An Alternative Economic Vision for Healthy Work: Conducive Economy

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A model of production and exchange is proposed as an alternative to both market-oriented policy and social welfare policy. New patterns of social coordination at work form the basis for a new form of production output value: conducive value. This value is developed in both workers and consumers, activates skills and capabilities, and transforms customers from passive recipients to active users. It broadens the definition of economically valid social activity and it will help to resolve the unemployment dilemma arising with globalization. The article observes that the flexibility demanded by neoliberal, market-oriented policy is antithetical to the flexibility of creative production, which builds on horizontal interaction at work and in exchange, thereby facilitating the creation of social relationships and social capital. In that, it constructs bridges between the new policy and models of social policy which form its platform and enhances the chances for effective democracy in society.

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Social policy discussions today are too limited. In many countries, they hardly extend beyond the simplistic view that progress in social welfare ultimately depends on economic success in a global market economy (market-oriented policy, MOP). Many political parties of the left now self-limit the redistributive and democratic participation goals of their original vision (social welfare policy, SWP) and increasingly accept the logic that rapid, market-driven economic growth will most benefit all citizens. They may often adopt budget-balancing regimes to attain this goal, cutting public services and undermining low-status worker income security. This yields policies so similar to MOP that many current political observers denounce the lack of real political alternatives and voters retreat from the electoral process in apathy: There is a vacuum of ideas about social policy.

The narrowed discussion of social options poses dilemmas for policy makers seeking a broader range of solutions. The previous article, "A Vacuum in Political and Economic Labor Policy" (Karasek, 2004c), observed that major policy dilemmas arise because the existing policy models—MOP and SWP—do not take sufficient account of work organizations' social implications. These arise in the areas of (a) skill development, unemployment, and education, (b) overwork and disability, (c) services lacking humane effectiveness, and (d) the commodity economy's threats to democracy.

The hurdle to more insightful understanding of these problems is an obsolete model of production value. Although the nature of production and work activity has changed dramatically since the historic foundations of these two models emerged in the 19th century from the work of Adam Smith, David Ricardo (MOP), and Karl Marx (SWP), little political discussion transcends the boundaries of this traditional debate. Significantly, SWP has never questioned the production model of capitalism, the nature of the value it produces, or that the market initially distributes well-being. Furthermore, SWP defines well-being—mass-produced and mass-distributed material well-being—in the same way as MOP.

The limitation on alternative visions that arises from the similarity of calculus of well-being and productivity under both MOP and SWP is the point of

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departure of this article. The restricted definition of value in social production—overlooking labor quality and quality of life in many other respects—is hardly surprising because the very model of commodity value developed by the classical and neoclassical economists in originating MOP, was the same model appropriated by Marx in originating the foundations of SWP. Thus, at the center of the modern political-economic policy problem is a paralyzingly restricted theoretical construction of society's main purposeful actions. Although life has changed since these models were developed, the analytical theory of modern economics retains many of these presumptions. A second set of assumptions about the nature of labor quality and value could be the basis for developing a new economic model.

As a consequence of this similarity, this article claims that none of the four dilemmas noted at the beginning of the article (see Karaek, 2004c) can be resolved by either creating more commodity value (or income) or redistributing it. There are significant political implications involved. Income inequalities obviously threaten human well-being around the world—and they are growing—but we claim that solutions to this problem also fall outside the standard MOP and SWP policy prescriptions. Many political observers might disagree and claim, with validity, that the major social problem of the global economy is simply the maldistribution of income with a well-known SWP solution. Although one could certainly agree that the maldistribution problem seems as large as any of the dilemmas above, this article claims that the failure to address work quality issues has eroded the democratic strength of the social structure, which must be the basis for a democratic society's control of capitalism—and, in turn, any solution to that problem. Thus, few solutions to either the income-distribution problem—or the other dilemmas above—can ignore weaknesses in understanding work quality.

Work Quality as a Basis for Social Policy

A free-market orientation and social welfare form the usual bases for the development of social policy; work quality could form a third. Social policy based on work quality claims that many of the costs and benefits of work activity are transferred to people's lives as citizens and consumers through processes of social relation that are not included in the current market model. Work quality issues have major effects on

- the innovation capability of companies and workers;
- the stability of communities and families;
- many aspects of health and mental well-being; and
- the strength of democratic institutions.

Some similar social policy approaches, such as the prevention approach and the precautionary principle, focus on eliminating unintended costs of production overlooked by the marketplace. Social policy based on work quality, however, also focuses on generating new forms of benefit from the production system. Indeed, a new model of production, called conducive production, lies at the heart of this article and is proposed as the cornerstone of a new policy approach. This addresses the challenge of defining social policy as a productive factor, which arose in recent European policy discussions (Ministry of Social Affairs and Employment, 1997).

A simple example shows the contrast of the three types of logic mentioned above: MOP, SWP, and the new work quality policy. Perhaps the most often discussed policy challenge in many economies is that low-skilled workers will face continually increasing unemployment in high-technology workplaces. Here, MOP recommends the lowering of wages and social insurance contributions to improve social welfare. The logic is that lower wages will reduce production costs. This will increase market demand and lead, ultimately, to more jobs, cheaper goods, and higher overall social welfare. Reduced social insurance costs to employers are claimed to be socially beneficial for the same reason. Alternatively, an SWP approach would redistribute material well-being and provide subsistence support for low-status citizens out of general tax revenues. Advanced models of the welfare state have defined a job as a basic right; SWP thinking about job design, however, goes little further, with the Keynesian dynamics of job creation seemingly forgotten.

In contrast, the work-quality approach highlights the importance of work-related social activation in generating the effects of work and distributing them to members of society. In this perspective, jobs can be developed that increase the skills of workers: active jobs. When appropriately designed, such jobs can train workers for still better jobs in the future and build self-esteem and motivation to engage in societal institutions in workers at all levels of skill. Such policies increase social productivity. Furthermore, the social

structures in the workplace, broadly defined, can strengthen the platform for civil democracy through similar mechanisms of activation, engagement, and competence building. A second set of work-quality processes emphasizes social-cost mechanisms that operate for low-status workers. Social costs of the economic system include illness, disability, job insecurity, marginalization, inadequate skills, and poor opportunities for skill use. Social welfare could be increased if the quality of low-status jobs were improved; this would reduce, for example, job strain and stress-related disability and disruptions of family life, thus reducing social costs to the affected workers and to other members of society.

The rewards mentioned—activation, engagement, and competence building, along with social and mental well-being, work-related health, and family and community stability—are now at the core of current social debate. These are not the material goods that marketplaces directly deliver or the primary focus of the redistributive policies of the welfare state. Today, the work-quality perspective might provide a more direct pathway than either to the important results of social policy under discussion.

The focus of the work-quality perspective on new models of production and exchange distinguish it from both MOP and SWP, but its prioritization of democracy and equality create an important similarity to the latter. Work-quality policy focuses on the design of jobs as an integral part of economic policy; this opens new avenues for social policy discussion. This policy approach is also well positioned to take advantage of major transformations that are occurring in the world of work.

A Quality Revolution in Work Organization: A Skill-Based Economy

New Work Organization for Industry

Fundamental changes in the organization of work are occurring around the world. Workers have the potential to win their freedom from the rigid Taylorist principles of mass production (narrowly specialized and tightly supervised jobs). For organizational developers, researchers, and social policy experts involved in workplace issues, these shifts make up a revolution. Texts from well-known business textbooks have contributed to the perception of a paradigm shift (Piore & Sable, 1984; Porter, 1990): The end of hierarchy, worker participation in decision making, and intellectual capital as a major asset compose a new image of the future that is certainly partly rhetorical. It is supported by such powerful economic institutions, however, that it could hardly be considered a utopian dream. These messages have an internal consistency: they emphasize the liberation of workers' skills and intellectual resources in flexible new production processes, in which products are more adaptable than in mass production.

What has been rejected is no less than the basic paradigm of work organization resting on Adam Smith's founding vision of global capitalism in 1776 (Smith, 1976). This model for manufacturing productivity was to be based on the specialization of labor, which Smith claimed was far more effective than the labor of the farmer generalists of the age. An entrepreneur would coordinate the specialized labor and sell mass-produced commodities in a mass market: The larger the market, the more profitable specialization would be. A country's economic prosperity depended on an analogous specialization in industrial development and free trade with other countries—the foundation for today's global economy.

Two-hundred years later, Michael Porter's (1990) analysis of the conditions for current economic success rejected Smith's view of resource endowments as the basis of the wealth of nations, based on extensive empirical analyses of current national economic development. Porter's four categories of current economic development focus on human resources and institutional arrangements: human capital development in a skilled labor force; networks of suppliers; active, demanding customers; and motivational factors in economic institutions. But Porter offered no new model of human relations and no new concept of production value. Piore and Sable's (1984) vision of a second industrial paradigm goes further in providing a new social component for future economic development. They replace giant mass-production firms that used vertical integration and monopolistic markets with the innovative capabilities of networks of small firms to combine to dominate their economic terrain.

However, even in these newer narratives, an old concept of production value embodied in Adam's Smith expansive model and a Lockean validation of materialistic efficiency still determines the goals of production and through so-called efficiency criteria set the terms and criteria for the public debate as well.

Also, these transformations in microlevel work organization are occurring within the broader context of a rapidly expanding capitalism that is now undermining occupational stability, leading to another set of worrisome headlines: The end of the job, and the rewriting of the social contract. Many of the new directions for work organization have been the joint product of many politically progressive and humane aspirations for a creative and democratic future civil society, such as the Scandinavian industrial democracy movement. But the social welfare platforms on which these humane experiments were developed are now seriously challenged (van Eijnatten, 1991). Developments in industry around the world are moving much faster than political institutions. They pose a severe threat to the political structures of the past that moderated the effects of capitalism on workers and made possible industrial democracy. As old production structures give way to new ones, the worker-based institutional structures that protected lower status individuals in these production processes are undermined with replacements nowhere in sight. (The final section of this article returns to these challenges).

Thus, current discussions about a new era of production actually involve the following two major elements (even if one is largely undiscussed): (a) the typical patterns of social coordination at work (methods) and (b) a model of value that society places on the output of the production process (goals/values). Capitalism's combination of mass production and commodity output value, which seems so securely established, is actually beginning to confront major pressures arising from the productive social processes of the new forms of work organization. There is a growing mismatch between two themes—methods versus goals—with the consequence of disjunctive and inconsistent social dialogues. The new examples of work coordination in many industries have a potential for humane, skill-developing, quality-focused, horizontal social relationships, which contrast with a value model that focuses only on private profit and the possession of material objects. Ultimately, these irresistible pressures from innovative methods of production organization will require a transformation of the output value system of capitalism—optimistically, this could be toward a skill-based value, which facilitates humane social relationships in production, consumption, and the community. This article attempts to develop such a humane new definition of value—a definition that could potentially close the growing gap between the methods and goals of production.

Reintegrating Specialized Work Into Skill-Promoting, Horizontal Links to Users

For the new model to qualify as a humane economic alternative, the human being as a whole must stand at the center of the production process, as an active person with capabilities far broader than the specialized laborer of mass production. An important 20th-century realization, missed by Adam Smith's 1776 vision of mass production and its present-day adherents, is that workers' skills and capabilities are not limited to specialized, narrowly defined actions in productive work. Overspecialized job designs, such as those for an assembly-line bolt tightener or insurance-form data-entry specialist, seriously underestimate and then underutilize human capabilities. These job designs rigidly confine the possibilities for personal development of adults in the prime of their lives; this is inconsistent with emerging social values. The reexamination of some of the more dynamically creative and challenging forms of work organization consistently shows the following three themes:

- horizontal coordination in production, which involves combinations of capabilities;
- power equalization; and
- the dynamic linkage between customers and producers, which highlights the new dynamics of job creation and helps to identify the new form of value that is created.

Broad Recombinations of Skills

During the past 2 centuries, the modern world has created armies of specialized workers. Many jobs are far more specialized, for example, than those of the farmers common in earlier centuries, who had to cope with a broad range of problems to succeed. Specialized jobs in the current economy are the raw material for an alternative to specialized production: the recombination of skills in production. The challenge is to recombine the skills of workers into assemblages that can be useful to individual consumers—through more direct linkages to those who could directly appreciate these new forms of skill-intensive output—and indeed lead to the desire for more such products. New, integrative skills are needed to reassemble diverse specialized skills into new, useful combinations. Integrative skills are broadly available in the population, not just a small group of managers and entrepreneurs. Such numerous, locally developed skill combinations are

the core idea of the new economic alternative to Smith's vision of specialization.

Power Equalization

Job design from the perspective of combinatorial analysis, of course, would change the fundamental principles behind Smith's division of labor in production (Smith, 1976). The division of labor into specialized functions, which must then be recoordinated in hierarchies by managers, is the origin of vertical power relationships in the commodity production process. Thus, the goal of recombination has the potential to return to workers the power to coordinate their activities. The focus on new combinations by many individuals would generate a more horizontal set of power relationships inside the work process. This could be relevant at many levels of activity. For example, the combination of skills between two workers could assist a third, and departments of a company and companies themselves could combine into networks.

A New, Dynamic Linkage Between Skill Combinations and Customers

These skill combinations must, of course, be useful to customers. The possibility of many workers making new combinations, however, means satisfying the needs of many customers, not just a few, by employing diverse combinations in production. Such flexibility requires multifaceted communication and equal relations between customers and producers. Such relations provide the channels for feedback that allow workers to utilize their skills fully and then to increase them, by satisfying the dynamically developing needs of the customer. These feedback channels also give customers the chance to use these highly adaptive goods and services to develop their own capabilities.

Altogether, what could be called a conducive chain of association contributes to a new, horizontal economic dynamic of job creation and development. It could sustain employment in a new economic paradigm and form an alternative to economic growth based on low labor costs.

Defining Conducive Production: Linking Users and Producers Through Tool-Like, Skill-Based Output

These simple concepts can be expanded into a production process and social exchange model that can generate skills and capabilities while meeting the needs of consumers. The name for the process involving networks of consumers and producers in skill-based production is "conducive production" (Karasek, 1981, Karasek & Theorell, 1990). The model is called conducive because the output is based on skills, which customers and producers induce in each other as they engage in these new processes of production and market exchange. The primary mechanism is that the producer helps the consumer to develop his or her capabilities by delivering goods or a service that is conducive to the consumer's growth and development. Greater capabilities in the consumer will usually lead to a new set of needs (stimulation) to use even more sophisticated, tool-like (conducive) goods and services in the future.

In the conducivity model, products are valuable because they make possible the growth of the customer's own productive capabilities. The producer transfers a tool to the customer. This tool could be a new set of skills or ideas, new software or indeed a material good used as an input in a production process. The conducive economic process, as shown in Figure 1, addresses the potential for growth of human beings and their organizations, rather than providing the largest number of mass-produced objects, which is the goal of the conventional economic model. Securing the maximal development of skills in many individuals requires horizontal, self-managed forms of coordination.

The conducivity model is well suited to service production in health and education, for example, but also works for innovative manufacturing of products adaptable by consumers. A simple example of a conducive product is a word-processing program for a computer. Perhaps the customer first purchased the program with the goal of simply writing letters to his or her colleagues. If the producer company's software is conducive, however, it can enable a customer to produce other kinds of documents with relative ease. After some practice with the conducive program, the customer may find that he or she can use it to produce a company newsletter. This new production goal represents a growth of capabilities for the customer, and most likely results in a new set of needs. The customer will probably go back to the software supplier with a demand for a more sophisticated program that can publish the company newsletter with special layouts, inserted photographs, and so forth. This generates a demand for the next level of conducive product.

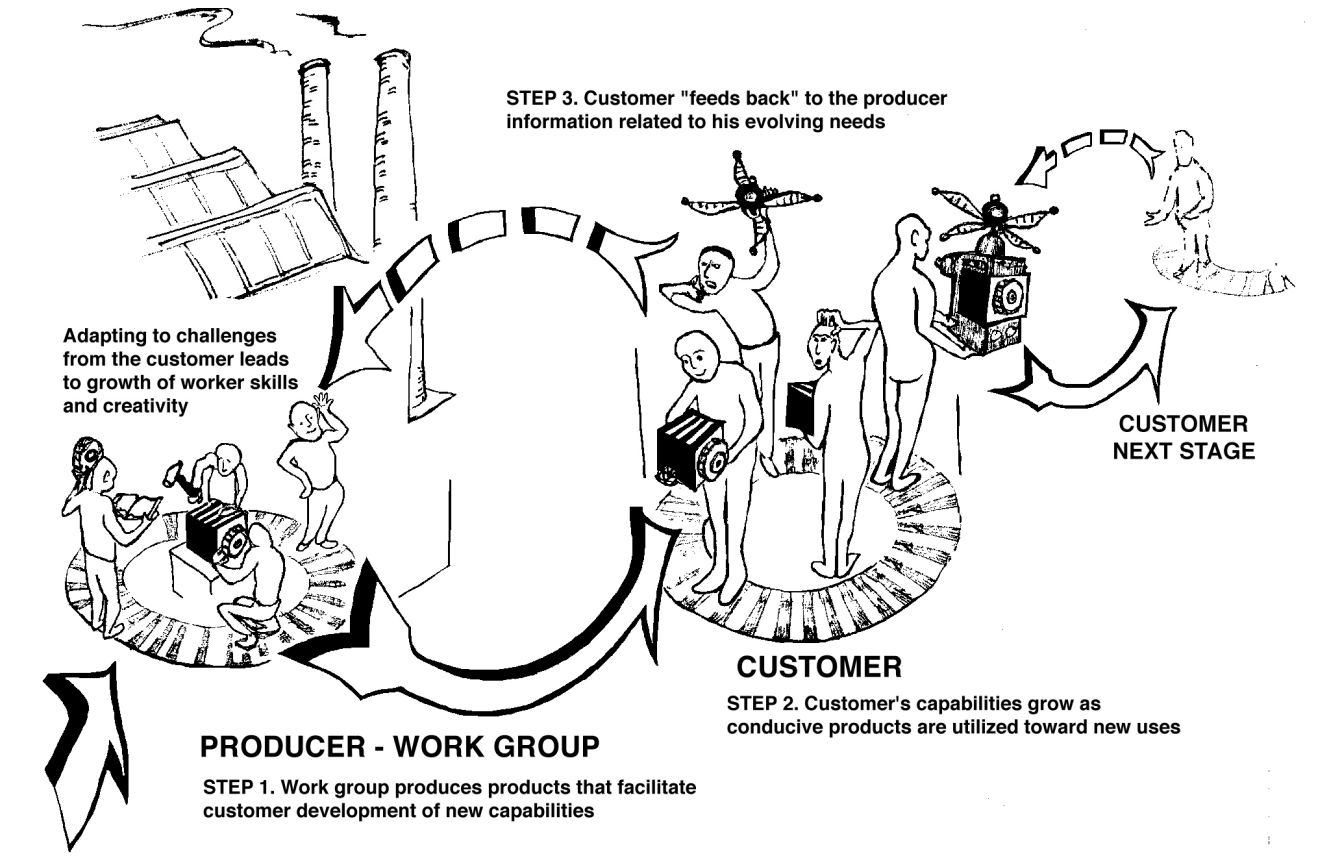

Figure 1. Conducive Production

Step-by-Step Process of Conducive Value Development

Figure 1 shows the step-by-step development of conducive value. In Step 1, the producer produces a special kind of output for the customer, which leads him or her to develop new capabilities. Such conducive production—developing user-friendly and adaptable software, for example—requires that the workers actively use and develop their skills, take part in decision-making processes, and develop an overview of customers' needs. The necessity of highly skilled production requires that workers horizontally integrate their own skills to ensure maximum effectiveness; thus, they are shown organized as a self-managed team. Their understanding of customers' needs must result from good communication with them.

In Step 2, the customer uses the new input (conducive value) to enhance his or her own capabilities, as if using a tool. For example, the customer uses a new program to write business correspondence. These capabilities appear in the ability to produce something for another customer in the next stage of production. During the process of using the new tool to assist expanded production, the customer, now a producer, must test and challenge his or her other production capabilities, becoming a smarter customer and expanding his or her skills. The customer has an idea for a new production capability: now, perhaps, he or she can produce a company newsletter with the software.

In Step 3, as the new output takes shape, the customer forms a new understanding of what is really needed for the next stage in this new production process; he or she needs a better word processor to do this new job. The customer must express these needs in a form that a producer can easily understand and rapidly act on. Significant communication must occur between the customer and his or her suppliers.

This process generates a demand for a new product, a demand that has evolved from and been stimulated by the creation and use of the previous product. This demand drives a new form of economic development. It calls for a product that encourages the use and devel-

opment of workers' creative capacities, leading to skills mutually induced in both consumer and producer. (In contrast, the demand for more products in Smith's commodity model leads to a larger scale of production and more specialized, stupider jobs.) The duality of these productivity-related benefits underscores the importance of symmetrical analysis of the actions of both the producer and the customer; consumption and production are inseparably linked (see, also, Toffler, 1990).

In addition, conducive production forms the basis of a new type of nonhierarchical social communication in production. It thus stimulates demand for skill-developing production and builds constructive social integration.

Evaluations of computer software—often a conducive product—illustrate the utility of this value framework to address the reality of modern production. A piece of software is judged good, of course, if it increases the user's capabilities to do the originally specified job. As the user masters the program, this may suggest new applications and thus stimulate the need for both new products and a more sophisticated program. Bad software—low in conducive value—is just the opposite. Poor instructions or faulty operation may make learning a frustrating experience, and the skills learned may be impossible to apply elsewhere. This dampens motivation for related activity, and users will order no updated versions.

Examples of Conducive Production

Example 1. Combining new production organization and a new market: Sisu truck factory. The Sisu AB truck factory in Finland is a successful producer of heavy-duty trucks for the local market, in stiff competition with international truck producers such as Saab, Volvo, and Mercedes. Sisu totally reorganized its truck assembly facility in the early 1980s to accommodate production of a new truck design (Karasek & Theorell, 1990) based on modular components to increase the adaptability of its product. The reorganization process—moving from line production to decentralized, group-based assembly—represented a well-organized, participatory project for change involving all 250 assembly employees, as well as the engineering staff, management, and organizational development consultants. It gave workers a vividly clear overview of the whole truck production process, and led to autonomous production based on work groups. This eventually allowed almost all of the workers to participate in the construction of prototype trucks for local trade fairs, which were crucial to Sisu's home-market success. This represented a significant increase in capabilities and responsibility for most workers.

Both the customer-adaptable product and the skill-enhancing work organization design have made possible new links with customers that increase sales. For example, workers affix the customer's company name to each truck body as it passes through assembly; this gives workers motivating feelings of accomplishment because they may personally know the customers in south-central Finland. In addition, Sisu invites customers to watch the assembly of trucks when they pick up their own vehicles. This stimulates their understanding of how they might be able to use new modules or components to expand the usefulness of their own trucks in the future. The Sisu truck becomes an adaptable product, which can not only grow with customer capabilities but also enhance them. In short, this flexible, decentralized production lays the foundation for future additional sales, an important ingredient for Sisu's success in the face of international competition. The Sisu process shows the self-sustaining aspect of conducive production.

Example 2. Assessing conducive value productivity in the service industries: Enskededalen Elderly Home. The second case study comes from the Swedish service sector. Medical researchers Arnetz et al. (1982) redesigned jobs and activities to reduce mortality in a nursing home for elderly people in Stockholm. This work had broad implications. Many aspects of conventional medicine—in many of its specialties and elderly care—can treat patients as objects passively undergoing a process. In contrast, Arnetz et al. wanted to improve the health of nursing home residents by increasing their social competence and active coping ability. For the experimental group, the researchers hypothesized that care workers could stimulate increased activity levels and engagement in residents by learning about their previous life experience and building a support platform of personally tailored activity, which would contribute to an improvement in health. The new work routines, involving more direct social contact between residents and health care workers, increased both worker participation in the scheduling of health care activities and the activities based on residents' interests. The outcome of the experiment

would test changes in the residents' activities and physical health.

The experiment, as discussed by Karasek and Theorell (1990), can also be interpreted as measuring productivity—the effectiveness of health service delivery—by assessing the impact on clients' capabilities to live active lives. The important innovation in this case study is to measure, as an output, the increases in clients' capabilities—their health, as reflected in their capabilities for activity—a measure of conducive value for the client. Here is a true measure of output value applicable to the service industries. This forms a strong contrast to the many conventional proxy measures, such as revenue per patient or patient visits per week; these are styled after the conventional MOP criteria that work for mass production and are increasingly used in the health services. Although such measures are easy to quantify and may reflect production costs (labor input), they may have very little relation to the true output: client health. Indeed, sometimes they have an inverse relation to health (von Otter, 1985)! The person who receives a service cannot be priced in the marketplace to determine the value added to him or her in the health care production process. Service clients often view the application of such models as indicators of a disturbing decline in the humanity and quality of care (Koep, 1987). The experiment at Enskededalen Elderly Home dramatically shows the difference between conducive and conventional commodity-based perspectives on the nature of productivity.

What were the productivity results in this new format? The intervention group showed a significant increase in social activities in comparison to the control group (Karasek & Theorell, 1990). In addition, clients often took over the organization of the activities, not just participated in them: a major increase in demand. Significantly, physiological measures confirmed an improvement in health status.

In addition, the health care workers involved experienced significant increases in job satisfaction. Indeed, absenteeism showed a clear decline in the job redesign groups after the first 3 months, to nearly half of the previous rate (Karasek & Theorell, 1990). Health care workers experienced a dramatic and positive change in their image of themselves as professionals; rather than just dispensing medicines prescribed by others, the health care workers were now performing a true service for clients: interacting with them and stimulating their development of capabilities. For the first time, many of the health care workers felt that their skills were being fully utilized.

Conducive Value, Needs, and Properties

Reharmonization of Work Coordination and Work Value

A new social dialogue must address the value that is obtained from production. The new models of work coordination described above set the stage for new concepts of output value for society. They bring new patterns of social relations—characterized by skills, groups, participation, and so-called *co-* words: cooperation, communication, coordination, collaboration, and so forth—and they come at a time when social aspirations are advancing.

New Definitions of Value From Production

The physical or material output of the mass-production economy, globally traded as commodities such as wheat, oil, steel, and even computer chips, are at the core of the traditional capitalist model of economics and production. The new directions in coordinating work organization, however, are consistent only with a different model of economic value: conducive value (value from production). Conducive production adds value to growth-capable entities, not inanimate, object-like entities. Current mass-production processes, often in what are now called smokestack industries to highlight their obsolescence, add value to an object by having laborers machine a piece of cast iron, for example; this object then becomes more valuable in the marketplace. This product is dead: an inanimate commodity with no capability for development on its own.

This is fundamentally different from the process that adds value to human beings and other growing entities by teaching them new skills. For example, when a teacher helps a pupil to read or a doctor teaches an elderly person how to care for his or her diabetes, a human being gains the value. This is thus a new form of economic production, in which living, growing, and developing entities—such as people, organizations and communities—occupy the central logical position.

Conducive production value is created within growing entities, as they expand their capabilities. This model might be said to be a skill-based model of eco-

nomic value production, in which human capabilities are the components. This alternative economic concept precisely fits many major sectors of the modern economy, particularly the service sector, which adds value to people through health care and education. Indeed, conventional economics cannot measure the value of service output because it cannot evaluate the developing attributes of living entities. This is a major problem when one lives in a service economy.

The skills of both the producer and the consumer determine the nature of the output value. In addition, growing entities can add value to others, or to physical objects, when they take action in their own environment. The conducive value model places the active human being in the center, both as the creator of value and as the target of value creation processes.

Skills are not bounded and limited like material objects but inevitably expand and link to other skills. Skill combinations are discussed below; conducive value lies in the association of skills, not the things themselves (Stewart, 1997). Value can lie in the association of potentially integrable capabilities when they are brought into a new configuration: a team of workers, a well-integrated set of computer programs, or the elements composing a good real estate investment package. A variant on the idea that the whole is greater than the sum of the parts, this new type of value arises from the special attributes of the combination, not the utility of the original inputs or separate capabilities. The association of capabilities has value because of its future, as well as its present utility: this value model is well suited to growth processes and long-term development.

Thus, part of the value of a conducive product lies in its ability to support association. Computer software demonstrates the aspects of conducive production that facilitate the development of both skills and constructive association. A good operating system increases the associativeness of computer software because many more computers can run the same program with it than without it. Operating systems can promote the integration of separate programs, serving as integrative facilitators, hooking together capabilities in larger numbers than would otherwise be feasible. Of course, an operating system that is difficult to communicate with provides no such advantages.

Conducive value, although unfortunately invisible to the current discourse of political economy, is important in the current economy. Defending the importance of a concept closely related to conducive value—intellectual capital—Stewart, an editor of *Fortune*, one of the largest U.S. business magazines, claimed that knowledge has become the most important factor in economic life (Stewart, 1994, 1997). It is the chief ingredient of what people buy and sell, and outweighs physical or financial assets in importance to success.

Historical Basis of and Limitations of Commodity Value

The concept of physical objects as the basis of commodity value derives from an earlier era, when society's most valued outputs were indeed physical objects, often created by adding one's labor to natural resources: for example, farming a field to produce crops. In 1690, John Locke (1988) defined private property as the output of an individual's activity that society should be most concerned about developing, distributing, and protecting. The concrete, clearly observable and measurable object, separable from interaction with its surroundings, is the basis of materialism and the modern economic theory that soon arose. Locke designed his intellectual construction to attack a 17th-century monarch's claim to control the wealth of his subjects. Locke's more democratic social construction was based on the right of each individual to enjoy the fruits of his or her labor. This was a value concept for society that would stimulate the productive use of countries' resources by encouraging many individuals to develop the physical resources around them. It was a theory of value based on labor and physical products, primarily agricultural output. Today's challenge, however, is to develop human resources.

The properties of conducive products are the logical opposite of the typical properties of the material objects of commodity capitalism. Packaged value is often limited in time and usually consumed in a short-term process. Commodities are bounded so that they can be evaluated in the marketplace and controlled. Using old forms of commodity value, however, can inhibit productivity in many current applications, including not only health care but also computer products. In the case of computer products, the rigid boundary that must be drawn around commodities inhibits the dynamic connectiveness that is the most productive new feature of such intensely conducive products as the Internet, operating systems, and the Java computer language. Institutions and governments basing policy only on an older form of value could soon find themselves at a significant disadvantage.

In such a new value system, commodities need to be evaluated by a new standard: their ability to facilitate the development of capabilities (skills) in living entities, human beings. Tool-like objects can be conducive when they facilitate such development. A developmental approach to production is, of course, known as innovation; the value of innovation (or research and development) has been especially hard to define in conventional economics.

New Definition of Needs: Capability-Created Needs

Motivation and the Evolution of Needs

The ability to generate socially meaningful roles—jobs—for its members is the *sine qua non* for the existence of a modern society. People's work in meeting others' needs, validated by society as jobs, ensures the validity of the social roles of production and exchange that give meaning to modern social life: the job, social participation, and citizenship. In earlier societies, the most important challenges related to production efficiency because nature already clearly defined the needs for food, shelter, and so forth, but that is slowly changing. Developing need-creating social mechanisms has become a central requirement for a society to ensure its jobs, or for a company to ensure its customer base, when it has moved beyond biological needs. In advertisement-stimulated, mass-consumption society, Pavlovian conditioning is used to whet appetites for additional goods (Bernays, 1928). The conducive process is very different from such conditioning, however, and involves the innate desire to increase the competence of all living organisms (White, 1959).

Conducive production creates needs through the development of skills (see below) as a result of a social interaction between actors of relatively equal status, in which needs and capabilities are assessed and capability growth is a goal and motivation of both producer and consumer. In the conducive economy, needs are endogenous to the model: they are created inside the processes of production and consumption. In the traditional economic model, needs are exogenous, outside the production and exchange process, and the result of preexisting tastes.

A typical conducive product—education—illustrates other major distinctions between conducive and conventional economic value. A little education, rather than sating the desire to learn about a topic, may whet the appetite to learn more and lead to further growth of capabilities. Economists have noted this with concern because this violates the fundamental neoclassical economic law of diminishing returns. In addition, this example undermines the value of scarcity, the most fundamental postulate in commodity economics: that scarce goods have zero-sum value. What one person takes from the budget, another cannot have. The zero-sum concept is certainly appropriate for allocating the most basic necessities, such as food and shelter, and mass-produced objects of all kinds. The value of education, however, cannot be dealt with in this way. Lessons may be taught again and again to many individuals, never losing utility for anyone just because they have already been taught to someone else. It is interesting to contrast the value of the skill of baking a cake to the value in the cake itself. The cake itself has conventional zero-sum economic value; one literally cannot have one's cake and eat it, too. One can, however, teach baking to many people and not lose one's own skill in the process; indeed, one's skill might increase. In economic terms, the value of the skill is not alienated from its producer during exchange.

The Dual Process of Motivation and Conducive Need Creation in the Creative Extension of Skills

Most fundamentally, needs in the conducivity model come from human capabilities that people want to use in a socially constructive manner. Carpenters want to build houses; musicians want to play music. The desire to use one's skills is the natural motivation of any living and growing organism, arising from the anticipation of how these capabilities could improve one's life and the lives of others. As skills thus create the needs for their own use, they generate the demand for the potential employment of other individuals in society. Skills beget skills in a sophisticated, well-organized society in several ways. Although conducive needs do not supplant more basic biological needs, they provide one answer to the question as to where truly socially constructive new needs (as opposed to induced appetites) are to come from in the future. In a conducive economy, people are paid by their opportunity to be active participants in a socially creative activity. Of course, users, facilitative settings, and conventional economic resources may be needed to allow such situations to occur, but the net conventional costs may be zero because the activities are productive.

The example of jazz indicates how needs become socially endogenous. The production process of creating jazz creates not only the output for consumption by the audience but also the demand for more jazz. The producer reaps immediate advantages. The positive responses of the audience build the producer's feelings of self-esteem: he or she can do something for others, and this makes him or her feel good, and further motivated to create more jazz. The spontaneous process in which production capabilities and users' response stimulate each other synergistically is central to the musical form of jazz, an art form characterized by its participants as collective improvisation or a dialogue among equals. Jazz musician Curtis Fuller uses his skills, stimulates the audience, and develops further motivation to do even better in the process (Berliner, 1994):

> If I play [a jazz passage], and I see someone sway or someone says, "Yeah!" I'll stay right on this because they understand where I'm coming from, and I've got this going for me. Then he'll say, "Yeah, baby!" When I get that message, the guy in the audience is saying, "I'm still there. Come on, run it by me again" (Fuller laughs), you know? Sometimes, I'll keep the thing going there. I'll deal with that phrase and expand on that, develop that. Then you'll hear him say, "Yeeeeaaaah!" or "Heeeeyyyy!" And when I see those little interests tapering off, I'll say, "All right now, come on. Let's try something else and take it another way." I'll put something else out there in my solo, and I flirt with it to feel them out to see, what the response would be. It could be something melodic or rhythmic, something like a quotation, but not a gimmick.
>
> Just something that would stir up their interest. When I get that audience around that, they won't let me off the stage. (p. 468)

Skills do not exist in isolation; they need to be socially combined as well. Whenever individuals gather, there naturally arises a question about what they could do together. Three individuals might be an architect, a bricklayer, and a carpenter. Using their particular skills, together they can create a beautiful house, a valuable product ensuring not only their own well-being but also their sense of worth and social esteem. None could create it alone. Thus emerges a social need for creative production. The chance for the complementary combination of skills by two individuals can provide much more motivation to act than the practice of a skill by a single user alone. Motivation need no longer be understood solely as the monetary gain from individual subcontracts: part of people's motivation is their desire to use their skills productively, to be creative and dynamic together. A grouping of capabilities is thus defined, and in a social manner: this group wants to complete itself. Each member feels the value of the potential that would result from completing the production combination.

Prerequisites for a Conducive Economy: Basic Material Well-Being and Social Trust

The postulate that conducive production is relevant in situations going beyond biological needs sets the fundamental prerequisite for a conducive economy. Basic needs must continue to be satisfied, otherwise more primitive motivations will return to dominance. Basic human needs must be satisfied if the individuals in collaborative work roles are to develop trusting relationships. Social relationships must be of the type described as weak ties (Granovettor, 1973), as opposed to strong vertical relationships or family relationships. Thus, the conducive society must diminish the responses of survival insecurity by making material necessities broadly available, diminishing biological needs in so doing, and by strengthening appropriate platforms for family and community security. Insecure situations—in which food, shelter, health care, and social respect are threatened—should be minimized. These induce primitive defensive behavior and emotions, inhibit trust, and thus preclude the sophisticated social activity of networking (Goleman, 1995).

This means that a conducive economy requires a social welfare platform. Situations of insecurity may have been the norm for our ancestors, and were, of course, the norm for humankind's animal ancestors, from whom we have inherited our survival-based neural circuitry. Thus, insecurity shaped the central value model of early eras and limited the possibilities for progress toward sophisticated production. Value systems stressing the survival of the fittest imprison the societies that hold them.

A second basic requirement operates at the social level: trust. The economic importance of trust (Fukiyama, 1995) is shown in Robert Putnam's contrast between the economically prosperous northern Italy with the autocratic and economically less dynamic southern Italy, both in the 1300s and today

(1993). This illustrates the reciprocal causal relationship between trusting associations, strong patterns of community association and economic success, and their long-term heritage. Putnam called this the civic platform (Putnam, 1993):

> The growing prosperity of the northern Italian city in the 1300s depended on credit, and credit, if it were to be provided efficiently, required mutual trust and confidence that contracts and the laws governing them would be impartially enforced (etymologically, "credit" derives from *credere*, "to believe").

Decentralized Production via Creative Coordination

Consumers can begin to use specialized production capabilities only when these are integrated to fulfill larger functions in the lives of common people. Although such integration can result in products sold in the marketplace with conventional financial rewards to the producers, this kind of reinforcement can also happen without the exchange of commodity-like products, through skill-related communication that creates and exchanges conducive value. The known or even the expected expression of awakening interest from an emerging user is a powerful motivation for individuals to integrate their skills. The motivational energy to organize the production process—conventionally the entrepreneur's job—can easily come from the user's direction; providing a product for a clear and important use could motivate two skilled people to combine their capabilities.

Conducive production uses creative coordination mechanisms, which do not need the hierarchical control of an entrepreneur to link customers to producers and to organize workers according to production tasks. Instead, workers and customers create these links in a decentralized manner and with much greater opportunity for communication. Creative coordination does not need a single, central genius doing all the organizational thinking to ensure that producer capabilities and consumer demands meet. Decentralized production in networks of relatively small-scale producers—each with freedom of operation, equality in power status, and links to customers—accomplishes the coordination goal. Creative organization occurs at many points in the system, not just a few.

Although demands in conducive production have the self-sustaining quality that is good for economic development, they also have natural limitations, which prevent overheated economic activity. Demands are kept in a middle range, which is healthy for human activity because of the requirements of direct human contact: norms of fairness and the limitation of conducive needs by the limits on one's own energy. Increased demands in commodity production come from managerial control and the drive for increased profit; these are limited by the relative equality of roles in the conducive production process (Homans, 1950; Milgram, 1974). A fair contribution by each party becomes a dominant norm. Second, self-limitation of demands in the conducivity model comes from the fact that consumers must make their own contribution—as coproducers—to develop demands in a conducive manner. Thus, one's own consumption of education or even theater visits is limited; although enjoyable, these activities can also be said to be demanding (Ingelstam, 1980).

In contrast, levels of demand in the commodity economy have no such intrinsic limitations, owing to Locke's definition of value from production as the accumulation of property. One demands as much as one can pay for, and a thriving economy places no limits on greedy impulses as long as the accompanying production can be said to be efficient.

Elements of Conducive Work Redesign Processes

For the new model to qualify as a humane economic alternative, the production process must center on the human being as a whole. The skill breadth of shop-floor workers shows in photographs taken for job redesign activities in small manufacturing firms in Sweden. These pictures, surrounded by the multiple skill areas needed in the production unit, are used for discussion in the work group (Karasek, 2004b [this issue]). In these meetings, workers inevitably show that they have many skills beyond the one skill sector in which they are actually employed. These skills are often not being utilized; still, workers would like to learn many new ones. In today's specialized workplace, the whole human being, with the full breadth of human capabilities, struggles to break out of the narrow confines of a title on a conventional organizational chart. Such charts depict the chain of command and the tightly defined, specialized roles of the individual (Weber, 1947). They use a linear descriptive form, but miss the multidimensional breadth of real people in

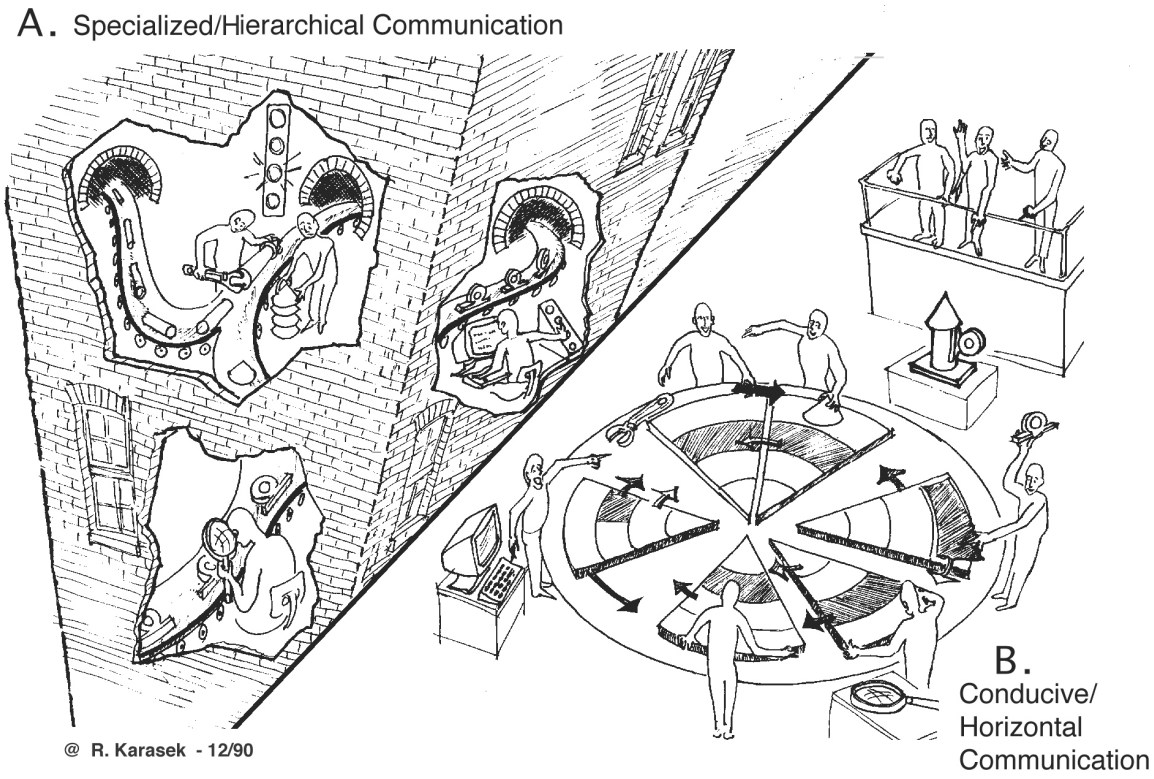

Figure 2. Communication for Work Coordination

modern society. These skill images show the social resource as a very new form of production.

The current situation in the workplace discourages workers from forming their own overview or personally engaging in creative integration with other workers. The left side of Figure 2 shows the encapsulated understanding of workers in specialized situations, who are encouraged to concentrate only on their own problems and not to understand the work of others (Karasek, 1992a). Certainly, this offers a negligible possibility of their grasping an overview or the whole picture. Of course, workers' invisible knowledge, beyond their formal job descriptions, is valuable. Ehn (1988) described the futility of trying to force such knowledge into hierarchical job descriptions and systems models of plant operation. From the perspective of conducive production, the tacit knowledge of specialized workers is a useful and necessary beginning, but not enough by itself; knowledge from cross-group collaboration is needed to create new combinations of skills. In the workplace today, workers are discouraged from learning the communication strategies that would allow them to create new interfaces between their skills. The goal for change is to develop broad types of understanding for people who have been forced to start their working lives in restrictively specialized situations.

The fundamental requirement for a new division of labor is to enable workers to get an overview, to understand the potential of new patterns of labor combination, and to evaluate different alternatives so as to select the most feasible, as shown on the right side of Figure 2. Participatory processes for job redesign have the goal of activating workers on the shop floor, who have been furthest removed from managerial planning overviews. These processes can use integration and overview development tools to facilitate such communicative learning and thus bring workers into the redesign process. This occurred when I used such tools among shop-floor workers with little formal education in small manufacturing firms in Sweden (Karasek, 1992b). Workers are sometimes unaware of the power of this type of knowledge because they are normally discouraged from using it. With supportive manage-

ment and the help of overview tools, however, shop-floor workers in job redesign projects undertake complex initiatives in work planning.

Such recoordination processes could be organized in limited versions that differ only superficially from current mass production patterns, or into very sophisticated forms in which both producers and consumers are capable of understanding each other.

Social Exchange and the Social Properties of Conducive Production

New Bridges Between Consumer and Producer

The goal of the conducivity model is to supplement the existing market and production model with an alternative, in which productive activities contribute to the creative development of the social fabric. In the conventional economic model, production is a narrowly bounded activity involving stable groups of participants and long-term social organizations, and using special jargon not understood by outsiders. Market trade, on the other hand, often occurs between strangers with no previous interaction or expectations of future social interaction. Indeed, the fact that the market can work without contributing to building up the fabric of society means that energy is often diverted away from socially integrative activity.

In the conducive economy, the exchange process—the market-like activity between separate economic actors—represents the same creative combinatorial activity as does production, albeit with a less permanent group of participants. These network-linking activities in exchange—social exchange—are actually part of the production process in which capabilities are created; they build creativity and value. At the same time, they compose a more elaborate market-like trading activity than the conventional model of the commodity market enables. The original, commodity-based model of economic man was the result of Jeremy Bentham's late-1700s model of man as a utilitarian social calculator in the marketplace, with a limited budget and a set of predetermined preferences for goods. It implied only two activities, separated by the marketplace: making things of value for the marketplace and selecting (or buying) them. Simple communications about price and quality between buyer and seller link these two activities. The model for conducive production and social exchange doubles these categories to four, which cross the boundaries of the commodity market, creating direct contact between producer and consumer, even through several levels of exchange. This boundary spanning enables new forms of creatively productive social interaction such as user-friendly design, production processes organized according to strong user needs, partnership in innovation stimulated by users who honor producers' capabilities, and need definitions organized according to strong productive capability (see Figure 1 and Karasek, 2004b).

Social exchange no longer requires the social anonymity and thus social alienation of the marketplace to function in the most effective manner. Indeed, it requires sophisticated, horizontal forms of creative coordination and communication, and information about mutual needs and capabilities. Habermas (Habermas, 1984, 1987) discusses a new communicative rationality to supplement the existing technical rationality. A location where this synthesis is being developed has been a dialogue-based action research program in Sweden (Gustavsen, 1992).

From Skill Integration to the Creation of Social Trust in the Community

Currently, there is renewed interest in the social processes that can sustain community development (Etzioni, 1995; Florida, 2002), but continued underemphasis on the workplace's social process contribution to that development. Community means joint production, and not only in nostalgic recollections of socially integrated past eras. The community's integration depends on its members being integrated into productive activity, not just living as contiguous consumers. In the past, a blacksmith, a miller, and three farmers with adjacent fields, for example, assisted each other at their work, dividing labor among themselves, with the result that the combined efforts of each were needed to sustain life's most important activities. In today's dormitory communities, neighbors have no relationship in terms of joint productive activity, with the unsurprising result that they lack a strong basis of community. Putnam provided a definition of the concept of "social capital" (1993) that discusses reinforcement of the social fabric of communities—and work activities figure prominently:

> Social capital here refers to features of social organization, such as trust, norms, and networks, that can improve the efficiency of society by facilitating coordinated actions. "Like other forms of capital, social capital is productive,

> making possible the achievement of certain ends that would not be attainable in its absence. For example, a group whose members manifest trustworthiness and place extensive trust in one another will be able to accomplish much more than a comparable group lacking that trustworthiness and trust. . . . In a farming community . . . where one farmer got his hay bailed by another and where farm tools are extensively borrowed and lent, the social capital allows each farmer to get his work done with less, physical capital in the form of tools and equipment" (Coleman, 1990, pp. 302, 304, 307). (p. 160)

In discussing the prerequisites for social-capital development, Putnam cited Granovetter's discussions of "weak ties" and "embeddedness," both of which are necessary contextual supports for conducive social exchange. Granovetter observed that trust is generated and malfeasance discouraged when social bargains are "embedded" within broader structures of personal relationships and social networks (1985). Granovetter also noted that social relationships involving "weak ties"—"bridging" rather than those of "bonding" and kinship facilitate community collective action (1973). Putnam's (1993) research focus on "civil society" and its platform of informal activities provided a comprehensive catalog of examples of "horizontal" networks that bring together agents of equivalent status and power:

> Networks of civic engagement, like the neighborhood associations, choral societies, cooperatives, sports clubs, mass-based parties, and the like represent intense horizontal interaction. Networks of civic engagement are an essential form of social capital: The denser such network in a community, the more likely that its citizens will be able to cooperate for mutual benefit. (p. 160)

Conducive social exchange has much in common with these constructs but further emphasizes the explicitly productive focus (see Karasek, 2004b). The conducive associations have a goal-oriented, collaborative purpose. The communications between individuals contain a larger component of "skill inventory discussions"—and perhaps fewer positive and negative sanctions reinforcing traditional behavior, even when there is no formal employment activity involved.

How does the effect of successful cooperation "accumulate" over time as social capital? Putnam reviewed extensively how civic engagement supports the economic development of northern Italy, but the answer to the question of how civic engagement develops is not as clear, and the discussion implies it could take centuries. Could we speed up economic and social development with a more energetic social-capital-creation process? Part of the process of creating the components of social capital is simply a byproduct of the repetition of successful social transactions. Putnam noted that repeated exchange for a period of time tends to encourage the development of generalized norms of reciprocity (the so-called trust expectation that imbalances in exchange will be repaid in the future), and that these, in turn, facilitate development of dense networks of social exchange—a density that is a hallmark of the accumulated capital—a virtuous spiral.

However, if the conventional market trade discussed above can build trust, then the more general form of commerce involved in conducive social exchange could contribute to it even more potently. Conducive social exchange provides the possibility of transferring a broader range of value than the economic market can transfer. Although conventional economic market trade has only two very limited information activities, conducive production and exchange involves so-called broadband communication about skills needed and possessed by many actors, and the forms of coordination between them.

The process also provides stronger personal motivations to cement individual's commitment to the process (see Karasek, 2004b). Conducive exchange builds skills, coordination contextual knowledge, and can also build self-esteem of the parties. A jazz musician, by picking out particular capabilities of his or her musical partner and honoring them by a specifically designed passage, can trigger a musical offering in response and an improvisational sequence. By showing the partner how important his or her capability is by how carefully this has been set up, the user makes the producer feel good about his or her production capabilities. Such so-called angel roles help the collectivity, and in turn such contributors can be well rewarded by the group. As the recursive steps in creative coordination continue, the user's growth can, in turn, stimulate the producer's own capabilities, as shown in the conducive value diagram (Figure 1) and build value.

Because the social exchange process has significant duration and significant social reciprocities, its transactions contribute to the strength of the surrounding social network. These rules for constructive interaction build the fabric of communities, cement creative associations of producers at all levels, and embed the family in a social environment that is more supportive to its socially reproductive functions. With habituation, this process first generates social capital—as discussed above by Putnam. With further development, its common gestures become symbolic rituals and the microcomponents of a community culture.

Culture can reflect both the product of, and the support for, conducive production. If true community is based on joint production, then culture contains an understanding of how things are traditionally produced in a community. It provides basic languages of both use and production of objects in the culture: how food is made and eaten, how housing materials are used, and so forth. Cultural rules ensure that individuals understand the kinds of skills that the other community members have—and cultural training ensures that people know how to interact with other communities on the basis of this set of skills. People who are well trained in the culture are more likely to understand the community's languages of production and languages of use, even when they are not in their own specialized areas. Thus, culture makes possible a likely match of the outside-the-firm languages of the use and the inside-the-firm languages of production. This means that a strong, skill-based cultural platform could promote more possibilities of successful combinatorial activity across individuals with weak ties, as discussed above by Putnam and Granovetter: A virtuous spiral of social capital formation.

Examples of the development of conducive skill combinations to form new community capabilities can be found in networks of small businesses in Emilia Romagna, Italy, which I witnessed on trips to this region. I saw groups of small-scale proprietors (with fewer than 20 employees), who owned surprisingly large milling and grinding machines, collaborating in their use to gain the business of giant German machine tool manufacturers. The German companies shipped the heavy tool beds for their premier products to northern Italy, hundreds of miles away, for processing, owing to the exceptional quality, flexibility, and prices offered. This was feasible in this Bolognian suburb only because grinder-repair technicians, CNC machine tool programmers, and so forth were skills trained and used in the local businesses. Such an integration of capabilities represents a skill accumulation: a small piece of conducive capital with long-term value. It also builds the social fabric of the community and region concerned.

At the community level, the accumulation of skills can reinforce the social platform. A small community in north-western Denmark, Holstebro, confronted terminal decline and migration of its active population with the closing of its last large-scale manufacturing firm in the late 1950s. Following an innovative new policy to save the town, Holstebro decided to invest in art and culture; it was hoped these two lively skill areas could keep young people in the town. Schools were founded and artists were given low-cost space. This conducive plan worked: Music education synergistically reinforced theater, and theater reinforced studio art (Holm et al., 1985).

Ultimately, this new energetic activity base gave Holstebro a second-stage boost: it became a regional retail center with the business brought by the newly energized population. This, in turn, allowed the town to build the library and performance spaces needed to sustain growth through the 1980s. Holstebro is an example of Putnam's (1993) collaborative civic platform, which creates economic vitality. Many urban renewal efforts in older cities in the United States have followed similar redevelopment trajectories, in which artists' creative collaboration sparks broader social collaboration (Florida, 2002).

Several preconditions for creating a healthy social context for this development are both outputs and inputs. These can lead to virtuous circles of positive development; vicious circles arise when the preconditions are absent. The first example is the satisfaction of basic needs, which is an essential input for conducive production and is often also an output in such production networks because the productivity of these horizontally collaborative structures is high. Such phenomena are observed in regional economies, particularly in regions committed to ensuring basic welfare. Increased job creation and lower unemployment reduced economic insecurity in the small manufacturing networks of Gnösjö, Sweden, in the 1990s, when manufacturing employment was deteriorating elsewhere in the country, and in Emilia Romagna, Italy (Brusco, 1982; Ehlin, 1996). Second, relative equality of power in social relationships of production and trade allows conducive production to occur. Equality is also an output, however; in time, it helps, as an input, to strengthen equality norms in society and democratic civic behavior such as that discussed by Putnam (1993).

Conducive cultures can be identified in regions of high technological sophistication. Saxienian's (1994) description of the cultural difference of the successful computer industry in Silicon Valley in California versus the unsuccessful culture of Route 128 in Boston clearly shows the importance of work organization on the broadest scale. Silicon Valley espoused egalitarian, open collaboration, based on cooperative, knowledge-based relationships, in the development of new high-technology products and markets. Route 128 fell back on vertical hierarchy and status as the basis for production decisions and failed to generate the winning product development and marketing dynamics. On the broader civic level, however, there remain questions as to whether the benefits of innovative production in Silicon Valley are spilling into the surrounding society in forms other than human capital expansion. If not, this limitation would represent a difference from the clearly linked civic and economic development of Emilia Romagna.

It is inside the community or regional boundaries that the feedback about consumer need and local skill can become self-reinforcing social dialogues (positive feedback loops). To benefit a particular community, the skill-stimulating characteristic of conducive production must be expended on those users who will bring back their smarts in the form of both skills and active consumer demand to local workers and businesses. (The local community will not benefit in the long term if its conducive processes educate workers who then move to other communities or educate customers who shop only in the wealthy districts of a distant city.) A corollary to the need for these local feedback mechanisms is that areas of material poverty, joblessness, low skills, and resulting local distrust must be assisted by outside resource transfers, delivered with long-term stability, to progress. Although the goal is activation and skill development for local inhabitants, material security and local trust are prerequisites.

Another corollary is that nonconducive forms of production that do not sustain the social fabric can destroy it. For example, commodity capitalism can, by its very production rules, consume its social platform, the very platform needed to support the more active consumption that could sustain it. Deteriorated social relationships arise as a byproduct of intense commodity production, even when it is materially successful. Competition leads to social mistrust among competitors. Specialization leads to lack of common viewpoints among disparate skill holders. Shifting capital to maximize resource profitability undermines security-providing social structures and norms. Material accumulation, not social relationships, become the measure of social activity. Exhaustion in consumers gives them no time to consume in a satisfying manner or to build social relationships in the family or community: the activities that reproduce the social platform. Commodity capitalism can create commodity value in the short term at high productivity levels, but it fails to regenerate the social platform for long-term growth.

Why Lean Production, the Just-in-Time Method, and Reengineering Are not Conducive Work Organization Forms

Clearly, major misunderstandings surround the terminology for new forms of work organization. Cohen (1997) said that in France, "the very word 'flexibility' is taboo. It is seen as a code word for replacing Gallic solidarity with marauding American capitalism." Such flexibility has come to mean the replacement of any form of work organization (any form of social organization with a contract) with the social insecurity of pure market relations; this is certainly different from the creative adaptation discussed above.

Additional confusion comes from the push for organizational change, often on the basis of standard recipes delivered by consultants, such as quality circles, total quality management, reengineering, and the just-in-time method (Appelbaum & Blatt, 1994). Although some aspects of the work coordination process are similar to the conducivity model, most of the currently used methods have arisen in U.S. business schools giving priority to financial goals. Of course, some of the best-known methods have come from Japanese companies. Toyota's so-called just-in-time method was originally titled by its Japanese developers the "respect-for-worker and just-in-time method" (Sugimori, Kusunaki, Cho, Dehikawa, & Toyota, 1977). When the name was translated for broad use in the United States, the first half disappeared.

The consistent goal of these methods of work organization is increased profitability of production (commodity value). People working toward this goal reduce employment levels and centralize the control of financial accounting in companies, in marked contrast to conducivity principles. Although possessing the same democratic labels as the conducivity model and job redesign philosophies that have arisen from the industrial democracy movement of northern Europe, these change processes have often had a destabilizing effect

on the well-being of workers. The language used undermines the validity of the vocabulary of processes for humanist job redesign.

A comparison of conducive production with lean production (Womack, Jones, & Roos, 1990) demonstrates the difference. Both use terms such as *flexibility*, *skills*, and *groups*, but the goal of lean production is capital rationalization, primarily to reduce the cost of commodity production. The output of conducive production is skill-based value. Lean production joins some so-called job-enriching elements with more stringent management controls to eliminate so-called production slack in an effort to increase quantity output, reduce inventories, and increase profit. This is an unfortunate combination for workers: Systems are driven to the point of failure, leading to working conditions described as management by stress (Parker & Slaughter, 1988), in which the prevention of any waste eliminates workers' last remaining reason for rest breaks. In lean production, the breadth of worker skills is greater than in assembly-line work, but not exceptionally so. Furthermore, if old, centrally controlled decision structures do not give way to decentralized ones, more elaborate process control reduces workers' overall freedom of decision; this also increases stress.

Lean production's emphasis on the quantity of output overlooks any creative link between worker and consumer. Conducive production's links to the tool-like and quality aspects of a product or service (its capabilities)—instead of conventional economic quantity-per-hour aspects—can imply quite different results. Direct, multidimensional human relations between producer and consumer, with the creative quality noted above, modulate demands and contributions. With products intended to extend customer capabilities, production workers must use their skills to the maximum and develop their communication capabilities in general, for use with other workers, with customers, and in society at large.

Clearly, many forms of so-called new work organization are mislabeled, representing only superficial changes in work coordination patterns, and in fact retaining old commodity value as the goal of production.

Completing the Circuit in Conducive Production: Active, Associative Consumption

The lean production discussion above shows that the revolution in the economy so far is only a revolution in the organization of production, and potentially contradictory at that. Furthermore, the process of consumption continues to remain the same as under mass production. Selling the largest number of similar products at the cheapest price (at the greatest profit for producers) remains the goal: It is the standard model of passive, commodity consumption. But such a revolution could never work; it could not sustain itself: Productivity gains would quickly outstrip consumer demand—a lesson well known to every economic development economist since the Depression. What is needed to sustain growth is new products, new markets, in short, new demand. Porter's (1990) widely publicized analysis discussed in the introduction of this chapter makes clear that one of the critical four ingredients of economic growth in modern economies is the "active customer." Our own conducivity behavioral model (see Figure 1) in this section shows the interactive communication and mutual stimulation of the active customer/producer linkage that underlies skill-based production.

Just as we have argued mass production can lead to worker stupidification, so can mass-consumption processes make the consumer stupid (perhaps recent poor levels of U.S. educational attainment and mass media content sophistication are evidence of this). Mass consumption products that are disposable cause more than just environmental problems. Products that cannot be fixed are products that cannot be understood, and that therefore are not cogenerators of skill (maintenance persons learns about machines by fixing them). Nothing need be known about a commodity: It is merely to be consumed. Commodities can easily be stupidifying products. The commodity product often cannot be usefully taken apart, stripped to its useful components, and remade. It cannot be recombined with other products. It is not conducive (our planet's natural resources, can of course often be refined and easily combined, and thus can support conducive production). Primarily, such products cannot stimulate new demand because they do not encourage cycles of new skills and new needs that characterize active consumption.[1]

We saw that conducive community development occurred within, supported, and required the input of a strong civic platform based on trust, basic need satisfaction, local languages of production, and a skilled population—all in dense social interaction to facilitate capability linkage. Commodity mass consumption emphasizes just the opposite: specialist consumption, satisfiable with only a particular brand names or niche products of global producers—which cannot be

locally satisfied (indeed, a management goal), and which generate no local social interaction or platform.

The conducive economy requires an adequate set of building blocks for flexible adaptations. Although traditional culture has been described as the barrier to the expanding market economy, in fact for conducive production, preservation of culture ensures the availability of these building blocks. A major problem for conducive economic and dynamic economic development in the future would occur if these traditional building blocks are lost. This could happen because of the "stupidification" processes discussed above (Karasek, 2004a): One world culture of McDonald hamburgers and Arnold Schwartzeneger movies renders many cultural traditions obsolete and then forgotten to the community, depleting the stock of building blocks (see the appendix in Karasek [2004b] and Ashby's "requisite variety" [1956]).

There can be no sustained revolution in work organization without active consumption. There can be no active consumption without support of the social fabric and social capital endowments in the community. A true revolution requires these additional steps if it is to be self-sustaining. Not only are many forms of so-called new work organization mislabeled because they represent only superficial changes or because they retain an old value goal but because they generate none of the special type of demands that the new skilled and flexible production can best satisfy. Skilled and flexible production must generate conducive products for active customers. The circuit between supply and demand is not completed in examples such as lean production.

Thus, the most significant changes in socially sustainable production and consumption remain for the future. By integrating a new value system with the new patterns of social relations at work, we could develop a new form of economic development that leads to real democracy and sustainability. Of course, this new form of economic development requires basic need satisfaction, social trust, and a well-preserved cultural heritage as a platform. Because these are elements of a secure and effective regional or national political situation, understanding the possibilities of conducive economic development requires additional, macro-level of analysis.

Stability of the Social Welfare Platform?

The conducive production model goes beyond capitalist production, but is based on the platform of material well-being and democratic engagement that capitalism produces. Although Putnam has shown how the civic society has been a platform for economic success, the above statement emphasizes how the social welfare economy, based on relatively high and equally distributed material well-being, is also a platform for the humane evolution of production.

The neoliberal transformations of the global economy are creating a time of increasing job insecurity for many people. Although application of principles of a free-market economy and unrestricted global flexibility of capital was initially emancipatory and originating in the freedom to control one's own property, now the continued elimination social protections is seriously undermining the very nation-based systems of labor relations that provided a major source of well-being in advanced industrial societies. Ironically, this insecurity could be undermining the platform for the conducive economy.

On one hand, we have seen how capitalism's evolution of material abundance and information society promote a new set of human experiences at work, which in turn advance a new value model. At the same time, we have seen above how extreme and extended applications of the MOP model undermine the social platform that could support capitalism's own peaceful transition to a step beyond. Of course, it is also noted that repeated sequences of successful economic transactions—such as those occurring in a vigorous market economy—build the social platform, so determination of the net result requires detailed investigation.

Democratic Social Relationships and Economic Success

MOP discussions often make it appear that civil society's decision processes hinder the development of an efficient economy (Friedman, 1962). Since the beginnings of both democratic government and the free-market economy, however, political philosophers have observed that the structure and stability of civil society are the platform for the development of the economy, not an annoying appendage to it. John Locke (1988), author of the doctrines on both the democratic social contract and private property, made clear that there is no economy without a stable social consensus on the value of money: It is the first social contract, and step one toward the free-market economy. The institutional direction of modern economics (Streeck, 1991; van Waarden, 1997) raised this theme, using terms such as the *concerted economy*, the *social*

market economy, or the *stakeholder economy*. This emphasizes the contribution of a very broad range of nonmarket institutions to the coordination of economic activity in society; such contributions increase, not hinder, the adaptive capacity of society to produce.

Indeed, historical evidence shows that economic institutions in a democratic form—with horizontal social relations and social policies for the widest possible opportunity for education and participation—have actually been the most productive. Robert Putnam's (1993) influential research on the social structure of democratic and economically prosperous northern Italy illustrated this point particularly clearly in contemporary Europe. The northern Italian region of Emilia Romagna, with extensive horizontal social and economic networks and strong democratic traditions, had become the wealthiest region in Italy by the 1980s and was among the wealthiest regions in the European community, ranked 17th out of 80. Within Italy, it moved from 17th place among 20 regions in 1970 to 2nd place by the mid-1980s. Piore and Sabel (1984) discussed egalitarian, trust-based social relationships as a platform for effective economic development (through craft-like flexible specialization) in northern and central Italy and parts of Bavaria, Germany. Similar industrial districts are Scandinavian: Jutland, Denmark (Hatch, 1987) and the Småland region in Sweden (Ehlin, 1996).

Parts of Asia that have distributed income (and presumably power) in a more egalitarian way, such as the Republic of Korea and Taiwan, China, had faster economic growth than many Latin American countries, such as Brazil, Argentina, and Guatemala, where income inequalities were more extreme (Passell, 1996). Socially egalitarian economic programs that went into effect in the United States after World War II, such as the GI bill, allowed all militarily active citizens to pursue a university degree with government support; this "pulled a whole generation up by their bootstraps, and put them among the most educated and financially well-off generations in United States history" (Kiester, 1994). History provides many examples of rapid economic growth following democratic political change.

Another major irony is that our market price analytic tunnel vision overlooks the true costs of unregulated market exposure on workers' health, undermining true economic sustainability in the very name of economic development. In my own experience visiting government officials in seven European countries in the early 1990s, I found in Country X, they were worried that their factories would be shut down by competition from Country Y—and they were convinced that reducing social expenditures to entice factory investment was the only competitive strategy. When I visited Country Y, they said that because of their competition with Country X, they also were cutting social costs to remain competitive. Far from this competition leading to the best of all possible worlds because of increased productivity and reduced consumer prices as we have been taught by MOP—it was simply leading all countries to cut their social expenditures for workers. However well they might do in material well-being as a result, the workers of each country would still suffer from a major loss of social benefits and new forms of psychosocial suffering from the increased competition—which had not been tabulated in this analysis of these social decisions. This is happening just as these social costs are being shown to be more clearly measurable and comparable between countries—and thus a suitable basis for new criteria for international discussions of broader, "qualitative" social impacts (Karasek et al., 1998).

Limits of a Partial Market Economy Based on Unequal Exchange

Schematic Diagram of the Market Economy

The common admonition to be realistic and take the marketplace viewpoint is often followed by a discussion of a very idealized marketplace, deriving from MOP theory. This section examines the kinds of market relationships that do and do not exist in the early 21st century. The purpose is to understand one major source of the emerging problems discussed: distortions of the market model itself. Figure 3 presents a brief analysis of modern economic activity in a schematic picture of the modern money-based marketplace. The transactions shown have replaced direct barter between parties, which allows a much more frequent set of market trades. Even if specific needs do not match, either party in a monetary economy is willing to take money in exchange, which can then be traded for something else in a second market transaction. It is as though barter is split into two halves. In the monetary economy, each economic actor, whether an individual or a company, occupies two major market roles: that of the consumer who buys goods or services and that of the producer who usually provides labor. The necessary link between the individual's income and consumer budget is shown by a dotted line.

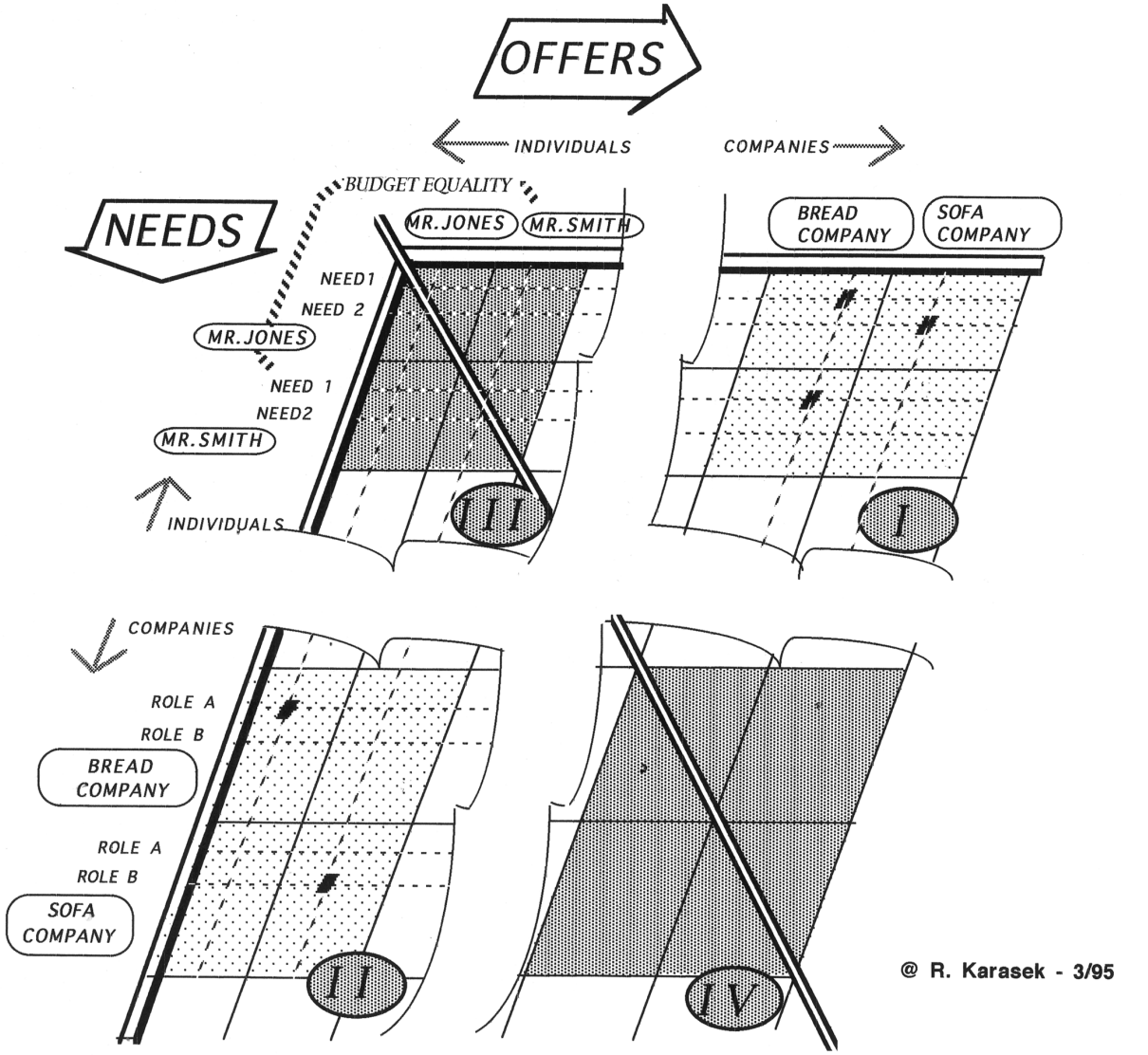

Figure 3. Analysis of the Market Economy

Figure 3 shows the fit between the offerings of the producer on the left side and the needs of the consumer along the top. The additional step of monetary exchange, however, brings the disadvantage that consumer and producer are no longer in direct contact, as they are in the case of barter; this restricts their ability to transfer conducive value. To depict the entire economy, Figure 3 shows both the individual and the company levels simultaneously, including both the needs and offers sides of the economy for each level.

Lopsided Trade in the Current Economy

An important observation to draw from Figure 3 is that a major change has taken place during the past few centuries in larger economies. In general, individual participants no longer sell products in the marketplace; instead, they sell labor in exchange for wages. Individuals sell their labor most often, however, to large companies (Sector II) and usually purchase goods and services from such companies (Sector I) rather than the individual, as producer. Thus, economic activity in modern economies occurs mainly in Sectors I and II, in which buyer and seller have unequal power. In the context of mass production, individuals, both as wage earners and as mass-market consumers, have less power (potentially much less) than the large companies that purchase their labor for use in mass production, and then sell them these goods through channels of mass distribution.

Sectors III and IV are characterized by power equality between producer and consumer. Transac-

tions between individuals take place in Sector III. Company-to-company transactions are in Sector IV. These sectors are underdeveloped in the commodity economy, but could easily be developed for the conducive economy.

Redeveloping the economic sectors involving equal power relationships (Sectors III and IV) according to the principles of social exchange will become the broad theme for recommendations on future humane economic policy. This new equality of exchange must be developed at the microlevel between consumers in consumer networks and between groups of companies in company networks.

Bridges Between the Conducive Economy and the Commodity Economy

One source of job security in the global economy is the ever-narrowing definition of what should qualify as economic activity. The definition is shrinking to cover only the activities that can compete in a global economic marketplace: jobs in commodity production. Thus, many forms of locally valued social production lose their validity. The shrinking definition of valuable work, combined with a glut of production facilities in almost every commodity export market (Uchitelle, 1997), means that workers in many countries face continual pressure for job loss. These add to the job insecurity problems described above and further worsen labor's bargaining position. An alternative, broader definition of economic activity and employment, such as that of the conducivity model, could return value to social relations—within the production process and as outputs of it—and restabilize labor's political claims.

To broaden the definition of economically valid activity in society, an interface between commodity and conducive production must be described that could enable them to operate in an integrated manner. Although commodity value and conducive value differ in nature, both are relevant to functioning in a successful and humane society, and both exist in the current economy. The conducive economy exists most obviously in innovative technology industries and in some areas of the service sector, and is notable for the nontraditional cultures of the workplaces concerned. The conducivity model can hardly be imagined to exist without the simultaneous presence of some conventional commodity production. Certainly, the conventional commodity model now dominates in the areas of basic necessities production and commodity trade. This specialization would be expected to continue in the future, but the links between the economies could work much more effectively. Furthermore, the conducive economy and the free-market commodity economy could be integrated with the social democratic traditions of welfare. This further illuminates the political implications of the broadening of the definition of economic activity that conducive production represents.

The design of synergistic value transfers between these economies would allow bridges to be built between work-quality policy, MOP and SWP. With well-designed, integrated policies, the conducive economy, and the commodity economy can support one another to work toward that goal. Unfortunately, with poorly designed policy interfaces (such as those in the dilemmas discussed in Karasek, 2004c), policies that encourage the development of one economy can inhibit development in the other.

Integration of Parallel Commodity and Conducive Economies

The integration of MOP and SWP based on work quality would take into consideration several specific transfers of value between the two types of economic activity.

Figure 4 shows how these two economic spheres would be integrated, given a full-sized conducive economic sphere. The top half shows the conventional mass-production, commodity-based economy and the bottom half, the conducive economy. Both include consumption and production (work organization), although the boundary is harder to draw for the conducive sphere. The commodity half of Figure 4 shows the links between the two sides: a set of arrows for the consumption process, in which products go to consumers and purchase money goes to producer companies, and a second set for the production process, in which wages go to workers and labor to producer companies. For the conducive economy, only a single set of arrows is used, representing workers' contribution of motivated labor and capabilities, and their receipt of stimulation and social integration.

On the consumption side, the conducive economy contributes the psychic and social benefits that consumers and workers in the commodity economy have lacked, whereas the commodity economy provides material well-being, the satisfaction of biological needs, as today. The arrows at the bottom, linking the

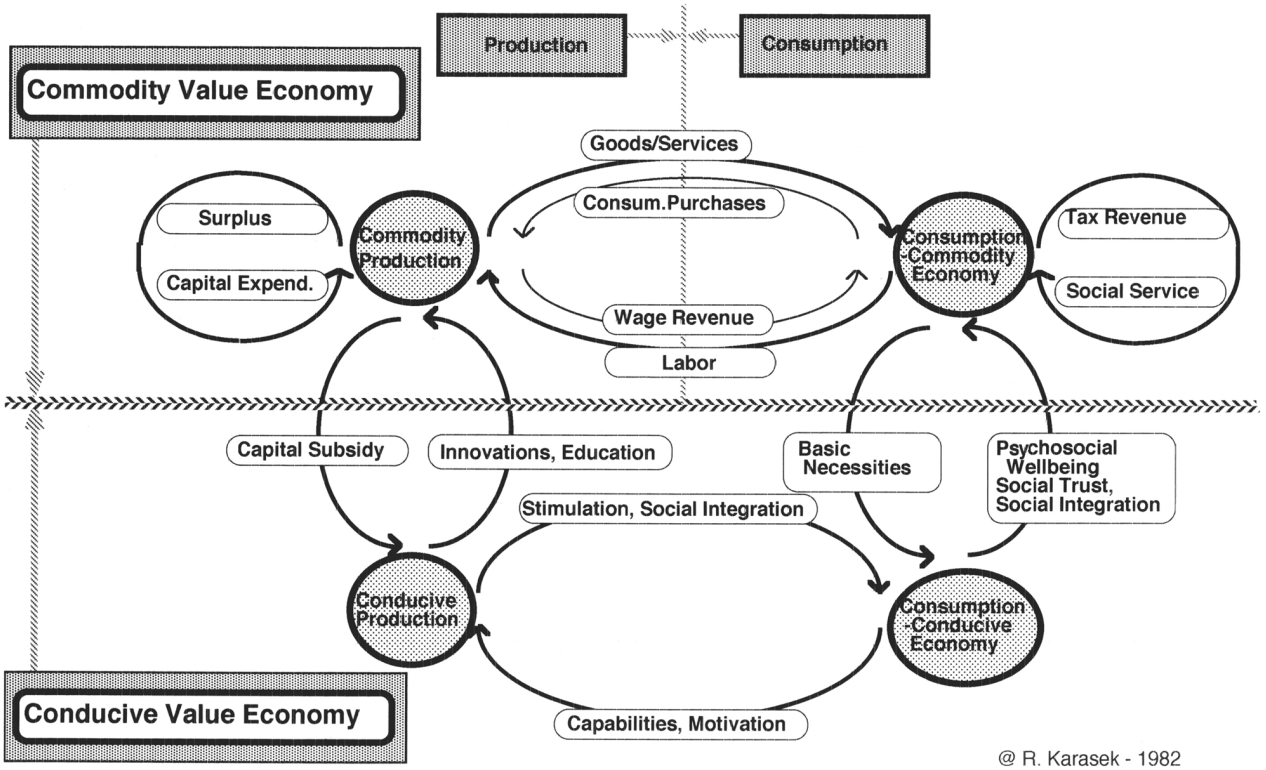

Figure 4. Bridging the Conducive Economy and the Commodity Economy

two consumption circles, show this integrated contribution.

On the production side of the conducive economy, the network-based, creative coordination discussed above generates the new technological ideas and the innovative products and services that can stimulate and energize the production sector of the conventional economy and prevent stagnation. This flow is represented by an arrow from the conducive to the commodity economy production sectors. In return, the commodity economy contributes conventional monetary resources to sustain the production structures of the conducive economy: machines, materials, start-up capital, and so forth. This support might be indirect; for example, taxation mechanisms could contribute revenues to the state, which could then allocate them back to the conducive economy for industrial development. This reciprocal flow is shown by the complementary arrows between production sectors. An important feature of Figure 4 is that the commodity side of the economy requires redistributive mechanisms of the welfare-state type to ensure the basic material welfare of all citizens. The commodity economy's support of the conducive economy in part represents investment in general social well-being, which has been a major goal of SWP since its inception.

In principle, the commodity and conducive economies could be balanced at several levels; achieving this balance for each individual would be one of the major challenges of designing a new economy. For example, many production processes within an existing company could be redesigned to emphasize conducive benefits as well as commodity benefits. Alternatively, the balance could be achieved within the economy as a whole, in which a conducive sphere supplements the commodity sphere. Conducive value must be experienced directly by individuals if its dynamic benefits are to be achieved. It cannot be generated efficiently in one location and then distributed as a transfer payment to nonparticipants, as with conventional economic value. A learning experience cannot be credited to a person who has not gone through the process of learning.

The integration of the conducive and commodity economies would have major new distributional con-

sequences in society: New groups of winners and losers could be defined in terms of their conducive rewards from work activity. Thus, an important principle would be that all citizens have the opportunity to participate in conducive processes: a social equity criterion. Nevertheless, many options for institutional design would be available to achieve equity on the basis of, for example, rotation of individuals through different activities, rotation of roles over the life span, new forms of value exchange between groups, and so forth.

Rethinking the Welfare State as a Platform for a Conducive Economy

The model of the conducive economy developed in this article presumes a platform of social welfare security and democratic government tradition. As noted in the second section, basic human needs must be satisfied for individuals to enter into the required relationships of creative coordination. Thus, the present welfare-state platform of basic material well-being must be protected as the *sine qua non* of further progress. As in the past, social democracies will require a good measure of distribution-equalizing logic in the future to maintain basic economic security for all members of society and to help guide the democratic control of capitalism. If the working or middle classes are forced to give back relative wages to a newly aggressive capitalism, this re-creates the preconditions for the class struggle of the 19th and early 20th centuries. However, in the conducive economy, the welfare policies are the platform for, not the goal of, social development. The creative coordination goals would mean different operating principles for social institutions than the welfare state model has emphasized.

After examining Figure 4, readers may conclude that such conducive elements have always been part of the economy, or at least the ideal economy. They were certainly part of a past economy, perhaps a small town or agrarian society with more organic production and trade and a broad range of social and community outputs. The conducive economy is not utopian; it is merely an attempt to create an analytical model for many spheres of social life that are essential in any stage of human productive development. The logic of MOP, however, urges that this breadth of value must be relinquished for narrow market value (in privatization, for example), which shows how much the current single-minded focus on free-market development in every social sphere has narrowed the social agenda.

The danger is that the social capital of an organic economy, in which production is integrated with community life, will be spent to create more efficient commodity production, which contributes little to sustaining the social platform. Thus, the real danger is the further extension of the MOP market revolution—today's revolution. The first step in countering this revolution could be to reemphasize a revalidated social platform based on a pluralistic social policy, which is in turn based on a wider definition of economic activity.

Work Quality Strategies for Different Industrial Sectors

This article can only briefly discuss how conducive production and work-quality policy could be used to modify work and economic policy in various industrial sectors. Economic development would be emphasized in the sectors of the market economy with equal economic power relationships, in both community-based networks and company networks. For example, industrial policy would encourage networks of small-scale enterprises, where possible. Educational institutions in society would have an even more important role than today, but would encourage integrative and not just specialized skills. A wide variety of strategies could be adopted to bridge commodity and conducive value in production. What follow are a few brief examples from several industrial sectors.

Innovative, High-Technology Manufacturing

The use of software development as an example in the initial presentation of the conducivity model makes clear its utility for many high-technology products, where product innovation, in synchrony with an educated consumer, leads to economic success. The principles of the conducivity model are clearly reflected in the experience of many organizations, which have developed products with marked tool-like features. For example, in the mid-1980s, Apple Computer developed a winning (conducive) internal organization to produce the Macintosh computer, which was then emulated inside and outside Apple for more than a decade (Kawasaki, 1993). Negative examples show how nonconducive work organization led to failure, even for tool-like products. Data General Corporation, which Kidder (1981) described as failing to nourish intellectual investment in its computer-development teams, created a good initial product but then lacked

the culture to sustain successful development in the long term, and leading to the company's decline.

Alternatives in Commodity Production

The Sisu example above illustrates the modification of a product that would often be considered a commodity—a truck—into a conducive, tool-like product, with dynamic linkages between producer and consumer. Many commodities have a tool-like quality that could be improved by understanding the conducive side and developing policies to enhance it. Subsidizing the conducive side would be in the interest of the community.

More difficult cases occur when the commodity qualities are inherently more rigid, and meaningful feedback between worker and consumer is difficult to establish. Nevertheless, many new forms of work coordination have been developed in the context of mass-market production, such as the diversified quality production of high-volume automobiles and durable goods by small, medium-sized and large firms in Germany (Appelbaum & Blatt, 1994; Streeck, 1991). Many of the goals on the production side are similar to the conducivity model: broadened skills from national apprenticeship programs, flexible organizational structures, decentralized competences, mutual trust, and redundant organizational capacities (the duplication of capabilities, which allows workers and the company flexible response options). These are present in such production, although it is usually considered to be commodity production. Admittedly, production in Germany has aimed for the high-quality market.

Social Services

Services such as health care, education, and care for elderly people and children have long-term, rather than short-term, payoffs to individuals and organizations that can grow. They are the most likely location for the application of conducivity principles, as shown in the Enskededalen example. Pestoff (1996) clarified the distinction between long-term versus short-term services (enduring vs. temporary) in terms of their implications for both work organization and consumer relationships. As it is based on learning, the conducivity model fits best in the enduring category. One new goal is to use the conducivity model for the local service sector (Pestoff, 1996). Jobs in this sector are good targets for conducive economic activity because large multinational enterprises often provide poor services.

Developing Jobs at the Margins

Many employment problems relate to people at the margins of the economy: those who have part-time jobs, are temporarily disabled, or are just entering or leaving full-time employment. Indeed, still larger groups in society—who, ironically, can quite capably perform services for others—risk being classified as marginal if they cannot meet the ever-tougher criteria to prove that their jobs pay off in the global economy. Profitability in commodity production in the global economy is too restrictive a criterion to define useful economic roles in a modern society; it overlooks many aspects of both community and family life, and innovative production in the future.

The suggestion that the equal-power quadrants of the market economy (see Figure 3) can be expanded can be interpreted as building the marginal regions of the economy: that is, those that are marginal to commodity production. Of course, these quadrants of economic activity are central to conducive production because they can easily include innovative production and services, and many types of networkers normally operate here.

Economic subsidy has been the main supportive structure provided to the marginally employed, even in advanced social welfare economies such as the Netherlands. Work-quality policy would supplement this platform for material well-being with enabling social structures to build skills, communication capabilities, and participatory social engagement, and try to create social validity for new economic roles. Rutten et al. (1990) present an expanded discussion of this topic. The criteria for the creation of a new type of job (a meaningful social role) in society include social validation (see the jazz behavior example above), the demonstrated use of skills in the service of others and basic material rewards. Clearly, conducive economic principles can fulfill these criteria, and thus help to open new pathways for job creation. Financial support alone, dead-end jobs, or social stigmatization are either insufficient or can destroy the effectiveness of programs for marginal workers.

Reducing Unemployment: An Example of Work Quality Policy

Europe needs to generate more jobs, but how? MOP logic claims that Europe's current inability to generate sufficient jobs is a result of high levels of social protection and social subsidy; these must be removed to stimulate economic development and jobs. However,

Europe seems likely to enjoy as significant an economic growth as that of the United States; which undermines the argument that its social policies have inhibited economic development. (High interest rates in Germany after unification and enormous transfer payments to the former east Germany certainly did inhibit economic growth in Europe.) Europe may thus be able to afford its welfare states, but there remains the problem of the inequality of the social and private benefits between job holders and others when unemployment rates are high.

In contrast, the SWP approach, illustrated by the French government in 1997, advocates a simple redistributive solution: sharing jobs by significantly reducing the workweek. The danger here is that private firms, operating within a weak social contract, may only increase work intensity and not hire additional workers. Such an increase in work intensity occurred in the Netherlands in the early 1980s, yielding huge long-term disability costs to society. Reengineering the work process to create greater flexibility for the firm, but not greater social equity, is the trend in companies in Italy and the United States (Tagliabue, 1997).

Criticism of narrowing the definition of valuable labor when commodity markets develop is a common theme in literature on developing countries: for example, when export crops replace general agriculture. As mentioned, when combined with a glut of commodity production facilities in export markets (Uchitelle, 1997), this can lead to job-loss pressures in many areas, automobile production being one constant example. As an alternative, this article presents a broader definition of economic activity and employment by adding the concepts of conducive production to the existing model of commodity production, bridging the gaps between the two.

There is much relativism in the definition of employment, which illuminates an important avenue for exploration. A thoughtful and much-cited review of Dutch labor participation policy (Rutten et al., 1990) pointed out that the labor participation rate varies substantially in time on the basis of societal choices about the necessity and desirability of the role of market-wage work in comparison with other social roles. For example, the gross participation rate in the Netherlands was 59% in 1960, including guest workers, in a time of what was felt to be high employment; in Germany, mass unemployment accompanied a rate of 59% in 1985. The participation rate is much affected by changing concepts of social roles: the so-called leisure society of the 1960s, current discussions of the shorter work week, and changes in women's roles.

Part of the answer to the employment problem is thus a broader definition of meaningful work in society. The conducive economy can certainly generate more jobs, through conventional economic dynamics, from creative and adaptive production. The broader definition of value that comes from considering conducive production, however, brings with it a broader definition of employment. This means more jobs by definition. Far from sleight of hand, it is a social necessity if policy makers are to avoid being caught in the global commodity economy's restricted definition of value.

From the perspective of MOP, one might object that one cannot make value out of nothing; attempts to do so would be inflationary. This objection is false because the other forms of value are real; they just await the social recognition that is their due. Admittedly, if a broader definition of economic activity were not consistent with gaining real value from the services of new job holders to other members of society, this idea might ultimately be impracticable. The other obvious requirement is that society should be able to provide material welfare for this so-called marginal employment when it does not generate sufficient material value by itself, but the welfare states of western Europe have adequately demonstrated this capability. Finally, the new, broad definition of work would fail without clear and positive social dialogue on its importance; this would be the very opposite of MOP discussions about the need for service privatization, cost-efficiency and government cutbacks. The essence of this last step is a political discussion that has not yet begun but is needed now. With these three requirements fulfilled, the broader definition proposed here could very much increase overall employment and production.

In general, by facilitating socially useful activity, conducive production expands the boundaries of valid economic activity in society.

Jobs for the Disabled: A Major Developmental Challenge

The social processes of conductive production, which focus on human development, are both part of the formula for innovative production and a formula for developing jobs for people on the margins or with disabilities. Although developing jobs that increase the social participation of disabled people is perhaps

the most difficult work organization challenge, it can be seen as highlighting some of the principles of human capability development that should be followed in work quality policy and conducive production. Good jobs for disabled people must first carry low risks to health so as not to aggravate workers' disability problems. This is, of course, a good formula for society in general. Second, health-promoting jobs should be created that prepare the incumbents for other jobs afterward. The third requirement is that jobs should be part of a broader economic program that can direct job improvements to disabled workers and generate a self-supporting process of economic development.

The first part of the policy, to reduce high-strain jobs, can be accomplished by taking dead-end or hazardous jobs and redesigning them as active jobs, according to the demand/control model discussed by Karasek and Theorell (1990) and the participatory work design programs of a research institute in Amsterdam. The general aim of the solution is to increase workers' ability to make significant decisions about planning and carrying out their work, and to build creative collaborations with coworkers, supervisors, and customers. The solution should facilitate a supportive social context and keep job demands moderate. Such jobs could also provide

- the training ground for learning new forms of work coordination;
- the framework for developing broad skills and socially integrated community functions; and
- services that the larger market economy often provides poorly, such as elderly care, day care, long-term and outpatient health care, and much education.

A conducive economic policy focused on work quality would activate communities with a program including the following components. Conducive economic links between the new needs and the newly energized producers would be facilitated through trade fairs and community events. The focus would be on developing needs related to those that the local community personnel could meet through local enterprise (and thereby diminish the complaint of outside private producers that their markets are being drained). Such meetings would build a social consensus on the need to act in many areas, public and private. In addition, regional and even local community fairs would be organized to help groups to meet each other at presentations of the skills available close at hand and potentially to network on the beginnings of new employment ideas. Modest levels of government resources should be provided to support some start-up activities with generic and basic tools.

If new motivation is to be built into jobs for the disabled, such alternative goals for jobs must be strengthened by public acceptance. Society can help to give reality to new views of the meaningfulness of these roles. Major social institutions, public and private, can praise workers' activities in many ways, and offer a pay packet. Unfortunately, just the opposite is happening under market-oriented social policies, undermining the potential success of the policies advocated here. In this view, any job that cannot be paid for by a free-market transaction or survive global competition is considered old-fashioned: a bureaucratic excess or make-work from an overfinanced welfare state; social efficiency demands its elimination. In addition, privatization undercuts many social institutions through mass media–delivered criticisms of social projects, by emphasizing only private goals as valid.

Job Design for a Healthy Economy

Having defined social progress as the elimination of bad conditions, such as poverty and infectious disease, the social democratic alternative to capitalism lost momentum when its goal began to be achieved, as in some Scandinavian countries in recent decades. The very changes in technology and mass production and consumption that had led to this progress, however, simultaneously undermined the social structure. This, in turn, caused social insecurity, loss of social identity, and mental strain from new forms of work that were mentally, not physically, demanding. Now a new set of bad conditions—broadly speaking, stress-related mental and physical disease in both individuals and society—have become perhaps the largest threat to social well-being in more developed countries.

Of course, eradicating these new problems, along with implementing the new forms of production described above, could become the joint political goal for a future society, and relaunch the stranded movement toward social democratic alternatives. Moving from stress-related illness toward positive health requires capability development, local control, and social relationship development—all elements of conducive production. Conducive production is thus a model for social health, as well as creative, sustainable production and democracy.

The suggested characteristics of jobs for disabled people, particularly the lack of additional health risks, highlight the link between conducive production and health in modern society. This issue gains importance as stress-related illnesses increase. These accompany increasing demands on workers and reduced opportunities for workplace control in the global economy. For workers, the equal-power sectors of the economy, producer networks and service-oriented, community consumption networks are likely to be the healthier parts of the economy in the future. These two enable reduced work-organization hazards, moderating the intensity of work demand, and increasing worker autonomy and creativity and trust-based social relationships. This would give new advantages to the network-based economic development sectors, both conducive production advantages and health advantages.

In contrast, being either a worker or a consumer in the market sectors with unequal power relationships is unhealthy. Workers have powerless and demanding jobs, and consumers have no power of commodity production. This is unhealthy in terms of both direct psychosocial stress effects and indirect effects due to impoverishment of social networks.

Deepening Democracy

During the 19th century, institutional protections emerged from democratic government institutions to safeguard individual citizens against the power and wealth inequities of unrestricted capitalism. When capitalism challenges democratic institutions themselves, however, as it now does, then democratic aspirations can be left unprotected from the claims to freedom for large accumulations of capital. For example, modern societies in nation states require employment stability; countries are now subject to a new hegemony of international or multinational firms that control many jobs, and their actions, based on huge financial resources, exercise their freedom in a manner that recognizes few social boundaries. The source of the current weakness of our democratic principles is their basis in a model of social contract theory that led to the overthrow of divine-right monarchy at the end of the 1700s, bolstering both the cause of capitalism and that of civil democracy. As mentioned, the model had no theory of a democratic production process that was truly consistent with its goal of empowering all members of society. Democratic principles applied only to civil institutions, which were outside production.

A Second Path to Democracy

A new economic model, such as the conducive model, could integrate democracy with creative production in a manner that takes a clear alternative approach to combining freedom and democracy. Just as the mass-production or global-trade model formed the basis of two centuries of political models, an alternative view of production, based on a conducive economy, could lead to a new direction for both democracy and political economy.

The new combination of democracy with a production model must ensure that economic activity does not threaten civil democracy, but extends it to all spheres of social life. The developmental question for democracy is, What social processes lead to socially active working class or mass of society, a mass that would defend and extend its own interests? This article claims that experience in the workplace molds behavior and encourages individuals to be active or passive in society as a whole (see Karasek, 1976, 2004a). Although the community, its structure and value, and the family complement the transformative character of the work process, the key institution is the occupational structure. Through its accompanying social processes, this structure can reproduce the behavior that supports it or sometimes transform itself by changing such behavior.

First, democracy is built into the core vision of the new society and its basic patterns of productive social behavior. Thus, democracy is encouraged at every level of society, not just in a national representative assembly but at the local level, and not just in civil society but in its economic institutions. Conducive production encourages the dynamics of social behavior, particularly at work, that stimulate active participation in democratic institutions. The workplace stimulates democratic principles in society rather than being an exception to them.

Second, the understanding of workplace organization includes the social and psychological aspects of the work process and forms of social association inside and outside this process. The new valuation of human productive activities includes issues of labor quality and could be important in regenerating workers' active participation in political life, particularly for workers in service industries, where the nature of effective social production can differ so widely from commodity production that conventional political dialogues are alienating. For example, an analysis using U.S. Labor Department statistics on workforce composi-

tion and CBS/*The New York Times* exit poll data showed that service workers were less than one-fifth as likely to have voted in the 1988 national elections as professionals and managers, and about half as likely to have voted as blue-collar workers (Meyerson, 1989), who are sometimes regarded as marginal participants in the political process in the United States.

The current (or older) occupational and political system is constructed to find peaceful solutions to conflicts between workers in heavy industry and the managers and owners; the issues are stated in terms of economic rewards, quantitative benefits, hours, and physical demands. Modern political discussions take account of these conflicts but overlook both new, highly stressed and disadvantaged occupational groups that are "routinized, bureaucratized and commercialized" (Karasek & Theorell, 1990) and the skilled professional elite with new forms of career-development advantages. Thus, the psychosocial side of the modern economy has new losers suffering from stress and new winners with learning opportunities. This effectively creates a new class structure that needs political expression. Women often predominate in these occupational groups, particularly among the disenfranchised, so the expansion of political dialogue might be particularly energizing for them.

Finally, a new pathway toward democracy must balance the logic of laissez-faire social policy and profit maximization with the need for both social welfare protection (which undergirds the conducive economy) and democratic process (to steer the investment of productive resources in workplaces). The concept of property under capitalism receives social validation because it is seen as broadly stimulating society's productive resources; for example, patent ownership is thought to stimulate invention. In the past, the narrow concentration of productive resources, with limited forms of social possession, may have yielded maximum effectiveness for commodity production and material well-being. Today, however, the world is awash with investable capital; the resulting speculation, mergers and foreign acquisitions, and the excess manufacturing capacity, which outstrips demand in almost every sector, are destabilizing influences. Most important, from the perspective of a new definition of productivity—based on conducive value and relating to the maximum growth of human capabilities—rigid social organization and the narrow concentration of productive resources become inefficient because they restrict access to the necessary tool-like resources for the majority of people. Those principles need to be redesigned according to the bridge model if they are not to impede social development in the future.

Conclusion

This article attempts to resolve four major dilemmas in modern social policy by adding work organization to existing discussions on political economy. It introduces a new model of conducive production and a work-quality approach to social policy. The value model arises from diverse sources: the new forms of production discussed in the business community, new thinking about communities and social capital development, alternative social thought on the political left, and new concerns about psychosocial health and disability. The article attempts to go beyond these, however, in redefining value from production and by outlining the resulting effects on consumption, community and politics. An integration of the new work-quality policy with MOP and SWP is claimed to enable a new phase of political and economic development.

As an example of the implications of the conducive production model, the article discusses the differences between the approach of work-quality policy and the MOP and SWP reasoning on tackling unemployment. The conducive economy can generate more jobs through the quite conventional economic dynamics of creative and adaptive production. When appropriately designed, jobs can train workers for better jobs in the future, build self-esteem, and motivate those at every level of skills to participate in societal institutions.

A major source of unemployment is too narrow a definition of economic activity. The broader definition of value that comes from conducive production brings with it a broader definition of employment and thus more jobs. The potential MOP objection that this would be inflationary is false, because these other forms of value were recognized in earlier social and political discourse; they are losing legitimacy only in the current, limited, pure-market dialogue.

Along with unemployment comes a familiar but complex web of problems that all seem to knot together around a quantitative logic of market costs and benefits. This article presents a new set of integrated solutions based on alternative, qualitative aspects of labor and production, focusing on work organization, which is claimed to resolve the four dilemmas described in the introduction.

First, free-market commodity production fails to support the long-term increases to human capital needed for economic growth; this could be resolved through a new production model to supplement the commodity model. The output value of this new model reflects the development of the skills and capabilities of both workers and consumers in new, dynamically creative and associative work processes. These processes also weave networks of creative social relationships that can strengthen the local community, which, in turn, can support more robust economic development in the future.

Second, a new model of work organization and production can resolve the dilemma of ignoring so-called soft issues of quality of life, such as overload risks, job insecurity, and social deterioration. The new model explicitly addresses these issues. This dilemma highlights the need for a social security platform to minimize risks, as a basis for flexible and innovative production in the future.

Third, a new understanding of value from socially collaborative activity can resolve the dilemma of the underproduction of quality of social services and of decent jobs in the service sector. This understanding attaches value to the results of the process of constructive and collaborative social relationships, which are the essence of services. It replaces the alienating focus on material values alone.

Fourth, building active participation into the production model can dissipate the threat to democracy from the very free-market development that it made possible. Active participation starts at the workplace, moves out into political and community engagement, and then strengthens both the economy and civil institutions of democracy.

In addition, the focus on work organization brings awareness of several new dilemmas, which could undermine future political discourse if not properly understood. They are unfolding as the changes in the nature of production extend slowly and inconsistently through several linked stages: yielding new coordination processes at work, evolving new links to the customer and communities outside work, and erecting new forms of value.

Immediate political debate is needed to tackle a dilemma looming on the horizon: the growing mismatch between the new ideas of work organization and the value model that they imply. At present, the modern workplace is outrunning policy makers, generating new modes of social coordination at work faster than political institutions can adjust the goals for society, and leaving social debate on values lagging far behind. The absence of this debate creates the present danger that workplaces with new forms of work organization will mislabel reality, using jargon reflecting humane future potential to describe their old-fashioned goal: advancing shareholders' profits. If no distinctions are made between the good and bad new models of work organization and their goals are not examined, the negative political impact of the discrepancies between new language and old goals will damage the policy alternatives for the future: a strategic loss to those who want to obtain a more humane and democratic society. This is a clear problem in the United States, where many mainstream socially progressive forces see new work organization as a threat, not a direction for future progress.

A second new economic dilemma arises because many of the so-called examples of new work organization retain an old mass-consumption view of the linkage to the customer. This generates none of the new type of demand that skilled and flexible production can best satisfy, and which is therefore needed to sustain development in this new economic form. For example, lean production does not complete the circuit between supply and demand. Skilled and flexible production must produce conducive products for active customers. Support for the social fabric and social capital of the community is essential to both active consumption and sustained revolution in work organization. To be sustained, a true economic revolution requires these additional steps outside the workplace.

Although significant social programs can be launched today with the assistance of work quality policy, major social progress probably requires a more dramatic, added element: a shift in value system, a set of goals for the production and exchange structures of modern society that extend beyond those of increased profitability. Indeed, there are very broad changes already afoot in the global economy that may presage such large evolutions.

The most desirable locations for generating capitalism's exchange value surpluses are shifting outside the United States and Europe. Transferring capital to its most productive location—Adam Smith's cornerstone dictum of capitalism—may soon mean sending it to China and India; Asia could absorb a lot of capital if its material standard is to reach our level.

And in the meantime—will there be empty cupboards in the advanced societies—or on Wall Street? (Wall Street may still manage some of the investments but the capital's main effects will be elsewhere.) What

about expensive office buildings and empty factories not generating the appropriate return-on-investment (ROI) in the developed countries? Should that capital be sent to the far East—to dutiful respect to Adam Smith principles? Or, rather, should the advanced societies be pragmatic and figure out a new intellectual justification for keeping all of that laboriously accumulated investment at home? Not sending it abroad, however, means accepting an alternative to the so-called productive efficiency of investments principal, the ROI (return on investment, "productivity"), as a rationale for social decisions.

Perhaps instead of textbook economics, one should value social and environmental sustainability, humane social development, and local social equity—and keep the locally accumulated wealth and the jobs it creates at home.[2] When social sustainability, for example, becomes the default guiding principles for social organization—then the value system has shifted. The free flight of capital and unrestricted trade confront an alternative set of principles. One could not rule this out as a resolution of the endlessly discussed malaise of Western societies, as those societies search for their pathways through late capitalism.

It would be an easier transition to manage if the capital wealth and the social platform remained intact. Once those are gone, then the advanced societies are on an equal footing with China and India, and the only rules created for the economic development process are rules of ruthless, low-wage competition around the world—probably an unstable transition for those societies.

In the Dutch public forum where the conducivity model was first presented, an economist wondered whether the conducivity model was 50 years ahead of its time in economic policy. I think not. These changes are needed now. Many of the disruptive changes noted above—driven by companies aiming only for increased profit—have already worked their way at surprising speed through many social institutions. They have left worker protection in the United States, for example, seriously compromised. If national welfare systems in Europe and elsewhere are further jeopardized and the fundamental social security platform is compromised, however, a move toward a conducive economy might first require a new political basis for social security, possibly global social contracts; building these would be a formidable and very long-term challenge.

Wait for the future? If MOP advocates were to continue to aggressively pursue the items on their current agenda—such as foreign investment liquidity, economic shock treatments for newly independent states, consolidation of transnational currency and financial institutions, and the privatization of public-sector activities—supportive social structures around the world could unravel even faster. The lack of countervailing social policy during this decade has already given this result. In many countries, waiting even one more decade means risking the development of so much insecurity in the workforce that constructive change in labor relations could be difficult. Without equality of power, there is no trust, and power relations are eroding for many groups of workers. Insecurity can drive retrogressive social changes, which, in turn, can reinforce the negative effects of a deteriorating social platform. The past century has already seen such periods of retrogression.

This article brings the optimistic idea that some advanced industrialized countries could move in the conducive direction now. For these countries, conducive production could be a logical progression from currently successful policies. The existing political agreements have built a supportive national welfare base; worker aspirations are moving in these directions, and the necessary organizational skills for companies are rapidly growing. Positive change is possible when one is relatively secure—and challenged. There is no time to waste.

Notes

1. The consumer actively partakes of the process of consumption (and thus makes it production as well). Consider the opposite: The music of a single recording artist who could supply the world demand for music is the dream-scenario of a commodity-oriented multinational entertainment corporation. However, the appetite for music is whetted by the playing of music, just as all skills stimulate demands through their use, as we saw above. Without the possibility of playing of music, eventually there might be no demand for music. Although an exaggeration, this is the consequence of music not being physiologically needed like food is needed, but its being a skill, which facilitates human adaptive activity, in combination with other skills.

2. Such actions might first appear to aggravate the problem of international labor force inequalities. However, it could be claimed that because the real source of that phenomenon is the hegemonic scope of capitalism's exchange value and surplus extraction model. Thus, the international inequality problem could best be reduced through adoption of a less aggressive production model in the powerful developed countries.

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