

## OPPORTUNITY, DIVERSITY, AND COMPLEXITY\*

by

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## I

K. Paul Hensel, in Grundformen der Wirtschaftsordnung, suggests that there are some millions of different variations in economic goods. Each variation in a good can be viewed as having a characteristic production process where factors are being transformed into products as outputs of that process. The way that human beings relate to one another in the production, exchange, and consumption of diverse goods and services requires recourse to an extraordinary variety of patterns of organization. Hensel suggests that the aggregate economic process in West Germany has reference to a great number and variety of consumption units (Haushaltungen) and production units (Betrieben). Among the consumption units, Hensel refers to individuals, families, associations, and collectivities. He estimates that some 23 million collective economic units exist, 3 million of which operate as producers. The consumption units range from the Federal Republic to single family households. These 23 million consumption and production units all require coordinated planning of jointly associated efforts. I assume that these estimates are less than the true magnitude of organization involved.

Any particular joint effort depends upon the ordering of human relationships with reference to rules that apply to discrete individuals with reference to particular time and place variables. Each association is in some sense a polity that orders relationships with reference to mutual understandings that take account of discrete contingencies. Each association is nested into other configurations

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of associated relationships so that human actions are coordinated through time and space relationships that have reference to societies as larger aggregate structures of social relationships.

Hypothetically, it is possible to conceptualize, aggregate, and disaggregate these relationships in many different ways. Some ways of doing so distinguish economic and political relationships. How such relationships might be distinguished turns upon the criteria used. One criterion, commonly used, is to conceptualize the economic realm where relationships are organized by reference to prices expressed in monetary terms where money is used as a medium of exchange. Government, then, comes to be identified with the provision of goods and services that are not subject to exchange relationships. Economic relationships then implicitly refer to market structures where governmental and other forms of organization have reference to nonmarket structures.

Problems arise in such conceptualizations because some elements that are essential to market organization cannot be supplied under market conditions. Money as a medium of exchange has characteristics of jointness of use for all who use money as a unit of account in establishing price relationships (Picht, 1985). This jointness of use means that a monetary system viewed as supplying a medium of exchange is a public good. Similarly, while goods and services are exchanged in markets, there is a public good aspect to market relationships where the use of those arrangements by some buyers and sellers does not distract from their use by other buyers and sellers. There are mutual gains to be realized in alleviating scarcity by having more rather than less market participants. Market arrangements depend upon authority arrangements having to do with property rights and contractual relationships that are themselves not marketable commodities but symbolically conceptualized ways of ordering human relationships so that agreeable exchange relationships can occur. Market systems are themselves not exclusive social orders that exist apart from other institutional arrangements in human societies. They depend upon social infrastructures and facilities that require recourse to nonmarket decision structures.

Similar problems arise in conceptualizing something that might be characterized as a state that has reference to rule-ruler-ruled relationships in human societies. The traditional theory of sovereignty presumed that the coherence or unity of law depended upon there being a single source of law. The unity of law, in this view, depended upon a unity of power. The state, from this perspective, might be viewed as an autonomous actor that rules over society. The state is a pattern of subordination in a hierarchy of superior-subordinate relationships culminating in a single, ultimate center of authority that is the source of law, but which cannot itself be held accountable to law. The state then is a monopoly of the authority to govern and exercise control over the legitimate use of force in a society.

Drawing upon such a concept of state and upon a contrasting pattern of organization associated with market systems, it is easy to

conceptualize the nature of order in human societies as being constituted by reference to markets and states, or to markets and hierarchies as these conceptions are sometimes expressed. Using such simplified conceptions fails to clarify the contextuality of life as many of us experience the conditions of life in human societies. Markets and states are not isolable autonomous realms that exist as mutually exclusive domains of life.

When I buy an automobile, for example, I enter into a contract as well as paying money to a dealer. The contract is a basis for establishing a legal title. Before I can operate the automobile, I must have a valid driver's license. I consummate the transaction by relationships with an automobile dealer, and with equivalent persons who register titles, issue vehicle licenses and driver licenses, supply credit, insurance, and other contingencies that may be involved in becoming an owner and user of an automobile. Some alternatives are available at each juncture including which licensing branch to patronize in registering the title and procuring licenses to own and drive an automobile.

I bring these relationships to a personal level not from the point of view of being idiosyncratic about the diversity of enterprises and structures of relationships in modern political economies but to explore the relationship of social realities to the cognitive experience of individuals who exist in different social realities. I do so because I am concerned with tendencies to use labels such as markets and states, or socialism and capitalism, to address the multitudes of relationships that individuals pursue in human societies. These abstractions somehow achieve a sense of reality in our imaginations and, depending upon our degree of attraction or aversion, may become either nirvana models or diabolical machines.

Karl Polanyi's The Great Transformation, for example, views market structures as a diabolical machine. His term is "Satanic Mill." Polanyi sees "a market economy . . . as an economic system controlled, regulated and directed by markets alone" (Polanyi, 1957: 68). This is hard for me to imagine because property rights cannot be established, maintained, and enforced by markets alone. Nonetheless, there are certain dynamics that are characteristic of markets and some of these dynamics may have perverse effects in human societies. Polanyi has, in my judgment, overstated the case and not made adequate levels of comparison, for example, between life in what he refers to as a market economy to life in a feudal economy. Yet, there is some ring of truth about some of the costs Polanyi associated with the transformations that occurred in nineteenth-century industrial societies.

## II

My own inquiries in looking at quite a different vista of later nineteenth and twentieth century institutional development in the arid regions of the American West gave me quite a different understanding of the way that people confronted opportunities in a market economy. Since water is a critical factor in an arid region, the focus of my concern was the way that institutional arrangements were used to shape development in the American West with particular attention to California and especially to Southern California. Private profitable enterprises play only a relatively limited role in the supply of water services in California, especially Southern California. Much more important are nonprofit cooperative enterprises, locally referred to as mutual water companies, a vast array of public water districts organized as limited-purpose public corporations and having many of the characteristics of nonprofit cooperative societies, and a range of other specialized agencies of general units of governments including cities, counties, the state of California, and agencies of the United States such as the Corp of Engineers and the Reclamation Service (Ostrom, 1971). The California water industry is comprised predominantly of nonprofit cooperative enterprises, public enterprises, and governmental agencies. Of the 5,000 or so enterprises, less than 300 are for-profit private enterprises subject to regulation by the state public utility commission. This configuration of institutional arrangements has made possible a course of economic development where California has become the most populous state in the United States and enjoys a very high level of economic development. Yet, this same state with a very small population experienced disastrous droughts in the 1860s which remind one of the African Sahel today.

My point is that people in diverse localities in California worked out forms of collective enterprise that were highly sensitive to communitarian values while at the same time limiting opportunities for private water developers to extract a monopoly profit and allowing small-hold settlers to capture the predominant share of the economic rent inherent in opportunities for development in California. The capital investments in water-works and water-supply systems are predominantly held as cooperative or public properties in one form or another. A competitive market economy in a so-called capitalist society has yielded a highly productive water industry composed predominantly of cooperative and public enterprises that some might be inclined to designate as socialist enterprises. The social infrastructure of the California economy is a mixed economy composed of a great variety of profitable, nonprofit cooperative and public enterprises that relate to one another in complex configurations of interorganizational arrangements.

How do we explain the circumstance that people in California did not allow water resource development to occur under circumstances where private developers could extract a monopoly profit? Aspiring monopolists existed; but few succeeded in dominating patterns of water resource development over an extended period of time. Most

developments in California were initiated under circumstances where control over water supply was vested in the local communities of users rather than in monopoly suppliers.

The only explanation that I can offer is that the people of California developed an awareness that incentives facing a supplier of water services who sought to maximize profits was not consistent with interests of those who were being served. Both public and private ownership of property in land meant that profitable water utility companies were required to meet political terms and conditions pertaining to the granting of franchises and exercising the power of eminent domain to acquire rights of way across intervening parcels of private property. The essential leverage for invoking political processes came from the ownership of land; the results yielded by the political processes prevailing in California through time biased decisions against profitable water-utility companies and in favor of cooperatives and public enterprises. Political processes were themselves altered through constitutional decision-making processes to reduce the authority of the state legislature, to place greater reliance upon popular initiatives and referenda, and to enhance the constitutional authority of local communities.

The juxtaposition of property relationships to political processes to yield the institutional characteristics associated with the California water industry carries quite different implications than are yielded in Polanyi's analysis. The property rights of individual persons, the property rights of mutual water companies and of various types of public corporations gave standing to individuals and diverse communities of interest to sue and be sued. This power gave an essential leverage for initiating potential veto capabilities in a political system characterized by strong emphasis upon a separation of powers among many independent units of government in a highly federalized system of government. A critical issue is how diverse institutional arrangements, both market and nonmarket, get linked together. Public entrepreneurship that takes account of diverse communities of interest is facilitated by a combination of a highly differentiated system of property rights and the absence of monopoly power in the exercise of public authority.

To explore these relationships further, let me shift the focus of inquiry away from California to some of the problems that arise in the so-called Third World. The contrast will enable us to indicate how different structures in human societies yield different opportunities to fashion diverse forms of enterprise and structures of relationships.

### III

Lord Bauer, in an essay on "Market Order and State Planning," provides us with some interesting speculations about the cognitive experience of individuals in relation to the pursuit of developmental

opportunities. I wish to relate Bauer's observations to some other observations by David Feeny about a demand-and-supply model for institutional change. I then wish to speculate about the implications of such a model where the supply conditions are dominated by a model of military dictatorship that has been espoused by American authorities concerned with maintaining stable regimes in the so-called Free World. These give us some measure of understanding of the tenuous nature of market economies. Polanyi's "Satanic Mill" becomes little more than a paper tiger that lays wasted by the repressive powers of the state.

Lord Bauer, in his discussion of market order in the Third World, indicates that major transformations occurred late in the nineteenth centuries and early in the twentieth centuries. Rubber trees indigenous to South America were planted over millions of acres in Southeast Asia on plantations controlled by Western-owned companies and by many Asian smallholders. Much the same pattern occurred in West Africa with the development of the cocoa industry. This development, Bauer suggests, was made possible by the "establishment and extension of public security" (Bauer, 1984: 24). I assume that these conditions came about through the exercise of imperial authority by European powers.

The prodigious efforts undertaken by millions of people, Bauer argues, occurred without their needing to know the end use of the trees they planted and the crops they harvested:

they simply took advantage of the opportunities for improving their lot, which came to them as a result of complex processes which originated far way, and the outcome of which was transmitted to them by the market. All they needed to understand was the extension of their opportunities (Bauer, 1984: 24).

The critical information was the opportunity represented by prices in the market.

But, the success of the market order, Bauer also indicates, is everywhere challenged, because "the market system provides no mechanism for its own survival" (Bauer, 1984: 36). Success in the market, Bauer argues, "requires concentration on concrete problems of production and marketing" (Bauer, 1984: 36). These problems require a devotion of time and energy that does not leave room for people to develop "sustained and perceptive interests in general issues and their analysis" (Bauer, 1984: 36). This is much the same issue that Tocqueville raised when he expressed concern that the pursuit of wealth might come at the cost of citizenship in a democratic society. Individuals who pay attention only to price in determining their choices are vulnerable to political processes where some are free to argue that workers and peasants have the prospects of achieving a greater advantage by expropriating private property and instituting a socialist society, where profits are eliminated and workers realize the full social product of their labor. The naive maximizer might select that option offered by those who make the biggest promises. This too is taking advantage of perceived opportunities.

We are, thus, confronted in choosing diverse types of institutional arrangements with establishing the relative advantages or the relative prices that accrue to the alternatives that are available. Price in its most general sense can be defined as the terms on which alternatives are available. Some estimate of the terms on which alternatives are available, or might become available, is necessary before one can begin to estimate the demand for alternative institutional arrangements. Instead of money-prices for discrete commodities, the choice is at a different level. It is the choice of configurations of rule-ordered relationships. These are much more difficult to assess.

The supply of new forms of institutional arrangements depends upon procuring the necessary authorizations for establishing authority to act. This requires some form of legal standing; and to acquire legal standing depends upon legal processes associated with the exercise of governmental prerogatives. The supply of institutional arrangements is controlled as David Feeny suggests by "the elite decision makers of government" (Feeny, 1984).

In the case of European empires in Africa and Asia, we might anticipate that this price would come relatively high. While opportunities to pursue market options on the part of individuals and families within the constraints of imperial preference may have been readily accessible to subject populations, the possibility of accruing institutional arrangements, comparable to that of the California water industry, would be relatively inaccessible. The less experience in dealing with diverse forms of enterprise and the less knowledge that is available about experience with different institutional arrangements in other societies, the less opportunity there is for articulating demands for institutional changes. Empires may have provided an adequate degree of public security to allow for sufficiently reliable expectations to yield important economic opportunities in the development of rubber, cocoa, and other productive enterprises given relatively simple structures of property rights and imperial structures of authority relationships; but we have no reason to believe that these arrangements would have facilitated the diverse forms of cooperative and public entrepreneurship that could have sustained the great variety of mutual water companies and public enterprises to support essential infrastructures in a highly productive market economy. If political structures are organized as highly-integrated monopolies, would we expect political elites to drive a less favorable monopoly bargain than might be expected from monopolists in other circumstances?

#### IV

The British, Dutch, French, and Portugese empires have given way to a great number of new nations where formerly subject peoples are now concerned with undertaking their own course of development. This provided an important opportunity to fashion institutional

arrangements that would facilitate developmental opportunities in each of these societies. Primary attention has been directed to building the apparatus of the state on the assumption that state is the essential foundation for supplying all other institutional arrangements that might be relied upon to undertake the modernization of those societies. What has occurred?

The experience is diverse; and what I have to say applies to only one pattern of development that is associated with coup d'etats and military dictatorships. That pattern is sufficiently common in the Third World to give some degree of understanding about the price of institutional innovation and change under strong monopoly conditions. In stating these conditions, I rely upon a memorandum published as an appendix to Miles Copeland's The Game of Nations. This memorandum was prepared by both Americans and Egyptians who participated in planning and consolidating the coup d'etat undertaken by Gamal Abdelnasser, who is known to the world simply as Nasser. The critical issue was how to build a stable structure of relationships that would secure a successful coup against further coups and counterrevolutionary efforts. Equivalently, the task can be conceptualized as how to fashion a stable military dictatorship.

The Copeland recipe places a strong emphasis upon the presupposition that power is based upon the use of repressive capabilities. Revolutions and coup d'etats are by their nature illegal. The task of a revolutionary government, then, is to do whatever is necessary to actualize a maximum of power that is subject to its control. This is done by exercising control over: (1) legislation, (2) police, (3) an organized intelligence service, (4) propaganda facilities, and (5) organized military force. All political activity not favorable to the regime is proscribed. Legislation, in the form of revolutionary decrees, becomes the foundation of state security and formulates the duties and obligations of citizens. Magistrates are placed under control of the revolutionary government. The police force is politicized and made a partisan military arm of the revolutionary government. A carefully concealed intelligence service becomes the nerve center of the whole security system of the revolutionary state. Propaganda efforts are mobilized to support the use of repressive measures and justify their continued use. Everything should be done to build a loyal and efficient army, create a countersubversive intelligence system in the army and, in general, to keep a "happy army." A mass organization composed of revolutionary leaders, governmental officials and employees, and a large mass of private citizens is to be organized for supporting and furthering the accomplishments of the revolution. This mass organization serves as a "propaganda front for the government and as a base to build a political party of the future" (296). This organization provides citizens with "the freedom to vote without the freedom to argue about what is being voted upon. . ." (127). Copeland, also, emphasizes a principle of "big government" to keep "a large segment of the public off the streets. . ." which "could be extremely dangerous if left unemployed" (128).

The key instrumentalities of control are a politicized police, a secret service, a happy army, a mass movement organized as a one-party system, an inflated bureaucracy, and a propaganda service to tell the people what to think. Traditional institutions that have helped to sustain a way of life are subject to assault; and new ways that are amenable to revolutionary appeals and maximization of the regime's control over society are put in their place. Revolutionary rhetoric about socialism is used to nationalize economic enterprises, expropriate property, and control economic activity.

These are the conditions that can be expected to prevail in controlling the supply of institutional innovations governed by elites organized as military dictatorships. These opportunities can be highly lucrative for some. The Washington Post recently reported the present private assets of a former African sergeant, currently a head of state, to be 4 billion dollars. Old-style imperialisms may have been relatively more benign than new-style cryptoimperialisms of the contemporary world.

## V

Since the price of supplying institutional innovations and change by "the elite decision makers of government" may come extremely high, we may want to consider some alternatives that may be available where people need not depend upon chance, coup d'etats, or revolutions to fashion their systems of government. This requires a knowledgeable awareness of alternative terms and conditions that might apply to the creation and operation of systems of government. Lord Bauer's workers and peasants would be required to know much more than to calculate the economic opportunities that were available to them. They would also need to know something about the opportunities afforded by market structure and alternative forms of economic organization. Markets themselves are never sufficient. Markets for different types of goods and services may take on quite different characteristics. Some may work well under the impersonal conditions of nontuism. Others may depend upon personal considerations involving high levels of trust among trading partners. Further, Bauer's workers and peasants would need to know how to take best advantage of opportunities for teamwork and how teamwork might be best organized so as to realize the relative advantages of teamwork as against pursuing opportunities with others by reference only to market exchange arrangements. Workers might manage an enterprise and employ their own manager as against circumstances where someone might become a proprietor who hires other workers as employees. In large-scale enterprises, workers might organize to bargain collectively with management. In turn, diverse cooperative and public enterprises might be organized to procure essential services like water supply or marketing facilities to gain access to more extended markets.

This range of opportunities always needs to be viewed against the possibility that Lord Bauer's workers and peasants might aspire to establish the terms and conditions of government so that they could

exercise basic control over those who exercise the prerogatives of government. They would then realize that a naive faith in revolutionary appeals is extremely hazardous and is likely to yield increasing oppression and deteriorating conditions of life. Real revolutionary potential exists when people establish processes of decision making that specify the terms and conditions of government where citizens reserve to themselves fundamental authority that applies to the governance of society including the authority to set the terms and conditions of government.

I have elsewhere elaborated much more fully upon the terms and conditions that apply to the constitution of democratic societies where people can be said to exercise and control the prerogatives of rulership in a society (Kaufmann, Majone, and Ostrom, 1985: Ch. 5). This is what it means to be self-governing. People are then not helpless victims of market systems as diabolical machines; but they learn to appreciate that markets do afford important opportunities for people to order their relationships with one another in mutually productive ways. But, markets do not suffice to yield the most favorable economic opportunities in all circumstances. Monopoly bargains may come at a very high price and people may gain advantages in organizing natural monopolies so as to constrain monopoly pricing and share the inherent advantage of production technologies among the communities of users.

When people share in the exercise of the fundamental prerogatives of government through a properly constituted system of government, they can take account of different opportunities to fashion institutional arrangements for diverse production and consumption of possibilities that occur in many different communities of relationships. Systems of public enterprise, as in the case of the California water industry, are as essential as systems of private enterprise in the operation of many other industries.

This implies that individual choice is not limited to prices in a market but involves a much more extended range of calculations about the terms on which alternatives become available in the context of diverse institutional arrangements including both market and nonmarket systems of relationships. Human beings have potentials for taking account of their own preferences and using their own cognitive and emotional facilities to come to a sympathetic understanding of what it means to be human and to relate in mutually productive ways to other human beings. But, these relationships are always subject to tension because the maintenance of orderly relationships in human societies depends upon the enforcement of rules through potential access to instruments of coercion which can also be used to repress and exploit others.

## VI

When human beings develop a sufficient level of understanding to be effective artisans in the production and use of diverse goods and services, to participate in taking collective decisions and pursuing joint opportunities with others, and to constitute systems of governance where those who exercise the prerogatives of government can be held accountable to specifiable terms and conditions, we should have a sufficient level of understanding to avoid becoming the victims of diabolical machines of our own making. Unfortunately, it is the vision of nirvana models that work as ideal-type mechanisms which lead human beings to suppose an omniscience and an omnicompetence which no one can realize. The most we can do is to act on the basis of choice in light of discussion, reflection, and experience. Each of us needs access to diverse capabilities and the opportunities afforded by diverse structures of relationships in our contemporary circumstance. Unfortunately, we can take advantage of and maintain those opportunities only when we learn how to do so.

Lord Bauer's workers and peasants would then need to know more than the prices that are available in markets. They would also need to know, as Tocqueville has suggested, the science and art of association to secure the many joint advantages that come from working together in diverse types of joint enterprises and from constituting systems of government where no one exercises unlimited authority and where all officials can be held to account for the proper discharge of their public trust. Each individual would then be a knowledgeable actor in a self-governing society where opportunity is a function of diversity and complexity in patterns of organization in human societies.

A science and art of association that is appropriate both for understanding the nature and constitution of order in human society and for engaging in those forms of association that are constitutive of mutually-productive relationships is the foundation for choice among the alternatives that are available. Since human beings, who are capable of innovation, cannot know what the future holds, there is an advantage to be gained by exploring diverse possibilities. Whether human beings can use methods of discussion, reflection, and choice to fashion the future course of human civilization remains to be determined. That civilization will be the richer as it becomes more diverse and more complex provided that we strive to be cognizant of the basic "similitude" of thoughts, passions and circumstances that characterizes all of mankind (Hobbes, 1960: 6).

References

- Bauer, P. T. (1984) Realities and Rhetoric. Cambridge, Massachusetts: Harvard University Press.
- Copeland, Miles (1969) The Game of Nations. London: Weidenfeld and Nicolson.
- Feeny, David (1984) "The Development of Property Rights in Land: A Comparative Study." Center Discussion Paper No. 459. New Haven, Connecticut: Yale University, Economic Growth Center.
- Hensel, K. Paul (1974) Grundformen der Wirtschaftsordnung. München: C. H. Beck.
- Hobbes, Thomas (1960) Leviathan. Michael Oakeshott, ed. Oxford: Basil Blackwell.
- Kaufmann, F. X., G. Majone, and V. Ostrom, eds. (1986) Guidance, Control, and Evaluation in the Public Sector. Berlin and New York: Walter de Gruyter.
- Ostrom, Vincent (1953) Water and Politics. Los Angeles: The Haynes Foundation.
- \_\_\_\_\_ (1971) Institutional Arrangements for Water Resource Development. Springfield, Virginia: National Technical Information Service.
- Picht, Hartmut (1985) "Monetary Arrangements for Economic Development." Paper prepared for a conference on Institutional Analysis and Development, Washington, D.C., May 21-22.
- Polanyi, Karl (1957) The Great Transformation. Boston: Beacon Press.