Chapter 8

Freedom, Property Rights and Innovation in Socialism*

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Background Notes

Economists have long been concerned with the neoclassical efficiency paradigm. Given initial endowments and preference functions, exchange moves resources from lower- to higher-valued uses. In a private-property, free-market economy all resource use opportunities are exploited, and allocative efficiency can be conceptualized. The wealth of nations is maximized when people have the right to choose. Methodological individualism combined with contractual freedom and private property provides important insights into social problems that stem from scarcity, generates refutable predictions, and explains a wide class of economic events. The neoclassical price takers' model represents an ideal of allocative efficiency against which many people judge economic performance. To earn respectability, alternative institutional structures must demonstrate similar outcomes. In this mode, *the entrepreneur is a passive agent who directs production in accordance with the consumer preference*.

Instead of remaining a benchmark against which to judge the consequenes of different institutional arrangements, the price-takers' model has become a guide for policy. Laws and regulations have been en-

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acted under a pretense of enhancing market competition. SEC, FTC, FCC and many other institutions have been formed to assure the economy of a price-takers' competitive environment. Yet, the concept of perfect competition is a poor vehicle for understanding various competitive strategies, institutional structures and organizational forms. Moreover, the assumptions of private ownership in resources and zero transaction costs leave outside the scope of neoclassical analysis cases whose market solutions are inconsistent with the marginal equivalencies for the general optimum, as well as cases that arise from the existence of various types of property structures.

Given their assumptions of private ownership in resources and zero transaction costs, neoclassical economists have developed a powerful apparatus for discussing *some* economic issues. However, analytical tools such as demand, supply and investment schedules have frequently been used to analyse social and economic issues in a non-private property, non-market environment. The problem is that the incentive effects of private property rights embodied in those analytical tools are not operative under alternative institutional arrangements. A mechanical transfer of neoclassical analytical concepts from a free market economy to a non-market environment is surely misleading. For example, Lange and Mises initiated a technically impeccable debate on the issue: Could the Soviet (planned) economy simulate the price-takers' results? This and other similar debates are examples of academic resources being wasted on wrong questions.

In response to those limitations of the standard theory of production and exchange, a significant body of literature has grown up around the central idea that property rights matter in two ways. First, property rights are a major determinant of incentive structures. Thus, property rights influence economic behaviour in specific and predictable ways. Second, new property rights develop and existing ones are modified in response to economic change. The emphasis on the interconnectedness of institutional arrangements and economic behaviour alleviates some limitations of neoclassical economic analysis. Importantly, the property rights approach has shifted the focus of economic analysis away from "toy" issues and toward substantive analytical problems that have direct bearing on policy.

Let us go back to the Lange-Mises debate. To assume that the Soviet manager will seek to maximize the firm's profit upon being told to do so is like assuming that a three-year-old will stop eating sweets when told to. Substantive questions are: What is the Soviet manager's survival trait? What is the penalty-reward system? What is the cost of monitoring the manager's behaviour? What does the manager gain from pursuing planned objectives? "To publish a set of rules asking the state enterprises to behave "as if" they were profit maximizing entrepreneurs in competitive industry

ignores the actual personal motivations faced by these men" (Brittan, 1980).

The property rights literature has applied economic analysis fruitfully to many diverse problems. Viewing the firm as a set of contracts among factors of production has not only improved our understanding of its *intra-organizational* processes but has improved our comprehension of economic processes in general. The area of comparative economic systems has taken on an analytical content. Instead of just recording and interpreting Soviet economic performance ex-post, we can deduce it ex-ante from the effects of Soviet property rights structure on economic behaviour. The allocative efficiency of the labour-managed firm has been investigated rather extensively. A paper by Jensen and Meckling (1979) highlights this endeavour to evaluate the concept of self-management. The property rights literature has been able to anticipate recent economic problems in Yugoslavia (Pejovich, 1976). It also explains why current stabilization policies in Yugoslavia are not going to work as intended (Pejovich, 1986). The Yugoslav experience having failed to vindicate the concept of self-management, new "Oscar Langes" have begun to surface. Their common purpose is to salvage the idea of labour participation in the management of business firms (Rutterman, 1984; Sternham, 1984). Friedman defined the issue as: "It forces [socialist and pro-socialist intellectuals] to try to estimate what the results would have been in a free market and therefore to take into account relevant considerations in achieving efficient production" (Friedman, 1984). Alchian and Meckling keep reminding us that the property issue is why the survival of such an "efficient" institution depends on a bloody revolution, a dictatorship, a monopoly in the market for organizational forms, or all of the above.

The property rights literature has made a major contribution to better understanding of the allocative effects of different institutional structures. It has, however, done little to improve our understanding of the *expansion of choices*.

The Expansion of Choices

A theory of economic change should discuss the following issues: (i) How are new choices introduced and evaluated in the system? (ii) What is the effect of different property rights on the expansion of choices? (iii) Can the development of new property rights be deduced from economic change?

The basis for those questions arises from the fact that people prefer a wider to a narrower range of choice. A disruption of the prevailing equilibrium (and a reduction in economic efficiency) may be compensated by

the expansion of choices. The entrepreneur (innovator) then becomes an active agent in the system, while the consumer gets to *judge* entrepreneurial decisions.

One set of institutions may be superior to another set not because it happens to be more efficient in terms of the neoclassical maximization paradigm, but because it encourages the flow of innovation with the expansion of the new opportunity set (Buchanan, 1985). The central issue is the effect of alternative institutional arrangements on the flow of innovation.

Neoclassical economics has appreciated the importance of innovation. It has treated innovation as a deliberate element of firm strategy (Nelson and Winter, 1977; Rosenberg, 1976; David, 1974). It has explored the effects on innovation of risk, uncertainty and R & D (Kamien and Schwartz, 1982; Klein, 1977). The effects of the distribution of firms by size, concentration ratios and market shares has been looked into by many writers, including Abernathy and Utterback (1978) and Boylan (1977).

However, the neoclassical view of the firm as the unit of analysis (which ignores behavioural effects of the intra-firm relationships) and the narrowness of its maximization paradigm (which assumes the firm's choice set to be given) have made innovation an external phenomenon. Once innovation is made, the "given" set of choices is adjusted to embrace it. That is, neo- classical analysis deals with innovation *after* it is introduced into the system.

Innovation *is* the pursuit of economic gain. It is characterized as an expansion of the firm's choice set. In that sense, the neoclassical maximization and growth paradigm is analytically narrow—it means more *of the same*. Innovation expands the meaning of economic development into the expansion of choices. It disrupts prevailing relationships and brings about a discrete jump from the old to a qualitatively new situation. Innovation has two interdependent social functions: It alters the economy and offsets the law of diminishing returns. An important *economic* issue is how to appropriately enable people to attempt to innovate.

Innovation is complex. For the purpose of analysis it could be broken down into: the freedom to innovate, the ability to innovate, the incentive to innovate, the implementation of innovation, and the evaluation of innovation.

The paper is an inquiry into the relationship between freedom, property rights and the flow of innovation in socialism.[1] The line of reasoning in the paper is exampled by reference to the Yugoslav economy. Relative to other East European states, the Yugoslav economic system is most interesting for a study of socialism.[2] Yugoslav institutions are supposed to simulate the production efficiency of capitalism while preserving the so-

cialist character of the economy. They have been operative for several decades. Thus, their performance can be evaluated. Moreover, the concept of self-management has strong followings in the West.

Freedom to Innovate

Innovation means doing something that is new. It could be the development of a new good, the opening up of a new market, a new source of supply, a new method of production, or a new way of organizing activity. At the firm's level, innovation is primarily technological (NSF, 1983). Technology, broadly defined, includes physical objects, human capital and physical production methods. That is, technology embodies the prevailing know- ledge. However, the growth of knowledge is unpredictable, and that contributes to the unpredictability of innovation.

The innovator translates knowledge into new choices. The unit of analysis is then the innovator rather than innovation itself. Innovation is a consequence of the innovator's perception about the applicability of knowledge, willingness to accept the risk and uncertainty associated with doing something new, and ability to see the innovation through (as innovation unfolds many people have to say "yes"). The innovator must possess such traits as ingenuity, optimism, stubbornness, perseverance, and imagination. Moreover, potential innovators are difficult to identify ex-ante. The growth of knowledge being unpredictable means that specific innovations cannot be planned in advance. One cannot simply decide to have one innovation each month. In a nutshell, innovation is individualistic in its origin and social in its consequences.

However, we should be able to identify and influence some specific objective conditions that are conducive for carrying out innovation. One such objective condition is the freedom to innovate.

The prevailing property rights in society determine who has the right to acquire and determine uses of resources (e.g. who can innovate). Property rights also define constraints on the rights to use resources. In a private-property economy all individuals are allowed to innovate, while the right to contract private-property rights to resources lowers the cost of identifying the value of resources in alternative uses.

The Yugoslav system of self-management reached its maturity during the 1965-73 period. Even during this period the government kept the basic constitutional requirement: To share in the firm's residual, Yugoslav workers must combine their current labour with the firm's physical assets. The employees can neither sell their rights in the residual nor enjoy them when they quit. A Yugoslav economist is quoted saying: "If the workers really

owned the firm, they would sell off their shares and then we wouldn't have socialism anymore" (Beloff, 1985, p. 251).

The property rights analysis has demonstrated that the Yugoslav system of self-management is inefficient (Jensen and Meckling, 1979), predicted the emergence of serious problems such as inflation, unemployment and liquidity crisis (Pejovich, 1976), and suggested that the Yugoslav government will have to choose between creating capital markets or reintroducing bureaucratic controls (Furubotn and Pejovich, 1974).

The Yugoslav government made its choice in 1974. The Constitution of 1974 and the Law of Associated Labour of 1976 modified and redefined institutional structures in Yugoslavia. *De jure*, the 1974 reform strengthened and expanded the system of self-management. *De facto*, the government took the economy back toward a greater reliance on political and bureaucratic controls. To accomplish this dual effect of *more* self-management and *more* controls, the government made the employees' property rights assignments both cumbersome and vague.[3]

The pool of those who can acquire and use resources in Yugoslavia is for all practical purposes restricted to the working collective.[4] The term "working collective" is important here. The employees of the firm cannot, as individuals, acquire private property to productive resources. Only the working collective as a whole can do so through its Workers' Council (WC). An employee who perceives an opportunity for innovation must convince the WC about his idea. Convincing and persuading the WC is quite a task. The WC reflects the composition of the firm's labour force. The firm's management is *not* represented on the WC. The members receive no extra compensation, have no staff support to help them understand the issues, and they continue to work at their regular jobs; that is, they do not receive on-the-job training to be business leaders. Yet, the WC must approve or reject all major investment, financial and other internal decisions that may affect the firm. To have to get a group of people with diverse attitudes toward risk, different incentives, different technical knowledge, limited business experience and different age distribution to comprehend and approve a *novelty* must certainly impede the flow of innovation.

Until 1974, the firm's director was in the best position to get his ideas through the Workers' Council. The director was the Council's employee, but he was also its business expert. The director was the person in the firm who could best formulate the alternatives and identify their expected consequences for the WC. The director's evaluation of the alternatives, his method of presentation, and personality traits had considerable influence on the WC's decision. Members of the Council also knew that it was in their self-interest to go along with the director and vote for his favourite

projects. They knew that once they were off the WC, the director could reward them by better (or worse) paying jobs in the firm, send them abroad, and ignore shirking.

Predictably, the mangers' power, influence and prestige grew steadily during the 1965-73 period. Party cadres soon were threatened by this "new" class. True, managerial jobs, like all other important positions, were filled by the Party network. However, the prevailing property relations pushed the Yugoslav manager into a position of influence that was neither anticipated nor welcomed by the party leadership. Managers were becoming independent decision makers, true captains of the economy, and also quite rich (Bajt, 1972). The case against the managers was put as the technocrats vs. the people. Two aspects of the institutional reform after this period are relevant here: (i) the atomization of business firms, and (ii) the transformation of Yugoslavia into a contractual society.

In the mid-1970s, the Yugoslav government made a fundamental change in the organization of business firms. Three new legal categories were introduced: (i) *Associated labour* refers to the whole set of economic activities that combine current labour with capital goods. Only those Yugoslavs who work with capital goods can participate in self-management decisions. (ii) *Organization of associated labour* (OAL) refers to a self-managed organization. It is what we usually call a firm in the economic sector and an institution in the non-economic sector. I will continue to use the word "firm" to refer to this organization. (iii) *Basic organization of associated labour* (BOAL) identified work units, plants and departments. BOAL is the *fundamental*, lowest level, economic unit in Yugoslavia today. The law says that employees must form a BOAL whenever the results of their joint labour (e.g. teamwork) can be measured in value terms either in the market or within the firm. The BOAL's "employees" elect their own Workers' Council who, in turn, appoints the BOAL's director. The BOAL's residual, which differs from one BOAL to another in the same firm, is appropriated and allocated by the BOAL's collective. (Obviously, the classic intra-firm pricing conflict has to arise.)

Each BOAL sends representatives to the firm's Workers' Council, which, in turn, appoints the firm's director. BOALs within a firm negotiate written contracts among themselves. These contracts specify their mutual rights and obligations, composition of decision-making bodies, criteria for the distribution of income, assignments of costs of law suits, coordination of production schedules, etc. Negotiations between BOALs within a firm are real, long and often sharp (Beloff, 1985, p. 229).

The firm's powers are only delegated powers, and the firm's income is set according to contractual contributions of its own BOALs. These conditions reduced the firm director's power, prestige and influence by the

mid-1980s. The atomization of the Yugoslav firm created many new (and costly) problems. For example, the Yugoslav railroad system has been broken down into 350 separate BOALs with as many new managers.

Basically, the 1974 reform curbed the influence of market forces on the allocation of resources. The government avoided returning the economy to a system of administrative controls. Instead, it created a *sui-generis* contractual society which has turned out to be (perhaps inevitably) a mix of *more* self-management and *less* freedom. As we said, BOALs negotiated contracts among themselves. Institutions and firms in related activities negotiate contracts. These contracts specify the pooling of resources, criteria for the distribution of earnings and other business issues. Self-management agreements, as those contracts are called, are combined into social contracts. Besides business firms and institutions, labour unions, trade associations, political groups and government bureaus participate in negotiating social contracts. Regional social contracts are combined into social contracts for a province, republics and finally the social contract for Yugoslavia. Provision of welfare, health, education, arts, and other services is negotiated between the suppliers of those services (e.g. hospitals, pharmacies, ambulances) and those who demand them (firms, institutions and trade groups on behalf of their members). On top of this structure of contracts we find a new self-management bureaucracy (self-management associations, public agencies, committees of interest and trade groups).

Contractual agreements among all those groups encompass economic life in Yugoslavia. Working from the bottom upward, contractual agreements are supposed to reflect preference functions of the working people. In practice, the party leadership formulates economic guidelines which the party apparatus is supposed to plug in at each level of negotiations.[5]

The atomization of productive units and the system of contracts have attenuated the workers' rights in their respective firms. The atomization has broken the firm into small groups moved by their own self-interest. The system of contracts has brought back, in a roundabout way, the administrative controls. And, above all BOALs, firms and contractual agreements is the new self-management bureaucracy. It runs the systems on behalf of those who are supposed to have the right to govern it. S. Kraiger, a revolutionary turned economist, made the following comment about this new bureaucracy: "Every single reform we recommend needs a market. But the operations of the market would only destroy the power of the ruling body. And it is the Rubicon, which those in office do not wish to cross" (*Danas*, 8/1982, p. 2).

I now summarize my perceived effects of property rights in Yugoslavia on the freedom to innovate. The working collective still represents the pool of those who can innovate. However, the number of people who have

to say "yes" as innovation unfolds has risen significantly since 1974. The government has, in effect, collectivized the phenomenon which, by its very nature, depends on the individual, the personality traits, and the system of incentives. Today, a Yugoslav worker with an idea for innovation has to persuade the BOAL's Workers' Council, then the firm's Workers' Council, and finally the self-management bureaucracy. The BOAL's director has to deal with his own Workers' Council, the firm's Workers' Council and the self-management bureaucracy. The firm's director must get all BOALs on his side. In comparison with a private-property, free-market economy, the Yugoslav system of self-management has (i) reduced the number of people who are free to acquire and use resources, and (ii) collectivized the activity by requiring more people to agree on the wisdom of some proposed innovative effort.

Ability to Innovate

It is important that we do not confuse freedom with power (Jensen and Meckling, 1985). Freedom to acquire resources is one thing, the power to actually get them is another. The ability to acquire an asset does depend on the buyer having enough resources to pay for it, and the seller having a bundle of rights in the asset that he is willing to transfer at a price the buyer is willing to pay.

Suppose that the working collective of a Yugoslav firm approves its director's proposal to implement a technological innovation. The issue is: Does the Yugoslav financial system enhance the innovator's ability to carry out innovation?

In a capitalist economy, financial markets match the demand for resources with the supply of resources at prices which reflect contractual agreements on various issues, including risks. The fewer imposed regulations in the financial markets the better they will respond to the innovators.

State ownership in capital and the collective's attenuated property rights in the residual limit the scope of financial markets in Yugoslavia. The supply of private venture capital in Yugoslavia is insignificant. Some private wealth exists in Yugoslavia, but property rights preclude this source of income from being used to finance innovations. Foreign capital has dried up. Inter-firm markets for undistributed profits is virtually nonexistent; incentive structures discourage business collectives from lending funds to other collectives. Thus, the Yugoslav collective has two major sources of funds: the firm's own residual and bank credit. The former is not a promising source of investable funds. There are simply too many claims against it. About 70 percent of the residual is usually allocated into the collective's

wage fund. The collective consumption is financed from the residual. The law requires that a percentage of the residual be set aside as reserves. Bank credit is then left as the most important source of financing innovation in Yugoslavia. The collective's ability to carry out innovation depends on the organization of the banking system.

The rate of interest in Yugoslavia demanded by the banks is set below its market clearing price, with a resultant "insatiable" demand for bank credit. A collective seeking funds is not given a choice to compete for bank credit by offering to pay more than the official rate of interest. Financial markets in Yugoslavia do not bring the borrower and the supplier of bank credit together to negotiate a mutually acceptable price.

Banks in Yugoslavia are operated by the managers of the firms which are also their *chief borrowers*. To form a bank, management of several firms get together and negotiate a contract. They have to satisfy many legal provisions including (non-refundable) contributions to the bank's credit fund. Once the bank is approved, the founders govern the bank, appoint the bank director and other officers, appropriate the residual (the residual does not belong to the bank's collective), and appoint the credit committee. The last point is important here. The representatives of business firms which "own" the bank replace bank officers as the allocators of funds. With the bank's rate of interest held below the market clearing level, the evaluation of credit applications must be expected to reflect the committee's subjective preference and their respective firms' self-interest.

Let us review the ability to innovate in Yugoslavia. First, the major source of innovation financing is bank credit. Second, prices in financial markets are not market clearing prices. Third, bank credit is allocated by the committee representing business firms which (i) appropriate the bank's residual, and (ii) are its chief borrowers. A novelty (that is a *risky* venture) is not a likely winner in competition for funds that are sold below the market price. In other words, the prevailing property rights in Yugoslavia tend to reduce the innovator's (i.e., the collective's) ability to innovate.

Incentives to Innovate

The act of innovation, being a non-routine action, usually entails a relatively high degree of risk and uncertainty about its outcome. The innovator must be given sufficient incentives for the risk he takes. An effective way of providing an innovator with sufficient incentives is to assure him that he or someone has the right to appropriate the gains from innovation. In a capitalist economy, the right of ownership and contractual freedom offers greater rewards and hence incentives to accept the risk and uncertainty as-

sociated with innovation. The gains come from the market acceptance of innovation.

In discussing the effects of the Yugoslav property rights structures on the flow of innovation in Yugoslavia, it is necessary to ask: (i) Does the innovator have the incentive to accept the risk and uncertainty associated with innovations, and (ii) does anyone else have incentive to provide the innovator with the resources to attempt innovation?

The Yugoslav property rights structures preclude the capitalization of the future benefits of a successful innovation into their present market value. This immensely important proposition has several behavioural implications.

(i) The collective captures some of the benefits of innovation in *the form of higher wages*. Given the employees' time horizon, i.e., the expected length of employment by the firm, the collective members' incentives are to approve innovation that shifts income forward and/or postpones costs. That is, the collective members have incentives to seek innovation that increases the near-term cash flow. This incentive is quite restrictive. It may rule out some economical innovations because the benefits extend too far beyond the collective members' time horizon.

(ii) The expected length of life of innovation affects the collective's incentive to approve the innovator's idea. If the expected life of innovation exceeds the collective's time horizon, the employees will have less incentive to approve a novelty. Again, some potentially profitable projects may be turned down for the wrong reasons.

(iii) A worker who comes up with a successful innovation *shares* the benefits with other members of the collective. Even if the innovator gets a cash prize or periodic payments, he will capture for himself only a small fraction of the total gain from innovation. Moreover, an innovator who leaves the enterprise before the life of innovation ends forfeits all the future benefits from innovation to those workers who remain with the firm.

(iv) The prevailing property rights in Yugoslavia reduce the director's incentive to innovate. In the West the manager-innovator captures the benefits in the market for managers. The present value of his future earnings goes up. A successful innovation in Yugoslavia does not reward the manager-innovator. The costs of information about the manager's performance are much higher in the markets without private ownership. Thus, the Yugoslav director has less incentive to accept the risk associated with innovation.

(v) The innovator (the collective) has incentives to seek a loan that bunches benefits within the collective's time horizon and, hopefully, extends its amortization to future workers. At the same time, the credit committee of the bank (representing the firms which "own" the bank's residual) has incentives to grant those loans whose interest payments over *their* time horizon are assured.

Freedom, Innovation and the Yugoslav Economic System

Innovation is a very individual phenomenon. It depends on the individual perceptions of the applicability of knowledge, attitudes toward the risk and ingenuity in putting things together in a new way. Innovation cannot be predicted, planned, or ordered to happen. The suppliers of innovations are difficult to identify *ex-ante*. The community's potential for economic development could be deduced from the analysis of the effects of its institutions on the ingredients of innovation such as the freedom to acquire resources, incentives to try out new things and the ability to secure economic power to finance a novelty.

Economic development does not depend only on the savings-investment relationship, the availability of resources, or the "equilibrium path." Economic development depends primarily on institutional arrangements that increase the right of people to innovate, enhance the individual's incentives to innovate, and provide a subsequent evaluation of innovation. That is, an essential problem of economic development is the freedom to search for and adapt a set of social institutions within which opportunities and incentives for innovation are enhanced. The emergence of economic freedom in Eastern Europe (and elsewhere) should be related to changes in property rights and their behavioural effects. A theory of economic change that links freedom, institutions and innovation will fill an important void in neoclassical analysis.

The system of "self-management" in Yugoslavia has constrained both the firm's efficiency as well as the innovator's freedom and ability to expand the set of choices. Co-determination in Germany seems to be going the same way (Watrin, 1985). The Hungarian situation is still fluid and difficult to evaluate analytically. In general, property rights assignments associated with labour participation in the management of business firms reduce the number of potential innovators, their power (ability) to innovate, and incentives to innovate.

A casual visitor would have noticed a remarkable difference between the quality of life in Yugoslavia in the early 1970s and the early 1980s. It is not to say that the situation in the 1970s was great. It was only not nearly so bad as it is today. Stores were cleaner, supplies looked better,

employees were more alert (especially when the manager was around), and in sidewalk cafes stories were told about business deals. Inflation, liquidity problems, unemployment were all alive and well. Yet, the system provided room for business leadership. Today, Yugoslav stores are poorly kept and badly supplied with goods. People seem sour and resigned.

Economic numbers support casual observations. The rate of unemployment increased from 8 percent to 15 percent. Counting 700,000 Yugoslavs in Western Europe, unemployment is about 20 percent. Quality of labour input per employed worker has been falling by 1.5 percent per year (Bajt, 1983). This problem of "unemployed employed" has been attributed to laxities in the organization of production and plain shirking by workers. The average rate of taxation by inflation in Yugoslavia is now about 70-80 percent of the money stock. The rate of economic growth has been negative; the average real income of Yugoslav workers has been declining by about 7 percent per year. A Yugoslav sociologist calculated that between 1982 and 1984 the number of hours required to buy a pair of shoes had doubled (Beloff, 1985, p. 234).

The paper has two conclusions. Self-management in Yugoslavia has *collectivized* innovation and *alienated* the innovator from its results. More generally, economic superiority of capitalism over all the various types of socialism does not arise from the neoclassical efficiency test. Superior economic performance of capitalism should be attributed to the fact that socialism collectivizes and hinders innovations.

The time has come to ask a general question: Is the principle of state ownership in resources—whether it takes the form of the Soviet administrative planning, or the Hungarian "privatization" or the Yugoslav system of self-management—so incompatible with the basic rules of human behaviour that it could never work? Whatever the answer, it is intellectual madness to continue to contend that the system is inherently virtuous.

Other Issues

Two critical issues have been left out of this paper. They are the implementation of innovation and the evaluation of innovation. The former should analyse the effects of alternative property rights on the flow of innovation from their inception to the final integration into the economy. A recent study has estimated that the speed of implementation of innovation in the USA and West Germany is more than twice that in the USSR (Marten and Young, 1979). The evaluation of innovation is important. To introduce a novelty into the system does not necessarily make the people better off. To say that innovation is risky means that it often does and indeed will fail. In a capitalist society, people in the market evaluate

innovation and their judgement is quickly incorporated into relative prices and affects the innovator's wealth. In socialist economies the evaluation of innovation is done by a much more ambiguous procedure.

NOTES

1. Property rights are defined as behavioural relations among men that arise from the existence of resources and pertain to their use. For the purpose of this paper, freedom means that changes in property rights are (or could be) triggered by the interaction between the prevailing institutions and man's search for ways of achieving more utility.

2. The Yugoslav system's basic characteristics are: (i) The state owns capital goods held by the business firms (it makes some people feel better to call it *social* ownership). This preserves the character of socialism and reflects the ruling elite's dogmatism. (ii) Employees govern their respective firms through Workers' Councils, the highest organs of management. This is what sets the Yugoslav system apart. Workers are supposed to control allocation of resources. (iii) Employees own returns from their firms' capital. Workers' Councils decide how to allocate profit between firms' wage funds, reinvestments of earnings, and other uses of funds. (iv) Major sources of investment funds are retained profits and bank credit. In Yugoslavia, investment decisions have been transferred from economic planners to firms, banks and Workers' Councils. (v) Plants within each firm, institutions and firms in related activities, as well as groups bound together through common interests (e.g. firms, chambers, trade unions) negotiate contracts for polling resources, criteria for the distribution of profits between wages and other funds, and other matters. These are called self-management agreements. Self-management agreements encompass the entire economic life of Yugoslavia. They aren't voluntary, but mandated by law, with basic terms often stipulated in advance. Within those constraints (i.e., controls) contractual terms are negotiated among participants.

3. I believe that it could be demonstrated that more self-management inevitably leads to more contracts.

4. The right of private ownership is limited to a very few assets and has many economic and political constraints.

5. The leadership does not necessarily get its way in each and every instance. As orders travel down from the top they tend to get attenuated. Party members frequently face the problem of their loyalty to the party on the one hand and self-interest within their economic units on the other.

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Discussion

Edited by Michael A. Walter

Michael Walker This morning we have a slightly different pattern of affairs, largely because the comment by Tibor Machan in effect amounts to a new point rather than an intervention on the paper by Steve Pejovich. As a consequence, I'm going to go to interventions from the floor now, and I will bring Tibor in at a later stage of the proceedings with his new point.

Raymond Gastil I want to make two points. First, earlier we heard that China had no word for individual freedom until very recently. In listening to the discussions around here, it strikes me that maybe there are too many words for individual freedom in our language, because the over-emphasis on the individual doesn't seem to me to accord to the actual reality of the world today. For example, the idea that innovation is strictly an individual thing doesn't accord with the way innovations are now carried on in corporations. I used to work for Battelle Memorial Institute which had 7,000 employees around the world—in very few of those innovations did the return from the innovation go to the person who did the innovation. He received a salary, he worked for the corporation, he got paid whether or not he made an innovation that week. I think an awful lot of innovation today is of *that* sort rather than the entrepreneurial innovation of the individual that is being discussed here.

The second point I wanted to make is that if we are going to discuss the gains and losses of a system, such as the Yugoslav self-management system, as they call it, in relation to something like innovation, then it seems to me that it has to appear as if we are doing a kind of balancing job. Too often in these discussions I haven't seen a balancing job.

Yesterday, Assar tried to look at freedom of choice in the welfare state, suggesting there might be some gains as well as losses in the welfare state as regards freedom of choice. I didn't like freedom of choice as an analytical category; I thought it was very difficult to deal with. Nevertheless, it seems to me that we have to make that attempt more often. In this paper I missed that. I felt you were trying to point out all the ways in which this system made innovation difficult without ever really thinking seriously about whether there might be ways in which it would *improve* the chances of innovation. Unless you do that, I am not very convinced about the pa-

per. For example, it occurred to me that if the managers of the various self-management units are, in fact, the people who run the banks that give money to those units, the argument could be made that if they make the decision that they want to push a certain innovation, they don't have to do what they might have to do in a Western country, which would be to then convince the bank first. They might have some advantage, an ability to short-circuit the process, because they control the banks directly. That's just a thought, but unless these things are brought up, I don't feel very convinced.

Walter Block I was puzzled somewhat by the absence of any footnote or citation to Israel Kirzner with regard to entrepreneurship in his book *Competition and Entrepreneurship* and certainly in his other writings. I don't know of anyone who has done more for promoting entrepreneurship and criticizing the neoclassical paradigm for overlooking it.

I also have a different interpretation of what Steve calls the Lange-Mises debate. First, I would call it the Lange-Mises-Hayek debate, because certainly both Hayek and Mises were very instrumental in upholding their end of the discussion, vis-a-vis Lange. The paper implies, if I am reading it correctly, that the whole debate ignores entrepreneurship and incentives and is based pretty much on neoclassical optimal allocation analysis. The way I see it, this is certainly true of Lange but not of Mises and Hayek, who stress entrepreneurship vis-a-vis economizing. Certainly Kirzner's work on entrepreneurship is based upon the Mises-Hayek contribution. I don't think these are crucial points. I think it is a very good paper, but these are perhaps minor oversights.

On the point of innovation by committee versus individuals, I don't think that even in the past there were only individuals working on these things. The inventors of the past always had assistants and people they were working with. But I think the distinction between the committee and the individual is not the crucial one; it is rather between the private and the public sector—the private sector where there is entrepreneurship, where there are gains and losses, where there are incentives, versus the public sector where we have the bureaucratic mentality.

Svetozar Pejovich I would like to take the opportunity now to answer a few points.

As an innovation unfolds many people have to say yes. But in its inception, innovation is still the result of an individual's perception. I still think it's the individual who is in the centre of the analysis here. It has to be because innovation is the product of an idea, ingenuity, perception or whatever.

I find myself very reluctant to talk about American-Austrians. I think they are busy trying to tear down something rather than advance their method of thinking. It seems that their major occupation is to be critical of neoclassical theory rather than to make their own case. I happen to be philosophically closer to the Austrian method of looking at economic processes, but I am also turned off by their arrogance and non-intellectual attitudes.

On Lange-Mises, you can look at the debate in two ways. If a planned economy could only replicate the results of a free market, then you have to say that planning is completely unnecessary. However, transaction costs are higher in a planned economy. Suppose the Soviet manager *is* told to maximize profit, and suppose that if he were to do as he were told the outcome would be the same as the free market outcome. But what is his incentive to do so? What is the cost of monitoring his behaviour? If his rewards are associated with a different behaviour and the cost to the state to monitor his behaviour is high, then the Lange-Mises debate was meaningless.

Milton Friedman I have two points; one is just an informational one. I certainly believe that the existence of a large element of the free market is a very essential ingredient for successful use of resources. But I think there is a fascinating case that I want to call your attention to, which suggests that it may be a necessary but not a sufficient condition for innovation. Many years ago Sol Tax wrote a little book called *Penny Capitalism*. I don't know how many of you have seen it. It is a wonderful little book about a tribe in Guatemala which has an absolutely perfect Adam Smithian kind of economy—completely free markets, private property, individual returns proportionate to effort, et cetera. It has a higher standard of living than its neighbouring tribes that have communal arrangements, but it has no progress. It has been absolutely stable for a long time. It is a fascinating case, which I think suggests something about necessary versus sufficient conditions and that what matters is not only the economic arrangement but also attitudes, ideas and so on.

The second point goes partly to what Raymond said. I think the issue about whether you talk about individual innovation or corporate innovation is in large part a purely semantic issue; the real issue is very different. It is, how do you establish arrangements under which somebody has a chance to take a one chance in five hundred? The point is that if you have a bureaucratic organization in which nobody is going to be in a position to get a big windfall if the one chance in five hundred turns out to be successful, that chance is never going to be taken. What is crucial is not whether the decision is made by a corporate board, by Battelle or Mr. Jones, but whether some people at Battelle figure it is worth while risking

money in order to have a small chance of a very large return. That is what produces innovation—the fact that there are a lot of people, whether they are individuals or groups, who are in the position where if the one chance in five hundred works, they get a thousand-fold return or a two thousand-fold return. Whereas, in a bureaucratic organization like the Soviet Union or Yugoslavia, if the four hundred and ninety-nine chances in five hundred come out, they are in a bad way; if the one chance in five hundred comes out, maybe their salary is doubled. It doesn't pay them to take the one chance in five hundred. That is why in the Yugoslav case, which I remembered going over many years ago—I spent quite a lot of time in Yugoslavia—I came to the conclusion that the crucial defect in the whole Yugoslavian situation was the absence of a private equity market or the equivalent of it. There was no way in which anybody who took a risk for a large return would be able to get a reward which would make it worth his while to take that risk.

Herbert Grubel I hope I am not talking about something that is so totally obvious that I bore you, but isn't there an important distinction between research and the innovation? Britain and the Soviet Union have very successfully done basic research, but the economic success that makes the United States the envy of the rest of the world is the dynamism of the owners of little garage shops that take these ideas and put them to work in risky, innovative applications, all hoping to get rich. I think that is an important distinction. It is at least in part an explanation of the puzzle that there is such a low correlation between the amount of resources that nations spend on research and the actual rate of growth in per capita income. England has one of the highest research expenditures but one of the lowest rates of innovation.

One interesting problem arising in this context concerns the optimum time of protection for innovation. What is sacrosanct about the current fifteen years of copyright or patent protection? How was this length of time determined? Is it the optimum? I wonder whether anyone has any ideas on these matters.

Michael Walker Just as a side comment, if you won't regard this as an intervention, the Fraser Institute has published a wonderful little book called *Industrial Innovation* which makes clear the distinction between invention and innovation which, if I may be permitted to say, has not been made in this discussion.

Ramon Diaz I just want to tell you of a conversation I had very recently with one of the executives of an important pharmaceutical company in

Switzerland that engages in research in a big way. They have changed their method of how to reward individuals. At first they did not have any pre-arranged reward. They instituted one and have removed it now. They say it is unfair, because a lot of people help the company by knocking out certain projects saying: this is a dead end project; it won't do anything. And he doesn't get anything. So there is a problem, but the corporation is the one that has to create incentives of one kind or another for its staff. The situation is very different if there is no one who is trying to create incentives.

Walter Block I thought it was a mere oversight that Steve didn't mention Kirzner regarding entrepreneurship. I am puzzled to find that it was purposeful and that the ground is that the Austrians' major function is to tear down rather than to build up. I find this to be an inaccurate description of Hayek and Kirzner.

Svetozar Pejovich I said American-Austrians.

Walter Block I don't see any difference between Hayek and Kirzner in this regard. They are both, certainly, trying to plumb the depths of process as opposed to equilibrium. As Steve says, certainly the Austrians are interested in a heterogeneity...

Michael Walker Walter, may I? This is a doctrinal dispute which gets us away from the central issue. I'm going to put it down as a new point, and you can bring it back in later. But I am going to go now to Raymond on the same issue.

Raymond Gastil I just wanted to respond to Milton. I have no doubt that there are large advantages to being willing to take risks and getting rewards for this. What I was objecting to was the discussion as though the people who actually are doing the innovating or thinking up the ideas—this is the point you were making—are necessarily risk-takers. Now Battelle, to take the example, is an organization that is hired to make discoveries which become practical innovations in the marketplace. A corporate president might need a better mousetrap, so he goes to Battelle and says, you figure out a better mousetrap for me. He comes back later, and the corporate executive says, okay, we'll risk so much money on it. That is a very different process, it seems to me, than what was being described here, which seemed to apply to a different era, that's all.

Milton Friedman I think it is purely semantic. I think that is really what he is talking about. I don't think there is any difference between you and him.

Gordon Tullock The entrepreneurial decision is to hire somebody to do some research, and then it gets factored down. It isn't true that your individual researchers are not taking risks. They, in fact, will get fired if they don't have enough new ideas. This little company I am involved in has just spent, in an entrepreneurial decision, $250,000—which to us is a lot of money—to hire some people to come in and renovate part of our personnel policies. It is going to cost us a lot more because of the workers' morale and so forth while the renovation is going on. Anyway, the decision to do that—hiring a very peculiar type of research work—is an entrepreneurial decision. Frequently, the people who are taking the entrepreneurial risk are not the technicians; they are the people who hire the technicians.

Tibor Machan In response to something Milton said, I would like to pose a question somewhat like the Devil's advocate. Suppose this Yugoslav says: "Of course our innovators cannot gain as much as yours do, but they won't lose so much either because we have a safety net and we don't run them into a situation of destitution as your free market capitalist society does. Even if his innovation doesn't succeed, he will be taken care of."

That mitigates some of the points that you might raise. I don't know how that is answered.

Milton Friedman Very easily. It changes the whole odds situation, and it changes the character of the innovations that people ought to undertake. It changes them in the direction of undertaking innovations which have very small chances of success, but in which failure is not conspicuous.

Ingemar Stahl I don't know if Raymond referred to Batelle or LaRoche, but both firms are well-known for their highly bureaucratic structures. There are some things in the market that create some of the examples. For example, you can sell your ideas to another company, or you can even start a new company. The pharmaceutical company is just a bundle of contracts; and most of the things being done in a pharmaceutical company can be hired in the market.

The second notion is that you can always buy stocks in the company. That might be an indication that LaRoche is too large, because you can't capitalize too much of your own interest in such a huge company. But it is

also interesting to note that it has been pretty unsuccessful in innovation during the last 15 or 20 years, whereas modern firms have been much more successful.

A question to Steve, which I don't really think I found covered in the paper: How do I start a new firm, a BOAL? Do I have to register it, or can I just go out into the street and take five people with me and say, "you are a new BOAL." That is the most important thing, because innovations within firms might be a smaller thing than the establishment of new firms.

Svetozar Pejovich A group of citizens like you and I meet in a bar and decide to start a new firm. Yes, we can do that. A major problem is that the capital we invest in the firm belongs to the state.

Assar Lindbeck If you look at the innovation literature, a typical feature of innovations is that they come in so many different forms and structures and organizations. It is extremely difficult to generalize about it.

One way of generalizing about this complexity is to say that if you want to have a maximum of innovations in society, you should allow a maximum number of organizational forms because different types of organizations favour different types of innovations. If you only allow certain institutional forms, you are likely to get fewer innovations and restriction of the set of innovations.

Another generalization might be that large organizations with heavy research seem to be fairly good at what the Japanese call "improvement engineering." They put known pieces together in new forms and make big systems. Whereas, if you look at completely new ideas, it is remarkable how they come from what we call "outsiders." These are often people in their early twenties, coming from universities or who have jumped off large organizations where their ideas did not fit in. The word "outsiders" is a very usual term in that literature.

A very good book called *The Innovation Millionaires* dealt with the environment in Silicon Valley and around MIT. It turned out that it was a young guy who was able to get money from some millionaire risk-takers. Engineers often get funding this way. A study by a Swedish economist in business administration looked at how successful Swedish firms started. It was very usual that it was one engineer and a businessman or a capitalist—one or two or three persons, very often based on an idea of their own. If you look at path-breaking innovations, they seem to come from single individuals. It is very unlikely that larger organizations generate something completely new. Nylon from DuPont is often mentioned as a counter-ex-

ample. But otherwise, innovation in the electronics industry and the recording industry mainly comes from newly established firms.

Walter Block The Apple computer.

Assar Lindbeck Yes, the whole of it, practically. So, if I may end where I began, if you restrict the number of institutional arrangements that are allowed in a society, you are likely to reduce the number of innovations.

Douglass North Actually, my comment follows right on Assar's. I have just finished some research on an article that I have sent off to a journal. We have been looking at the interplay between technical change and institutional change historically, and attempting to examine how costly it was to transact at both margins. We would try to observe under what conditions we have had lots of flexibility with respect to institutional arrangements which then would produce the technical changes we are looking at. In this paper we have attempted to demonstrate that the interplay between these two has been very decisive, but that the most fundamental one has been the one that Assar has been talking about. That is, if you maximize the number of alternative ways you can combine yourself—going back to the point I was making about adaptive efficiency the other day, that is, ways that allow you to take chances and to lose as well as to have the losers be eliminated—then you produce a setting which I think fits Milton's point, that then you tend to encourage the kinds of technical change that we are talking about.

Alan Walters Those institutional environments that we regard as anti-innovation in fact have always had an enormous incentive for innovation but often of a nonproductive kind. In Africa some years ago it seemed as if the society was completely stagnating, but in fact innovations were coming out of everybody. The innovation was there; it just wasn't being directed the right way.

We see this, for instance, in Britain. The Labour government of 1964 created the British National Enterprise Board which was charged with the task of promoting all risky innovations. The record was almost an unmitigated disaster. I think it had something like thirty-five promotions. In fact, only one of these thirty-five *did* go right—it was a drug. All the others failed. When they return to power, the Labour Party has it fully in mind to refinance this Board.

Now the general lesson from this is that when we talk about innovation we had better be clear how government drives innovation into channels

which are quite unproductive, but nevertheless the innovation is always there.

Alvin Rabushka I think Assar started the right theme here. Living near Silicon Valley, I am reminded of the fact that most new jobs in the United States are created by small firms, not the large, existing firms. When we had the 1978 capital gains tax rate reduction from about 50 to 28 percent, we had a rather substantial increase in venture capital. When Stanford tries to recruit new faculty, they come out and look for housing and they say: "By golly! For $280,000 all you get is a garage!" Of course, garages are where Hewlett-Packard and other new companies are formed, and that is why there is a very high price for buying a garage.

Now, the garage story has a ring of truth in it, because it's just two guys in a garage, fooling around, and lo and behold, you have Hewlett-Packard and Varian Brothers, and on we go. All of this is captured in the equity, and whether or not five guys put together a hundred bucks each or they go to a venture capital group and sell 20 percent of the equity in exchange for X amount of dollars, I think Milton's point was absolutely right. There is a way to capitalize on a very high-risk venture. I think the fundamental reality of these publicly owned systems is that they get in the way of that to varying degrees—some completely get in the way of it, and some partially get in the way of it.

If you think about the single biggest economic experiment taking place on the face of the earth, involving one billion one hundred million people, Deng Xiaoping and his cohorts are trying to figure out how to get the impediments to this out of the way. So, for example, they are starting to experiment with bonds, they are starting to experiment with freely traded stock, they are letting companies go bankrupt, they are letting creative destruction take place. After all, we know in our country that 95 percent of all new products fail, and 90 percent of all new business ventures fail. Socialism is not a system designed to let new business ventures fail; that is not the way the system works. Unless you are prepared to have that, you are not likely to get much innovation. The Chinese are trying to get from here to there. They know where they want to go, and they've got to dismantle it. It's awfully hard to dismantle. It's probably harder to dismantle a control system and get to a free system than it was to have a free system in the first place and keep it.

I keep harking back to what I will call "the Walters-Parkin question" raised very early. It is not just how is it that Hong Kong, Singapore and a few others sustain those free institutions. The bigger question is how is it those that never had them are going to get to them as well? And why is it

that places like China, for example, have now decided enough is enough, and yet the Soviet Union has decided it's *still* not enough?

Armen Alchian I worked at Rand for several years and spent three or four of those years on innovation research and concluded—and I still believe—we don't know the first thing about research innovation. We know a little bit about what induces it, but beyond that we are a total blank. Some of the methods for enhancing what we call innovation are what we would normally call very restrictive. They look like monopolistic devices, but they are not. So when I see contracts drawn on inventors or in strange areas, I no longer take the attitude that they are necessarily monopolistic devices.

We just don't have any good general theory at all that I know about regarding innovations; it's one of those blank areas. I hear all your comments, and I say, yes, I've been through that before. But I'll be damned if I can make any substantive propositions that are worth carrying around. It just isn't true that small firms are the most inventive; the opposite is true—we don't know which one is true. So I caution you to be very careful about any statements you make that we know about innovation because it's a great mystery, at least it is to me.

Milton Friedman May I add a footnote? While the Apple computer was invented in a garage, the Hollerith machine was invented in the Census Bureau in order to carry out the calculations for the census in a government agency.

Armen Alchian The idea that you invent something is just crazy. There is a whole string of people involved, and you don't know where the thing gets invented.

Brian Kantor I wanted to make Assar's point. I also know nothing about innovation and how you encourage it. But one of the strengths of a free society is precisely that of citizens being able to choose the form of association or organization or contractual arrangement that is most suitable for the purpose. One of the ways in which competition is joined in a free society is precisely over the type of association or organization. You compete—if you are allowed to—in the marketplace, and the marketplace will select, over time, the forms of association that are right for different kinds of activities. That is the key.

I don't think defenders of a free society have to make any presumptions in favour of one kind of organization over another. Equity capital may be

most useful for some purposes and may be terribly unsuitable for others. A workers' co-operative might work; an inventors' co-operative might work. A mutual arrangement between managers might work or it might not work. If a society is wise, it doesn't put any regulatory barriers in the way of choosing the form of association that's suitable.

These thoughts occurred to me because in South Africa we have been deregulating the building society movement. Managers in building societies now have an option. They can choose to continue to be a mutual-type organization or turn themselves into an equity-type organization. An argument I made was, give them the freedom and see what happens in the home loans market—what type of organization is best. You will probably have different kinds of associations co-existing in different markets.

Ingemar Stahl I think Gordon and I would probably use the same argument on Alchian's point. Of course, there *must* be a mystery around innovation and how to promote it. If there were no mystery, there wouldn't be very much to discover. If we really knew how to do it, of course, we should have been doing it already.

Douglass North I wanted to pick up on Armen's query, because it illustrates Armen's point very well. Steve Cheung, who some of us around the room think was one of the brightest economists around, got this whole pile of contracts on innovation out of SEC or somewhere. He was sure that he could sort them all out and come up with some generalizations about innovation and solve this problem just like he'd solved the problem of being the world's greatest photographer or the world's greatest whatever, as Cheung had thought he was before that. It turned out that he just got immensely frustrated, and that was probably the reason he quit being a serious economist. He absolutely could not sort it out and come up with some generalization.

In fact, he came up with one of the points that Armen was just making. He found that some things that on the surface looked like they were monopolies and would be restraints turned out to be ways by which with trade secret things you actually channelled the flow of information in directions that, as he looked at it, turned out to be very productive.

But, there is one very cautious generalization that I think Steve could make, which is that you did allow for a maximum of voluntary contracting arrangements that made possible people working out these very complex things, even though he couldn't rationalize them. I think the generalization that there was a lot of flexibility in the way you could contract was an important point.

Armen Alchian That's like saying, I don't know what to tell you to do; I'll just give you freedom to do whatever you want to do.

Douglass North The point I am making is that that's different from what you can do in a lot of societies where you are not allowed this flexibility.

Armen Alchian Oh, I agree. Yes, we can say that.

Voice Beyond that, not much.

Tibor Machan I was going to comment briefly on Brian's point, which relates to this. One of the most irritating claims in Marx is that free market capitalism implies the wage system—that there is no way to have a capitalist society without a wage labourer/capitalist relationship. I have never been able to understand where he got that idea. Maybe it was because of history or the predominance of hired labourers, but it seems to me you could even have labour corporations work like a law firm rather than individual labourers. I have always felt that it was sad that unions developed as a predominant spokes-organization for labourers. Had they not developed and become such an entrenched part of our society, through collective bargaining and through the legal system recognizing them as a necessity, there would have been all sorts of innovations in the arrangements in the free market which might have usurped the wage system.

Assar Lindbeck I tend to look at innovation about the same way as a genetic mutation process. There is a probability that mutations will arise, but you don't know where. If you look at biological mutations, you have a very one-sided environment. Very few of these mutations will result in anything new growing up. But if you have an extraordinarily variable environment in terms of soil, climate, et cetera, more of those genetic mutations will result in something new growing up.

That is why I think the society that puts few restrictions on who is allowed to innovate and what type of organizational forms they can choose is much more likely to generate innovation than a society that says that we are going to create these ten organizations that are going to innovate, they employ these persons called "innovators" and assume that innovations will come from there. A society which requires new firms to get permission from the government or from somebody else to start up is less likely to create innovation than one where innovators do not have to ask somebody else's permission.

A typical aspect of innovation is that often only one or two people believe in it. If they need permission, then they have to convince other people to believe in it too. That is often extremely difficult. But if they have free entry without asking permission, there is a much higher probability of innovation.

The innovative capacity of Soviet-type countries is extraordinarily low. They rank much better in allocative efficiency, even if they are bad there. But I think they are much, much lower in innovation. It is very difficult to think of innovation there. There are state enterprises in the world that have made innovations, which shows that innovations are not restricted to private firms. If you take the steel industry, some new processes after the war came from the state-owned Austrian steel industry. These examples just reinforce my point that you should not restrict institutional forms if you want innovations.

Walter Block If we were to search around for a possible counter-example to Assar's point (with which I agree entirely), one might mention the space programme. Here is a situation where the U.S.S.R. is at least competitive with the American space programme. But I would say that this is not a counter-example to Assar's very correct point, because in the space programme in the U.S. we do not have the essence of free enterprise; rather, we have a central planning type operation. So all that could be said is that when it comes to central planning, the U.S. and Russia are competitive or perhaps the Soviets are slightly ahead. This would not be a true counter-example to Assar's insightful hypothesis.

Brian Kantor I want to pick up Herb's point; I think it is important. We have heard we know nothing about innovations, therefore we have no basis for deciding what is the best way to protect property rights in knowledge because we don't know how those affect the outcomes. Whether it should be fifteen years or five years or fifty years or no years at all, we just don't know. So that is one issue.

The other issue is, how do we protect the trade in knowledge across countries? Clearly, it may be advantageous to free-ride on other people's research. Maybe it is optimum for a small country or even a big country to discourage research altogether and free-ride off the improvements in knowledge made somewhere else. I think that is a problem in relations between governments.

Assar Lindbeck The problem is that everybody tries to do it.

Brian Kantor Yes, that's one of the free-rider problems.

Michael Parkin I wanted to complete the Assar point, which I think is an important one. I think Assar is correct, and his analogy is brilliant. I think there is one further feature of it that we have not quite got. It connects to what Alan was saying. Innovation of all kinds is going on all the time. The important thing is the value of the innovation, and the value to whom. If we have a society in mind in which the values that matter are the values of individuals, based on individual willingness to pay, then Assar's observation is clearly correct that maximum variety of institutional forms and freedom to form contractual arrangements will further that goal of innovating in areas and in ways that produce things that are valued by individuals.

If, however, we think that the correct form of society is one in which the views of a small elite are the ones that count and nobody else's count for anything, then indeed we might prefer to organize ourselves in the form of the big space programme or whatever and produce this mass of innovation, as it is highly valued by the relevant group. I think there is an intimate connection between the basic ideals and the fundamental notion that individuals are what matter and the conclusion that the innovative process is best served in an environment in which those individuals are free to form whatever contractual arrangements they elect to.

Michael Walker Now we have the opportunity to go to new points. Walter, I will give you 30 seconds at this stage on your doctrinal issue.

Walter Block What I was saying is that the Austrians certainly have not just torn down but also built up, although sometimes a part of building up *is* tearing down. But even if the contention were true that somehow the Austrian didn't, this seems to be no reason for purposely avoiding a footnote that should have been made.

Now with regard to the Lange-Mises-Hayek debate, yes, incentives are missing. So it is very difficult for the Soviets to replicate the market. But this was not the point of both sides of the Lange-Mises-Hayek debate; it was just the Lange side. The Mises-Hayek side made the very point that Steve is making very well himself.

Svetozar Pejovich Let me start with Walter's statement. It is fine to disagree with me, but I think I have the right to ask you to understand my point. When I referred to American-Austrians, I certainly did not mean Hayek. It is not fair to put them together. Hayek belongs to the same club

as Milton, Armen Alchian and Lord Keynes. I have conceived and organized symposia that will be held annually to honour Mr. Hayek.

On asking where Marx got the idea of employer-employee relations, I would say he got it by looking around.

To Alan Walters, in the last five years of his life, Mr. Haggerty—a founder of Texas Instruments—was very concerned with the issue of how to preserve incentives to innovate in a growing corporate firm.

Finally, my point to Ingemar Stahl. I think I have given you an answer which is partially correct about the Yugoslav firm. It is possible in Yugoslavia to have a private firm. But you can have a private firm only in well identified areas like hotels, motels, restaurants. However, they are supposed to employ at most five people. If you go into any Yugoslav restaurant that is privately owned, you will see about thirty people employed there. If you ask whether they are breaking the law, they will say, of course not, they're all family. They are innovators!