

## DEMOCRATIC SOCIALISM AND TECHNOLOGICAL CHANGE\*

### THE CONCEPT OF SOCIALISM

As the Communist world enters into an ever deepening crisis, socialist theory increasingly detaches itself from practical politics and takes refuge in normative considerations.<sup>1</sup> This development has the merit of clarifying the fundamentally democratic inspiration of socialist ideals, but it runs the corresponding risk of recasting these ideals in a utopian mold that invites dismissal on the grounds of impracticality. Contemporary arguments for democratic socialism are especially vulnerable to the charge that they fail to come to terms with the problems of technology, administration, and the related complex of cultural and educational issues that are ritually brought forward as fundamental obstacles to economic democratization.

In this article, I propose to address these problems of technology and culture in terms of a very broadly reconceptualized theory of the "transition to socialism." My goal is to raise the problem of feasibility to the level of a question of principle, rather than treating it as a laundry list of familiar objections of detail. I believe a discussion of this kind can significantly advance our understanding of the normative questions as well by relating them to the framework of social transformations they are intended to guide.

There is a precedent for this emphasis on the practical framework for the realization of socialism. Marx believed his most important discovery was the idea of a transition linking the capitalist present to a very different future through a specific dynamic of change. Instead of treating socialism as an "ideal," he asserted the existence of a historical "process" or "law" leading from capitalism to socialism.<sup>2</sup> Today it is clear that such a "law" will apply only contingently to any real society, but in any case its logic can be formulated as a general model of the dynamics of cultural change in societies making the transition to socialism.<sup>3</sup> The transition to socialism might then be reconceptualized non-deterministically as a *civilizational project* rather than as the result of what Marx once called a social "process of natural history."<sup>4</sup>

Civilizational projects are realized through possible *trajectories of development* that impose a global pattern of culture based on new values that eventually define an entire epoch of human history. Capitalism supports just such a civilizational project, underlying the differences between national regimes. The Marxian model of socialist transition can be employed to define a socialist civilizational project, fundamentally different from that of capitalism. Unlike an idealized socialist utopia, which necessarily plays the role of unattainable "ideal" in opposition to the sorry state of social "reality," a dynamic transitional model of the sort proposed here can be used to develop concrete proposals for change.

If socialism is a civilizational change, that would explain why Marx did not treat individual components or aspects of the future society he anticipated as so many policies that need only be implemented by a sufficiently determined government. Instead, he imagined a coherent transformation in the very foundations of the existing social world leading to the creation of a new type of industrial society. The centerpiece of this new society was to be a radical advance in the cultural level of the labor force. It is not easy to reconstruct Marx's view of this transformation, but I will argue that he regarded *socialization*, *democratization*, and *innovation* as intrinsically connected dimensions of it.<sup>5</sup> Here is a brief sketch of these three dimensions:

1. the socialization of the means of production, accompanied by the early substitution of planning for markets in the allocation of capital and other productive forces, and eventually, at a later stage, the general replacement of the market;
2. the radical democratization of society through an end to the vast economic, social, and political inequalities characteristic of class societies;
3. the innovation of a new pattern of technological progress leading to an end to the sharp division of mental and manual labor characteristic of capitalism and a requalification of the labor force.

Any concept of socialism based on these premises can legitimately be called "Marxian" in inspiration. By the same token, the reconceptualization of socialism on the basis of the first or second component alone leads to a variety of non-Marxian socialism. The existing Communist societies would have to be counted among these latter given their narrow overemphasis on planning at the expense of democracy and technological change. Elite control of industry, such as Stalinism presupposes, requires precisely the division of mental and manual labor and the corresponding technological forms the Marxian transition to socialism is supposed to overcome. Similarly, a socialist position such as that of Jürgen Habermas, which reduces socializa-

tion to democratization while conceding the neutrality of technology, falls outside the Marxian framework.<sup>6</sup>

This unified conception of socialism has by now been split into its component parts by history and analysis. Popular movements for democracy in socialist countries, like environmental and labor movements for technological change in the West, testify to the breakdown of the original Marxian synthesis, and the need to articulate relatively independent struggles in every sphere. Contemporary social theories which, starting out from Marxist premises, move toward recognition of this fragmentation of socialism are sometimes called "post-Marxist." Such theories attempt to recover the democratic or technological dimensions of socialism against the exclusively economic Soviet model.<sup>7</sup>

This article presupposes many of the results of this general critique, and applies them in the technological domain. The argument hinges on the conditions for the requalification of the labor force through technological change. It is here that the Marxian conception of socialism becomes more than a socio-political alternative and points toward fundamental civilizational change. But, where traditional Marxism assumed that workers would be guided by inherent and unambiguous interests in transforming technology, I will argue a contrary position, that *the institution of democratic control of industry is a condition for generating an interest in a new direction of technological progress*. In other words, democracy itself is a "productive force" of a new type, shaping the form of innovation in a future socialist society.<sup>8</sup> I would like to turn now to that argument.

#### A NON-DETERMINISTIC APPROACH

Marx's various scattered comments on the idea of socialism can be unified around two assumptions he routinely made, first that in industrial societies power depends on control of technology, and second, that the working class possesses an overriding class interest in the abolition of the division of mental and manual labor and the system of wage labor it implies. With these premises in mind, Marx argued that workers can rule industrial societies through the socialization of industry, a form of ownership in which the public character of modern forces of production is recognized through some sort of democratic control. The technological consequences of this arrangement follow from the imposition of new criteria of innovation responsive to the interests of the working class rather than to those of the capitalist class. Control of industry is thus more than control of society; it is also control of

history. The class that decides on the course of industrial progress governs the future out of the present.

This brief sketch of Marx's views shows that he relies on the concept of interest to secure the connection between the democratic forms and the substantive technological content of his conception of socialism. The reference to interests gives an objective, imperative form to the process of the transition to socialism and suggests that, just as the interests of capitalists govern the cultural and technological development of capitalism, so the interests of workers would shape a new socialist civilization.

Since interests grow out of the relation of classes to the means of production, they can be objectively ascertained, independent of temporary ideological variations. On these terms, the chief interest of the capitalist class is the maintenance of the precondition for its existence as a class, namely, what I will call the *operational autonomy* required by its alienated administration of society's productive resources. This interest is secured in the system of property, which offers capitalists a great deal more freedom of action than had the leaders of work groups in earlier societies, freedom that can be used to increase their power and wealth. In particular, capitalists introduce technological innovations independently of the opinions and needs of workers and in function of the goal of maximizing control of the production process through technological design.<sup>9</sup>

The capitalist division of labor that results from this innovation process has a social impact through its cognitive effects on the working population. I will call these effects the *knowledge deficit*, defined with respect to the cultural level required for self-rule. The acquisition of knowledge generally follows the patterns established by the specialized breakdown of tasks that insures capitalist control of the labor process. Disqualification and increasingly narrow technical specialization confine workers to a dependent position in society, while casting capitalists and their managerial representatives in the leading role. The result is an enlarging gap between the level and type of culture required by most positions in the division of labor, and that required to make significant social decisions. Technological advancement in this system thus not only subordinates workers to capital, but disenfranchises them at the most fundamental level by removing all incentives for society to teach and for workers to learn enough knowledge about the social world to understand and participate in making the important social decisions that concern them.<sup>10</sup>

Capitalist technology has evolved under a system of class rule and therefore reflects the requirements of control from above. It is these require-

ments which generate a division of labor and a conception of technical progress incompatible with the full and democratic development of the individuality of the workers. A democratic power would have different requirements, tied to the civilizational project of creating an industrial society favorable to individual development.<sup>11</sup> It is important to note that Marx does not regard any of these points as politically contingent. When it comes to matters of control, it is not a question of what this or that individual or group prefers; essential determinants of class identity are involved. Capitalists *must* impose a division of labor which *only* workers can overcome. It is characteristic of Marxism to so condense a democratic process and a substantive goal through the identification of social essences.

The third dimension of Marxian socialism can now be reformulated more precisely in the following propositions, which express the interconnection between its political and technological aspects:

3.1. A socialist system would require the development of a qualitatively different division of labor compatible with the employment of highly educated and socially responsible workers.

3.2. Such a system would be oriented toward long-range patterns of technological development that would further the actualization of human potentialities at work.

The whole theory can now be summarized in what might be called Marx's *maximum thesis* on the transition, according to which:

Workers' control of industrial society inevitably leads to the socialist transformation of the division of labor and technology.

This original Marxian position is subject to two very different kinds of attack today. First, it is claimed that the desirable social transformations Marx expected from socialism are in fact being made under capitalism in response to technological advance. Second, the deterministic reliance on class interest is rejected on the grounds that the self-understanding of social groups cannot be deduced from their place in the social structure but depends on a wide variety of factors. Let us examine these objections in turn.

1. Is the Marxian theory of capitalism refuted by the emergence of an "information" or "post-industrial" society, based on a radically new type of computer technology that privileges skills, in contrast with the deskilling associated with traditional mechanization? The initial determinist assessments of post-industrial society argued that computerization would raise the general skill level of the workforce, automate production and enlarge the range and power of human communication and collaboration at work, making

possible the general democratization of society.<sup>12</sup> But nearly a generation of experience with automation and computerization has changed the tone of social commentary.<sup>13</sup> An emerging consensus argues that automation is suspended politically between very different alternatives and nothing about computer technology per se can decide the issue. A brief glance at two recent studies of automation illustrates this point.

In her book *In the Age of the Smart Machine*, Shoshanna Zuboff argues that computers make possible two complementary transformations of the workplace.<sup>14</sup> On the one hand, they can be used to automate production, relieving human beings of physical effort. On the other hand, they can be used to "informate," a term Zuboff introduces to refer to the integration of workers and machines at a higher level of intellectual involvement, participation in decision-making and productivity. Informating is not an alternative to automation, but consists in further potentialities of computer technology management may or may not choose to realize in the course of automating. Zuboff offers persuasive evidence for the social ambiguities, or ambivalence, of computer technology.

Harley Shaiken concludes his book, *Work Transformed*, with similar reflections:

It is ironic that computers and microelectronics should be used to create a more authoritarian workplace. They could just as easily be deployed to make jobs more creative and increase shop floor decision-making. Rather than pace workers, systems could be designed to provide them with more information about the production operation in general and their own jobs in particular. The technology could be used to bring the work under the more complete control of the people who do it rather than the other way around.<sup>15</sup>

Shaiken would seem to agree with Zuboff that, "Technological design embodies assumptions that can either invite or extinguish a human contribution."<sup>16</sup> And Zuboff offers numerous examples of the suppression of the democratic potential of informating technology by uncomprehending or frightened managers, confirming Shaiken's argument that automation has failed socially because of "the use of technology to extend managerial power."<sup>17</sup> Thus the issue for both Zuboff and Shaiken is less the impact of technical progress on the democratization of society than the reverse: the capacity of democratization to release suppressed potentialities of technical progress. But this was precisely the point Marx was getting at a century ago.

2. I would like to turn now to the far more damaging objection to Marx's deterministic conception of class interests. How strong, really, is the connection between working class power and the socialist society Marx expects

workers to create? Marx's original theory of working class interests assumed that capitalism could only satisfy workers' needs contingently, inadequately, and episodically. This biological basis for opposition to capitalism was linked to a sociological theory of alienation according to which the structural obstacles to self-actualization through work could only be overcome in a socialist society. Thus in this early formulation, workers' vital needs for food and shelter would be satisfied only where their human need for fulfilling work was also satisfied.

The later theory of "relative immiseration" recognized the possibility of a rising income floor without clearly explaining the impact of this reformulation on the motives and aims of socialist revolution. Once the impoverishment of the working class is defined as relative, socialism can no longer pretend to be the only adequate representation of workers' rational self-interest. A more sophisticated formulation is required which distinguishes between the wide range of interests that can be reasonably imputed to workers, many of which are as well satisfied under capitalism as under socialism, and the narrower subset of that range which is systematically obstructed by the existing technology and division of labor and which can therefore best be achieved through socialist transformation of the technological base.

Once this concession is made, the deterministic framework collapses. It can now be asked what would necessarily orient workers toward the new concepts of labor and welfare that Marx identifies with socialism. The interests of workers under socialism are ambiguous and may not guarantee an evolution toward a truly different form of civilization. The idea that there is a necessary connection between working class interests, the quality of work, and the direction of development of industrial society is not persuasive in its original deterministic formulation, but it can be reconceptualized more modestly as a theory about the ambivalence of the economic culture of capitalism.

The *facticity* of the worker under capitalism, as object of capitalist control, involves discontent over the nature of work.<sup>18</sup> This cultural structure can, but need not, inspire workers to make the sort of demands that would lead to a socialist transformation of the production system. In fact, there is a good deal of evidence from the existing Communist societies that controversial trade-offs are involved in the choice between working conditions and consumer goods. But no group other than workers can consistently support an end to the conditions of control from above, since such changes are subversive of every way of organizing the economy from outside the labor process itself.<sup>19</sup> This *minimum thesis* might be formulated to say that:

Workers' control is *uniquely compatible* with changes in technology and the division of labor in the interests of the systematic enhancement of human capacities.

This formulation of the idea of socialism requires the translation of Marx's theory of the transition out of the objectivistic language of "interest" into the more empirical language of culture. The concept of the *economic code*, referring to empirically identifiable cultural differences in economic values, can serve for this purpose. By the economic code, I mean the way in which individuals customarily perceive their own welfare, what they regard as economic goals, and what they consider to be legitimate or desirable economic means. The economic code governs the goods individuals seek to obtain as economic rewards, whether they expect these goods to be delivered publicly or as privately consumable commodities, which goods are signified as utilitarian, and which possess aesthetic, prestige, or other types of values, and so on. Every society also has characteristic economic codes concerning such things as workmanship, authority relations on the job, savings and leisure, the occupational expectations associated with various jobs, with sex and age, and so on.<sup>20</sup>

These cultural differences have major implications for the process of technological development. In any society, it is through encoded perceptions of the economy that the so-called economic "realities" take on their specific significance. In particular, culturally relative conceptions of means and ends and divergent interpretations of welfare govern innovation and the reception and adaptation of imported technology.<sup>21</sup> Technological futures are thus determined not only by technical factors but by economic culture as well.

With these considerations in mind, we can ignore Marx's maximum thesis and reformulate his theory of the transition in ideal-typical terms. For our purposes, it is unnecessary to prove that working class rule guarantees a socialist evolution of society. The interesting point is the *possibility* that workers in some socialist society might choose an original technological future corresponding in its main outlines with Marx's concept of the transition. The actual economic code governing workers' economic perceptions *may* become the basis for the adaptation of technology to socialist purposes where it approximates to the hypothetical "interests" Marx imputes to them. This contingent relationship between workers' economic culture and the preconditions for the transition to socialism renders the socialist future itself contingent, since under the assumptions of the minimum thesis socialism can only be created by workers' control and not, for example, by a suitably enlightened political dictatorship.



## TECHNOLOGY AND THE DISTRIBUTION OF CULTURE

Marx's hypothetical construction of the interests of workers and his predictions about the future have been criticized and defended ad nauseam. Rather than continuing that rather fruitless debate, I intend to pursue the "minimalist" strategy outlined above by reformulating the concept of proletarian interests as the ideal type of a *socialist economic code*. This approach reveals the underlying economic logic of a new form of civilization that would not merely add a few desiderata to the current repertoire of "values," but which would have a truly different structure. On this basis, it will be possible to anticipate changes as fundamental as those which gave rise to citizenship through the abolition of estates, or the invention of childhood through a series of social changes culminating in the limitation of the labor market in the late nineteenth century. Marx's *Grundrisse* provides a basis for this approach which, with a certain amount of imaginative interpretation, can be substituted for the usual deterministic account.

In this text, the dynamic of technological change under socialism is guided by workers' "interest" in humane work settings, an interest which must be imposed on the inherited technological base through rationalization and innovation in the course of the transition. Marx believed that eventually workers would produce a whole new technology in which work would be "life's prime want" and not a burdensome obligation.<sup>22</sup> This goal would be achieved when labor

is of a scientific and at the same time general character, not merely human exertion as a specifically harnessed natural force, but exertion as subject, which appears in the production process not in a merely natural, spontaneous form, but as an activity regulating all the forces of nature.<sup>23</sup>

The transition to this higher type of industrial society would involve a deep change in economic culture. Capitalist society, Marx argues, distributes wealth in the form of ever more varied commodities, but this commodity form is only a limited reflection of the actual enrichment of the human species represented by the growth of the needs and faculties of the consumers. It is this latter that is "real" wealth, the development of human attributes and capacities as dimensions of individual self-actualization, mediated by material goods to be sure, but not identical with them. Marx writes,

In fact, however, when the limited bourgeois form is stripped away, what is wealth

other than the universality of individual needs, capacities, pleasures, productive forces, etc., created through universal exchange? The full development of human mastery over the forces of nature, those of so-called nature as well as of humanity's own nature? The absolute working-out of his creative potentialities, with no presupposition other than the previous historic development, which makes this totality of development, i.e., the development of all human powers as such the end in itself, not as measured on a *predetermined* yardstick? Where he does not reproduce himself in one specificity, but produces his totality? Strives not to remain something he has become, but is in the absolute movement of becoming?<sup>24</sup>

The extension of transport and communications is a clear example of Marx's new standard of wealth. Peasants confined mentally and physically to the small villages of their ancestors are "poor" by this standard, compared with modern individuals situated at the nexus of cosmopolitan interactions. Whether or not we share Marx's disdain for the countryside, the economic implications of his argument are clear. Instead of appearing in the form of goods external to the individual, wealth now appears as the developed powers of that individual. There is a sense then in which training and education, variety of experience and occupation become a higher type of consumer good. A socialist society values such an enlargement of human experience and individuality as an end in itself, without subordinating these forms of wealth to the pursuit of a profit on the sale of the material goods associated with their acquisition.

Why would this change in the social definition of wealth occur under socialism? Marx argues that the industrial economy not only produces a huge variety of commodities, but it also creates unique opportunities to apply the expanded powers of the individual productively.<sup>25</sup> These opportunities would be seized under socialism as economic motivations for the enlargement of human capacities. Once a society has been gripped by this dynamic relation of consumption to production – the pursuit of "real" wealth contributing to its production – radical changes in the economy will occur. Every activity that increases the skill and intelligence of the worker increases the value of labor power. Meanwhile, work itself becomes one important arena in which to develop the powers of the individuals.

But work remains work, however fulfilling. Thus even under socialism workers will strive to reduce the time spent working while simultaneously increasing their leisure, much of which would be used for learning. But the more workers employ their leisure to learn, the more productive their labor and consequently the shorter the workday. "The saving of labour time [is] equal to an increase of free time, i.e., time for the full development of the individual, which in turn reacts back upon the productive power of labour as

itself the greatest productive power.”<sup>26</sup> Socialist “interests” and the corresponding patterns of consumption develop the “wealth” of the individual personality and the productivity of labor in a self-reinforcing cycle.

This is truly a utopian conception, but one that is considerably more interesting than the utopias usually attributed to Marx. Here the economic circle is squared by the creation of an economic *perpetuum mobile* that feeds off the very resources it consumes. If in fact a primary leisure activity, pursued voluntarily and for its own sake, increased the value of labor, then it could be freely converted into an economic input. Consumption and investment would approach identity in the domain of human resources and one of the chief costs of the economy, education and training, would also be a benefit.<sup>27</sup>

At the civilizational level, the key difference between all present day industrial societies, including Communist ones, and the socialist model outlined above is the role of knowledge and skill in the economy. Under socialism the “subjective” forces of production – human skill and intelligence – formerly wasted by industrial societies, could be applied to increasing productivity according to the dynamic of requalification projected in the *Grundrisse*. The socialist labor process emerges as a synergism of the demand for skilled labor and the growth of human powers through work. The higher level of knowledge and skill characterizing this labor process would make new efficiencies possible, motivate the transformation of technology, and reconcile broader participation with the technical requirements of an industrial society.

So formulated, the theory of the transition to socialism is an attempt to show the *possibility* of an alternative type of industrial society, one based on a much fuller development of individual capacities than in capitalism. By “possibility” in the sense of the term used here, is meant not merely technical feasibility, but the integration of technical and economic codes in a configuration corresponding to a new type of civilization in which the very pursuit of economic efficiency would raise the cultural capacities of individuals to the level of the social responsibilities they would have to fulfill, in which there would be no necessary trade-off between the pursuit of economic well-being and democratic participation.

#### THE TRANSITION TO SOCIALISM

Can we bring this utopian conception down to earth to inform our speculations about the future? I will argue that the effective initiation of a transition

to socialism has three specific institutional correlates in the economic domain, corresponding to the three dimensions of socialism discussed at the beginning of this article. While these are not sufficient conditions for achieving a socialist reorganization of society, they do appear to be necessary conditions; and the discussion of them offers a useful way of concretizing the model of democratic socialism proposed here.

First, under the assumptions introduced above, social ownership must extend not just to machines, buildings, and land, but also to the monopolized cultural capital required for the management of industry. But the *socialization of cultural capital* cannot be accomplished at the stroke of a pen; it takes a long term educational effort on an unprecedented scale.<sup>28</sup>

Furthermore, if workers are to assume greater responsibility for their enterprises, the systematic redistribution of cultural capital must begin in the very earliest stages of the transition to socialism and must aim at raising the general cultural qualifications of the population. Thus it is not enough that the society favor study; narrow, merely technical training for existing positions in the division of labor must be replaced by much broader and continuing preparation for social participation. Workers must be in a position to enlarge their access to the kinds of knowledge required to perpetuate and increase their power in society.

The democratic distribution of culture would accomplish two fundamental objectives:

1. to supply the volume of intellectual resources required to take advantage of technological options that rely more heavily than does capitalist technology on inputs of skill and intelligence;
2. to qualify the entire labor force, and not just a small elite, to participate effectively in management and politics.

This strategy would seem to involve wasteful investments in human resources. But this objection is rooted in the culturally relative distinction between *investment* and *welfare* in the capitalist economic code. We tend ethnocentrically to consider these as unambiguous categories because for us the goals of production are signified in terms of capitalist concepts of wealth, that is to say, primarily in the form of material goods available for private consumption. By contrast, education is an investment rather than a major positive component of personal welfare. The scarcity of knowledge and skill is a direct result of this code, which regulates supply by market demand and which rewards deskilling with a share of the savings realized by the replacement of skilled with unskilled labor.

Following Marx's argument in the *Grundrisse*, we could construct an ideal

type of a socialist economic code in which, on the contrary, educational activities that capitalist society places within the category of investment and evaluates in terms of efficiency in the production of material goods would be placed in the category of consumption and evaluated as contributions to individual welfare. While this is a promising beginning for a theory of socialist economic culture, Marx's account of how such a culture would come to prevail over the capitalist one is unacceptable.

The shift would occur, according to the *Grundrisse*, because technological progress would render the capitalist method of distributing culture obsolete and would usher in a new age in which the acquisition of knowledge and skill becomes an end, an activity in which workers will voluntarily engage independent of personal economic return. Industrial advance, beyond a certain point, would yield a new social definition of welfare as self-actualization. This argument is a clear instance of Marx's tendency toward technological determinism, and as such unpersuasive.

The collapse of the deterministic position forces us to answer a type of objection Marx never had to face. Socialist educational strategy sounds remarkably idealistic in the bad sense of the term. Indeed, today education is usually treated as a moral value where it is not merely an economic investment, suggesting that democratic socialism would be committed to the voluntaristic imposition of educational goals. On these terms, the socialist hypothesis that education would be pursued for its own sake is not much more plausible than the hope in a general commitment to moral self-improvement. Is there a way to retrieve Marx's notion of educational consumption from these consequences of the breakdown of his determinism?

If the pursuit of education is to be a consumer good under socialism, it must serve importantly in a practical context of daily life. Educational consumption must have some purpose more compelling than the sheer enjoyment of learning.<sup>29</sup> The elements of a solution are present in the democratic dimension of socialism, but have never been applied to the problem before. The local politics of participatory self-management in workplaces and in communities would offer a far more effective scene for the application of broadened cultural capacities than the inherited labor process. Thus, to a considerable extent, the consumer value of education would be realized at first in relation to public functions such as management and community affairs. There educational acquisitions would "pay off" for the individuals, if not economically, at least in terms of increased respect and influence and overall outcomes more in conformity with their needs and interests.

The scope of education would broaden accordingly, and in this the acquisition of knowledge and skill would no longer appear as subtractions from individual welfare but as components of it. The educational activities of the population would be *uncoupled* from the immediate economic needs of the society and from the investment strategies of individuals; education would become the driving force in social and technological change. Industrial society would *bootstrap* from a condition characterized by the knowledge deficit to one in which individuals would generally possess the cultural qualifications corresponding to their social responsibilities.

With the growing success of the transition, the initial "overinvestment" in education would make possible a leap to a higher level of productivity, based on new technologies adapted to operation by a highly educated workforce. Not technology but politics must lead the process of change, with technological progress an outcome rather than a cause of the establishment of new socialist social relations. Thus once Marxist determinism is abandoned, *democracy becomes an economic and technological requirement of the transition to socialism.*

Although such an educational dynamic contrasts sharply with our expectations in the advanced capitalist world today, it has partial precedents in the modernization of Japan and the Soviet Union.<sup>30</sup> To dismiss it as unlikely in any particular contemporary context misses the point that it defines a possible trajectory of development toward a new form of industrial civilization in which social responsibility is much more widely distributed than in today's world. Those who would seek an easier path to such an outcome must explain how it will be possible to achieve radical democratization in a technological society on the basis of the low levels of culture and intellectual qualification determined by the existing division of labor.

The emphasis on education is thus in harmony with a *second* requirement of the transition, the *democratization* of society through the establishment of formal institutions workers can use to intervene in the activities of those who exercise power and authority in their name. This question is inseparable from the problem of expertise because, as I have argued above, the subordination of workers is not merely a political matter but is rooted in the division of labor introduced by capitalism. The transition aims to create a new state of affairs in which *the recomposition of formerly divided mental and manual labor reduces the operational autonomy of leadership and reincorporates the alienated functions of management back into the collective laborer.*

This approach, which Marx and Engels never adequately theorized, might be explained by borrowing Habermas's distinction between forms of

rationality. Under capitalism communicative and technical rationality become competing bases of social power, their opposition growing out of a social structure which allocates power to those performing a special technical function, the leadership of the collective laborer. But these two forms of rationality are not *essentially* in conflict. It is only in the peculiar framework of modern capitalism (and its Communist imitators) that the technical sphere offers a basis for advancing claims to power in competition with claims made on the basis of the communicatively rational appeal to common standards and interests. A socialist society would therefore attempt to modify that framework in order to reduce the relative weight of technically based claims to power in favor of communicatively based claims.

Just how far can these technically based claims be rejected in the early phases of the transition without disrupting production? This is a critical question, but Marx never addressed it, no doubt because he could not respond a priori. But unfortunately those in a position to offer a response at a later stage did not even know how to pose the question, much less answer it. Thus the lack of an early industrial movement for workers' control on the basis of which Marx might have projected the first stages of economic democratization under socialism turns out to be an historical accident heavy with consequences.

With no guidance on the question of workers' control from Marx, later Marxists treated capitalism exclusively as a form of ownership, and its management system was identified with the general technical requirements of industrial production. In this context, the Russian and European council movements of 1905 and 1917–1919 looked like just another form of political mobilization and were praised or condemned as such without any appreciation for their profound social significance. Even democratic socialists believed for the most part that authoritarian control from above was an economic necessity. But such control could only be reestablished by once again disenfranchising workers in the workplace, in effect ending the revolution. Workers thereby lost any chance of initiating a real transition to socialism.

These are very much live issues today, as the Soviet Union, Poland, and Hungary struggle to reconstruct their Communist systems in a more democratic and economically efficient form. The dismantling of bureaucratic dictatorship and its clumsy planning machinery requires decentralization and greater reliance on markets, either through a capitalist option such as denationalization of government owned enterprises, or a democratic socialist option such as their autonomization under the control of managements

chosen by the workers. There is a considerable literature on the socialist solution, derived for the most part from the Yugoslavian experience with self-management.<sup>31</sup>

Self-management is not, however, without its problems, many of them evident in the Yugoslavian case. One school of thought argues that for self-management to succeed, formal democratization of the selection of managers is a necessary but not a sufficient condition. What might be called *deep democratization* of technically based power structures is required as well. This second requirement results from the fact that the socialist workforce must continue to rely on the authority of highly trained professional and managerial personnel for a prolonged period, no doubt measured in generations rather than years or decades as some have hoped. Their authority must be made to contribute to the transitional process through the way in which it is accommodated to the gradual enlargement of workers' initiative and control. The real problem of democratization lies here.<sup>32</sup>

Deep democratization implies significant changes in the structure and knowledge base of the various technical specializations underlying technical and administrative work to the extent that these serve as bases for advancing unwarranted claims to power. The rules and roles governing the exercise of authority must be altered to promote greater autonomy on the part of the "client" subject to the authority. These rules and roles concern such things as the method of training and selection of managers, the social context of management, and the procedures and criteria of innovation.

Other agent-client relations outside the domain of business are modeled on the capitalist project of maximizing control from above. Thus to the extent that socialism prevails in industry, changes can be anticipated throughout society, in government administration, the position of science and science based technical systems in society, the organization of medical practice and the "sick role," the craft rules governing mass media production, teaching, and so on.

How realistic is this strategy for recomposing the unity of the collective laborer? The chief obstacle would appear to be the opposition of technically qualified personnel to such a shift in allegiances and work conditions. But historical experience is not unambiguous and suggests a possible trajectory of change. Although it is not a fact given sufficient weight and notice, modern revolutions are characterized by sporadic "fraternization" between workers and sympathetic members of the bureaucracies and corporate administrations. Often in the enthusiasm of the moment quite elaborate plans for reform of management and government agencies are proposed, as was actually the case



in the French May Events of 1968.<sup>33</sup> These experiences indicate that the idea of reorganizing the collective laborer in new ways is not merely idle speculation but resonates with historical experience.

To go beyond such anecdotal evidence, a theory of the middle strata is required.<sup>34</sup> But such theories generally founder on the attempt to explain their object in terms of conventional concepts of class struggle and alliance, which generally presuppose that the classes have clearly defined interests independent of the political relations established in the alliance. But it is precisely the breakdown of such prior definition which seems to characterize the behavior of the middle strata in a crisis. The position of these groups is better understood by abandoning traditional class theory and returning to simpler, more empirical concepts. Then it is evident that neither the capitalist nor Communist middle strata can be satisfactorily conceived as a class because they owe their existence to their *place in organization* rather than to an economic function or role.

These groups are composed of individuals who have been hired, after meeting requirements such as educational credentials, to carry out an action based on specific technical codes. These codes embody basic social and technical assumptions about how to design and operate technical systems. Thus unlike the other classes of modern society, which arise from an "organic" economic process, the members of the bureaucracies acquire their class identity through a process of selection, rooted in a relationship to technology which qualifies them to represent others. This is the origin of the ideology of service which we associate with "professionalism" in the West. In professionalist ideology the middle strata are the "agents" of "client" individuals and groups in whose interests they act, and for whom they perform services these latter cannot perform for themselves.

This explains why, when the "clients" rise in struggle, the legitimacy of the bureaucracy's selection and conception of service is questioned on a global scale. Its claim to represent the public interest is visibly shaken and its technocratic self-image enters into crisis. The people can then appear "in person" as the source of a legitimacy granted hitherto by capitalist or Communist elites in their name. The people are a recourse and an ally through which the middle strata can be reconstituted and their "selection" reconfirmed under a different hegemony for different social purposes. The culmination of such a reconstitution of the bureaucracies would be the elaboration of new practices and technical codes for each field of work aimed at reducing the alienation (in system terms, the "operational autonomy") of professional leadership.<sup>35</sup>

In sum, where popular initiatives provoke splits in the ranks of the bureaucracy, its crisis can be understood as an attempt to reconstitute the unity of the collective laborer through the innovation of new practices and codes. The bureaucracy is no longer an interest in its own right engaged in maximizing its operational autonomy at the expense of workers, but becomes instead a scene of struggle in which popular interests are actively represented. These interests may inspire a fundamental restructuring of technology and society, initiating a process of civilizational change.

A *third* requirement of the transition concerns the direction and organization of *innovation* under socialism. During the transition, economic and technological development would proceed in a very different environment from Western capitalism. Skilled labor would be far more abundant than it has been at corresponding stages in the Western process of modernization, limited primarily by its social cost once private costs had been reduced or disappeared in the accumulation of educational resources. Under these conditions, *highly qualified human resources would not be in short supply but would be widely available as a nearly "free" good* on which the economy could draw at will.

In addition, the democratization of management would have profound effects on patterns of innovation, altering the technical code in terms of which progress is defined. The capitalist code, adjusted to the need to maximize profit and control the work force, would be replaced by a different code, still concerned with efficiency but taking into account a wider range of variables. As Carol Gould writes, in comparison with capitalist managers,

members of a worker self-managed firm would be prone to be more sensitive to the impact that the use of given technologies would have on their conditions of work and the quality of work life. They might well also be responsive to issues of consumer need and environmental effect, since they are themselves also consumers and residents of the local area.<sup>36</sup>

An economy developing under these conditions might reach efficient solutions to technical problems in new ways, moving generally toward an alternative type of industrialization. In some cases skills might be applied in relation to technologies that it would be economically irrational to employ in a capitalist society because of the very different organization of human resources under capitalism. In other cases, a different approach to work conditions and the environment might result in innovations that would not have occurred or succeeded under capitalism. Different patterns of consumption and different leisure pursuits would occupy the labor force of such a

society, and in it the political process might take on a qualitatively different character. This would be, in short, a socialist system of production, one in which technological change would be governed by new principles.

There are two commonplace objections to this view which need to be addressed briefly here, although they are really the subject of a historically and sociologically concrete discussion of innovation. The first of these objections is the familiar argument that planning necessarily suppresses the individual freedom and initiative required for innovation. Indeed the standard image of the innovator in capitalist society conforms to the romantic myth of individual genius, not uncommonly at odds with ignorant bureaucrats.<sup>37</sup> Interestingly, innovation continues to occur in certain large capitalist corporations which have directly confronted the problem of stifled creativity by opening spaces for innovation within their boundaries through radical departures from classical organizational models. Small teams are allowed to work in an almost parasitic relation to the corporation, drawing on its resources for an unusually autonomous activity of research and development.<sup>38</sup> Much can be learned from such examples. The transition to socialism requires the working out of comparable organizational innovations as the basis for the technological changes it must make in the creation of a new type of industrial civilization.

The second objection argues that technological development is essentially determined by technical considerations, largely independently of the social environment in which it occurs. Socialism, if it is possible at all, would therefore have to prove itself compatible with technology rather than the reverse. Usually this argument culminates in the demonstration that all technological societies must come to terms with the "imperative" requirement of authoritarian management. This is technological determinism, a view which has always been more popular in development theory than among historians of technology. I address this problem at length in my forthcoming book, *The Critical Theory of Technology*, but can do little more here than note the existence of an important literature in support of the view that technological development is a dependent variable in the social system.<sup>39</sup> This view suggests the possibility of anticipating the broad social determinants of technological progress in a socialist society as I have attempted here.

This article began by suggesting that democratic socialism involves a process of civilizational change more complex than anything we would normally consider under the heading of politics. These concluding reflections attempt to identify possible starting points for such a process. The result is

not a utopian description of a perfect society, but rather a hypothetical direction of social development which would lead to a new form of civilization through democratic changes at many levels: political, economic, cultural, and ultimately technological.

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#### NOTES

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<sup>1</sup> For a wide ranging survey of the contemporary discussion of socialism and democracy, see Frank Cunningham, *Democratic Theory and Socialism* (Cambridge: Cambridge University Press, 1987). See also Carol Gould, *Rethinking Democracy* (New York: Cambridge University Press, 1988).

<sup>2</sup> "What I did that was new was to prove: (1) that the existence of classes is only bound up with particular, historical phases in the development of production, (2) that the class struggle necessarily leads to the dictatorship of the proletariat, (3) that this dictatorship itself only constitutes the transition to the abolition of all classes and to a classless society." From a letter of Marx to Weydemeyer dated March 5, 1852. In V.I. Lenin, *Selected Works* (New York: International Publishers, 1967), volume 2, p. 291.

<sup>3</sup> Marx wrote, "Communism is for us not a *state of affairs* still to be established, not an *ideal* to which reality [will] have to adjust. We call communism the *real* movement which abolishes the present state of affairs. The conditions of this movement result from premises now in existence." Loyd D. Easton and Kurt H. Guddat, eds., *Writings of the Young Marx on Philosophy and Society* (Garden City, N.Y.: Doubleday, 1967), p. 426. Paul Sweezy denies there is such a "law" in Marxism, writing that "The assumption, more often implied than spelled out, is that once socialism...has been firmly established, *its own inner dynamic will automatically propel it forward on the next leg of the journey to communism...* No one, however, has succeeded in explaining what the 'law of motion' of socialism...is supposed to be." Paul Sweezy and Charles Bettelheim, *On the Transition to Socialism* (New York: Monthly Review Press, 1971), p. 125. I suggest that the idea of "possible trajectories of development" is present in Marx and that he may have mistaken it for "laws."

<sup>4</sup> For more on this concept, see Herbert Marcuse, *One-Dimensional Man* (Boston: Beacon, 1964), pp. 219 ff. For an account of Marcuse's theory of potentiality, see my "The Bias of Technology," in R. Pippin, A. Feenberg, and C. Webel, eds., *Marcuse: Critical Theory and the Promise of Utopia* (Amherst, Mass.: Bergin and Garvey, 1988).

<sup>5</sup> The two most important texts for understanding the Marxian theory of the transition are, "The Critique of the Gotha Program" and "The Civil War in France." The relevant passages are published in Robert Tucker, ed., *The Marx-Engels Reader* (New York: Norton, 1972), pp. 383-398, and pp. 526-576.

- <sup>6</sup> Jürgen Habermas, *Toward a Rational Society* (Boston: Beacon, 1970), p. 87. I will assume here that technology may be considered socially determined in some significant dimensions. My arguments for this position are offered in "The Bias of Technology," in Pippin, Feenberg, and Webel (note 5, above), and in "The Ambivalence of Technology," *Sociological Perspectives* (Fall, 1989).
- <sup>7</sup> For examples, see Ernesto Laclau and Chantal Mouffe, *Hegemony and Socialist Strategy* (New York: Verso, 1985); Carl Boggs, *Social Movements and Political Power* (Philadelphia: Temple University Press, 1986); Jean Cohen, *Class and Civil Society* (Amherst: University of Massachusetts Press, 1982).
- <sup>8</sup> The economic significance of democracy is discussed in Pierre Dokes and Bernard Rosier, *L'Histoire ambiguë* (Paris: PUF, 1988), pp. 291–294.
- <sup>9</sup> The basis for this approach to Marx's work is Part 4 of Volume 1 of *Capital* (New York: Modern Library, 1906). For recent accounts, see Harry Braverman, *Labor and Monopoly Capital* (New York: Monthly Review Press, 1974); Paul Thompson, *The Nature of Work* (London: Macmillan, 1983); and Ali Rattansi, *Marx and the Division of Labour* (London: Macmillan, 1982).
- <sup>10</sup> Marx, *Capital*, volume 1, p. 461. For a discussion of this problem, see my "Transition or Convergence: Communism and the Paradox of Development," in F. Fleron, Jr., ed., *Technology and Communist Culture* (New York: Praeger, 1977).
- <sup>11</sup> On the status of self-actualization as a socialist value, see Gould, *Rethinking Democracy* (note 1, above), chapter 1.
- <sup>12</sup> John Diebold, *Automation* (New York: Van Nostrand, 1962), p. 162.
- <sup>13</sup> For examples, see Walter Buckingham, *Automation* (New York: Harper & Row, 1961), pp. 96 ff; and David Noble, *Forces of Production* (New York: Oxford University Press, 1984).
- <sup>14</sup> Shoshana Zuboff, *In the Age of the Smart Machine* (New York: Basic Books, 1988).
- <sup>15</sup> Harley Shaiken, *Work Transformed* (Lexington, Mass.: Heath, 1984), p. 267.
- <sup>16</sup> Zuboff, *Age of the Smart Machine* (note 14, above), p. 182.
- <sup>17</sup> Shaiken, *Work Transformed*, p. 268.
- <sup>18</sup> See *Work in America: Report of Special Task Force to the Secretary of Health, Education and Welfare* (Cambridge, Mass.: MIT Press, 1973).
- <sup>19</sup> For a recent attempt to understand this facticity of classes and its relation to ideology, see Goran Therborn, *The Ideology of Power and the Power of Ideology* (London: Verso, 1980).
- <sup>20</sup> For a far reaching critique of the concept of interest in Marxism, see Laclau and Mouffe, *Hegemony and Socialist Strategy* (note 8, above). For a discussion of economic codes, see Jean Baudrillard, *Pour une Critique de l'économie politique du signe* (Paris: Gallimard, 1972).
- <sup>21</sup> A literature has grown up in the field of international development to attempt to account for these differences, which complicate technology transfers. See Edward Spicer, ed., *Human Problems in Technological Change* (New York: Russell Sage, 1952). For an example of such an approach to Communist societies, see Fleron, *Technology and Communist Culture*, note 11, above.
- <sup>22</sup> Marx, "Critique of the Gotha Program," p. 388.
- <sup>23</sup> Marx, *Grundrisse* (Baltimore: Penguin, 1973), p. 612.
- <sup>24</sup> *Ibid.*, p. 488.

<sup>25</sup> Marx, *Capital*, volume 1, pp. 533–534.

<sup>26</sup> Marx, *Grundrisse*, p. 711–712.

<sup>27</sup> Educational programs that required full-time attendance would still represent significant costs for the individuals; but part-time adult education, pursued as a leisure activity, would fall in a different category and might make a large free contribution to the economy. For the distinction between these different costs, see Gary Becker, *Human Capital* (Chicago: University of Chicago Press, 1975), pp. 194–195.

<sup>28</sup> On the concept of cultural capital, see Alvin Gouldner, *The Future of the Intellectuals and the Rise of the New Class* (New York: Seabury, 1979). See Rudolph Bahro, *The Alternative in Eastern Europe*, London: New Left Books, 1978: “Marx and Engels...sought to intervene actively in the abolition of traditional labour, with a process that I would today describe with deliberate political intent as a cultural revolution, since they believed – at the time somewhat optimistically – that the general level of productivity was already sufficient to set free sufficient ‘disposable time’ for the development of the general abilities of all people, by the participation of all in necessary labour” (p. 278).

<sup>29</sup> In modern economic theory, educational consumption is treated exclusively in terms of its potential for enhancing the value of future consumption of goods through the refinement of appreciation. This is an excessively narrow basis on which to conceptualize the leap in cultural level required by a radical civilizational change, and, to be fair, the theory was certainly not introduced for that purpose. See Becker, *Human Capital* (note 20, above), p. 69.

<sup>30</sup> For more on the question of early Soviet education, see Kendall Bailes, *Technology and Society under Lenin and Stalin* (Princeton, N.J.: Princeton University Press, 1978).

<sup>31</sup> There is a large literature on the concept of democratic management. See, for examples, Paul Blumberg, *Industrial Democracy* (New York: Schocken, 1976); and Pierre Rosanvallon, *L'Age de l'autogestion* (Paris: Seuil, 1976). For an evaluation of Yugoslavia in Marxist terms by a theoretician of self-management, see Mihailo Markovic, *From Affluence to Praxis* (Ann Arbor: University of Michigan Press, 1974), chapter 4. A skeptical alternative view is presented by Ellen Comisso, *Workers' Control under Plan and Management* (New Haven, Conn.: Yale University Press, 1979). For a recent philosophical defense and justification of self-managing socialism, see Gould, *Rethinking Democracy* (note 1, above), chapters 4 and 9.

<sup>32</sup> Arguments for this conclusion are offered in articles by Gorz, Maccio, and II Manifesto in Andre Gorz, ed., *The Division of Labor* (Sussex: Harvester, 1978).

<sup>33</sup> See Andrew Feenberg, “Remembering the May Events,” *Theory and Society* (July, 1978).

<sup>34</sup> For a collection surveying the main themes of the debate on the class status of the middle strata, see Pat Walker, ed., *Between Labor and Capital* (Boston: South End Press, 1979).

<sup>35</sup> During the Cultural Revolution, attempts were made to study China on these terms. See, for example, Rensselaer Lee's comments: “The function of ‘politics’ in Communist China is largely to distribute opportunities of generating technological and cultural change. This redistribution occurs at the expense of professional elites and results in a close integration of change-producing actions with participations in

labor"; in "The Politics of Technology in Communist China," *Comparative Politics* 5 (1973): 323.

<sup>36</sup> Gould, *Rethinking Democracy* (note 1, above), p. 277.

<sup>37</sup> For discussions of the actual problems of innovation in Communist societies, see R.V. Burks, "Technology and Political Change," in C. Johnson, ed., *Change in Communist Systems* (Stanford, Calif.: Stanford University Press, 1970); and Rensselaer W. Lee, III, "Mass Innovation and Communist Culture: The Soviet and Chinese Cases," in Fleron, *Technology and Communist Culture* (note 10, above). For a classic discussion of the wide variety of contexts in which innovation has occurred historically, see John Jewkes, David Sawers, Richard Stillerman, *The Sources of Invention* (New York: St. Martin's, 1959).

<sup>38</sup> For an example, see Tracy Kidder, *The Soul of a New Machine* (New York: Little, Brown, 1981).

<sup>39</sup> See, for example, Arnold Pacey, *The Culture of Technology* (Cambridge, Mass.: MIT Press, 1983).