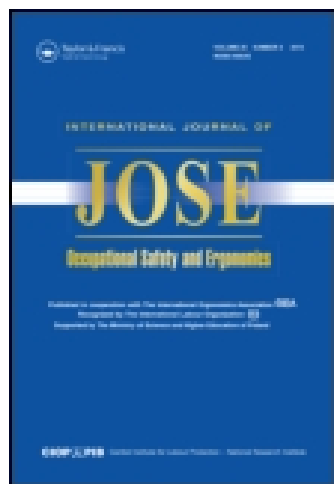


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Occupational Health and Social Resources

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1. THE NEW QUALITY OF SOCIAL RESOURCES

In the transformation processes the knowledge economy is currently undergoing, “soft factors” are increasingly gaining in significance for real net output (value added) in work processes. The term soft factors describes all dimensions and parameters affecting people and social systems in the work process. These therefore include dimensions such as the organization of work procedures, organizational development, processes of human and social development, and human work organization. Soft factors relate to the entire process that stabilizes, or destabilizes, an organization’s functioning and learning capacity. In contrast to the so-called hard factors such as technology, soft factors are becoming increasingly relevant in the knowledge economy.

The social context, the coupling of microprocesses and macroprocesses, is today more than ever permeating all work operations, functions, and structures to a wholly new degree, and thus increasingly also the aspect of work protection.

This fact was recognized at an early stage by work protection research itself carried out in Germany, as has been shown in a balance taken of work protection research carried out in Germany over the past 20 years (cf. Cernavin, Luczak, Scheuch, & Sonntag, 2001). It was, for instance, established in the 1980s that the effects of safety technology depend very much on how well the work organization can function—and thus on the interaction of social systems (functions, structures, communication, behavior; cf. Braczyk, 1984; Euler, 1987; Ifo-Institut, 1983). To the degree in which new forms of work and employment are emerging in the labor world, social sciences are growing in importance for work protection: Social relationships, corporate culture, social resources as an activation of skills and competence are becoming factors in the knowledge economy that determine not only productivity and value-added processes. These aspects also describe from the perspective of work protection an essential framework for new standards of work requirements and work load, for streamlined processes and for a work organization promoting creativity. Such aspects are therefore emerging as new subjects to be covered by work protection.

And finally, work protection research has also shown (see Cernavin & Wilken, 1998; Pröll, 1991), that work protection can only subject itself to the necessary process of modernization if it also reflects the social and functional context of its activities, as well as the social and economic conditions for development.

- Without a knowledge of the operational and organizational structures in businesses and in work itself, work protection will not be able to develop and renew itself, certainly not in the changing working world of today.
- No customer-oriented work protection can arise without familiarity with the conditions necessary for transferring knowledge of work protection.

In four major areas of both working life and work protection (cf. Figure 1), social processes are becoming increasingly important:

1. **Work as a social process.** Only the social resources of relationships in work teams and organizations are able to establish relationships between human resources, and bring these to life. These resources are an essential element of working conditions and work organization and influence standards of work requirements and work load.
2. **The “own life” of the organization independent of the individual.** The specific conditions and structures of action taken by an organization as a social system are becoming more important. Each company and each institution as a social system has its own life independent of the individuals making up the group. These conditions and structures of action, specific for each company or institution, describe the uniqueness of that organization, the features that distinguish it from its environment and which guarantee its existence. This includes all organizational features of work and work protection, organization knowledge, and the specific corporate and working culture, which jointly determine the standard of work protection.
3. **The relationship between the organization and its environment.** Successful relationships between organizations and their environment become more significant according to the extent to which policies of customer orientation have a decisive effect on the success of processes also within the organization itself. These external relationships of the organization contain its true potential for development. They decide what future, if any, the organization’s products and services, and the organization itself, will have.
4. **Effects of technological and economic processes.** More conscious reflection should be made regarding the effects of technological and economic developments on new forms of work and on social change. Without an understanding of the interaction and interdependence of structures, functions, and developments, certain central categories of the challenges facing organizations will remain hidden from view. This would lead at best to short-sighted decisions and initiatives, and perhaps even to false and thus counterproductive measures and solutions.

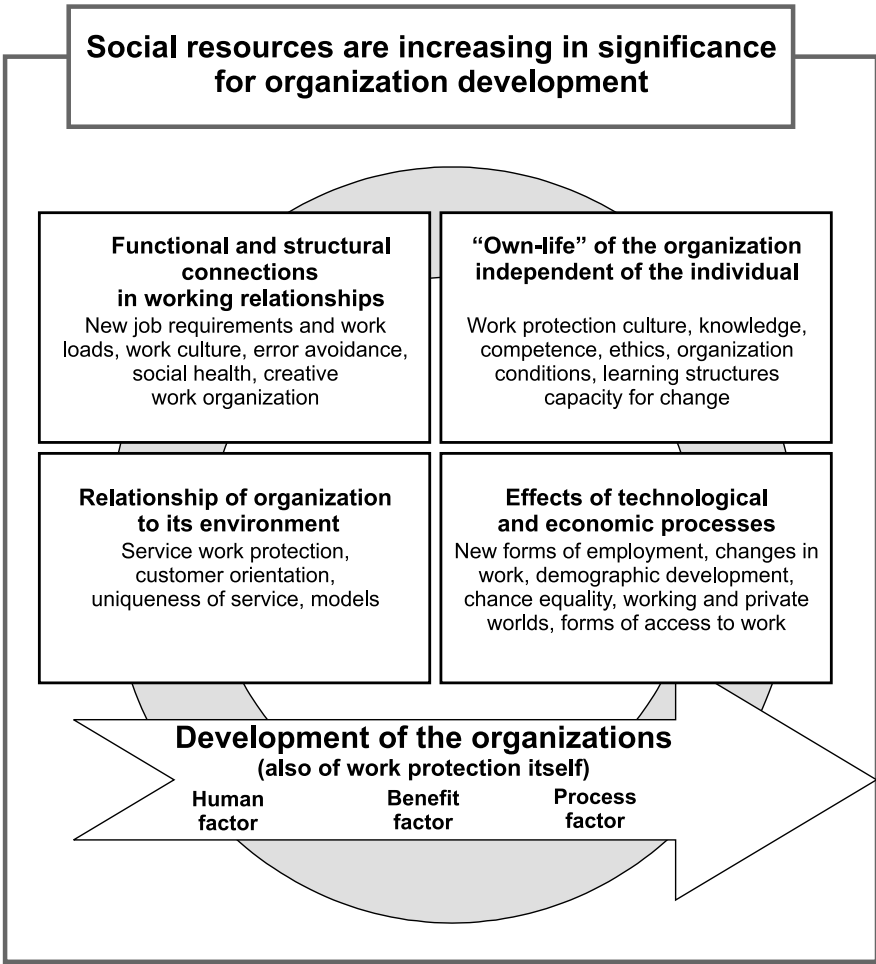


Figure 1. Social resources are increasing in significance for organization development.

The increasing significance of social resources also presents work protection with new assignments, and at the same time new opportunities. Work protection must free itself from the kind of technology-oriented perspective that is still dominant in Germany. The hard factors of safe technology will continue to be important, but will be reduced in significance compared to the soft factors in work protection.

The development of a knowledge economy demands constant education and continuous change, and will shift the human, and above all social resources more and more to the center of new value-added processes. The following soft factors, which are also aspects of work protection, are

becoming increasingly the focus of value-added processes: questions of a work organization that promotes creativity, prevention concepts relating to new standards of requirements and work load, the promotion of healthy work environments.

The social sciences will therefore be able to cover a significant area in the field of work protection research, as they already do, for instance, in management concepts in the field of business economy. They namely face the vital question—as do all other sciences engaged in work protection research—of how they can contribute their potential to the research process while at the same time guaranteeing an interdisciplinary approach in which—at the price of failure—no individual discipline may dominate or force its methods and approach on the others. It has still not been decided whether social sciences can fulfill this role, even in Germany.

2. WORK PROTECTION RESEARCH IN GERMANY CONFIRMS THE GROWING IMPORTANCE OF WORK PROTECTION FOR SOCIAL RESOURCES

The study carried out to summarize work protection research in Germany also examined work protection research carried out within the field of social science. A study of the contribution made by social science showed that work protection can release considerable potential for promoting social processes (cf. Lemke-Goliasch, Cernavin, Ebert, & Keller, 2001). As far back as the end of the 1970s, modern concepts were developed and tested in Germany in which the main focus was on social resources. These interesting projects were forerunners of subsequent approaches and prepared the ground for concepts of social resource development in the knowledge economy. The soft factors of work protection were always an important part of these projects, even if the projects' results in Germany were not in the early phase implemented in work protection practice. We would nevertheless like briefly to review these results in order to understand better the sources of the potentials within social resources and the increased role of work protection.

According to the internationally recognized definition of innovation, the work of social sciences has led to an increase in knowledge regarding work protection and organization structures from this research. This is true both in practice and in the development of theory. Above all, the innovation research promotion carried out in Germany as a split assignment within the

framework of the two programs “Humanization of Working Life” and “Work and Technology,” supported by the BMA (Federal Ministry of Labour and Social Affairs) and the implementation research carried out on the basis of these results by the German Federal Institute for Occupational Safety and Health (BAuA), led to the development of a new methodological perspective for work and health protection. Work and health protection are today seen as elements of an essential strategy to be used as part of the optimization of business organizational structures and processes.

The significant contribution made by social science in the field of work protection research was that it anchored prevention as a central concept in the debate on health politics, health science, and policy of the employers’ federations¹. According to von Ferber, participation of the social sciences in this research stimulated a shift in paradigms in work and health protection, which has had far reaching consequences, not least on the statutory-regulatory level: “The shift from research on work loads to health promotion represents a shift in paradigm from a concept of work load to a phenomenological labor sociology—and a step forward in our knowledge! It also represents a paradigm shift in work protection from a regulated system of protection dominated by experts to an employee-oriented approach” (my translation; von Ferber, 1994, p. 179).

The involvement of social sciences also produced advanced and practice-relevant findings back in the 1970s and early 1980s, the value of which is being recognized only today. Without the social-science projects, to give just one example, no independent contribution to concepts of business management, such as lean production, would have been possible. The scientific study of a series of subject areas, such as multiple work assignments, group work, participatory production management, ergonomics, work organization, stress was also possible due to the contribution made by social science to this research.

The results of social-science projects have had a central influence on company organization measures and thus also on the basic framework conditions of work protection. If the process of research carried out in the field of social science is reconstructed from this perspective, the principle work will be seen to relate to company and sector projects

¹ Other impulses came from the parallel BMFT Federal Ministry of Research and Technology (currently the Federal Ministry of Education and Research) research program “Research and Development in the Service of Health.”

- in which new forms of participation and training of employees and middle management were examined and tested,
- dealing with organization alternatives as part of shift work,
- dealing with work organization through group work or partly independent group work.

This led to a considerable expansion of the information available on the subject. This knowledge base was, however, implemented in company organizational measures only after a considerable delay, accompanied by changing economic and business management framework conditions in the knowledge economy.

It was therefore “quite unfairly almost fully ignored that many of the notions and concepts once linked to the projects of the program ‘Humanization of Working Life’ and which were in some cases bitterly fought against by employers, are now being praised in management literature on lean production and reengineering as new wisdom—such as uniform procedures, organization of processes and direct participation of the main parties, although representatives of the group interests and tariff politics are today generally excluded” (my translation; Leminsky, 1997, p. 65). And Volkholz concludes with the judgement: “Many results from work in the field of social science are now being annexed/incorporated by business economy and other disciplines, and there is now a natural and universal demand for solutions with integrated technical-organizational-training elements. Such principles were, however, developed by social sciences within the framework of the programs ‘Humanization of Working Life’ and ‘Work and Technology’ (my translation; Volkholz, 1993, p. 266)².

² Fricke, on the other hand, held the position from the perspective of action research that the discipline did not take sufficient account of the social and work-political possibilities offered by the research program. “Industrial sociology in the seventies was challenged to take active part in the democratisation of the economy. By its default at the time it missed the opportunity to consolidate and develop the tradition of worker participation in company management in Germany, e.g. by opening the constitution of enterprises towards a participation process by the introduction of part-autonomous group work, which was subject of much discussion at the time, by the development of learning and innovation processes open to staff participation in companies” (my translation; Fricke, 1998, p. 24 ff.). The decision of many social scientists at the time to keep away from industrial conflicts and to avoid exploring possibility analyses (Fricke) has consequences that have remained with us until today. The contribution of social sciences to the practical organization of social work is afforded scarcely any recognition at all.

The central areas of focus of research in social science in the initial phase of the program “Humanization of Working Life” related to work organization and testing of concepts of worker participation, with the objective of combining human work organization and productivity. Such studies centered in particular on the testing of group work models within the framework of company studies. Research was guided by the sociotechnical system approach and the implementation of participation strategies, linked to qualification measures for employees. These projects saw the first development of an approach with which a segmented perspective could be overcome, and the new focus of research was now on the complexity of the total system and the organization of processes with social, technical, and organizational components in mutual interaction.

These projects can be taken as models for a series of other projects, whose primary benefit, despite in part very positive research results, was quite limited as they were never adopted for practical use (Antoni & Cierjacks, 1994)³. Enterprises were simply not open to such approaches at the time and preferred more technology-oriented concepts for solving utilization problems. And this is still true for many companies even today.

One important reason for this is that the transfer to enterprises of research results obtained from the work of social sciences depends to a relatively minor extent on the control potential of the research; this process is rather controlled to a much greater extent by the principles of capital utilization in common use in economic systems organized on a private basis. Many research results provided by the social sciences were therefore often unable to find a direct way into work protection⁴, as too often no short-term direct benefits were apparent. It can be seen at second glance, however, that the contributions made by the social sciences are systematically underestimated in their range when only primary benefit is considered for the analysis.

Only with the transformation of the knowledge economy with the new forms of work and company organization in production and the service sector will the significance of human and social resources for productivity

³ One project considered exemplary in this regard is the project “Engine Assembly at VW Salzgitter,” where part-autonomous group work at Volkswagen was discontinued on completion of the project and VW has until today remained sceptical regarding group work.

⁴ The problems of the transfer of research results provided by social science are, in addition to the factors listed, related to the fact that the benefits of the results are often not directly applicable and apparent, and that researchers in social science continue to use a way of formulation that is extremely complex for outsiders.

and functional work organization be recognized. The approaches taken by social science advanced to become central instruments of value-added and work organization. Related to this, interest also grew regarding work organizational alternatives as part of the realization of new management concepts. The participation of employees as part of flat hierarchies, autonomous control within the framework of different group work concepts (Horndrasch, 1998), self-organization as part of the introduction of flexitime as a further demand on workers were promoted to a new status.⁵ As part of these reorganization and reengineering processes in enterprises, a belief then emerged that motivation, recognition of employees' work, a promotion of technical and social competence, support for a capacity for change, as well as physical well-being represent important dimensions for optimizing work processes.

The transformations to which the modern working world is subject must be reflected in the changes taking place in work protection. It was only against the background of these developments that the demonstrably high secondary benefits of the findings of social science became visible. However, this structural change clearly shows that soft factors are becoming increasingly relevant for work protection at all levels, and that work protection can in this regard provide new potential of increased significance for value added. In the following section, the new role of work protection will be sketched on the two tracks "Health as a Social Process" and "Human and Social Resource Development."

3. HEALTH AS A SOCIAL PROCESS

Health is a much-misused term. "What does health actually mean?," "How it is to be defined?," and, even more difficult, "How is it best measured?"—on these questions opinion is split, and not only in the scientific community. The familiar World Health Organization (WHO) definition is quite useful for defining the goal of social behavior and it demarcates a frame of

⁵ One aspect of the discussion on group work from an ethnographic perspective that has been given scarcely any notice so far was discussed by Wittel. On the basis of some—although somewhat restricted—empirical data (two mechanical engineering enterprises) he developed the thesis that group work is aimed not so much at work content, but much more at attitudes to work. The introduction of group work also serves to consolidate the middle-class work ethic, that is, an intrinsic and discursive work concept as a binding work attitude and behaviour (Wittel, 1998).

reference, but it is of much less help when it comes to the concrete formulation of health organization as a self-contradictory dimension. Health can therefore also not be translated into a separate and closed behavioral concept; one consequence of the findings is rather that health can be seen only as a social process within the framework of sociocultural and socioeconomic change.

It is, however, clear that health is becoming increasingly important as a value-added factor, as the traditional production factors (technology, capital) alone will not be able to guarantee competitiveness on the internationalized markets. "It is anticipated that health as a factor in production will become more important in future forms or work organization. Physical, psychological and social well-being will be considered indispensable conditions for promoting mental and physical capacity on the part of employees, without which the challenges of innovation in the world of work cannot be successfully managed. ... Health and human output can, however, develop into a bottleneck factor in flexible and independence-oriented forms of work. Taking account of demographic development and the anticipated spectrum of work-related health problems, considerable preventive measures are now required if the maxim 'healthy to retirement and beyond' is to be realized" (my translation; Bullinger, 1999, p. 32).

In the permanently changing value-added chains, however, clear, demonstrable cause-and-effect interrelations between standards of requirements and work load, such as were seen in classical industrial work, are now disappearing. The traditional areas of activity of technical and social work protection are accordingly also losing in significance (see Priester, 1997). What is required is a new orientation of the theoretical background of health.

Health and sickness are not static factors or a deterministic succession of different aggregate states in the subject. The transition from one to the other is much more gradual. Health is a social interactive process, formed from the interaction of the individual with his or her environment, from interrelating forces in work and private life and from the relationships between different social systems. In work systems, health is linked to individual, intraindividual, and organizational structures, and improvements to these in turn allow a strengthening of the individual's health potential.

The setting concept developed by the WHO (Baric, 1994), and the notion of the healthy organization derived from this, form a bridge to learning organizations and to health as a process amenable to formation. The notion of the healthy organization is based on the assumption that health is incorporated in all operating processes as continuous active

measures, which requires the active participation of all persons involved and which will also apply to the region beyond the scope of the company itself. (cf. Ennals & Gustavsen, 1999). Such a notion of health requires changes in the organizational culture, the structures, and the definitions of the roles of internal and external parties, for example, in the protection system.

The social sciences have methods that allow them select from the complexity of work systems and organizational structures the sociostructural problem areas standing in the way of a human and productive organization of the work. Just how health is to be organized as a social process will differ, for instance, between sectors with different risk structures, prospering areas of the economy, and areas undergoing crises, companies with different degrees of commercial autonomy and power of organization, employee and qualification groups within the staff. A philosophy of work protection oriented to such categories as humanity, economy, and capacity for change must always take account of these differences in order to control development processes in organizations under the double aspect of increasing profitability and improving the human quality of work.

Only when the focus is clearly on social processes and resources, the social and cultural milieu can be recognized and thus due account taken of development interrelations affecting the different operative levels. Only in this way can the diverging interests and power structures in work systems become transparent. The perception of these social processes and structures is a necessary condition for registering the different dimensions of health and for deriving from them alternative concepts of organization.

Health as a social process can only be comprehended adequately when not only structures within the company are considered, but also the framework conditions under which work is socially organized (dissolution of standard working relationships, increase in labor division between companies, increasing flexibility, etc.). Leisure time and the employee's private life must also be included as a central variable and examined in their mutual and reciprocal interaction. It has, for example, been demonstrated quite convincingly that both in working and private life there is a positive interrelation between social relationships, mutual help (social support), and health. This mutual interrelation will be all the more relevant, the more the working and private spheres intermingle in the knowledge economy, where it is often scarcely possible to distinguish them.

In this regard, corporate culture or corporate ethics will become increasingly significant for the organization of health (Empter & Kluge, 1995; Ulrich & Wieland, 1999). Health can ultimately be formulated as a social

process only on the basis of a clearly defined ethic management. The first moves in this direction in the USA (ethic audits), but also in Germany (ethic management systems in the building industry), indicate the close relationships existing between the ethic-cultural principles of a company and the organization of work processes with the social process of health and of work protection. In practice, however, work protection has so far not advanced beyond general references to its ethical basis. What is missing are concepts, broken down for working practice, for an integrated application of ethics and work protection management for the promotion of health as a social process.

The social sciences can employ research strategies that allow an assessment of the social interdependence of health as a complex system and process, as well as through a reduction in complexity. Against the background of the diversification of company and work structures, the tendentious dissolution of the demarcation between work and nonwork (cf. Voß, 1994), work protection research and work protection itself will increasingly require that competencies are able to promote the social and commercial resource of health as a social process.

4. WORK PROTECTION AND SOCIAL RESOURCES—SOCIAL RESOURCE DEVELOPMENT

Social faults and disturbances in the modern world increasingly influence value added in work processes. Human output and working performance in work processes, which are now increasingly managed with own organization and own responsibility, are becoming more and more dependent on the working conditions and climate, as well as on forms of work organization. The increased recognition of soft factors also means that what is referred to as a social resource will become an increasingly important element in work protection.

The term social resource is only slowly becoming accepted in Germany. Whereas the terms human capital and human resources have now become part of general parlance (although with pronounced and varied political overtones), the term social resources is still somewhat unusual. This term will, however, become increasingly important for value added and also for work protection in the knowledge economy. This relates not only to the conditions for action of the learning organization and learning work protection, but in particular also to the effects of social resources as

a value-added factor. This will be illustrated briefly in the following section, where will be shown the relevance this has for work protection and for innovative work protection research.

Social resources are an inherent part of all relational structures between two and more persons (cf. Coleman, 1995, p. 392 ff.). They relate neither to material production equipment nor individuals. Social resources are one aspect of a social structure, and they influence certain acts by individuals located within the structure. Social resources are productive, as they allow the realization of certain goals that would be impossible without them. Every enterprise, every working team, every work relationship is part of a social organization, or represents it and accordingly holds social resources that enable objectives to be achieved, which could otherwise either not be realized at all or only through major effort.

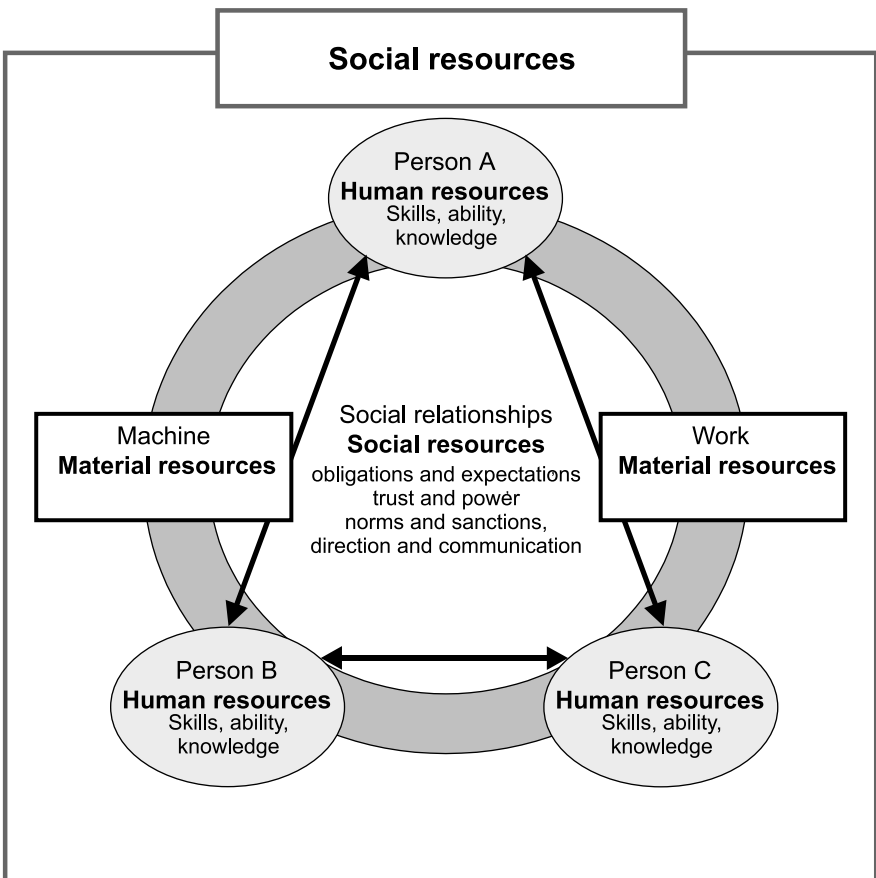


Figure 2. Social resources.

Every work procedure requires material resources (equipment, tools, machines, installations), human resources (the abilities, skills. and knowledge held by an individual) and social resources (relationships between persons and the social atmosphere in which technology is utilized; see Figure 2). Social resources are the “lubricant” of all processes in the enterprise or in work procedures. Social resources are at work in all work processes.

Social resources are a component of obligations and expectations, of trust and power, of norms and sanctions, of direction and communication in work processes.

Social resource development is therefore a focussed promotion of social resources, without which goals such as promotion of quality, working competence and performance output, accident-free and trouble-free operations cannot be achieved. These facts have not yet been broadly recognized in German work protection.

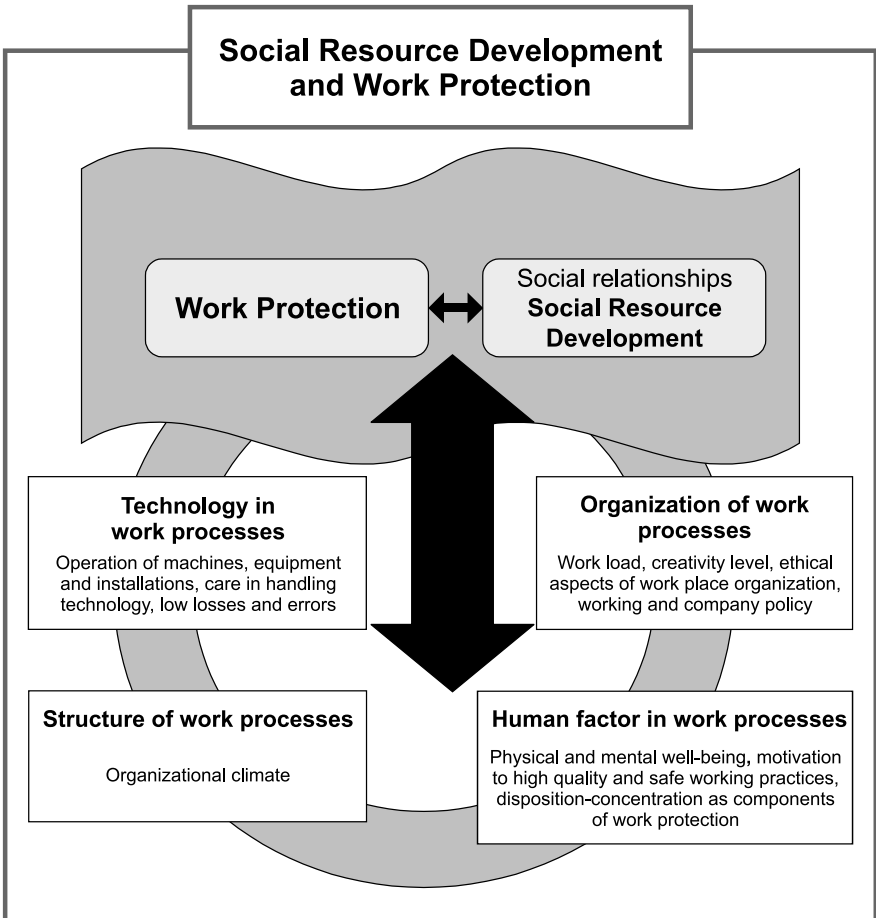


Figure 3. Social resource development and work protection.

Work protection promotes and influences social resource development in the following areas (cf. Figure 3).

1. The influence of social resources on technology in work processes. For example, operation of machines, equipment, and installations; care in handling technology; low losses and errors.
2. The influence of social resources on the organization of work processes. For example, level of requirements and work load, creativity level, ethical aspects of work organization, working and company policy.
3. The influence of social resources on the structure of work processes. For example, organization climate.
4. The influence of social resources on the people in the work processes. For example, physical and mental well-being, motivation to high quality and safe working practices, disposition-concentration as components of work protection.

The themes of social resource development listed here as examples indicate the close connection between social resources in work processes and work protection. Social resource development influences:

1. the quality of work performance and motivation,
2. the quality of work results and work protection,
3. the likelihood of accidents and breakdowns,
4. the level of own-control and capacity for change.

Only the integrative implementation of human and social resource development opens up perspectives for the potential offered by new value-added processes in the modern working world. The potentials of work protection will play an increasingly important role in these processes.

5. OUTLOOK

Against the background of developments in the knowledge economy, with the resulting system instabilities and the increasing significance of soft factors, work protection and work protection research is now facing challenges they have never encountered before. In Germany, it is currently not quite clear in which direction work protection will develop. Bieback and Oppholzer differentiate between three possible paths for the future:

- The optimistic variation (“best-case” scenario), which predicts that the philosophy of work protection oriented to prevention, modernization,

participation and processes will become a natural element for institutions and persons in work protection systems in Germany and be realized in the process of the knowledge economy.

- The skeptical variation, which predicts that the innovations in work protection triggered by scientific study and practice will in the end result in only sporadic changes being made, not least due to resistance to change among organizations and institutions and resistance to learning among the relevant individuals and experts. Other impediments are the natural conflict shyness in politics and administration and collisions with many points at the same time, which means ultimately everything will remain as it was.
- The pessimistic variation (“worst-case” scenario), which predicts that, under the pressure of global competition, work protection will be seen and judged purely as a cost factor, which has to be limited to the absolutely necessary minimum. This will be more probable if there is no assertive and capable counterpart active on behalf of employees and representing their interests. The consequences were the deregulation of regulations and laws and a further divergence of legal standards and legal reality (Bieback & Oppholzer, 1999, pp. 37–38).

Which variation, how and in which form, in which enterprises and sectors will finally emerge in front has not yet been decided. Work protection can be sure of a bright future in Germany if it manages in its everyday dealings to make quite clear the great potential it releases for the company’s value-added, human work organization, and the capacity for continuous change.

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