Eric Trist

Socio-Technical Ideas at the End of the '70s[1]

This paper will describe, in the briefest possible compass, what is meant by *quality of working life*, a relatively new approach to work and organizational improvement. The term itself, QWL as it has come to be called for short, was coined at a small international conference held at Columbia University's conference center (Arden House) in September 1972.

Available terms such as "industrial democracy," with its European connotation, did not suit North American conditions, while "job enrichment" or "job design" were too narrow. A new general term, politically neutral but indicating the direction that future development would likely take, seemed to be required. QWL proved the most acceptable among the suggestions made.

The purpose of the Arden House meeting was to obtain a better understanding of the frustrations and maladies of the workplace that were occasioning poor morale and poor performance and to identify approaches that would lead to positive outcomes. The most promising way forward seemed to lie in an increasing number of innovative work improvement projects undertaken in organizations of widely different kinds in most Western countries. A few pioneer studies in the '50s had led to some quite large scale, well-sustained endeavors during the

---

[1]Revised from a paper in <u>Adapting to a Changing World</u>. Ottawa: Labour Canada, 1981.

1960s. These, in turn, had stimulated a much wider field of activities as the decade of the 1970s opened up. These projets have been based on participative decision-making and work restructuring. Most of them have been able, simultaneously, to increase both job satisfaction and organizational performance, even though quite a number of them petered out, either through mistakes made by those immediately concerned or, more often, through lack of support in the wider organization, where most people did not understand what was being attempted and where many felt threatened by it. What the new designs did accomplish was to improve the quality of work experience of those directly involved and show that this could pay off.

Though these projects began in manufacturing industry, they have since been carried out in service industries, in the public as well as the private sector, and in hospitals and educational establishments. The principles have been discovered to be quite general. They apply, moreover, to all levels and functions. Nevertheless, special attention has been paid to the lower levels that had been neglected in earlier approaches to organizational development that had focussd on management.

The Basic Concept

Concern with improving the quality of life is increasing in all Western countries. To improve the quality of life in the workplace, where we spend half of our waking time, is a central part of this concern which represents an emergent value as Western societies pass from the industrial to the post-industrial era. This latter is usually defined as a state reached when manufacturing industry, because of its capital intensive and advanced technical condition, employs less than a half--perhaps no more than a third or a quarter--of the working population.

Though the problem of a new form of scarcity regarding the depletion of nonrenewable resources has now appeared, this does not mean that the old form of economic scarcity need return. Technology has developed to a point where enough can be produced to provide for the basic needs of all at a level considerably above that of mere subsistence. (At least this is so in the advanced countries, and this paper is concerned with Canada as an advanced country.)

The post-scarcity situation is changing the underlying attitude of people to work. A survey carried out in 1974 for the Federal Government of Canada showed that, while 97 percent of Canadians preferred being employed to being unemployed, only 67 percent were willing to take the meanest and dullest type of job at the minimum wage; 33 percent said they would sooner be on welfare. Though commitment to work is still central to people's lives, this commitment is becoming conditional on the quality of the work experience rather than remaining a compulsion of dire necessity. While 85 percent of respondents felt "satisfied" with their jobs in a vague and general way, only 50 percent would take the same job again, and only 30 percent felt seriously committed and involved in what they were doing (Table 1).

Canadians (in the same survey) put the following features at the top of a long list of desirable job requirements: interesting work; the means to do it; a piece of the action; dignity. Only then came good pay and job security. Though these two economic factors were placed first by the unskilled group, this group also included the four noneconomic factors in their top six factors (Table 2). Similar results have been obtained in a number of Western countries. In the post-scarcity situation, an increasing number of people (though not, of course, everyone) are seeking, over and above a reasonable and reasonably secure standard of living, an opportunity

Table 1

Job   Satisfaction

Survey Response	Percent
My job is O.K.	85
Take same job again	50
Involved and committed	30
Rather be employed	97
Rather be unemployed	3
Take dull job at minimum wage	67
Sooner be on welfare	33

Table 2

Most Desirable Features of Jobs

Interesting Work

Means to do it

Piece of the action

Dignity

Good pay

Job Security

More skilled emphasize human factors

Less skilled emphasize economic factors

Both include all six among most desirable factors

both to develop themselves and to contribute to society. One would expect to find a higher

proportion of such people in technologically advanced rather than in less advanced industries

because of the sophistication and challenging character of many of the core jobs. To enhance the

opportunities presented and the wish to respond to them is what is meant by improving the

quality of life in the workplace.

The majority of jobs, however, in most manufacturing and service industries have

been designed in a narrow and circumscribed fashion that yields a low quality of working life for

the many as distinct from a high quality of life for the privileged few. These jobs are

monotonous and uninteresting for large numbers of white-collar as well as blue-collar workers.

They give little scope for personal fulfillment or accomplishment. They are associated with high

turnover and absenteeism; with grievances and labor disputes; with unnecessary downtime; with

bad work leading to costly rework; with increased alcoholism, drug abuse and psychological

stress. All these are symptoms of what is often referred to as *alienation.* Directly and indirectly,

they all tend to increase production costs.

Yet it is not necessary for most ordinary jobs to be designed in this way.

Experience is now available from projects undertaken in most Western countries to show that

many such jobs can be designed or redesigned so that they do give rise to interesting work; do

afford means over which people can exercise considerable control; do give people more of the

action and do enable them to recover a sense of human dignity. When work is restructured along

these lines, two results usually follow: higher job satisfaction is experienced and a higher level of

performance is achieved. Quality of working life and productivity are positively associated.

When this is not the case, enough experience is now on hand to enable us to point

to the reasons. Most commonly the dissociation arises because the deeper values and wider

organizational issues involved are not understood by those concerned. The restructuring of work

in what may be called the new design idiom cannot for long yield positive results if it is confined

merely to one or two small areas of an organization. Under these conditions, innovative projects

tend to fade out. Disappointment ensues; one is worse off than before. To obtain lasting

benefits, the new idiom has to be diffused through an entire work establishment, such as an

operating plant, and supported by management above this level in multi-plant concerns.

The Underlying Philosophy

The transformation involved requires a new philosophy that regards work as a

factor fundamental to human development rather than simply as a means of earning a living.

Such a philosophy entails designing work organizations to this end. The new design idiom

depends on the primacy of collaboration over competition inside the organization, so that it may

become more competitive outside in the marketplace and hence survive and hence increase job

security. This requires a participant management style, nonbureaucratic organizational forms and

new principles of work restructuring. Together these factors can create jobs worth doing for their

own sake for everyone in the organization. They permit a new work ethic to develop which

recognizes the importance of the quality of working life as a way to personal growth and as a

central part of the quality of life as a whole.

As much as goods and services, the product of work is people. There is growing

evidence that those with a higher QWL have more to offer at home and become more active in

the community. A society can be no better than the quality of its people. This depends to an

important extent on how far work experience over the years fosters or prevents personal

development.

Advanced industrial societies have reached a critical point regarding the choices

that must be made on this issue. Economic growth has slowed down. Inflation has become

persistent. The rising standard of living experienced since World War II has depended on the

continuance of high economic growth and the containment of inflation. With slower economic

growth and uncontained inflation, the prevention of income erosion, not to speak of the

achievement of income gain, depends more than ever on increasing productivity (Table 3). But

nowhere is productivity increasing sufficiently for this purpose. Too often it is stationary. and

there are many instances of decline.

Table 3

New Economic Situation

Slower growth

Inflation

Lower profit levels

Wage increases more difficult

 Needed: higher level of organization performance

 Depending on: higher job satisfaction

more collaboration

Doing more with less

With the passing of the age of scarcity (that is, the old scarcity) the carrot and

stick have lost their former powers of persuasion. Paradoxically, the maintenance of our material

well-being now depends on our making advances on the nonmaterial plane. Whether the level of

technology is high or low, simple or complex, actual, as compared with possible, performance is

a function of the involvement in, and commitment to, what workers are doing by those directly

concerned. Involvement and commitment cannot be imposed. They can only be given, and are

given only when they arise naturally from the intrinsic value of job experience. To improve the

quality of working life for its own sake has paradoxically become the main way now available to

get the best out of increasingly sophisticated technology and to improve the bottom line.

Industrial advance has produced a world in which the levels of interdependence

and complexity, and hence of uncertainty, have become higher than any *previously experienced.

The environment has become <u>turbulent</u>. Change has become continuous. We have "lost the

stable state." Under these conditions, conventional bureaucratic and technocratic organizations

are too inflexible and non-innovative to retain competitive advantage. Organizations moving

into the new idiom have the resourcefulness to develop in alternative directions. Their members,

at all levels, are more willing to take risks. They are future-oriented, a quality that has become

mandatory (for survival) in a rapidly changing environment in which competition is worldwide

(Table 4).

Industry in the advanced countries is becoming information-dependent. The

complex information handling, which characterizes the core jobs both in the office and on the

shop floor in such industries, requires the sophisticated interpretation of data and the anticipation

and prevention of error. Workers have become managers of job systems. To a large

Table 4

World   Environment

Change Rate

    Interdependence

    Complexity

    Uncertainty

Lost of stable state

Turbulence

    Conventional organizations not coping as well

    Innovative organizations doing better

_____

extent they supervise themselves. Correction that mainly depends on external supervision is too frequently too late. The science-based industries, particularly, cannot, without self-damage, produce jobs which are the extreme as regards narrowness and repetitiousness. But traditional approaches to job design are resulting in just such jobs at a time when the microelectronics revolution is getting underway. This has particularly serious implications for continuous process industries and those concerned with computer-aided assembly and fabrication.

All in all, concern with with QWL is to be seen as an emergent value arising in advanced industrial societies as they pass into the post-industrial era. With the old scarcity dynamic no longer operative, the attitudes, especially among younger (and more educated) workers, have changed. A job which allows personal fulfillment rather than one which simply enables a living to be earned is increasingly expected, except among those who seem irreversibly alienated and parasitical. The design of jobs in the new idiom has become the best way to secure

higher productivity, more than ever necessary in face of slower economic growth and persistent

inflation. Such job designs form the basis of a process of organizational transformation from

bureaucratic and technocratic forms which are rigid and non-innovative to more flexible,

innovative forms founded on participation rather than authoritarianism. These emerging forms

are more able to maintain competitive advantage in fast changing environments. They give scope

for a higher quality of working life for the many rather than for merely the privileged few. In so

doing, they contribute to human betterment and reduce the divisions and tensions in the wider

society.

Principles

We must now ask how the basic concept and underlying philosophy can be

translated into practice. For this purpose a set of principles and strategies has gradually evolved

from the experience of the large number of QWL projects which have now been undertaken.

They are, however, no more than guidelines. Every project must be custom-built by those

directly concerned who must themselves discover what is best for them through their own

learning. Each QWL project is a unique process. Nevertheless, it must embody certain

fundamentals, else it will no longer be QWL. These fundamentals are described in what follows.

The new idiom of job design entails abandoning what has become known as the

technological imperative (that the requirements of the technology must be met whatever the cost

to people). To be abandoned also is the notion that improving "human relations" will, by itself,

compensate for modes of job structuring that unduly limit the scope of the human individual

through the extreme application of the principles of a "scientific management." Machines and

people are different. Work systems need to be designed so that the best match is obtained

between the two, which are complementary. This principle has become known as the *joint*

optimization of the social and technical system. A work organization is a *socio-technical* system

(Table 5).

Table 5

Joint Optimization of Technical & Human Resources

Industrial engineering, operations research and

management science approaches

Human relations approaches

The systemic, socio-technical approach

_____

Jobs have two set of properties: extrinsic and intrinsic (Table 6). The extrinsic are

familiar: fair and adequate pay; job security; benefits such as vacations and pensions; safe and

healthy conditions in the work environment; due process regarding grievance, dismissal, etc. The

intrinsic properties constitute a newly recognized dimension: tasks which offer variety and

challenge (elbow room); opportunities to go on learning on the job; to make some decisions

oneself, to have some autonomy, some piece of the action which is one's own; to experience

group belongingness with recognition and support from superiors, colleagues and subordinates;

to feel that what one does is making an identifiable and meaningful contribution to the overall

outcome and gives one an acceptable occupational identity; to believe one's work life contains

Table 6

Properties of Jobs

Extrinsic	Intrinsic
Fair and adequate pay	Variety and challenge
Job security	Continuous learning
Benefits	Discretion, autonomy
Safety	Recognition and support
Health	Meaningful social conditions
Due process	Desirable future

Conditions of Employment	The job itself
Socio-economic	Psycho-social

some promise of a desirable future (not necessarily promotion but additional experience; for example, further training, redeployment, wider responsibility, etc.).

In the new design idiom, the preferred way to redesign jobs is to involve the people who actually do them, and who have the most intimate knowledge of them, in the redesign process. They can begin by rating their present jobs on the criteria given in Table 6. They then learn to analyze their work systematically and to identify what needs changing. Then one or two operators (office personnel if the unit is administrative or sales clerks if it is retail), along with a supervisor and staff specialist, can make change proposals and test out their acceptability to the work group and to management. This is known as *participant design* (Emery and Emery, Vol. II, "The Participative Design Workshop"). Beginning in limited areas with trial

projects, participant design gradually extends to the whole organization. Some of the best

successes have been obtained in designing new establishments in this way involving both current

employees with relevant experience and the first groups of employees who will actually work in

these establishments. A principle of *minimum critical specification* (Herbst, Vol. II, "Designing

With Minimal Critical Specifications") is followed, which means that much is left open to be

decided as operating experience is gained. Any unions concerned are involved from the

beginning. If the organization is nonunion, other ways have to be found through which

employees can express their views about what concerns them as a group.

Participation is the basis of the new idiom. One must distinguish, however,

between direct or work-linked participation in decision making at one's own level and represen-

tative participation through having workers on Boards or Works Councils. Only the former can

directly improve the quality of work experience. The latter is concerned with problems of

governance: who is to have a voice in deciding the nature of the businesses to be engaged in, the

broad strategies followed, the distribution of profits, etc. In some countries the two go together;

in others, one is preferred, the other avoided. Either or both may be deemed incompatible with

free collective bargaining as they may compromise union independence (Table 7). Some unions,

however, see advantages in participating in both, as in Scandinavia; or more particularly in the

representative form, as in West Germany. In North America, most unions have held themselves

aloof from participating in either, though one or two unions in the United States and Canada have

begun to engage in the work-linked form. In Table 8, the situation as regards the strength of

collective bargaining, representative and work-linked democracy is summarized using a five

point scale (0-4). In several countries the situation is in transition.

Table 7

Forms of Industrial Democracy

Representative	Workers on Boards, Works Councils
Work-linked	Participant design of the workplace
Interest group	Collective bargaining, binding contracts

Table 8

Levels of Industrial Democracy in Selected Western Countries

Country	Collective Bargaining	Representative Democracy	Worked-linked Democracy
Norway	4	3 – 4	2 – 3
Sweden	4	3 – 4	2 – 3
Holland	3	2	1 – 2
Germany	2	4	0 – 1
France	2	1	0 – 1
U.K.	4	0 – ?	0 – 1
U. S.	2 – 3	0	0 – 1
Canada	2 – 3	0	0 – 2
Australia	2 – 3	0 – 1	1 – 2
Yugoslavia	0	4	0 – ?

Table 9

QWL Activities

Redesign of Jobs	More work group autonomy
Layout redesign	Wider organizational changes
Product improvements	New roles for supervisors
Process improvements	Problem solving training
Changes in information flows	Interpersonal, group skills training
Changes in support services	Management development

The range of QWL activities is very broad. Joint labor-management steering committees may be formed to decide on and monitor acceptable projects and action groups to carry them out. The projects themselves may involve the introduction of flextime, gain sharing plans such as Scanlon or payment for what one knows rather than for what one does; work restructuring, involving workers in the process of product improvement or in redesigning layouts; evolving schemes of job progression so that skills are widened and taking more responsibility in self-managing semiautonomous work groups that absorb some maintenance, quality control and planning tasks (Table 9).

Quality of working life activities usually lead to a number of concrete results. The literature is agreed that an improvement in product quality is almost always achieved. Usually, there is a reduction in costs through such factors as less downtime. Often, too, the levels of labor turnover, absenteeism and sickness become markedly less. There are fewer grievances and labor disputes (Table 10). Attainment of these results, however, depends on QWL endeavors being

supported by all levels of management and, in unionized plants, on the cooperation of the

union(s) being secured.

Table 10

QWL Results

Improvement in Quality

Reduction in costs

Increase in output

Reduced turnover

Less absenteeism

Less sickness

Fewer grievances

Fewer strikes

_____

Activities of the above kind cannot be successfully undertaken unless the role of

the supervisor is changed from that of an old style boss to that of a facilitator. Such facilitators

will now need interpersonal and group skills, training ability, capacity for forward planning on a

longer time horizon and will need to negotiate priorities on behalf of their groups with other

departments. This requires a considerable training investment. The work force also requires

training in additional skills and wider responsibilities.

These activities will sooner or later entail a change in the character of the

organization. This transformation involves a shift from one basic pattern to another. A basic

pattern of this kind that contains many components all consistent with each other is often referred

to as a *paradigm*. The old organizational paradigm constitutes a rigid technocratic bureaucracy.

The new constitutes a much more flexible and adaptive modality based on participation and joint optimization (see Table 2, p. 582A).

The old paradigm is based on the technological imperative; people are viewed simply as extensions of the machine, as expendable spare parts; work is simplified on the one worker/one job principle; controls are externalized in supervision, functional staff and precise work rules and administrative procedures; management is authoritarian; the pyramid is tall; the climate is one of internal competition and gamesmanship; risks are avoided; innovation is low.

The new paradigm is based on joint optimization; people are viewed as complementary to the machine and are to be developed for their own sake and as key organizational assets; jobs are grouped into operational subsystems with skills being broadened and controls internalized as far as possible in the primary work group; management style is participative; the pyramid becomes flatter; the climate is one of openness and cooperation; risk-taking is encouraged and the level of innovation goes up.

In the old paradigm, the organization pursues only its own interests. In the new paradigm, externally, the organization recognizes its interdependence with the wider environment, both social and physical, so that some of the externalities begin to be internalized. Within itself, it recognizes the need continuously to improve the QWL of its members--to produce high quality people as well as goods or services of high quality. On both counts, the organization accepts *social responsibility* as a condition of continuing its market thrust.

Organizations belonging to the new paradigm are not "feather-bedded." They are much "leaner" than those belonging to the old. Manning levels in both the blue- and white-collar work force are lower, often a third lower. There are fewer supervisors and junior staffs. Not as

many specialist departments are required so that there are also fewer middle managers. There are

far fewer work interruptions. Absenteeism, turnover and grievances are lower. Any of the new

plants or administrative establishments designed on the new principles will demonstrate these

features. In established organizations, great consideration and care need to be given to all those,

at whatever level, who are likely, or believe they are likely, to be adversely affected by the very

substantial changes involved in making the transition. Particularly important is the involvement,

in the preparatory as well as the later stages, of middle management and supervision and the

hourly employees (the union[s], if there are any). Any attempts for the sake of short run

economic gains to make changes in ways which contravene the basic commitment to

participation and the determination to secure win/win outcomes for all (whatever compromises

have to be made) will create distrust and will discredit QWL as a philosophy of work.

Strategies

Four main options are available at the overall corporate level as regards QWL

change strategies (Table 11).

Table 11

Four Options

Rejection

Laissez-faire

Selective development

Corporate-wide commitment

The first is to reject QWL, at least for the foreseeable future; to wait until many more organizations have gone this route and to reconsider when the new paradigm has become a generally accepted mode and when the main "do's and don'ts" have become well established. The next is to adopt a laissez-faire posture. If one or two managers here and there want to try something, let them. If they fall on their face, too bad; if they succeed, the brownie points are theirs. But there is no support from the wider organizational system. Projects undertaken in these circumstances tend to fade out when the initiators are transferred, promoted or when they leave. The negative aftermath militates against further developments (Trist and Dwyer, Vol. II, "The Limits of Laissez-Faire as a Socio-Technical Change Strategy").

The third option may be called *selective development* (Table 12). Top management is not prepared to make an unqualified commitment to the new idiom and to make public a statement of management philosophy that fully embraces QWL in its widest implications. It is, however, willing to give corporate support to QWL projects in carefully selected establishments where local management and workers are interested, the local union is supportive and there is a reasonable chance not only of initial gains but of self-sustaining success.

Table 12

Selective Development

Benefits of selective development

Risks and costs of selective development

Risks and costs of NOT pursuing selective development

_____

Finally, in some corporations, or indeed public agencies, top management may judge that enough experience has been gained and benefits proven that an overall public commitment can be made and continuous efforts undertaken in all parts of the organization. A few organizations (in several countries) have made such commitments and are following them through in practice. Nothing, however, is more likely to turn the clock back than a declaration which turns out to be largely rhetorical. In any case, such a declaration would be premature with regard to the current beliefs and attitudes in most sections and levels of the organization, or unwise because it would conflict with immediate priorities so that the necessary attention could not be given.

Selective development seems to be the course increasingly favored by organizations embarking on long range QWL programs, especially when they are large and diversified. This entails being clear about the nature of the likely benefits and taking into account the interests of all parties involved, given the rapidly changing environment and the changing character of the work force. The risks and costs of *not* embarking on long-range QWL programs need to be weighed *no less* carefully than the risks and costs of going forward. In the longer term, the penalties of inaction can be very great, but too much in the way of immediate disturbance can be self-defeating.

In conclusion, QWL opens up a set of very basic issues. Deep questions of value are involved, of organizational purpose and of the type of society one regards as constituting a desirable future. If one wants a more human and a more democratic world, rather than a more inhuman and a more totalitarian world, one is likely to conclude that QWL will contribute to realizing it. One may, in addition, believe that advanced industrial societies cannot persist

unmodified too many decades longer in their prevailing mode without producing severe

dysfunction and unacceptable suffering, and that what the private sector chooses to do in

initiating change will be critical in avoiding negative outcomes. In this case, one is still more

likely to conclude that improving the quality of life in the workplace, as part of increasing the

quality of life as a whole, has become one of the central issues of our times. The scale of effort

required, the determination necessary to sustain programs in the face of resistance and setbacks

will then--but only then--seem worthwhile.

The benefits of QWL are essentially long term. They have implications for the

wider society and for the development of the individual as well as for the organization itself.

They provide one of the critical ways of reducing social conflict in the decades immediately

ahead.

In organizational life, we are entering an era in which QWL is to be regarded as a

main means of maintaining, and very often increasing, the level of performance in face of rapid

change and unforeseeable events.

References

Emery, F. and M. Emery. 1974. Participative Design: Work and Community Life.

   Canberra: Centre for Continuing Education, Australian National University. Revised version,

   Vol. 11, "The Participative Design Workshop," pp. 599-613.

Herbst, D. (P.G.). 1974. Socio-Technical Design: Strategies in Multi-Disciplinary

   Research. London: Tavistock Publications. Revised version of Chapter 2, Vol. 11,

   'Designing with Minimal Critical Specifications," pp. 294-302.

Trist, E. 1981. "QWL and the '80s." Closing address, International Conference on

QWL and the '80s, Toronto. Vol. Il, pp. 338-49.

Trist, E. and C. Dwyer.. 1982. "The Limits of Laissez-Faire as a Socio-Technical

Change Strategy." Chapter 8 in The Innovative organization: Productivity Programs in

Action, edited by R. Zager and M. Rosow. New York and Oxford:

Pergamon. Revised version, Vol. 11, pp. 451-73.