

◆◆ Chapter 39

Critical Thinking, Human Development, and Rational Productivity

Abstract

In this paper, originally presented at the Annual Rupert N. Evans Symposium at the University of Illinois in 1985, Paul argues that productivity, development, and thinking are deeply interrelated. Consequently, societies concerned with their development and productivity must concern themselves with the nature of their educational systems, especially with whether or not the mass of citizens learn to think critically. Paul distinguishes rational from irrational productivity and argues that critical thinking is essential to rational productivity in a democratic world.

Irrational production, in Paul's view, is productivity which "fails to serve the public good, insofar as it is production wasteful of non-renewable resources, destructive of public health, or at the expense of basic human needs". As both capitalism and democracy develop as world forces, it is important that we recognize the struggle "between the ideal of democracy and protection of the public good, on the one hand, and the predictable drive on the part of vested interests to multiply their wealth and power irrespective of the public need or good, on the other To the extent that it is possible for concentrations of wealth to saturate the media with images and messages that manipulate the public against its own interest, the forms of democracy become mere window dressing, mere appearance with no substantial reality."

Paul believes that the human world we have created has been created with a minimum of critical thought, a minimum of public rationality. He is convinced, however, that we can no longer afford mass irrationality. For Paul, the tensions between democracy, unbridled capitalism, and the public good must be increasingly resolved by a genuinely educated, rational, citizenry.

When we look upon learning in itself or productivity in itself or any other dimension of human life in itself, we look upon it with a partial view, as an abstraction from the real world in which all things exist in relationship. We then fail to see how it derives from relationship its true qualities. We view our object uncritically and narrowly. We fail to achieve the comprehensiveness all genuine and deep understanding presupposes. In this paper, I emphasize the intimate reciprocal relation between learning and productivity, arguing that what we learn about the nature and problems of learning sheds light on the nature and problems of productivity. Hence, just

as learning can be rational or irrational, so, too, can productivity. Just as learning can be assessed not only in terms of quantity but quality as well, so, too, can productivity. Finally, I will argue that the nature and quality of life in society is intimately dependent on the nature and quality of human learning which in turn determines the nature and quality of productivity.

A free and rational society requires free and rational learning and thus generates free and rational production. Education, rightly conceived, has as its fundamental end the nurturing of free and rational learning and hence aims to contribute and will contribute to free and rational production. Vocational education should not, then, be seen as independent of the fundamental aims and ends of all education. It should proceed with the same liberating comprehensiveness, the same excellence, and the same command of mind and behavior that we typically think of as the desired hallmarks of a liberal education. My fundamental questions are these:

What is the nature of irrational human learning?

What is the nature of irrational human productivity?

What is the significance for education of irrational learning and irrational productivity as social phenomena?

◆ *What is the Nature of Irrational Human Learning?*

All learning has social and psychological as well as epistemological roots. Whatever we learn, we learn in some social setting and in the light of the in-born constitution of the human mind. There is a natural reciprocity between the nature of the human mind as we know it and society as we know it. The human mind — and we must understand it as it is, not as we may judge it ought to be — has a profound and natural tendency toward egocentrism. Human society in turn, has a profound and natural tendency toward ethnocentrism. Both egocentrism and ethnocentrism are powerful impediments to rational learning and rational production. An irrational society tends to spawn irrational learning and inevitably generates irrational productivity. Both socially and individually, irrationality is the normal state of affairs in human life. It represents our primary nature, the side of us that needs no cultivation, that emerges willy-nilly in our earliest behaviors.

No one needs to teach young children to focus on their own interests and desires (to the relative exclusion of the rights, interests, and desires of others), to experience their desires as self-evidently “justified”, and to structure experience with their own egos at the center. They do this quite naturally and spontaneously. They and we are spontaneously motivated to learn what gets us what we want. They and we are instinctively motivated to believe whatever justifies our getting what we want. It is not *natural* for us to step outside our egocentric point of view. It is not natural for us to take into account the interests, needs, or points of view of others. We do so only insofar as we are com-

pelled as we experience the force and power of others who require us to respond to their interests and desires and to take into account their point of view. We do so, then, often grudgingly and with limited understanding. We acquire and extinguish beliefs, knowledge, habits, and behaviors insofar as they seem to us to further our, typically unexamined, desires. We begin with visceral learning that is functional in the most immediate and spontaneous way. We learn without knowing we are learning, without making any conscious choice about the conditions of our learning, without recognizing the pitfalls of our learning, without recognizing its selective, its epistemologically naive, its narrow foundations. And, as long as what we learn “works”, as long as we can get by with it, we tend not to discover the longer range value of self-critique.

Socialization, which comes close on the heels of egocentric experience, builds upon, rather than significantly modifies, egocentrism. Our egocentrism is partially transformed into ethnocentrism. We spontaneously and subconsciously internalize the world view that is dominant in our society. And just as we don't as individuals recognize the egocentrism of our personal point of view, we don't as members of social groups recognize the ethnocentrism of our collective world view. We take that world view to be as objective, as completely a mirror-image of the world, as we take our personal point of view to be. Indeed, it is a rare individual who can tell where the one ends and the other begins.

The capacity to think critically — to penetrate our egocentrism and ethnocentrism, to give credence to points of view other than our own, to recognize ourselves as *having* a point of view (rather than simply grasping the nature of the world directly and objectively), to seek evidence for our beliefs, to monitor and assess the component elements in our reasoning — is not spontaneous as is our primary egocentrism, but must be laboriously cultivated through education. When we develop abilities to think critically we develop our capacity to function as free agents. As they develop, we come to analyze, assess, and take command of our learning and so of the actions that issue from that learning, including our own productions and productivity. As rational agents, we bring a new dimension to learning and production. We open the way for our own rational production and the collective development of a rational society. We can understand this better by considering the nature of human productivity.

◆ *What Is the Nature of Human Productivity?*

Production is, quite simply, the creation of some *utility*. The first question to ask, then, in probing the roots of productivity is, *whose utility?* Beyond production for sheer survival, utility must be judged from a human point of view; and all of the diversity and opposition that exists between conflicting points of view is reflected in judgments of the relative utility of diverse forms and modes of production and productivity.

Production and productivity can be looked at both quantitatively and qualitatively. Of greatest significance are the standards we use to assess production qualitatively. I suggest that *the most pressing problem the world faces*

today is the problem of irrational production, of that production which wastefully expends human labor and precious resources for ends that would not be valued by rational persons nor be given priority in a rational society.

The modes and nature of production within any given society reflect the nature, development, and values of that society. Insofar as a society is democratic, the modes and nature of production will reflect democratic decision making regarding production. This reflects not only individual decisions that one might make as an autonomous "consumer" and vocational decision-maker but also collective decisions as a citizen who supports some given social and economic philosophy or other. For example, the decision to provide many hundreds of millions of dollars to subsidize the development of nuclear energy rather than solar energy was a "collective" decision, heavily dependent on public funds and resources. So, too, were the development of railroad systems, the airline industries, the public highways, and sewer systems. These general decisions and the precise ways in which they were implemented can be analyzed for their implications for the use of public resources and the meeting of public interest and need. Indeed, there are very few "political" or "social" decisions which do not have economic and moral implications. Every expenditure of public or private resources represents both an economic trade-off (in that other possible uses cannot, then, be furthered) and some implementation of a judgment of value for public or private good. A society is not democratic if its citizens are not disposed to participate in this economic and social decision making in such a way as to knowingly and effectively protect the public good and interest.

◆ *What Is Irrational Production?*

It is a platitude, but an important platitude to keep in mind, that the productive resources of society should be marshalled to serve public need and public good, as against the vested interests of a relative few at the expense of the public good. *Production is irrational to the extent that it fails to serve the public good, insofar as it is production wasteful of non-renewable resources, destructive of public health, or at the expense of basic human needs.* One valuable rule of thumb is this: any economic practice is of questionable rationality if it can be maintained only by keeping the public in ignorance as to specific nature and modes of operation. The public cannot be understood to sanction that which it does not comprehend.

Production and productivity are to be viewed as collective as well as individual decisions in a functioning democracy. For these decisions to be made in a rational fashion, the public must have been educated to think critically, for when some narrow interest group seeks to maintain some form of irrational production (either as a whole or in part), it is inevitable that public relations and lobbying efforts will be launched which function, at least in part, to obfuscate public recognition of its own interests. For instance, it was in the narrow

egocentric interest of asbestos manufacturers to minimize public disclosure of the health hazards of working and building with asbestos. The asbestos industry obscured the public interest to serve its own. As a result of the industry successfully protecting its vested interest, a mode of production was maintained for decades at great expense and loss in public health.

Since it is unrealistic to expect industries with narrow vested interests to abandon those interests for the public good, it becomes necessary that the public be armed with the critical, analytic, fact-finding, and reasoning abilities that critical thinking provides, that they may judge where, when, and to what degree the pursuit of a vested interest is consistent with the public good.

It is easy to find innumerable historical examples in which the public good was flagrantly sacrificed precisely because the public was kept in the dark about the manner in which and the extent to which private interest was secured. Adam Smith himself was well aware of the tendency of private interest to seek its own advancement at the expense of the public good:

People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices. (*Wealth of Nations*, Book 1, Ch 10.)

It is extremely difficult to maintain genuine competition that serves the public good in the face of ever-changing market structures and ever-growing concentrations of economic wealth and power. Multi-national corporations, for example, are increasingly able to function as quasi-monopolies, or, in their capacity to move their productive facilities and great concentrations of wealth from one country to another, as to function as quasi-oligopolies. For example, when a foreign dictator prevents the development of free labor unions and preserves both "political stability" and "low wages" by effective and organized instruments of social and political repression, then the "free" labor force economically competing in "democratic" countries loses effective bargaining power at home. Free labor cannot effectively compete against unorganized repressed labor. A market economy cannot function in the public good when increasing concentrations of wealth produce conditions of radically inequitable bargaining power.

Again and again, questions intrinsic to the nature and mode of production and productivity turn upon decisions and policies that can be argued from divergent points of view and in which the relation of private and public interest are in need of critical explication. The individual citizen's capacity to penetrate the rationalizing smoke screens that can be generated to undermine the public good in service of private gain is a profound on-going problem of public life.

Consider, for example, an argument in the London *Economist* of July 13, 1850, criticizing the "sanitary movement" which was urging that government support the development of a pure water supply and proper sewage disposal. The *Economist* argued that poor housing and high urban death rates,

sprung from two causes, both of which will be aggravated by these new laws. The first is the poverty of the masses, which if possible, will be

increased by the taxation inflicted by the new laws. The second is that the people have never been allowed to take care of themselves. They have always been treated as serfs or children and they have to a great extent become in respect to those objects which the government has undertaken to perform for them, imbeciles There is a worse evil than typhus or cholera or impure water, and that is mental imbecility.

Here the public good is defined as allowing poor water treatment and supply to continue. To correct them, say these editors, would *harm* the poor.

As Adam Smith recognized, private vested interests naturally try to increase their wealth regardless of the public good. Hence, ironically, no private interest is in favor of more, but rather in favor of less competition in its own industry (unless an increase in competition would increase its own profits). When it is possible to take advantage of the public, private interests will almost inevitably do so. Thus, during OPEC's oil embargo, U.S. oil companies raised their own prices at home as well as abroad even though internal consumption of Arab oil was no more than 10% of our market. The OPEC action, in other words, provided a convenient excuse to join in a monopolistic practice of a special interest cartel. The result was windfall profits extracted from the U.S. public under artificially created, non-competitive conditions. The public, on the other hand, was continually led to believe that "Arabs" were exclusively to blame, as though U.S. companies hadn't taken advantage of the situation to advance their own interests, irrespective of the public good.

I am arguing that the nature and conditions of production and productivity are never things-in-themselves, forces independent of political and social decisions, but rather intimately bound to such decisions. These decisions may be rational (in the public interest) or irrational (against the public interest). Whether they are the one or the other, can only be determined by full and fair public argument. If a nation is to function as a democracy, then its citizens must be armed with the critical thinking skills which enable them to penetrate the propagandistic arguments which are creatively and adroitly developed by private interests to keep violations of the public good from public recognition. The history of the country is shot through with cases in which the public was deceived into supporting policies in which public interest was sacrificed to private greed. A tremendous price in lives and resources has been paid as a result of the public's inability to think critically to a sufficient degree to protect itself from irrational modes of production. We are, in my opinion, very far from the sort of educational system which nurtures the economic survival skills the public needs to protect itself against highly sophisticated propaganda which routinely advances private greed against public good.

It is crucial that we grasp the inevitable struggle that will continue to be played out between the ideal of democracy and protection of the public good, on the one hand, and the predictable drive on the part of vested interests to multiply their wealth and power irrespective of public need or good, on the other. In a society based not only on the ideal of democracy but also on a market economy that produces large concentrations of capital and vested

interest, the power of the voting public is only as great as the information upon which the public can base its votes. To the extent that it is possible for concentrations of wealth to saturate the media with images and messages that manipulate the public against its own interests, the forms of democracy become mere window dressing, mere appearance with no substantial reality. As John Dewey remarked in *Individualism, Old and New*, “financial and industrial power, corporately organized, can deflect economic consequences away from the advantage of the many to serve the privilege of the few”. Unfortunately, but predictably, the political parties, heavily dependent for their success upon the raising of large amounts of capital, “have been eager accomplices in maintaining the confusion and unreality”. (p. 114) Dewey saw the issue as fundamental to whether the democratic ideal would be achieved, and as being determined by whether *force* or *intelligence* would prevail:

The question is whether force or intelligence is to be the method upon which we consistently rely and to whose promotion we devote our energies. Insistence that the use of force is inevitable limits the use of available intelligence There is an undoubted objective clash of interests between finance-capitalism that controls the means of production and whose profit is served by maintaining relative scarcity, and idle workers and hungry consumers. But what generates violent strife is failure to bring the conflict into the light of intelligence where the conflicting interests can be adjudicated in behalf of the interests of the great majority. (p. 79f)

◆ *What Is the Significance for Education of Irrational Learning and Irrational Production as Social Phenomena?*

Wentworth Eldredge has put part of the background of the problem in a stark light:

The traditional democratic assumption is that rational adults in a rational society have the necessary hereditary intelligence and social training, coupled with a determined interest and sufficient time, to absorb the available facts which will enable them to make in the political process wise decisions among offered choices and upon occasion to invent and make real alternate choices. A majority vote of such reasoning citizens shall constitute the truth and the ship of state will sail a true course Most adults have completely inadequate training to understand even remotely the complexity of the contemporary scene. They lack interest and feel hopeless to think and act correctly in other than purely private concerns; and moreover, they have neither the time nor the information — assuming they could cope with the latter if by chance it were made available. They are merely carrying out the trite inculcated orders of their culture which have been drilled into them formally and informally since birth. Most adults are feeble reeds in the wild, whistling storm of a dangerous world they neither made nor could ever understand. To ask for the people’s reasoned decision and advice on weighty matters of policy would

seem to be a waste of everyone's time and energy, including their own. One might as well inquire of a five-year-old if he wanted polio vaccine injections.

In a rational society three general conditions would prevail:

1) The modes of production would be rational; that is, the bulk of production would be designed to satisfy basic human needs in a manner minimally wasteful of human and natural resources.

2) There would be, as a result, a multiplicity of jobs available to individuals whose performance would have a self-fulfilling quality based on the realization that it contributes to production in the public good.

3) Education would be oriented toward providing citizens with the critical thinking skills to make informed judgments with regard to the social and political decisions that ultimately shape and determine the economic destiny of the nation.

I am arguing that we are far from this democratic ideal of a rational society. If we are committed to it, we must devise means to achieve it. The only satisfactory strategy available to educators lies in making *rational learning* the hallmark of schooling. We can no longer afford the kind of schooling that at best transforms students into narrow specialists or experts who function as *tools* subject to additional *retooling* as dictated by the needs of production narrowly defined and narrowly controlled, and at worst leaves them without either specialized job skills or a general capacity to learn. The ordinary citizen needs the critical thinking skills of a person able to probe the evidential grounds for belief, a person who is swayed not by appeals to fear, prejudice, or ego but rather by the weight of evidence and reason, who is capable of suspending his judgment until such reasonable grounds for beliefs are forthcoming; a person eager to hear reasons and evidence against his or her beliefs if they become available, and to modify his or her views in accordance with them. Today's industrial technology is complex, specialized, and interdependent, but the social uses to which it is put and the human decision-making needed to maintain and direct it must be flexible, analytic, and humane — “ends” as well as “means” oriented.

◆ *Two Objections*

Before concluding, I should air a couple of obvious objections. One may be put as follows:

So far you have not dealt with the most obvious problem of productivity, the unproductive worker, the employee who, through lack of knowledge, training, or motivation, fails to perform in an optimal or adequate fashion. What employers want are dedicated, motivated, conscientious, and skilled employees who carry out their tasks as prescribed, not reflective thinkers who ponder the global problems of society.

This objection, you should note, assumes that the fundamental problem of productivity is “the worker”. This is, of course, a natural assumption to make

if the role one has played is one of traditional management in U.S. industry. From that vantage point, it is natural to key in on employee performance standards and to see those standards as a function of employees in themselves. Studies have demonstrated, however, that in most of the Western world, management and labor both operate with a strong caricature or stereotype of each other. The fact is that each tends to function with a narrow view of its own immediate vested interest. Hence, while it may be in the immediate vested interest of employers to get the most labor from the least investment of capital, it is also in the immediate vested interest of employees to get the highest pay for the least labor. There is minimal incentive in the system to cooperate toward mutual advantage, and maximal incentive to compete as adversaries for available capital.

The Japanese system of management with its guarantees to the worker of life-long employment and its provision for child care, recreation, profit-sharing, and job-retraining (if necessary) suggests the possibility of the accent being focused on cooperation rather than adversarial competition. It seems to me more reasonable to assume that there are no genetic or "moral" differences between Japanese, and say, U.S. workers, but that the differences in productivity are more a function of radically different philosophies of management/employee relations. I don't believe that any significant increase in worker productivity will occur unless, and only to the degree that, the interest of workers is more structurally linked to the interests of employers. This is both a global problem and one that can be addressed at the level of individual companies. One reason for the success of high-tech industries, it seems to me, has been a management/employee model closer to the "Japanese" than to the traditional "American" one. Much worker inefficiency arises from these two interrelated causes: workers don't seem to think; workers don't seem to care.

Present instructional practices and management/employee relations seem perfectly designed to produce the first cause. Students are neither taught nor expected to *think*. Such practices as mindless, purposeless drill, over-proceduralization (first do this, then this, then that — don't worry about understanding it) seem suited to what employers want: workers who keep moving, look busy, *seem* efficient, and don't question. But this very training-for-mindlessness produces workers who don't use their heads. Education and industry encourage "going through the motions."

Regarding the second cause, why *should* workers care about mindless tasks over which they have no control, which they are not encouraged to understand or value, and for which they often get little recognition or reward?

Here is a second objection:

The dominant trend in business is toward giant corporations. Within them relations are direct, hierarchical, and bureaucratic. Directions flow from the top down. There is minute specialization of tasks. The entire task is accomplished by orchestrating the diverse specialized contributions. Very few specialists are in a position to judge the contributions of other specialists, or to judge the productive

process as a whole. What we need are specialists who know their own specialty well, not generalists who judge this process as a whole.

My argument is not an argument against specialization but rather an argument for how to teach specialized skills. It is an argument in favor of specialists with the skills of generalists. There are two different modes of specialization, a narrowing and a broadening one. Most tools nowadays have a narrow specialized function. They are increasingly designed to serve a specific purpose in a specific process. But, as such, they are quickly rendered obsolete. We cannot afford vocational education or training that renders workers obsolete. Precisely because information and technology are quickly being replaced and transformed, we need workers who can adapt to profound changes.

Mindless, routine jobs are quickly being automated. The jobs that remain require increasing ability to adapt, to abandon old and adopt new ways. The same kinds of general critical thinking skills and abilities required for the global decisions of a citizen and consumer are required by specialists to adapt to new information, new technologies, and new procedures. This has been attested to in the call for new emphasis on critical thinking skills in vocational and professional education by the Educational Commission of the States, The National Academy of Sciences, and the Association of American Medical Colleges. As one business leader put it, we do not need "a steady supply of drones moving in a huge beehive". What we do need he suggested with the following example:

My company took a contract to extract beryllium from a mine in Arizona. I called in several consulting engineers and asked, "Can you furnish a chemical or electrolytic process that can be used at the mine site to refine directly from the ore?" Back came a report saying that I was asking for the impossible — a search of the computer tapes had indicated that no such process existed. I paid the engineers for their report. Then I hired a student from Stanford University who was home for the summer. He was majoring in Latin American history with a minor in philosophy. I gave him an airplane ticket and a credit card and told him, "Go to Denver and research the Bureau of Mines archives and locate a chemical process for the recovery of beryllium." He left on Monday. I forgot to tell him that I was sending him for the impossible. He came back on Friday. He handed me a pack of notes and booklets and said, "Here is the process. It was developed 33 years ago at a government research station at Rolla, Mo." He then continued, "And here also are other processes for the recovery of mica, strontium, columbium and yttrium, which also exist as residual ores that contain beryllium." After one week of research, he was making sounds like a metallurgical expert.

Whereas the specialists' preconceptions, intellectual arrogance, and algorithmic thought prevented them from solving the problem, the student's open mind and general skills enabled him to do so. It is clear that the age of changing specializations needs specialists skilled in the art of changing their specialty, not specialists who, like tools and machines, become obsolete. Those corporations, giant or otherwise, who recognize

this will thrive. Those who seek drones with specialities will continually be in trouble and, eventually, I would guess, out of business.

◆ *Conclusion*

We do not live in a disembodied world of objects and physical laws. Neither do we live in a world of nature-created economic laws. We live in a world of people. The fundamental institutional structures, the rules, laws, principles, mores, and folkways are, consciously or unconsciously, created by people. The conditions for and the nature of productivity are not things-in-themselves, but products of multitudes of human decisions embodied in human activity and behavior. The benefits yielded by any mode of production can be viewed narrowly or broadly. They can be treated technically as a function of production curves, of so much raw material and labor costs, of product output and input factors, of production standards expressible in time per unit or units per hour. They can, of course, be viewed from the perspective of management as skill in using labor and equipment or of maximizing profits for investors. In many settings, the narrow view will inevitably prevail as determined by pressing agendas and the imperatives that result from functioning essentially in the service of narrow vested interests. Stockholders do not gather together to hear reports of service to the broader public good but to hear what the balance sheets say, what the present profits are and, given intelligent projections, can be expected to be in the near future.

But educators, whether concerned with “liberal”, “professional”, or “vocational”, programs, should not function as representatives of any vested interest but rather as public servants working to advance the public good. Such a responsibility requires a broad, a comprehensive, and a critical view of society as a whole. Our understanding of the role of our specialization must be determined by our vision of its place in service of a critically sophisticated view of the problems of working to achieve a society that serves the public rather than private interests. Our global vision must shape our understanding of our specialty; our specialty as a thing-in-itself, as a system of narrow loyalties must not be used as a model for generalizing our vision of the world as a whole. The vocational or professional educator who adopts the philosophy, “What’s good for General Motors is good for the United States” uncritically confuses vested and public interest.

A market economy is compatible with democracy only insofar as large accumulations of capital cannot be used to harness mass communications to manipulate the public into the service of vested interest and private greed. There is no way to prevent such practices except through the development of sophisticated critical thinking processes on the part of the electorate as a whole. Such processes must be honed in school on complex, controversial issues that force one to deal with opposing points of view and the subtle devices of propaganda and mass manipulation. The result of instruction in

critical thinking is independence of thought and flexibility of mind, the very features essential to the metamorphosis of work from routine, mechanical functions (more and more to be automated) to complex problem-solving functions that presuppose the ability to question and redefine the basic problems themselves. Our view should not then be "What's good for General Motors is good for the United States", but "What's good for the United States is good for General Motors", whether it realizes it or not.