participants, but the emphasis is upon individual power for action. Power in emancipatory action research resides wholly within the group, not with the facilitator and not with the individuals within the group. It is often the change in power relationships within a group that causes a shift from one mode to another." [Grundy 1982:363]

Action research does not follow the strict experimental scientific method espoused within the Cartesian Newtonian paradigm. However, it is a method very appropriate to conditions of uncertainty and change, particularly when action and research are fully integrated. Nevertheless, guidelines by which to assess the research aspects of action research are of value, and Eden and Huxham [1996a, 1996b] have usefully provided fifteen. These are given in Table 4, and they will be used as a template against which to judge the SUNREG project. Before that however it is worth commenting briefly on an approach with links to action research: action learning.

Action Learning

Action learning has different parentage to action research: the founding father is generally agreed to be Reg Revans. Yet there is much in common. Thus the cycle of action learning has been described by Pedler et al as shown in Figure 2, based on Kolb's cycle of experiential learning.

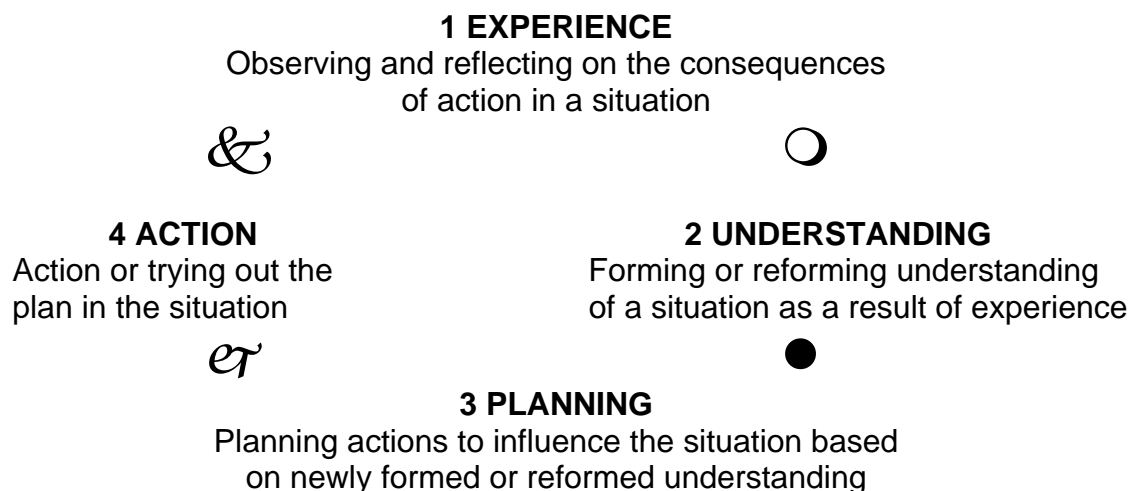


Figure 2: The Learning Process, Pedlar et al 1986

1	Action research demands an integral involvement by the researcher in an intent to change the organization. This intent may not succeed - no change may take place as a result of the intervention - and the change may not be as intended
2	Action research must have <i>some implications beyond those required for action or generation of knowledge in the domain of the project</i> . It must be possible to envisage talking about the theories developed in relation to other situations. Thus it must be clear that the results <i>could</i> inform other contexts, at least in the sense of suggesting areas for consideration.
3	As well as being usable in everyday life action research demands <i>valuing theory</i> , with theory elaboration and development as an explicit concern of the research process
4	If the generality drawn out of action research is to be expressed through the design of tools, techniques, models and method then this, alone, is not enough. The basis for their design must be explicit and shown to be related to the theories which inform the design and which, in turn, are supported or developed through action research
5	Action research will be concerned with a system of <i>emergent theory</i> , in which the theory develops from a synthesis of that which emerges from the data and that which emerges from the use in practice of the body of theory which informed the intervention and research intent
6	Theory building, as a result of action research, will be incremental, moving through a cycle of developing theory to action to reflection to developing theory, from the particular to the general in small steps
7	What is important for action research is not a (false) dichotomy between prescription and description, but a recognition that description will be prescription, even if implicitly so. Thus presenters of action research should be clear about what they expect the consumer to take from it and present with a form and style appropriate to this aim
8	For high quality action research a high degree of method and orderliness is required in reflecting about, and holding on to, the emerging research data and the emergent theoretical outcomes of each episode or cycle of involvement in the organization.
9	For action research, the process of exploration of the data - rather than collection of the data - in the detecting of emergent theories, must be either replicable, or, at least, capable of being explained to others
10	The full process of action research involves a series of interconnected cycles, where writing about research outcomes at the latter stages of an action research project is an important aspect of theory exploration and development, combining the processes of explicating pre-understanding and methodological reflection to explore and develop theory formally
11	Adhering to characteristics 1 to 10 is a necessary but not sufficient condition for the validity of action research.
12	It is difficult to justify the use of action research when the same aims can be satisfied using approaches [such as controlled experimentation or surveys] that can demonstrate the link between data and outcomes more transparently. Thus in action research, the reflection and data collection process - and hence the emergent theories - are most valuably focussed on the aspects that cannot be captured easily by other approaches.
13	In action research, the opportunities for triangulation that do not offer themselves with other methods should be exploited fully and reported. They should be used as a dialectical device which powerfully facilitates the incremental development of theory.
14	The history and context for the intervention must be taken as critical to the interpretation of the likely range of validity and applicability of the results of action research
15	Action research requires that the theory development which is of general value is disseminated in such a way as to be of interest to an audience wider than those integrally involved with the action and/or with the research

Based on Eden and Huxham [1996a and b]

The relationship between action research and action learning is not often discussed.

One exception is Morgan and Ramirez [1983]. They link action learning to self-organization, and seeing the former as holographic in that it simultaneously attempts to combine within itself a number of dimensions that are often regarded as separate - including theory and practice, subject and object, knowledge and action. They identify minimum critical conditions for action learning: it strives to:

- IV. Be democratic, heterarchical, pluralistic, proactive and empowering;
- V. Link individual and social transformation;
- VI. Integrate different kinds and levels of understanding;
- VII. Create conditions that are always evolving and open-ended;
- Demonstrate its worth in terms of the capacities it creates for intelligent action rather than terms of its contribution to formal knowledge.

Action Research in Practice

For those working within organizations, there are strong pressures to 'keep your head down', and there are structural constraints. This may be considered at two levels: non-management and management. Lessons from the SUNREG project are relevant to the first. This project was designed to develop the theme of collaborative action research involving Universities and Trade Unions, funded by the European Commission under the Targeted Socio-economic Research Programme. Out of 38 projects supported in this Programme, this is the only one not exclusively run by academics and/or researchers.

The Context: Involvement and Participation

Hyman and Mason draw out a helpful distinction between employee involvement and employee participation [see Table 5]. They identify three types of employee involvement - downward communication flow, for example through team briefings and house newsletters; upward communication flow, as with the use of quality circles; and job restructuring, for example through quality of working life initiatives, or job enrichment.

They show that these are increasingly being used in mainland Europe, in the United States and especially in the United Kingdom. By contrast, there has been a decline in employee participation in the UK. Thus the participative framework proposed by the Bullock Committee was frustrated in part by *"the concerted opposition of employers and Conservative politicians toward the threatened erosion of managerial decision making and hierarchical prerogatives"* [Hyman and Mason 1995:29] - and in part, as they say, by internal divisions within the union movement. The Conservative government elected in 1979 had a very different agenda, considering it *"important to curb trade union influences and to support the managerial autonomy of employers"* [Knudsen 1995:54]. Knudsen concludes: *"it still seems to be the fear of trouble rather than the chance of success that stimulates employers into accepting the participation of employees in decision making. There is no strong evidence of employers deliberately using participation in an active way in order to develop human resources and improve productivity."* [ibid.:64]

Table 5: Employee Involvement and Participation Compared	
<i>Employee Involvement</i>	<i>Employee Participation</i>
Management inspired and controlled	Government or workforce inspired; some control delegated to workforce
Geared to stimulating individual employee contributions under strong market conditions	Aims to harness collective employee inputs through market regulation
Directed to responsibilities of individual employees	Collective representation
Management structures flatter, but hierarchies undisturbed	Management hierarchy chain broken
Employees often passive recipients	Employee representatives actively involved
Tends to be task based	Decision-making at higher organizational levels
Assumes common interests between employer and employees	Plurality of interests recognized and machinery for their resolution provided
Aims to concentrate strategic influence among management	Aims to distribute strategic influence beyond management

Hyman and Mason 1995:27

Hyman and Mason see a continued decline in employee participation, but a growing interest in employee involvement, in particular in empowerment. On this they comment: *"Its main feature appears to involve job ownership by employees ... a look at case studies reveals a rather different picture. These indicate that empowerment tends to be introduced in companies which have removed layers of supervisory management and is used to cover existing tasks with fewer staff, with any 'reward' being intrinsic to the added responsibilities associated with the 'empowered' jobs."* [1995:191]

The Spanish context is different. Knudsen summarises it as 'participation within an adversarial setting'. He identifies in Spain *"the detailed and legally guaranteed rights and their character as a genuine legal counter-power to management prerogatives - a counter-power that may be used in cooperation as well as in conflict with the interests of the employer."* [1995:79]

This contrast has been sharply in evidence as the SUNREG project has developed. Crucially, it took the two Spanish partners a few weeks to establish their three research circles. In Britain it took up to a year [somewhat problematic in a project which has only a two year life]. This involved meetings with management, clarificatory papers, references up and down management hierarchies, and occasional revisits to the entire concept. Even when research circles were established, they proved difficult to maintain.

There are, however, some signs of optimism. The wider concerns of European

legislation, including the Social Chapter with its provisions for rights to information, consultation and participation in decision making, may help shift the British system toward that practised elsewhere in Europe [although not analysed above, the Dutch experience has been much closer to that of Spain]. If it is to achieve its full potential, then collaborative action research needs freedom - and in the industrial context, legislation appears an essential underpinning to this. The fundamental weakness of 'empowerment' is that those who give it can also remove it, leaving such an approach always vulnerable.

The SUNREG Experience

Turning now to the detail of the SUNREG project, we shall consider the work against the criteria of action research, and then consider its claims to be critical/emancipatory action research. First therefore we take the fifteen criteria proposed by Eden and Huxham, and assess the project against each of these. These have been chosen since they provide an independent 'measuring stick' developed outside the project. This assessment is based on the experience of SUNREG collaborators in the different regions across Europe.

1 Action research demands an integral involvement by the researcher in an intent to change the organization. This intent may not succeed - no change may take place as a result of the intervention - and the change may not be as intended.

The very nature of SUNREG makes this a complex matter. There is no single organization to consider: in addition to the eight collaborating organizations, there have been more than a dozen work sites involved, as well as the relevant trade unions in each. There is also the European Union, for whom policy recommendations are important. Even the individual partners are not easy to define: for example, the regional trade union body is part of a national trade union body on the one hand, while being a network in its own right on the other hand. All this makes it difficult to provide a simple answer: what change is sought, and to what organisation[s]? Nevertheless, the intent to change has been a feature throughout the project, with the possibility identified at several levels - within the organisations where Research Circles have been used, within the partner organisations, and within the European Union. The experience of the Research Circles, and the implications for the workplaces, are discussed later.

2 Action research must have some implications beyond those required for action or generation of know ledge in the domain of the project. It must be possible to envisage talking about the theories developed in relation to other situations. Thus it must be clear that the results could inform other contexts, at least in the sense of suggesting areas for consideration.

This follows from the above. The specific domain has been the research circles, but the intention throughout has been to draw wider implications at both a practical and a theoretical level. These implications relate both to the use of research circles and to the potential for action research involving trade unions and universities. Ideas are generated in the circles that are capable of generalisation and ideas from

outside the circle are introduced. It has been important to make explicit to participants that the research circles are not working in a vacuum, but can learn from and inform others.

In addition, the project has led to the production of socio-economic reports which have been the basis of wider discussion in each region. The regular meetings between partners, held successively in each region, have provided the opportunity to link the immediate work to other contexts, including industrial training and regionalism.

Action research not reaching out into the field of research (that is: to theory, to other researchers, to research education) does not make full use of the fact that it is a form of research, and connected with the world of research and knowledge. It has been a basic proposition of SUNREG that trade unions should be interested in results of action research outside the direct trade union situation or setting. Similarly, the European Union, and employers, should not be able to put these results aside only because they come from the unions. The (action) research part should so to say enlarge the power of knowledge the trade unions are developing in this partnership.

Thus an integral issue in action research is the question of "output" or influence in the world of research and education. Without this, the unions could as well do their own research or action research, without any link to the academic sector.

3As well as being usable in everyday life action research demands valuing theory, with theory elaboration and development as an explicit concern of the research process

An explicit concern of the research process has been to gain greater understanding of the use and potential of research circles. This aspect is further developed in the next section of this report, but it is worth saying here that there is a tension between the two levels of action research - the level of the whole project, and the level of the individual research circles. The participants in the latter are naturally focussed on their own situations and have not shown a great interest in the wider development or implications of theory on the whole. These have been for the researcher to sort out and keep quite separate; while there may be some interest among the participants, they have tended to view it as being at a different level of concern, not having much impact on their individual situation. Over a longer period of time this is likely to change as individuals develop and begin to consider issues in a different way. For the researcher it is of course of importance, both in terms of justifying or assessing the methodology and in terms of developing ideas with broad applications.

4If the generality drawn out of action research is to be expressed through the design

of tools, techniques, models and method then this, alone, is not enough. The basis for their design must be explicit and shown to be related to the theories which inform the design and which, in turn, are supported or developed through action research

This, as discussed above, we have set within the wider framework of critical/participatory action research, as the basis for drawing lessons applicable to the development of this method.

5 Action research will be concerned with a system of emergent theory, in which the theory develops from a synthesis of that which emerges from the data and that which emerges from the use in practice of the body of theory which informed the intervention and research intent

The learning from the project should be evident from the discussion in this paper, and is also to be found in other papers produced for the project, not least the output of the meetings and conferences held throughout its duration. The evidence gained through the project has been used to examine, and in some cases challenge, existing theory. For example the argument that technology allows more flexible working and the workforce becomes multi-skilled is strongly questioned by the evidence, particularly in the financial services/banking sector.

6 Theory building, as a result of action research, will be incremental, moving through a cycle of developing theory to action to reflection to developing theory, from the particular to the general in small steps

The cycle of action research followed in the project has been described earlier - it has been a fundamental, and at times problematic, element of the programme. This cycle may be illustrated from the experience in Barcelona, where it went:

- from theory to particular (SUNREG) practice;
- to theory via reflection/discussion (between ourselves + with Research Circles + with other SUNREG partners);
- to (hopeful) practice (ie: the attempt to generalise the Research Circle experience to other areas of trade union work).

Here we also need to recognise an important tension between the dynamics of action research and the requirements of a funded collaborative project. As the project has developed it has become apparent that several aspects of the original design required modification. Thus the original concept envisaged four phases, each lasting six months:

- VIII Regional and sectoral socio-economic analyses
- IX Technology Assessments and explorations
- X Research Circles and product/service developments
- XI Union-University collaborations-the enhancement of co-operative networking across EU Regions.

While the first phase was relatively unproblematic, it became obvious to the partners that phases two and three could not operate in this simple sequence: technology

assessment in each of the work sites was only feasible once the research circles were up and running. This meant that an important 'deliverable', the reports on technology assessment, could not be prepared in the timescale originally proposed. But this clashed with the requirements of the funding agreement, a matter that was never satisfactorily resolved.

7What is important for action research is not a (false) dichotomy between prescription and description, but a recognition that description will be prescription, even if implicitly so. Thus presenters of action research should be clear about what they expect the consumer to take from it and present with a form and style appropriate to this aim

The project is 'engaged' in the sense implied by this statement. There has never been any notion of 'value free' activity. But again there are tensions raised by the nature of the project. The 'form and style appropriate' to the requirements of the funding body differ from those appropriate to local trade unions. This is the case with language, with approach, and with the relationship with organizations outside the project. There is only a limited possibility of multi-use of outputs.

8For high quality action research a high degree of method and orderliness is required in reflecting about, and holding on to, the emerging research data and the emergent theoretical outcomes of each episode or cycle of involvement in the organization.

The overall structure of the project has facilitated this. The regular meetings between partners have given us the opportunity to discuss and reflect upon emerging findings, and to consider the interplay between the themes identified at the outset of the project.

In the operation of the research circles this has also been important. Sessions have been taped so that important information is not missed and a true record is produced. These records have been considered before each subsequent meeting to ensure that they are a true reflection and to spark off further discussion. Reflections are made about thoughts, hopes, and strategies before each meeting; after each meeting about what happened during the meeting and also any observations about what happened, and the process itself, having had some time to develop thoughts. This has not been an easy process, but it does have the advantage of capturing some useful insights that may otherwise be lost.

9For action research, the process of exploration of the data - rather than collection of the data - in the detecting of emergent theories, must be either replicable, or, at least, capable of being explained to others

The production of Working Papers and Research Papers during the project, as well as overall reflective papers such as the present one, have been the basis for explaining the link between data exploration and emergent themes. A crucial difference between action research and circles and other methodologies lies in the fact that the researchers do not just collect data; they also explore and examine it

with those who generate it.

10 The full process of action research involves a series of interconnected cycles, where writing about research outcomes at the latter stages of an action research project is an important aspect of theory exploration and development, combining the processes of explicating pre-understanding and methodological reflection to explore and develop theory formally

As explained above, the project has proceeded through interconnected cycles, with the periodic meetings providing both the opportunity for reflection and the opportunity to plan ahead.

11 Adhering to characteristics 1 to 10 is a necessary but not sufficient condition for the validity of action research.

This is a summation statement. We can however add some comments generated by the discussion thus far. While the overall project fits well into the characteristics defined thus far, the experience of the research circles fits less well. This relates not to the methodology itself, but to the way in which, in a project like this, certain parameters are predefined by the overall research programme, and by the need to maintain comparability across the regions. This limits the scope for participants within the individual research circles to take a full guiding role in their purpose and objectives. We consider this further below.

12 It is difficult to justify the use of action research when the same aims can be satisfied using approaches [such as controlled experimentation or surveys] that can demonstrate the link between data and outcomes more transparently. Thus in action research, the reflection and data collection process - and hence the emergent theories - are most valuably focussed on the aspects that cannot be captured easily by other approaches.

It is difficult to envisage any approach other than action research which would address the objectives of this programme, in particular in providing a momentum for change. Nevertheless, within this overall method, other approaches have been used - for example, surveys, statistical analysis of regions, and comparative work on the research circles

13 In action research, the opportunities for triangulation that do not offer themselves with other methods should be exploited fully and reported. They should be used as a dialectical device which powerfully facilitates the incremental development of theory.

Triangulation has occurred in several ways

XII the exploration in four diverse regions

XIII the use of several research circles in each region, based in different economic sectors

XIV the use of secondary material

XV the exploration of findings in conjunction with a wider group of participants

invited to each conference. These brought different perspectives and different areas of expertise which helped in the development of understanding and interpretation

14 The history and context for the intervention must be taken as critical to the interpretation of the likely range of validity and applicability of the results of action research

Both history and context have been critical. The initial work of the partners sought to delineate the specific regional contexts within which the work was taking place. The timing of the project has proved critical, coming as it does at a time when both the European Union, and the United Kingdom [where four of the eight partners are located] are experiencing major changes and rethinking of policy, both in relation to social partnerships and in relation to regions.

15 Action research requires that the theory development which is of general value is disseminated in such a way as to be of interest to an audience wider than those integrally involved with the action and/or with the research

Dissemination to a wider audience has been a major consideration throughout the project, and was of course one of the primary motivations in establishing it.

We may conclude that SUNREG has operated effectively as an action research project, although there have been limitations which are perhaps inevitably given the multi-organisational nature of the project. What of its claims to be critical-emancipatory in approach? Here the message is more mixed. The research circle, as Harnsten [1994] notes, "*has many similarities with the field of research known as participatory action research*", in particular those versions advocated by Fals-Borda and Rahman [1991] and Maguire [1987], although she also points to the specifically Scandinavian factors which helped bring the method into existence. Certainly, the objectives of SUNREG fit well with the types of change which Maguire identifies with participatory research. We can illustrate this by quoting from the original paper which set out the remit of the Project:

XVI Development of critical consciousness of both researcher and participants

"A critical analysis of the partner organisations themselves - as research institutions and trade union collectives - on the ways in which they relate to all the issues. The self-awareness involved in developing ongoing critical analyses of our own partner organisations' approaches to new technological developments - including how they affect our operations and policy goals, our working methods and our relations with other organisations and social partners - will, we hope, be of interest to fellow researchers and trade unionists across Europe. ... The action-researchers will wish to explore directly with affected workers and their collective representatives - utilising technology assessment principles and research circle methods - the changes in labour processes and shifts in working cultures engendered by specific scientific and new technological developments."

XVII Improvement of the lives of those involved in the research process

"In particular, it will be important to focus on especially disadvantaged communities and extremely hard-pressed labour markets within each region and to open up access to new technological processes (and the related training and education) to the poorest and most marginalised working people."

XVIII Transformation of fundamental societal structures and relationships

"Taking targeted socio-economic research to regions, sectors, workplaces and communities well beyond the ambit of both the originating programme partners and the normal academic range of EU-sponsored programmes, and thereby enhancing European social cohesion and helping to combat exclusion in the RTD sphere. An important objective in the SUNREG thematic network will be to undertake objective comparisons of more and less favoured Regions and to ensure that, wherever possible, the benefits of RTD are utilised beyond specific sectors or geographical areas."

However, these objectives have been achieved with only limited success. In retrospect, they were too ambitious, and underestimated some of the organizational problems that would be encountered in attempting to run an action research project across multiple organizations, as discussed above. To give one example, it would have been highly desirable to bring together representatives of the various research circles at each of the project meetings. But finance made this impossible: in practice we were only able to involve them in the meetings which took place in their own region. Thus while there has been considerable learning between the partners, this has been much less possible for other participants. Maguire's second and third objectives are longer term: the full impact of both the research circles and the overall project will only become apparent over time.

Turning to the arguments of Fals-Borda and Rahman [1991], it is fair to conclude that the project has sought to employ the four specific techniques they advocate. The research has been collective; the research circles have given the opportunity for participants to explore their context, and to work within their culture; and the outcome has been the production and diffusion of new knowledge. Again, we must add the caveat that inter-organizational learning on these matters has been limited.

Finally, we can consider the criteria given in Table Three. The project has been premised on the view of reality as "multiple and constructed, rooted in social, economic, and political"; nevertheless, we must recognise that the perspective on reality given in the original outline for the project has been a dominating factor; there is an inequity in power between researchers and participants as a result of this. Similarly, the question of problem focus has been more difficult: the focus was set by the original proposal for the project, severely limiting the opportunity for it to emerge from members' experience and to be negotiated in the situation based on values. Thus there was a strong emphasis in the original proposal on technology. In practice many of the research circles found this to be a secondary consideration compared to issues of work organization.

We can respond more positively to the next criteria: the relationship between the

knower and known has been interrelated, and embedded in society. The focus of collaboration theory has been mutual emancipation and validation, seeking new theory through both inductive and deductive means. The nature of understanding has been interpretive within a socio-political framework. The purpose of research has been to understand, challenge, and change to greater equity. The educative base has been consciousness raising and empowerment.

The individuals in groups have had natural or negotiated boundaries with fluid membership. Change intervention has been a problem to be explored as part of the process of change, developing an understanding of meanings of issues in terms of problem and solution. As we have seen, the project has involved cyclic processes, recognising multiple influences on change. And finally, the research relationship has been one where action and research have been integrated, with shared roles within the collaborating partners - although again an important caveat must be given about the limited extent to which other participants have been able to be involved.

3.3 RESEARCH CIRCLE METHODOLOGY

Aims and Objectives

The chosen methodology of the SUNREG project was to set up research circles related to trade union activity and compare experiences of research circles in Catalonia with those in South East England. Similar experiments were attempted on two other European Regions: Yorkshire & Humberside (UK) and South East Brabant (Netherlands), but these were less successful and encountered greater difficulties of various kinds. The first general conclusion that can be drawn is that it was possible to set up research circles where the environment was favourable to trade union activity. In other words, where the employer's policy is based on recognition, dialogue and negotiation, with a management style centred around consultation and participation and a trade union approach similarly based on participation and negotiation. However, it was also possible to set up research circles in adverse circumstances, although different organisational model, different dynamic and much more limited aims.

Another crucial factor is the existence of a framework of legal safeguards affording worker representatives official backing and guaranteeing the right to information, consultation and participation. Where the greatest difficulties were encountered, notably in Britain, the university researchers came up against serious obstacles to gaining access while trade unionists had problems in attending meetings. In short, the problems arose mainly in the initial stages of setting up the research circles. The employers were often hostile and failed to see the possible benefits the circles could have for them.

The reasons for the relative failure of the research circles in the Netherlands are perhaps more complex. At the outset the research team was optimistic, especially as to the possibility of setting up research circles in the electronics industry which is comprised mainly of small firms. The risk involved in this option lay in the low level of

trade union membership (under 10%) and in the high turnover of the workforce. This was reflected in the poor attendance at the early research circle meetings and the research team had to adjust its strategy accordingly.

The lesson the research team drew from this experience was that the success of the circle methodology depends on the type and size of the enterprise, the extent of trade union membership among the workforce, staff turnover rate, trade union leadership and the degree of legal cover. In particular, they noted that in small firms the work must be more actively directed by the outside team, since the degree of independence and participation of workers in such enterprises is very limited.

In addition to the difficulties encountered in small businesses, there were others that may have to do with Dutch cultural and institutional traditions whereby unions appear to play a more important role outside the workplace than in it.

The original intention of the research project was to select enterprises from different branches of activity - the service sector, public services, and industry - with a view to facilitating comparisons and contrasts. As it turned out, this only proved to be possible in Catalonia and South East England, which are the two cases on which analysis will be concentrated.

Research circle methodology is an action research technique as discussed earlier. It is an essentially inductive approach. It starts out from concrete situations and problems in the workplace and trade union activity and goes on from there to work out alternative solutions and draw up theoretical proposals which are capable of achieving a certain degree of generalisation. The process is in some ways one of a "social construction of reality" on the basis of the definitions of reality provided by the research circles themselves. Put another way, social reality - in this case labour reality - does not exist separately from people. It is not an "external" entity. Social reality is a product of human activity. It can therefore be recreated and redefined, influenced and altered. Within companies and workplaces, this means working conditions are defined by the correlation of forces and a bargaining process between the actors involved: workers, unions and employers.[Holmer:1991]

The research circle technique is grounded in the theory that social reality is constructed in accordance with three dialectically interrelated principles:

1. Society is a human product (through externalisation);
2. Society is an objective reality (through objectivisation);
3. Human beings are social products (through internalisation).[Berger & Luckman:1986]

However, social reality is not something that is immediately understandable. Social reality presents itself laden with stereotypes and prejudices deriving from the externalisation of our beliefs which we endow with a semblance of "objectivity". We consequently tend to construct social reality on the basis of our beliefs, values and ideas.

The purpose of this approach is to stimulate collective action by workers on the premise that social reality is continually being defined and constructed by the actions of the people concerned. In this way it seeks to avoid the apathy and passivity to which a structural

theoretical perspective might give rise. The pernicious idea that action is inevitably determined by structural limits may lead workers to give up before actually attempting to do anything. The main thrust of this approach is thus to combat the notion that social structures impose insurmountable restrictions on social action. Of course social structures limit action, but they do not determine it. There is plenty of scope to act and alter the structure.

By using this approach, based on orienting action subjectively in accordance with the actors' own aims and values, we seek to stimulate workers into action, through the research circles, in order to redefine the social reality with which they interact. Nevertheless, the capacity for collective action is obviously constrained by the balance of forces between capital and labour. Moreover, the possibilities for action depend on the type of objectives. Gauging and measuring objectives therefore becomes a key issue for research circle strategies.

The goal of the SUNREG project research circles was to apply action research to the study of technological innovation and the changes in the organisation of work and working conditions which have been taking place in European enterprises over the past decade. The objective was to guide research circle members in analysing and understanding the reasons for the technological changes and in seeking alternative solutions to the problems generated by them regarding employment, organisation of work, job skills and the environment. Research circles are therefore an instrument for change involving all the workers in a particular firm or workplace, on the one hand, and an observatory for investigating and discovering the meaning of the changes underway, on the other.

In other words, research circles are associated with a self-teaching process in which workers and trade unionists learn through their own experience, group discussions and thinking together about the needs of the groups themselves. In this sense, circle members are the source of the knowledge enabling change factors, including both those driving the change and those opposing resistance to it, to be identified.

Methods and Structure

The process by which research circle members acquire knowledge are usually divided into three major avenues of research. The first is the acquisition of available knowledge by classical methods. The second is the development and systemisation of the circle members' own knowledge and experience. This is an important primary source of knowledge. And the third is taking part in the social production of knowledge. Research circles, therefore, attempt to go beyond traditional research methods. Distance and objectivisation are replaced by involvement and critical subjectivity. They are designed to produce knowledge for action and to generate practical knowledge.[Holmstrand & Harnsten:1994]

The research circles in this project were set up in relation to particular companies or workplaces and the corresponding trade union federations or industry structures. The groups or circles were organised in accordance with the following general principles:

1. The groups' dynamics are determined by their self-organisation and planning of the work.

2. The starting point for discussion in the circles is a description of the jobs being done by the group members, followed by a description of the company or institution as a whole and finally a description of the firm's relationship with its environment.
3. Circle members must take the initiative in identifying the problems stemming from how their own jobs are organised and what they involve, analysing the causes of these problems, how they might be tackled and how they might be changed, as well as the obstacles to such change.
4. Circle members must gather information on jobs, how the production process is organised and the enterprise as a whole.
5. The information and documentation collect by the circle members must be discussed and processed in the research circle.
6. Other more traditionally academic methods of analysis may be introduced by the experts whenever it appears necessary and appropriate within the overall theoretical framework.
7. Researchers and experts also take part in the group process as follows: a) They participate in the dynamic of the research circle, directing it in accordance with the information gathering guidelines. b) They provide information on working methods data analysis. c) They intervene as experts contributing specific knowledge on certain points. If necessary, however, co-ordinators can also take a more active part as monitors guiding action. In other words the external co-ordinators do no always have to be entirely neutral and remain at arm's length.
8. The guidelines for conducting discussions in research circles must not be rigid, as situations may vary from one company to another and from one job to another.
9. In order to ensure that the information generated by the research circle is systematically recorded, the discussion must be tape-recorded.

The composition of the research circle is generally as follows:

- Members of the company or workplace union branches;
- Officials from the relevant union federations;
- A university-based research expert;
- A research assistant.

However, the composition of the circles can also vary, as happened in Britain, where non-academic industrial relations experts were involved.

Praxis

The roles of the researchers and other research circle members are in many respects complementary. In fact it is possible to discern a certain division of labour.

1. Researchers and lay members contribute to the discourse construction process from different standpoints. Lay members contribute by:

- a) systemising their own knowledge;
- b) gathering documentation and information;
- c) exchanging knowledge with other members.

The researchers' contribution centres on helping to systemise the group's knowledge and discussions.

2. Researchers contribute notably by furnishing group work methods and research methods for circle members to find out information. Research circles also allow the use of other complementary research techniques, such as interviews, examining documents and consulting other sources to fill in any information gap. Such supplementary techniques should be used only after the research circle has defined and listed the problems to be studied.

One of the most commonly used complementary techniques are questionnaires to gather information on the environment on which the circles are set up. Information garnered from questionnaires also serves as a control and basis of comparison against which to judge the information contributed by the group.

3. Researchers' contributions also include theoretical input enabling the discussion process to be situated in a wider theoretical context.

4. The participation of full-time officials belonging to the union's federal (or industry wide) structures helps to furnish a broader knowledge base and to centralise and co-ordinate information and action. That is circle members do not simply identify issues, they also look for alternatives and solutions and try them out in the workplace with the aid of the works' committee, trade union branch or some other body through which workers participate in the enterprise. Nonetheless, it is important to stress the need for the circles to start to act and to define their goals independently, without any pressure from the union structures.

5. Research circles can thus be said to be a form of action research. Research circles do not confine themselves to identifying problems and putting forward possible solutions. Whenever possible they also endeavour to come up with alternatives in the face of technological and organisational change in the workplace, generating a trial-and-error learning process.

In this way, research circle members obtain an overview of their company stretching well beyond what they can grasp from the limited vantage point of their own jobs. Research circles also constitute a procedure for adult education and self-learning through a person's experience and the often unarticulated, diffuse knowledge present in the group. Taking part in the group is thus a learning process and at the same time a process of experimenting with, and changing, the working conditions of those involved. Research circles are essentially an

action research method that allows participants to reconstruct their discourse about reality, investigate their problems, suggest and negotiate solutions and attempt to satisfy both the workers' and the group's need for knowledge. At the same time, research circle methodology seeks to draw out the group's unarticulated knowledge of its own surroundings. But bringing out such knowledge requires an interactive relationship among workers, trade unionists and researchers. It is not conventional research in the academic sense, but an action research method.

In the SUNREG project it was necessary to have guidelines ensuring the different topics and sub-topics were ordered to prevent the circles straying off the subject during the initial stages of contact with the workers in the company. As already mentioned, the starting point was the actual jobs done by the members in the company. In other words, the methodological approach consisted in proceeding from the concrete to the general or abstract.

Comparisons and Conclusions

1 The Research Circle Method

Research circles provide a method for describing the situation of members and the company for which they work. This enables them to obtain a fairly realistic assessment of the firm and accurate knowledge of the working conditions, thereby avoiding mystifications that do not correspond to the actual state of affairs. In other words, discussing, gathering information and comparing what they have found enables circle members to reconstruct their previously existing perception of reality.

In addition, this action research method has also proved to be capable of motivating research circle members and encouraging them to participate. Gathering written and oral information, engaging in systematic observation and drawing up reports to present to the circle, are also a source of social recognition and prestige among their fellow members. This method thus facilitates the creation of a climate of confidence, strengthening and enhancing the relationship between workers and their trade unions.

2 Problems of Research Circles

One problem was the composition of the circles. One of the most frequently encountered restrictions on the circle's work was the failure of members to participate or stay involved on a regular basis. If the group lacks cohesion, if members have little or no trade union experience or are not shop stewards or even union members, it is extraordinarily difficult to build a dynamic circle and stimulate involvement. In such cases the experiment is unlikely to be very successful. However, the key to involvement may not always lie in trade union membership. Involvement may also grow out of the organisational structure of the workplace, as in the case of Croydon Library (South East England).

On the other hand, if the group had already been operating as part of a workplace union branch or as members of a work's committee, a different dynamic is created. There may well be a reluctance to take part, find out information and compare opinions or leave aside their own beliefs and preconceptions. In the long run, however, there is a good chance of

producing some interesting experimental work. The action research method is useful in that the interaction, the dynamics of the meetings, participation or simple involvement may help to strengthen the group's position. It can assist in reinforcing group identity and cohesion.

The action research method also has its limitations, particularly when it is a question of obtaining certain types of information which are beyond its scope, are extremely technical or require highly sophisticated procedures. This happens, for instance, in areas such as the environment. On the other hand it is particularly successful in dealing with topics where immediate, subjective perception of reality is important. A good example of such an issue is health and safety, which to a large extent seems to be constructed on the basis of subjective perceptions.

3 Research circles, management policies and labour rights

These issues were specially prominent in the British research circles both in Yorkshire & Humberside and South East England. Where a research circle is established in a favourable management context which encourages employee participation and consultation, it tends to function successfully as a group. More importantly, a research circle can furnish knowledge on the effects of technological innovation, suggest improvements in how work is organised and put forward alternatives for better communication. This is what happened at Croydon Library, where new information technology and work reorganisation were successfully given a trial run thanks to the setting up of a system allowing for worker involvement and consultation.

The less friendly face of industrial relations was also seen in the British experience. The management policy at Co-Steel Sheerness (South East England) was aggressive and intimidating, based on an anti-trade union, free market authoritarianism. The problems was therefore not so much one of being able to set up a research circle, as an issue of trade union representation and workers' collective bargaining rights. Technological and organisational change at this plant have been pushed through unilaterally by management without consulting the workers' representatives and with scarcely even any participation on an individual level. Will the company perhaps take longer to adjust to the new technologies and to reorganise its work processes? Similar management prejudices in Yorkshire & Humberside led to a reluctance to allow participation in research circles which delayed research getting underway.

The experience of the British research circles has revealed the existence of an industrial relations approach by management that is decidedly unfavourable to worker participation. This appears to be related to the greater incidence of free market policies in this part of the world and the absence of statutory labour rights.

In addition to management policies, another factor which has a bearing on the establishment of research circles is the legal and institutional context. It can either facilitate the constitution of such circles by affording them legal protection in matters such as the right to information, consultation and participation, or else put serious barriers in their way by failing to guarantee such rights. Other obstacles which have been encountered are more of a cultural or political nature, or due to the existence of small firms with a high labour turnover, low trade union membership, lack of a collective organising tradition or a paternalistic management style.

This was the case in the Netherlands, where the attempt to set up research circles was hampered by choosing small enterprises. An additional difficulty may have been the seemingly more institutional approach of the unions.

4 Defining research topics

The topics to be studied by research circles should not be rigidly defined from outside, i.e. by the union or the university researcher. In most of the circles the members redefined the topics as initially proposed in accordance with their own particular problems. In this way the general themes suggested at the project's outset - technological innovation, work organisation and the environment - were adapted to suit the specific circumstances of each circle.

One thing that needs to be taken into consideration are the difficulties in translating research topics into action. That is why it is essential that the study themes be defined in accordance with the agenda for trade union activity in the company in general, and not in abstract and from the outside. However, in Britain, due to the lack of dialogue and non-recognition of unions, and in the Netherlands, due to the problems of trade union organisation in small companies, the research agenda and how to approach it had to be defined by the researchers and trade union officials. Leadership and drive must therefore come from outside the workplace, simply because on the inside self-organisation of the workers is impossible or their capacity for achieving trade union representation is extremely limited. In such cases the method is not participation but involvement by the workers.

5 Research circles as a complementary research technique

The research circle method can also be useful for case studies. It is therefore an important complementary technique for social researchers. On the one hand, the workers themselves contribute their opinions, describe their own jobs, paint a picture of the company and gather oral and written information about it. On the other hand, the social researcher can supplement the case studies by interviewing members of the management at different levels of the hierarchy, analysing documents and taking part in the research circle discussions. In short, it is a way of obtaining a considerable amount of "objectivised and verified" information which can then be worked up into a case study. The social construction of reality reflected in the case study is thus grounded in a much more detailed knowledge of the actual terrain than would otherwise be possible.

6 Objectivising the discourse

The external researchers' insistence on checking preconceptions and general discourse against concrete data brought a new perspective to circle members. In many cases the reaction may be described as one of "surprise" at discovering new angles or vantage points to look at problems when comparing subjective opinions with documentary evidence. Discussions with other workers, interviews and examining "objective" data brings to light the existence of preconceptions and mistaken ideas. However, the pressure to objectivise came

mainly to the circle members from outside the workplace - from the co-ordinators and trade union officials. The tendency of the group members is to reproduce a discourse based on a more or less intuitive appreciation of reality. The insistence on checking the information proved to be a way of gaining a more objective grasp.

7 Reinterpreting reality

Finding out and comparing information implies revising certain ideas or notions about the “other side”, i.e. the employers, and about one’s own trade union activity. In some instances it was a surprise to the circle members to find certain management decisions and actions failed to tally with the “works committee’s intuition and interpretation”. It turned out that management decisions which appeared economically irrational were perfectly rational from an organisational and bureaucratic perspective. Management decisions are not always determined by the market led logic of comparing costs and benefits. Some decisions can only be understood in terms of power, preservation of authority and discipline.

In short the action research method makes it possible to discover misconceptions and reveal the self-referential discourse common to most groups. It exposes the ideological self-reproduction of reality whereby ideas and values are mistaken for reality itself. Groups tend to generate views of reality that are most comfortable with their existence and which tend to reinforce their status. Groups find ideological discourse and discussion - without the bother of checking their assertions against other information - easier to handle. It requires little effort. But the price of such an approach is that it conceals reality and therefore leads to the wrong action being taken because the framework within which it is conceived is false, imagined or merely supposed. This means that a partial or insufficient representation of the reality of work entails a mistaken analysis which may, in turn, result in ineffective trade union practice. The other side of the coin is that the research circle method helps to redefine the reality of working conditions and find alternative approaches or simply counteract other discourses concerning a complex and ever changing reality.

3.4 TECHNOLOGY ASSESSMENT

Trade Unions and assessing technology before SUNREG

Technology and the changes that it brings has been a trade union concern for many decades. Technology at work means at least three possible changes:

- 1 loss of jobs due to rationalisation;
- 2 creation of new jobs in the industries producing or developing new technologies;
- 3 changes in jobs and their content due to using new technologies and coping with it.

Faced with large scale job losses and redundancies the trade union response in the 1970s was largely pessimistic and defensive. There were, however, attempts within the trade union movement to look at the situation from a positive point of view, to

make use of new technologies to foster user and worker friendly forms of new employment. Examples were the work undertaken at Lucas Aerospace in Britain and the Nijmegen Employment plan in the Netherlands. These were the first signs of trade unions being involved in assessing future technology use. The aim was to compensate for loss of employment (due to technological changes or structural rationalisation) by job creation using the potential of new technologies. Workers would therefore get the chance to develop skills and turn threats to their jobs into opportunities for the future. The trade union technology assessment route stressed the need to reskill workers into new jobs, before they were made redundant.

The attempts to use such technology assessments by trade unions and workers has been extremely limited. In most cases technology has been seen as work independent, developed by specialists, and knowledge of it retained by companies to gain a competitive advantage.

The SUNREG experience

Since the 1970s technology has become more complicated and technical. The SUNREG project marks an attempt to recreate worker centred technology assessments at the level of the firm and also on a regional basis. Throughout the project's four regions it is clear that technology changes have certain common features: partly new production technology, partly information and communication technology, and partly process innovation. In many case these elements would be combined, such as production technology changes coupled with new information technology in the Solvey plastics company in Catalonia.

In the banking and finance industry there are parallel trends in the different regions and indeed across Europe: what was once an information technology revolution, emerges into process innovation on a large scale. Former back office work is quickly replaced by client directed tasks, with the help of rapidly developed information and communication systems. This new processing of work represents a threat to some groups of workers, by opportunities for other groups.

In the public sector too, there has been a similar process at work, with technological changes: reducing the number of jobs; creating new (but not necessarily better) jobs; demanding new skills and qualifications from workers.

The experiences of the last decade seem universal throughout Europe. A common feature is that technological changes go hand-in-hand with other large scale trends which affect working life:

- New forms of work organisation, breaking down big firms and big units into smaller ones. This can take place within the firm or be external to it through outsourcing. New information technology enables firms to keep control and at the same time to participate in more networks than ever before.
- New employment opportunities are likely to develop outside the bigger firms, whereas changing or adapting skills is more likely to be observed within the bigger

firms and organisations. Where employment is shrinking it seems that the opportunities for training are higher than where employment is expanding. This is mainly due to the lack of scale, skills and time within these smaller enterprises.

- Generally, trade unions are stronger, both in terms of membership and influence in bigger firms. This means that they have to develop new types of instruments and new strategies when confronted by the process of change in order to prevent job losses or to ensure that workers have opportunities to adapt to the new technologies. However, industry based unions face another problem since the industry or sector is not necessarily the best place in which to organise workers' response to technology. A regional or indeed, international approach may be required.

The central question is no longer: Can workers assess and use technology in their own interest? Instead it has become: How and where can unions create new platforms for assessing and influencing technology, in a rapidly changing field of employment, public/private and inter-firm relations? The answer is twofold:

- Unions will have to use their expertise, strength and positions in the bigger firms where they operate; and
- They will have to construct new action fields and instruments to answer the new challenges. Regional partnerships with others could be the way forward.

For trade unions wishing to deal in their own way with technology assessments, this is an essential combination. Assessing technological changes coming from the bigger firms (highly unionised, but not big employment creators) could lead to a technology assessment strategy for a select few, or to a strategy focussed heavily on expected future job losses. On the other hand, concentrating on regional networking, without a strong base in the bigger firms and industries could result in unions losing their ability to make collective bargains on employment, pay and the quality of jobs.

3.5 TECHNOLOGY: WORKERS' PERCEPTIONS

Introduction

For the past two years the SUNREG partners have worked closely with hundreds of workers in a research relationship that was very much rooted in the workplace. Through the research process the workers with whom we collaborated described

experiences and deepened their understanding of technology as it related to their work, their workplace, their industry and their lives. Through the dialogue established in the research circles and through the processes of inquiry that were fostered and facilitated by the action researchers, workers developed their own 'independent' analyses of the relations of production in their workplace, and of the dynamic forces at work in economies.

The research circle methodology that we employed required participants to look afresh at their world of work. After encouraging participants to express their initial views it is essential that participants should ideally discard preconceptions, prejudices and ideology when commencing their reflections and dialogue, introspective or otherwise.

For SUNREG to function as a credible research project, it was necessary to concretise an objective or objectives that could be rigorously studied. One concretisation was "to study the actual and potential role of workers and trade unions in the management of the process of technology change in the workplace". Each centre of research, a partnership between a trade union confederation and an academic institution, chose to concentrate on different aspects of this central theme but it remained a generic one.

The SUNREG project was determined to engage the real world in a meaningful sense. The research was premised on a determination to regard workers as potential "experts" about their workplace. It was our explicit aim to collect and generate new information and knowledge directly from workers. This was 'research with workers', not observational research about workers, and as such it was to be *prima facie* reality and not a deduced abstraction.

The principal method utilised was 'participative action research'. Each regional research partnership was funded to set up research circles of workers from a company or sector. Ideally, the circle should have a broad composition, including managers. The circles were facilitated by an action researcher who was tasked by the participants to provide source materials. The circle developed its dialogue and its collective understanding through undertaking a process of inquiry about their place of work.

It was anticipated that the establishment and functioning of the research circles would be difficult. In reality, it was very much more difficult than expected. Nevertheless, research circles were established in Catalonia, in Yorkshire & Humberside, and in South East England, and the participative action research methodology followed as closely as practicable. Research was conducted with workers from two multi-national banks, a former municipal building society which had recently converted to a bank, a steel works, a food processing plant, a chemicals plant, the central administrative office of a local authority, local government library services, and a local government information service.

Workers Understand Technology

Workers were very quickly able to talk in detail about technology as it affected them in the workplace. They knew their work tasks in such detail that they were undeniably experts on their part of the production process. This knowledge was mostly latent, not utilised by the employer. The knowledge was sometimes tacit, the worker had not necessarily reflected upon its significance.

The potential for cost savings resulting from ideas submitted through suggestion boxes is well established, but this potential is seldom exploited rigorously. Further, utilisation of this resource is largely limited to refinement of existing processes that are too well entrenched. The potential value of the aggregate of workers' piecemeal knowledge, and the product if the innovation that could result from a development dialogue between workers is largely untested. The outcomes claimed by companies utilising "shop floor Kaizen breakthrough exercises" warrant detailed critical evaluation. However, workers' full powers of innovation can only be released when their interests are protected and served. Some possible implications of worker innovation are immediately apparent such as redundancy, others may be subtle but none the less invidious. Workers at Vauxhall have described how the observation of the way a worker informally and unilaterally organises their own work task successfully within a set pattern, such as a particular assembly task, can become a prescribed 'standardised' practice. This standardised practice may increase work intensity or demand skills or aptitudes which are beyond the scope of existing workers. The imagination and application of one worker has become detrimental to their own and to their colleagues welfare. The role of the trade union is central to the fostering and management of any such process of worker focussed workplace innovation.

When this research project has been described to others outside of the Regional partnerships, it is common for these others to assume that we are only interested in high technology. Workers are equally prone to this, thinking that we were only interested in 'leading edge' science. It is true that the introduction of computer technologies has made an impact on in every workplace we studied, often enormously so. But similarly, even the briefest analysis by workers revealed that for some a significant technological change had occurred which was far less sophisticated. For example, workers in the food processing plant cited the installation of mechanical cleansing equipment for large vessels as being the fundamental change to their work experience, they once had to get inside and clean the vessels manually. Technological revolution at work is not necessarily dependent on Information and Communication Technologies (ICTs).

Workers in every workplace we studied reported technological change at their place of work, but in vastly differing degrees. Workers in the finance sector felt as though they were being subject to a technological storm, where the pace of change was universally rapid. Workers in the public sector reported different experiences. Those in the information service, who were using ICT for delivery of their service, had experiences which were directly equivalent to workers in telephone banking - increased work intensity, increased managerial control and increased alienation from the product. Workers in the local authority had access to ICT, but optionally - its use was unsystematic. Workers in manufacturing reported a lesser degree of change,

indeed a worker at the food processing plant said “the place has hardly changed in a decade”. Workers in the steel company believed the company was constrained by the investment in the existing plant. “This place was state of the art 20 years ago, it is not any more. There has been some technical change, computerisation and the like, but it’s cheaper to make the lads work harder than to invest again”.

There is no Alternative

It was frequently expressed by workers that technological change was inevitable, but for differing reasons. For some technological change at their workplace was indisputably ‘technological progress’. It had enabled them to provide their product in a better way or to provide new products. This was especially true of the library service workers. Other workers felt that technological changes were enforced and that technology was an external force which the enterprise within which they worked could not ignore. This analysis is a deterministic one with technology being such a powerful determinant that it was hardly worth considering alternatives. Other workers felt similarly enfeebled by technological change, not because they could not conceive of alternatives, but because they felt they had no power over the choices made.

Technological Change and Employment

It became immediately clear in all our research circles that technology change had precipitated redundancies, increases in work intensity, the imposition of shift working and flexible working, changed working environments, changes to the required skill levels (both up and down), pay differentiation, and erosion of negotiated terms and conditions. Every worker had a story, but it was frequently a complex one and workers quite rightly refused to reflect on the role of technology in the workplace in isolation from the organisation of work. Indeed, in no research circle was technological change identified as being the primary issue of concern. The primary issues were always material ones, and technological change was seen as important only in that it facilitated the reorganisation of work.

However, with the exception of workers in the central administration of a local authority, it was the general experience and understanding of workers that technological change had caused significant job losses. This is not to say that the same technological change might not have simultaneously destroyed and created jobs. Workers in the banking industry reported their salutary experience of the use of information and communication technologies which at first generated many jobs. This was then followed by a periods of restructuring and cost savings resulting in many redundancies. In the library service, the introduction of information and communication technologies for use by the public had substantially increased the demand for workers with traditional qualifications in conjunction with ICT and communication skills. These employees work hands-on with public users of ICT services as facilitators and educators, and their jobs are unquestionably dependant on the application of technological advance. In this narrow case technology was a

job creator, but it did not compensate for the number of workers who lost their jobs through the computerisation of library records and management systems. Further, the new jobs were 'good' jobs, but they were not necessarily available to those workers who had been displaced from other parts of the service.

Workers also reported intrinsic changes in the nature and organisation of work which were at least partly driven by a technological dynamic. Most related to the employer's demand for 'flexibility'. Workers in the finance sector were compelled to work shift patterns, rather than conventional banking hours. In food processing workers had to work in various points in the process, a kind of menial multi-skilling. In steel production there have been more radical changes where breaking of the craft structure and removal of the distinction between craft and production workers has been central to a new organisation of work.

A different kind of flexibility, essentially informal, but still tangible, occurred in the library service. Here two workers, with responsibility for the central computer, voluntarily started work early to ensure that the system was in full operation before the other workers arrived. They perceived it to be necessary as part of their 'professional culture', and also because if they did not do this their day would start with unanswerable questions and computer crashes, tension and misery.

Workers also reached interesting views regarding work intensity. Whereas automation of processes within the chemical plant had reduced physical work to one of surveillance, workers in the financial sector and in the information service had experienced vast increases in work intensity as a direct result of computer technology - work was now easily monitored. At the steel works, which is an integrated plant running a continuous production process from smelting to finished goods, the management (for commercial reasons) were loathe to stop any part of the process because of the immediate consequence for the whole process. Workers are, to all intents and purposes, subjugated to the technology used.

Other Consequences of Technology Change

There are other consequences of technology, health and safety being a major one. In the steel works, an inherently dangerous place, although health and safety was compromised by the intensity of work, it was acknowledged that technological change really had been technological advance in terms of its impact on health and safety. This was also the case in the food processing plant where mechanical innovation had reduced physical contact with mechanised plant. The health and safety benefits to workers in the chemicals industry of automation had been extremely high and were very welcome.

Whereas ICT applications to control dangerous processes were seen as a health and safety advance by many workers, those in direct contact with ICT thought it generated acute health and safety hazards. In addition to the common complaints of screen glare, repetitive strain injury (RSI), inappropriate furniture, environmental problems, workers frequently complained of dehumanisation due to loss of intimacy

with colleagues and to the intensity of work. This was thought to contribute to low levels of morale and high levels of stress.

Stress would often be compounded by the working of unsocial hours, shift work, variable starting and finishing times. All workers subject to such regimes argued that it adversely affected their social and family lives. It was evident that these problems are now as acute in the financial sector as they are in industries where shift work has traditionally been commonplace.

Workers at all levels also reported that the application of new technologies had sometimes de-skilled them. In the food processing plant the work had once required constant interventions to adjust machinery, but further automation had so reduced this element that almost anyone could do the job with little training. Library workers complained that their core qualification was now effectively devalued by computerised library management systems. Skilled tasks, such as cataloguing, are now vastly simplified by modern databases and specialised packages. Workers entering the service at higher levels were often ICT specialists with no library qualifications. So technological innovation had disrupted seniority and status structures.

The application of advanced technologies can also create substantial barriers to worker advancement. This was most potently witnessed on a factory visit to a printed circuit board factory in Brabant. Very sophisticated technology was used to make highly specialised products but the nature of the process was ultimately repetitious and simplistic. Thirty percent of the workers were graduates and highly skilled, seventy percent of the workers performed extremely low skilled mundane tasks. The only possible career advancement for the production workers was to become a shift manager of which there were five in a workforce of several hundred. Workers felt that the chasm between any of the production jobs and the thirty percent skilled jobs was far too great to bridge by internal training or career development programmes. The application of advanced technology to specialised production had created or intensified barriers to worker development in the workplace. Such de-skilling and entrapment of workers was not unique to production industries. In the information service, workers from the telephone service identified themselves as virtually career segregated. In effect, despite the ICT environment, their job design was as narrow and repetitive as any production worker in a manufacturing process.

A Vision of the Future

The overwhelming experience and analysis of the workers from our research circles is that it is the employers who reap the benefits of technological change in the workplace and that workers bear most of the costs. The anticipated benefits of technological change are unequally distributed. Commentators may argue that the workers may have only had a job because it has been secured by the productivity gains from technological change. This is very difficult for workers to assess rigorously but recent research indicates that productivity gains in the UK, where

investment levels are chronically poor, have been very dependent on workers working harder and longer and are not the product of the assimilation of technological change.

In 1997 the European Commission published a Green Paper, "Partnership for a New Organisation of Work". It is a statement of a vision of how the most successful companies of the future will be characterised by high quality specialised products, high technology, high productivity and highly flexible and adaptable to innovation. They will also be characterised by high skills, high employment standards, high wages, job security, a learning culture and flexibility for employees. Thus, the interests for employers and employees are envisaged as being mutually achieved in a production coalition of interests predicated on the explicit application of leading edge technologies.

The experiences and analyses of the workers in our research circles can rarely be reconciled with the Green Paper's vision. Nonetheless, workers expressed a great deal more positive affirmation of technological change than may have been predicted. Workers in the library services and in the central administration of the local authority typically expressed a firm belief that technological change was a progressive force in their sector. Workers in the chemicals plant and in the steel plant acknowledged the significant health and safety potential of new technology applications.

On the other hand, workers in the finance sector typically had a far more pessimistic analysis. Workers at the former building society spoke negatively of the destabilising changes, of the inefficiency of equipment which regularly broke down, and reported that in their view technological innovations in their workplace had not improved the products nor the service to the customer.

Hence, the workers we have worked with have expressed a range of views about the essential nature of technology change. These views have sometimes been complex, distinguishing between their immediate experience at work and technological change in general. On the whole, workers' views are more positive than their analyses of their specific experience at work. Key determinants which impact on perception in the workplace are workers' assessment of their job security and whether a culture of change exists. Change in a workplace which is used to stability, insecurity of employment, a lack of control over the processes of change and an environment of adversarialism, were described as generating negative perceptions of technological change.

Negotiating and Managing the Process of Technological Change

One of the most consistent findings from workers in the research circles was that they believed that process of technological change in the workplace had altered the 'balance of forces' between the employer and employees. In relation to this workers did not cite new management techniques as being a factor, although performance related pay in the finance sector was seen as a force for individualism against collective interests. At the steel works, the trade union had been derecognised some

years previously, but this related more to dogma from the Personnel Director and a reorganisation of work than from any technological factors. The cause in the increase in the dominance of management was due partly to a diminution of the centrality of labour to the production process. The more sophisticated the technology the more marginalised workers felt. Secondly, it was felt that the more sophisticated and constant was management's control over worker's performance, the more the balance of forces swung to the managers.

In the workplaces we studied there existed a variety of possible mechanisms to represent workers' interests in the management of the process of technological change. In the library services formal and informal processes were established such as weekly staff meetings, peer group meetings, and ad hoc committees. These were set up to examine and report on possible technological innovations, and annual development reviews, in addition to trade union representation. In the Netherlands and Catalonia there were works committees. Workers reported that these varied hugely in effectiveness, and that in one case the works council barely existed. In general, the level of participation or even of mere involvement in managing the process of change was reported as being very weak.

The trade union membership rate in the workplaces we studied varied from 3% to more than 90%. The level of membership was not a sufficient indicator of an effective role for a trade union in the management of the process of change. In the workplace with the highest density, workers described the perception that trade union officials turned up to meetings and were effectively informed of what was going to happen, but management prerogative was more or less absolute.

Workers reported that in most workplaces the trade union had been a source of representation on the issue through collective bargaining. However, workers frequently argued that the trade union had not regarded technological change as a high priority issue. Where collective bargaining had occurred on technology change, it was regularly felt that union strategy had been to negotiate the price of the change for the workers that remained and to concentrate on health and safety factors, risk assessments, etc. Indeed, union officials confirmed that technology change had not been a priority, that organisational change had been regarded as far more significant and that the fundamental impact of technology change as facilitating organisational change had rarely been appreciated. Successful representations of worker interests were described by workers in the bank in Barcelona, where collective bargaining resulted in two agreements, one providing training to enable workers threatened by technological displacement to retrain for new duties.

Technology and Training

The members of our research circles identified a significant level of technological change in every research site that we studied. If the production process is conceived

as the 'combination of capital and labour through a particular technology', then it is self evident that a change in the technology employed will cause a change in the relations of production between capital and labour. This points to the need for training to facilitate the effective accommodation of the technological change.

This is confirmed by data from the UK Skills and Enterprise Executive. It reported that in 1997, 69% of employers thought that the skills needed by their average employee had increased during the year and that 74% of those employers attributed this to 'changes in process and technology'.

The members of our research circles described the following key themes regarding technology change and training provision in their workplace.

- The quantity of training provided to enable workers to use the new technology, not necessarily information technology, was frequently very limited.
- The quality of such training was also very poor, typically described as being 'barely adequate to use the new technology.'
- The training was mainly 'cascade training' and frequently 'on the job' training. Where this occurred in a service industry, 'on the job' training caused acute stress and resentment, as workers were very sensitive to "seeming to be ignorant" and seen to be committing errors in front of the public.
- There was very little "off site' training.
- In the finance industry, where there were sometimes full time trainers within the company, much of the training that accompanied technological change, and simultaneous structural change, was attitudinal rather than technical. It was designed to influence behaviour and commitment, rather than to enhance practical skills.
- There was rarely a structured approach or a published training plan.
- It was rare for procedures to be in place to monitor the success of the training provided.
- There were rarely systems in place to identify, and provide support to, workers who were struggling to adapt to the new technology.
- Where support mechanisms supposedly did exist, workers declared that those who had tried to utilise them were demeaned and criticised. Using the mechanism actually exposed the worker, causing jeopardy to their security and prospects, such that it was felt to be wiser and keep a low profile and seek aid informally from colleagues.
- Training was very rarely accredited. The only example of accredited training that we found was at the steel company. Here training was effectively compulsory. A worker's training plan was imposed at their annual job review. They had to follow

this plan unpaid in their own time. And they had to achieve the objectives, otherwise they risked sanction at their next annual job review and loss of performance related pay. Some of the training courses they were required to follow were accredited National Vocational Qualifications, others were company programmes.

It was the experience of the workers in our research circles that appropriate training was a critical feature of any reform in the production process that involved technological change. Without the appropriate training, the productive potential of the technological change was impeded or even lost. Also, inadequate training in an environment of change, caused workers to have a lack of confidence in the new technology and in their competence to use it. This, in addition to other factors, caused an increase in the insecurity expressed by workers, resulting from the technological change.

It is clear that in our research sites, employers had usually not understood the essential role of training or at least had chosen not to commit sufficient resources to it. For example, in two library services that we studied library management systems had recently been introduced in order to provide complementary data, but with minimal training. In one instance the employer's logic was seemingly, "we cannot afford training, staff will get used to it". In the other, the logic seemed to be "the new technology is a self-contained magic solution, the answer to all problems. Here it is, plug it in."

The challenge in an era of technological change

From a worker's perspective, training:

- provides increased security of employment;
- provides enhance promotion prospects;
- offer potential increases in pay;
- gives transferable skills;
- facilitates personal and collective development, and thereby increases job satisfaction;
- can contribute to an equal opportunities agenda.

From an employer's perspective training can increase the competitiveness of a business by:

- increasing innovation;
- increasing workers' ability to adapt to technological change;
- increasing the flexibility of the workforce;
- increasing the commitment of the workforce;
- increasing job satisfaction and thereby enhancing staff retention.

This demonstrates that there is a congruence of interests between employers and employees, but more statistics from the UK Skills and Enterprise Executive for 1997 show that 65% of employers in the UK had no formal training plan, and 63 % had no

defined training budget. Further, a third of all workers were not offered any training opportunities during the year. Workers in companies of fewer than 50 employees were even less likely to be given training opportunities. Despite this a European Commission analysis (*European Update, June 1997*) of the provision of continued learning in its member states shows the UK to be in the upper echelon, far beyond the EU average. Hence it would seem that the training deficit is endemic throughout Europe.

The challenge for trade unions is to gain a role in the management of technology change to secure the interests of working people. Given that the dominant forces at this time are those of private property and capital accumulation this can only be achieved by:

Independent action by trade unions

- Acting as a direct provider of educational and vocational training.
- Making technology change and training more central parts of the collective bargaining process.
- Renewed commitment to running specialised courses for those responsible for negotiating on training and issues of technological change, to providing negotiators' guides, to disseminating good practice models and to forming and supporting networks between negotiators.

Increasing the commitment of employers to human resource development and getting them to acknowledge the central role that workers and trade unions can play.

- Actively forming partnerships with progressive employers.
- Decisively challenging 'bad' employers to recognise the critical role of skills training, the essential contribution of workers and trade unions and the strength and mutual interest of the high skills approach.
- Ensuring that models of good practice are disseminated.

Persuading government, both National and Regional, that it has a greater role to play in ensuring the provision of high quality training and equality of access.

- Skills training is an area of market failure, as employers poach rather than train. Government should itself provide more high quality skills training and should instigate a framework to require companies to meet training needs or to pay for state provision, such as the introduction of a training levy.
- Employees should have statutory individual entitlements to training and development, for example, five days per year off-the-job training development per year.
- Where workers cannot gain satisfactory career development within a company or

industry because of structural barriers, they must have access to other means of training and development. The UK Government's 'individual learning accounts' and 'University for Industry' are interesting initiatives but funding will be key.

- Regional government should undertake comprehensive skills assessments, formulate a regional skills strategy and implement it proactively.
- Regional government should work to cluster together small and medium sized companies, with traditionally poor training records, either by sector or geography, to provide facilities for skills training. Similar initiatives could be pursued with supply chains, using larger companies with established training programmes as a resource, a model and a mentor.
- Technology centres should be established regionally to which employers and trade unions would have access. The role of technology centres would be to advise on ways in which technological change can be introduced whilst sustaining the level and increasing the quality of employment.
- All regional and national programmes should have a genuine tripartite approach.

4 CONCLUSIONS AND POLICY IMPLICATIONS

4.1 Conclusions

SUNREG has been ambitious, attempting to operate as an action research project operating in four regions across Europe, and within that investigate the value of a particular action research method, namely research circles. Inevitably, it has not fulfilled all the original objectives. Nevertheless, SUNREG has brought together in discussion several hundred people, primarily trade unionists and academics. As it developed, it is fair to say that the regular meetings between participants proved increasingly valuable, as each region developed its work, and as comparisons which revealed both similarities and differences became possible. Out of all this there has been important learning, and there are some initial conclusions to be drawn from this.

The first is the need for flexibility. Earlier in this report, the tension between the dynamic nature of action research and the rigid requirement for 'deliverables' was considered. We would argue that recognition is needed that in such projects there is the need to be flexible, to revise and amend the original proposals in the light of experience.

Second, there is the need for time. The original SUNREG application envisage a three year programme - it proved difficult to contain it within the two years ultimately sanctioned. This was exacerbated by the insistence that the project be considered to have commenced at the time when the funding was agreed, even though there

was an inevitable gap of several months between then and the appointment of project workers in each region [none could begin this process until they knew that the funding was in place]. Allowing for time at the end of the project to evaluate and assess, this meant that there was little more than a year available for detailed investigative work.

It was always unrealistic to expect SUNREG to develop proposals for alternative products, especially after it was cut from three to two years, without any real change to the aims and objectives. Consequently some of the objectives were too ambitious and not possible to meet given the constraints of funding and timescale. Nevertheless, some concrete proposals have arisen as a result of the SUNREG experience:

- A shop stewards' computerised information service through public libraries being developed within the London Borough of Croydon.
- Research Circles being developed as a form of training.
- Some Research Circle members are starting to define alternatives in the banking sector.
- It suggests a possible alternative route for trade union strategies and collective bargaining.

This shows that when workers are exposed to the SUNREG experience and its methodologies, and when they realise that they too can have some influence of changing the way they work, they can potentially develop new products. After all they are the people who have expert knowledge of the workplace and production processes, which the SUNREG researchers cannot be expected to have. They are the specialists, the researchers the generalists. Hence the notion of an electronic information service for workers from library sites. The initiative came from a worker in the industry, not from SUNREG itself, but it is a product of the SUNREG project.

Third, there is the need for coordination. For tragic reasons outside the control of the partners, the project lost its co-ordinator at an early and critical moment. The circumstances surrounding this loss, moreover, made it difficult to obtain an early resolution. This issue is particularly important in a project such as this, where very different types of organisation are involved. The purpose, structure and operational rhythms of universities and trade unions are very diverse. Mechanical linkages can be developed, but it is the practice of the relations between universities and workers, and the content of these linkages, which move us forward. Until the understanding and perception of work, the value and skill of workers, and the nature and role of education, are altered, anyone attempting what we have sought to do is inevitably working in a somewhat alien environment. It is fair to say that we have shown that action research is a powerful mechanism for encouraging new levels of understanding. It is much more than the meeting of 'lobby groups' in order to reach a common understanding. It is a process of dialogue which embraces dissensus as well as consensus.

The project's remaining conclusions are more positive.

1. We have found that it is possible to undertake action research across boundaries. Indeed the very diversity of experience between the regions has proved beneficial in allowing us to learn. We can identify two distinct but complementary applications of the process. First, action research, the objective of which is to collect new data where the researcher's role is to organise the information processes at work and to provide a fertile environment. Second, action learning, which is explicitly led, where ideology has a legitimate and perhaps central role and where there is tactical intervention. There is scope for both of these processes to be employed in a collaboration between trade unions and universities .
2. As specified in the project's original objectives, a network has been established, consisting of numerous links: between trade unions and universities; between trade unions and research institutions; and between trade unions and trade union confederations. To establish this network on a lasting basis, a centre or base would be needed. It could and should be done, but funding would be required. The project has established many contacts with workers and with other research institutions and those contacts will persist. If work is to progress in this area, we suggest that the European Trade Union Institute could provide an important role in facilitating the establishment of further networks and contact.
3. Whilst the funding for this project has now come to an end, SUNREG will undoubtedly continue, although not as a formal construct. A definite dynamic for research, which was visualised by Colin Randall, the original co-ordinator, has become real, and this is not entirely dependent on funding by the European Commission. The project partners in South East England are committed to attempting to map and create an ongoing network to disseminate our work and the research dynamic. It is envisaged that our work will continue with regard to specific things, such as exchanging information and experiences about regional developments and the further development of the use of research circles. There are, in addition, other plans for the future. The work of the project created interest in other areas, especially the use of research circles in the education field. And the FNV, one of the project's Dutch partners, have put forward further funding proposals for such activities.
4. People are positive if given the opportunity. As we have reported separately in the analysis of research circles, this is a valuable way of bringing people together to look at their work experience and future prospects. As the social dimension of the European Union develops, these types of opportunity need to be expanded.
5. Co-operation does work. National borders are not necessarily a problem, but they mean that it is not easy. The necessary investment of time and money to eliminate technical obstacles (such as computer languages) is, of course, important. Despite such technical problems, we consider the SUNREG project to have been very useful in laying the basis for broader trade union and university networks and developments at both domestic and international levels. It has proven the value of collaboration, demonstrating the benefits of working together in a new way to produce a new kind of product, both in the trade union and in the academic sense. In addition, the SUNREG network has developed linkages and communication channels with a wide range of institutions and individuals, including:

- international trade union federations and organisations.
- academic channels, through journals and conferences.
- international publications.
- Members of the European Parliament.
- dissemination to other ongoing research projects.

6. The project has also demonstrated the importance of realistically focussed aims and objectives. We have found that the objectives of an initiative need to be very well defined and, preferably, very narrowly defined, if success is to be achieved. The project has also highlighted the location and magnitude of the difficulties that can arise in the creation of such networks. Resources are critical: the promotion of the practice is difficult, and only those who have been fully involved may be in the position to comprehend the potential.

7. In projects of this type a catalyst can be very helpful: we again acknowledge the work of the late Colin Randall in initiating the project and doing so much to bring the partners together. This was much more than being a broker or intermediary: it was an active process of network creation. There is clearly a role for an information and communication network. In respect to specific projects, there are defined roles for third parties such as consultants and experts. There is a potential role for a third institution (Trade Unions and Universities being the first two), to train practitioners in action research and action learning.

8. Our experience reinforces the argument within this paper that action research and action learning can usefully be brought together. Our regular meetings between partners have been the 'learning sets' of the project. On each occasion, we have held both internal meetings where experience can be shared, ideas can be developed, and plans for the next phase laid. Alongside these, we have held open meetings where others in the region have had the opportunity to hear about our work, and where, through invited speakers, we have sought to extend the debate, and to extend our own thinking.

9. One of the project's original aims was to contribute to the improvement of economic and social cohesion within the European Union. The ideal that underpins this aim is that action-research, in a social democratic context, should reveal to workers the problems and constraints faced by managers, and should reveal to managers the problems and desires of workers. Consequently, everyone should have a greater comprehension of their shared interest. In this way economic and social cohesion will be strengthened. Whether any of the SUNREG research groups achieved that aim is debatable. Given the restricted time frame of the project, and the ingrained systems of industrial relations in most of the regions covered by the project, such a change of attitude was always going to be difficult to achieve.

Nevertheless, some positive progress was made. Two of the Library groups within South East England have potentially caused management to reflect critically on their actions and policies. Within one group the experience caused

workers to alter their perception of certain policies and change their response. So our action-research methodology can be said to have contributed in a modest way. However, it has not really helped to build a dialogue between the social partners. Our experience shows that where such dialogue exists already, our research methodology has been successful. Where such dialogue does not exist, and/or where trade union organisation is weak, the research circle methodology has generally failed. Success in this area therefore depends on well organised trade unions and the greater potential for advancing economic and social cohesion comes with the possibility of substantial intervention by trade unions in regional and local economic development.

10. The original focus of the SUNREG project was on technology and the effect of technological change on jobs and employment. It is our view that many people, including those with influence and power over the utilisation of technology, have lost sight of the key questions. Reference to the responses given at a research seminar to the question “What does ‘technology’ mean?” reveals a wide variety of answers. That in itself is not a bad thing. However, it is detrimental if a person who is engaged in our thematic network cannot offer a cogent response. It is our belief that some theorists and practitioners are so steeped in complex ‘down the line’ analysis of technological change that they have lost focus in their primary definition of ‘technology’. Others, who see themselves as necessarily passive victims of technological change, have seen no value in reflecting on the meaning of technology.
11. The SUNREG project has demonstrated that it is the organisation of work and not technology that is the key determinant which influences the type and levels of employment, working conditions and workers’ ability to influence decisions. New technology is used by management to justify changes in the organisation of work which leads to more control over and greater exploitation of the workforce. This is justified by the need to compete in the global market, or in the case of the public sector, by budget limitations.
12. Earlier in this report we have described workers’ own analyses of this subject. This raises the question, “What can we do as trade unionists and researchers to ensure that workers are involved, through their trade unions and other mechanisms to work for a more socially intelligent, equitable and sustainable future?” For workers to have a voice in the changes that are being made, to develop the Social Dialogue and to build a meaningful Social Europe, real, as opposed to formal, trade union organisation is necessary. The SUNREG project has shown that its research circle methodology can be useful in informing workers and their trade unions about important aspects of the work process, thereby making their trade union policies and actions more coherent and effective.
13. We cannot say that the research circle methodology is a mechanism to enhance workers’ direct input to the decision making process. That can only really be achieved

through strong trade union organisation in the work place. However, research circles may be seen as a mechanism for indirect input in as much as they can increase workers' understanding of the work process and the organisation of work, and thereby lead to a more informed and a more intelligent debate on trade union policy and action. As a by-product they may also enhance workers' capacity for decision making within trade union structures.

14. Finally, the debate about action research cannot and should not be separated from the debate about power. Gross has commented that in organisations "*power, like sex under the Victorians, has often been regarded as a subject not to be openly discussed but rather to be sought, thought about and used under the cover of darkness.*" [cited in Kakabadse and Parker 1984:16] When this happens, it is little wonder that power is seen as negative. By contrast emancipation is about the positive use of power, while recognising that this happens in contested terrain.

The recent EC Green Paper "Partnership for a new organisation of work" is of direct relevance to our project and shows that SUNREG fits very well into present EC policies on work. As stated in the Green paper, the future of the EU does not lie with low paid workers in poor conditions producing low value added products or services. The way forward for Europe is both to be able to compete with the rest of the world, and for people to have decent lives both in and out of work. This will mean the development of a workforce of highly educated and skilled workers in permanent jobs who have some commitment both to their company's development and to the future of the EU. The SUNREG project's methods of research and its goal of workers having a greater understanding of technology, work organisation and control of change in the workplace, enhance that vision. SUNREG represents ideas which now have their time. SUNREG's continuance in the future is part of the progress towards a better Europe

4.2 Policy Implications

A number of implications for policy changes throughout Europe have arisen from the project. The principal ones are:

- There is a need for statutory rights across Europe for workers' participation at work, through a single channel, where trade union recognition exists. Enforcement of this would be essential.
- Extra resources for management training are required. The standard of management is very variable, and their outlook, in the UK at least, extremely narrow.
- Resources should be made available to finance research circles as an educational

and research tool. Experience has shown that employers will not do this willingly, so such an initiative would need to be resourced to seduce employers into the process.

- The dissemination of models of good practice and evidence of successful intervention are needed.
- Encouraging a multiplicity of mechanisms, peer group meetings, ad hoc committees, etc. to investigate the specific issues concerning a piece of technology. This may be perceived as problematic in that it suggests alternative forms of representation and power other than trade union officials.
- The establishment of publicly funded institutions which are regionally or sectorally based, whose function would be to advise employers and trade unions as to potential courses of action given the direction and rate of technology change in a region or sector. The aim would be to maintain the competitiveness of jobs and to increase the competitiveness of enterprises.
- Trade Unions themselves need to change in a number of ways to improve their organisation, communications, education, and membership activity. They need to be better informed and more proactive, and do something about the perception that all they are concerned with is a narrow pay agenda.

5 DISSEMINATION

A characteristic of the SUNREG project was to disseminate information about the project's work throughout its life. One of the main methods by which this was achieved was by organising a series of international seminars and open workshops which took place at the same time and venue as the project's network management meetings. In addition to disseminating initial project findings, the purpose of these seminars was to raise awareness of the project amongst trade unionists, academics and opinion formers in each of the project regions, and to obtain views and inputs from people outside the project. In total some 300 trade unionists from the four partner regions were thus involved in SUNREG to some degree.

The principal subject matter of each of these seminars was as follows:

Brussels: Regions and Islands of Innovation (May 1996)

Barcelona: New Technology, Job Destroyer or Job Creator? (January 1997)

Eindhoven: Technology Assessments (May 1997)

Eastbourne: Training & Research Circles (October 1997)

York: Trade Union and University Co-operation (January 1998)

Dissemination also took place throughout the project by the development of linkages and communication channels with a wide range of institutions and individuals, including: international trade union federations and organisations; academic institutions (through journals and conferences); and to a number of other ongoing research projects. Much of this dissemination has taken place through the use of electronic media and the world wide web. The SUNREG partners have also been very concerned to see that the project is of benefit to workers, and that the results of our endeavours get through formal trade union structures to reach workers.

The projects outputs are listed in Chapter 7 of this report. They consist of a wide range of discussion papers, reports and bulletins which have been distributed widely to trade union organisations, academic institutions and other research bodies.

There remains one last formal piece of work to be completed by the SUNREG project. This is the publication of a book combining many of the disparate elements that have gone into the project's completed work. It will consist of edited versions of some of the project's discussion papers, amended in light of the closing project conference held in Brussels (April 1998). It will also include some related, but previously unpublished, material. It is planned to circulate this book as widely as possible throughout the European trade union movement, academic and research institutions, and relevant European Commission directorates. It will also be available on the world wide web through the British TUC's web site (<http://www.tuc.org.uk> - SUNREG is located in the SERTUC section of the site's virtual building).

6. REFERENCES

CHAPTER 3

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CHAPTER 4

4.1 CONCLUSIONS

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7. ANNEXES

7.1 Project Outputs

Coordinator

Sunshine Regions or Sunset Regions? The Report on the SUNREG Launch Seminar at the ETUI, Brussels (May 1996)

Regional Economies and Islands of Innovation- SUNREG Discussion Paper No. 1 (published following the Open Workshop at Northern College, Yorkshire, September 1996)

Unions and Europe - The 1996-97 Trade Union Action-Research Guide (Published in collaboration with CAITS and launched at the Annual Congress of the British TUC, September 1996)

(with John Darwin, Sheffield Hallam University)

Sunshine Regions Or Sunset Regions? The SUNREG Project, paper to International Conference On Technology Management, Istanbul (24-25 June 1996)

The State of our Regions: Initial SUNREG findings on the socio-economic status of the four regions and on the role of trade unions within them

Trade Union and University Co-operation

South East England, UK

Socio-economic-political report of South East UK (published in hard copy and on the Internet)

Abstract of socio-economic-political report of South East UK, (published in hard copy and on the Internet)

Newsletter (Introduced objectives, methods and possible outcomes of SUNREG network. Distributed to regional and branch union structures, research sites and interested academics)

Summary of research sites and potential action programmes

Croydon Borough Council Library Service: Profile of research site in the public sector with technology assessment and initial findings about participation and consultation at work

CoSteel Sheerness: Profile of research site in the manufacturing sector with technology assessment and initial findings about participation and consultation at work

Reflections on the comparative roles of trade unions in the management of change in the steel industry in Britain and Germany (draft background paper to the manufacturing research site)

Observations on the difficulties of establishing research sites (in the UK) and the limitations of research circle methodology

Workers Perceptions of Technology and Technological Change

The Importance of Training to Effective Introduction of Technological Change in the Workplace and the Potential Role of Workers and Trade Unions

Yorkshire and Humberside, UK

A socio-economic and political analysis of Yorkshire and Humberside

"Workforce matters" A newsletter for Yorkshire and Humberside

Progress report for the first year of SUNREG

Colour thinking and organisational development (paper given by John Darwin at Northern College Conference, September 1996)

Scenario planning and future search conferences

Action Research: Theory, Action and Trade Union Involvement

South East Brabant, Netherlands

The importance of small -medium enterprises in the Region of SE Brabant (paper given to SUNREG opening conference, Brussels, May 1996)

The socio -economic report on the Region of SE Brabant.

Progress report in SE Brabant 1996/7

Trade Unions and Assessing Technology: What did we learn in the SUNREG project?

Paper on SSMS (Foundation of Metal Works Training)

Catalonia

A regional and sectoral socio-economic and political analysis of Catalonia

A work plan for the first year of SUNREG

Methodological proposals for the research circles of the SUNREG project

Briefing document on Solvay Chemical company

Briefing document on Deutsche Bank

Briefing document on Barcelona Municipal Information Service

Progress and findings of the three Catalanian research circles

Contract companies (paper produced by Solvay research circle)

Progress report for Catalanian partners

Research Circle Methodology: Participation and Industrial Democracy in the Workplace

Los Circulos de Estudio

7.2 Project Deliverables

<i>International Conferences</i>	Brussels, May 1996 Brussels, April 1998
<i>Network Meetings</i>	Northern College - Barnsley, September 1996 (cancelled) Barcelona, January 1997 Eindhoven, May 1997 Eastbourne, October 1997 York, January 1998
<i>Open Workshops and Seminars</i>	Held at the same locations and times as the network meetings
<i>Discussion Papers</i>	Regions and islands of innovation 1996 Trade unions and technological assessment, South East Brabant, May 1997 Research circles and worker democracy, Catalonia 1997 Possibilities for collaborative action research, Yorkshire and Humberside 1998
<i>Quarterly Bulletins</i>	Workforce matters, Yorkshire and Humberside South East Region (TUC) Newsletters Catalonia South East Brabant
<i>Progress Reports to the EC</i>	First annual report completed Second report completed
<i>International Conference Reports</i>	Brussels 1996 Brussels 1998
<i>World Wide Web Pages</i>	http://www.tuc.org.uk