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The Policy Engineer  
and the Battle for  
Ideas

*By Madsen Pirie*



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# THE POLICY ENGINEER AND THE BATTLE FOR IDEAS

by Madsen Pirie

We praise scientists because they add to our understanding of the world. They give us insights into the universe and help us to predict what we shall observe there. Some gain recognition and reward instantly, for others the appreciation takes time. The great discoveries of pure science are not like the insights that great political thinkers give us into the organization of society. In the case of scientific hypotheses, there is an established procedure by which theories are tested before the process of acceptance begins. There is no such agreed methodology for accepting the work of political thinkers.

The social and political theorists are like the pure scientists in one important respect. They try to increase our understanding of the world we live in. From Plato and Aristotle, through Adam Smith and Edmund Burke, Karl Marx and John Stuart Mill, down to thinkers such as Friedrich Hayek in our own time, they can change our perception of the world.

In much the same way, thinkers such as Isaac Newton, Sir Robert Boyle, and Lord Kelvin change the way we look at the world. Thanks to their contributions, it appears to us to be more unified and more comprehensible. The pure scientists change our understanding of the world; they do not, however, change the world. It may look different after they have done their creative work, but it is the same world as it was before. After the pure scientists have put forward their ideas, a second group of creative minds comes to build machines that operate on their laws. The activity is no less creative, but its function is to take the insights of the pure scientist as the starting point, and to construct engines that work. Just as we honor Newton, Boyle, and Kelvin, so do we also honor the engineers who use their work to build the machines. James Watt, George Stephenson, and Isambard Kingdom Brunel have their place in humanity's hall of fame, no less than the pure scientists whose work provided their starting point.

**Engineers Change the World.** With Newton we understand motion and optics, with Boyle the behavior of gases, with Kelvin the dynamics of heat. We could list many others and the area in which they extended our understanding. But it is to James Watt that we owe the working steam engine, to George Stephenson the locomotive, and to Isambard Kingdom Brunel the suspension bridge and the transoceanic steamship. The pure scientists change our understanding of the world; it is the engineers who change the world itself.

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It takes a second type of thinking, no less original, no less creative, to devise the machines that will operate on the principles uncovered by the scientists. With Boyle we understand gases under pressure; with Watt and Stephenson we make it work for us. The scientists have interpreted the world; the point is to change it.

Of course the work of the pure scientist is an essential precursor of the work of the engineer. Without the great creative insights our engineering would be no more than a few rule of thumb devices developed by chance and improved by experience. The ancient Chinese and the Romans did reasonably well on such a basis, but the leaps and bounds of modern technology are made possible by a firm grounding in theoretical understanding of the workings of nature.

The pure scientist is essential, but so is the engineer. Without the second stage of creativity we would be left with a much richer understanding of the universe as we tilled our fields with wooden ploughs.

**Putting Flesh on the Bones.** There is a parallel between the work of the pure scientists and that of the great social thinkers. To some extent Montesquieu and Locke resemble Hooke and Joule. The fact that human society is the subject of study in one case makes for important differences in what can be achieved, but the creative insights are still there to enrich our understanding. We feel after reading them that human society is more comprehensible than it was, and that we understand some of the principles that underlie it.

This understanding does not, of itself, change it. Just as with the pure scientists, the world remains the same after the social theorists have made their pronouncements upon it. It takes a second group of creative minds to put the flesh of practice onto the bones of social and political theory, just as it takes engineers to build machines based on scientific theory. The great scholars who analyze our societies and their laws need their engineers before the insight can alter the reality.

It is one thing for us to understand a principle, but quite another to make it work to our advantage. This applies no less to the study of society than to the study of nature. We honor our political theorists as we honor our scientists, for the insights they give us. But we should recognize that policy engineers are needed to make machines out of the theory, and that the activity is by no means automatic.

**An Intricate Process.** No one would suppose that, after the work of Newton, Boyle, or Kelvin, the machines that operated by their laws would simply emerge. If they did, we would be waiting still. We know that it takes the application and work of creative minds. The machines do not happen; men and women make them. The same is true of political theory. The advances made at the theoretical level do not translate themselves into working policy. If, after the pioneering work of Adam Smith or Friedrich Hayek, we waited for a change in events to follow automatically in its wake, we would be waiting still.

It is as true of public policy as of pure science: the theorists change our understanding, the engineers change the world. Policy is an intricate process which requires skill, sensitivity, and creative intelligence. It does not just happen, any more than machines do.

The "battle for ideas" in political and economic theory can be likened to the disputes that take place in scientific theory. Scientists put forward competing theories, and they and their supporters fight to gain recognition for them. No doubt unscholarly behavior takes place in these contests as typifies academic infighting in general. Even though there are procedures for testing, these can occasionally be faked, hushed up, or ignored and denied publicity. The struggle, however fairly it is conducted, is for mastery of explanation. It is a contest between conflicting interpretations of the universe.

**Altering How We Look at Things.** Ideas at the scholarly level in politics and economics are also engaged in a battle for acceptance, and it is also a battle for explanation. At the end of the struggle, it alters how we look at things. It does not alter the things themselves. For that we need policy engineers to construct the instruments we can use to have an impact on the world itself.

There is an intellectual fashion in Britain, and a regrettable one at that, which affects to sneer at the role of the engineer. The very term "pure science" is elevated as though engineering were somehow impure. It is assumed that the work of the pure scientist is at a higher level, more academically detached, and therefore more holy than the work of the man in overalls with grease stains on his hands and clothes. This is an intellectual fashion, which arises partly from the priorities of our system of education, and partly from the legacy of a class system which accorded more status to an office job with clean hands.

Other, more successful countries have no such scale of priority. They recognize that the creative requirement of the inventor is no less than that of the theorist; and they admit the social utility of the former. They honor their inventors and engineers as the British once did, and reap the reward of seeing their top talent move into that area.

Perhaps it is the preoccupation with "pure" research that has led to the primacy of the notion that the "battle for ideas" is what changes events, thereby overlooking the essential role of the policy engineer. This is particularly unfortunate in view of the fact that the engineer's role in the application of social, political, or economic theory is possibly more important than that of his counterpart in the world of material things.

**Theoreticians and Machines.** It is usually the case in the realm of technology that the work of the pure scientist comes first. The theoretician achieves the breakthrough in understanding, and the engineers, mechanics, and inventors come at a later stage to build their creative ideas upon that base. It is not universally so. There are cases in which a working machine produced by an inventor prompts the theorists to reexamine their models of the universe. There were, after all, primitive working machines before the discipline of theoretical scientific study was established.

The ancient Chinese and Romans had crude rule-of-thumb machines working long before the physical laws on which they operated were known. In their case it was only much later that the pure scientists were able to say why the machines worked as they did. There have been more recent cases in which an engineer has produced a machine that ought not to have worked according to known laws. The

presence of the machine has turned the attention of scientists back to those physical laws in order to restructure them to explain why it was able to function successfully.

These are exceptions to a general rule. In science it is usually the theory that comes first, and the machines that are built upon it. In the field of public policy, however, there is no such general rule. Inspection reveals the opposite pattern. In general it is the practice that comes first, and the theory that is later elaborated to interpret it and to fit it into an explanatory framework.

**Policy First, Theory Later.** The cases referred to all fit comfortably into this pattern. *The Republic of Plato* set out the general style and many of the detailed rules of the comparatively successful society of Sparta. The attempt to apply the theory of the Republic to Syracuse failed. Locke's *Two Treatises on Civil Government* delineated a theory for the already accomplished limited monarchy of the Glorious Revolution. The *Federalist Papers* argued the case in principle for a constitution of the United States already decided in practice.

Lenin's revision of Marxism justified in theory what Lenin had done to win power and showed retrospectively why it had been done that way. The same is true of Mao Tse-tung's modification of Marxism-Leninism and of the theoretical additions necessitated by the success of Castro's revolution. In all of these cases, policy was applied first, and the "pure" theory came afterwards.

In policy, as in science, it is the engineers who change the world and the theoreticians who change our understanding of it. The major difference is that it is usually the theorists who come first in science to pave the way for the creative engineers. In political theory the policy engineers often change the world first with the academic theorists coming after them to explain things.

There is an interaction between theory and practice in both science and political theory. Once a valid theory has been put forward to explain the observations and to accommodate the practical cases, it might itself inspire some new practical applications. The study of case histories, on the other hand, can lead to modification of a supporting theory, as practice reveals facets previously unsuspected by theory.

**The Original Insight.** The relationship is not cause and effect one way or the other. There is a complex pattern of feedback between the two, operating in both directions. While theory tends to lead in science, and practice tends to lead in public policy, the same type of interactive relationship between theory and practice is to be found in both fields.

In a hypothetical case in science, and perhaps a typical one, the original insight produces a general theory. On the basis of that general theory, innovative machines are devised and constructed. Some of those machines might point to circumstances not covered by the theory, leading to modification or extension of it to fit them in. This, in turn, might inspire newer types of machines.

A similar hypothetical case could be described in the field of public policy, as typical of its realm as the scientific example. An innovation is introduced, bringing



practical success. The success brings it before the attention of the scholars, who apply creative insight to delineate the theory, which accounts for its performance. That theory may, in turn, lead to other applications of the principle underlying the first success.

In each case, theory and practice feed from each other, pointing those with creative imagination in the directions that might be fruitful. While in science the general theory usually comes ahead of the machines, it need not. And while in social innovation the practice usually precedes the explanatory theory, it need not. These are general tendencies rather than universal rules, and there are easily recognized exceptions to both of them.

**Policy and the Study of Nature.** That said, there is an important corollary that follows for the field of human studies. If the practice usually comes before the theory that interprets it, and if that theory on its own does not promote change without the creative activity of policy engineers, then it follows that the role of theory is of less significance in policy change than it is in the study of nature.

The battle for ideas might be equally intense in both disciplines insofar as the scholars and their supporters are concerned. Indeed, it might be more intense in political theory because of the impression that it is a battle for power over the future course of society. Despite this impression it is a battle in both fields over interpretation. Since the engineers tend to follow the pure scientists in the field of nature, victory in a struggle for interpretation might at least influence the generation of machines built upon the foundations of that general theory.

**Shaping the Future.** This is less likely to happen in political theory. With those who engage in policy engineering generally leading the way, the outcome of the conflict of ideas is likely to be of less consequence. It is more likely that the future has already been shaped by practical action, and that the battle is taking place to supply a contextual theory to cover it. The ideas are important because the way we look at our world is important; but it is the outlook over the long term on which they have their greatest impact, rather than on the policies which will be implemented in the immediate future.

Once the role of policy engineering is appreciated, it becomes possible to account for the difference in the performance of the Nixon and Heath governments on the one hand and the Reagan and Thatcher governments on the other. There was little difference in the acceptability of the ideas between the administrations of the 1970s and those of the 1980s. They were sufficiently acceptable at a popular level both times to elect parties committed to them, and sufficiently unacceptable at the intellectual level each time to call forth widespread denunciation in academic and "informed" circles.

The difference in performance could be attributed to policy. The Reagan and Thatcher administrations were much more equipped with the detailed mechanics of policy implementation, and aware of the need to develop even more practical policies in office. While the manifestos contained the same generalizations each time, the later governments had detailed policy options in preparation to put those generalities into effect.

Both the Nixon and Reagan platforms referred to cutting the burden of government, but the Reagan team understood the mechanics of tax cutting and had ready a detailed set of policy proposals, which were designed to overcome some of the obstacles encountered previously.

**Mechanics and Details.** Both Heath and Thatcher manifestos mentioned the desire to return state industries to the private sector. But whereas this remained only an unfulfilled wish of the Heath era, the Thatcher team went in with some conception of the policy problems, some notion of possible options, and a determination to learn from successful ones which techniques could succeed in a modern democratic society. The result was that in the Heath years more industry entered the state sector, whereas the Thatcher years were characterized by its accelerating withdrawal from it.

Observers have sought differences in the character or temperament of the participants, in their preconceptions, in what was realistic at the time, or in what opinion leaders were prepared to accept as reasonable. The difference is policy itself, its mechanics and details. The first two leaders did not know how to do it; the second two did.

As a result of the experiences of the Nixon and Heath terms of office, some of those who supported their declared programs decided to seek tougher and sounder standard bearers for those causes in the future. Others took a different message. Some who had been involved closely with those first attempts, either as participants or close observers, took the lesson that more subtle and more intricate policies would be required if they were to succeed in the future where they had failed in the past.

**Principles and Policies.** With the benefit of hindsight it seems as if the policy details were the deciding factor. It is true that Reagan and Thatcher do appear to those supporting their programs to be both tougher and sounder than their predecessors. This is largely because, unlike them, they did not abandon and then reverse those declared intentions. In other words, the success of the policies put into effect has enabled both Reagan and Thatcher to remain true to their original programs in a way that was not possible for their predecessors. It is because the policies were successful and could be repeated and extended that the leaders implementing them seemed stronger. It is not because the leaders were stronger that the policies were more successful.

The foregoing analysis suggests that a crucial switch in strategy took place some time in the 1970s among some of the elements that had supported political ideas conducive to the free market and hostile to the expanded domain occupied by government and the growth of government spending. Before the 1970s the argument had been fought on the level of principle. That is, the emphasis had been on pointing out the evils wrought by collectivist policies, and of the superior virtues of the market economy. Books and papers were published, lectures delivered, seminars held, all designed to sell the case for free enterprise and to undermine centralist planning.



That the Nixon and Heath governments were elected on the basis of platforms strong on those themes attests to the success of that campaign of persuasion. That they did not succeed attests to the value of the maxim that one should put not one's trust in princes, nor indeed in the ideas which they profess to espouse.

The 1970s saw the emergence in both Britain and the United States of a new concern with policy itself. Many who supported a free enterprise program continued as before to promote market virtues in general, and to criticize and expose the flaws of collectivist policies. Some continued to aim at academic opinion, others at political leaders, and some at the informed public. The new element was policy research, in which the detailed mechanisms of policy proposals were put under scrutiny, honed, and polished to maximize their chances of success. A key factor was the translation of the experience gained by Edwin Feulner with the Republican Study Committee onto the program of The Heritage Foundation.

**Short Circuiting Delays.** Part of the reasoning behind this new action was an appreciation of the time lag between the election of a new government and the preparation of its legislation. The process could take a full year, with a further year allowed for delay in preparation caused by civil service procrastination and obstruction. By the time the legislation could be put through in the following year, the end of a term of office would be approaching, and the government in power reluctant to take risks with unpopular policies.

One of the ideas that lay behind policy research was the idea of short circuiting the delays by having developed policies worked out in advance and ready for immediate action by an incoming government. The view was current that some of the toughest fights would have to be fought first, and that a new government would have to be ready for them.

**Ending the Bureaucracy's Monopoly.** A further strand that led to the development of policy research in the 1970s was the appreciation that the civil service establishment enjoyed a virtual monopoly of practical knowledge. Outsiders might advocate ideas in general, but only within the bureaucracy of the various departments of government was to be found the experience and the expertise to set events in motion. The result of that monopoly was that the civil service view tended to prevail. Even the strongest willed cabinet member with clear ideas of what should be done was alone against a united phalanx of expert opinion proclaiming this to be impossible.

The policy research teams took action in part to end that civil service monopoly. By advance preparation and detailed study of technique, they could offer the minister an alternative source of suggestion and initiative and override the effective veto that the civil service had until then possessed by virtue of its exclusive command of detail.

A third intended result of the policy research was the breaching of the credibility barrier. Whereas general ideas might be dismissed as "irrelevant" or "unworkable," a detailed policy proposal merited more serious attention. It would be harder to claim that certain things could not be done if detailed plans and mechanisms existed for accomplishing them. Ministers who might otherwise have

been persuaded that the prevailing paradigm was the only possible one would now be armed with worked out alternatives showing this to be untrue. The detail given to the method of application lent credibility to the idea underlying it.

**The Public Choice Tool.** One of the important insights that led to the development of policy research was the realization that some techniques would be more successful than others, and that investigation could show which they were. Instead of assuming, as previously, that victory in ideas would lead on to victory in events, some of those who advocated free market programs now engaged in the work of identifying which policies would be likely to succeed. To do this involved them in consideration of the whole theory of public policy, so they could construct policies designed to overcome the hurdles which it placed before them. They took the Public Choice critique of James Buchanan and Gordon Tullock and made a creative tool to circumvent it.

The understanding that some ways of attempting to achieve similar objectives could be more successful than others led to competitive evaluation of policy proposals. The policy research workers began to test hypothetical scenarios to discover which proposals would attract support and which might alienate popular opinion. Adjustments were made, details refined. A series of policy proposals gradually emerged during the 1970s, quite different from the broad advocacy of free enterprise ideas that had characterized the 1960s.

**New Kids on the Block.** There were still groups, societies, and institutes that carried on the work of winning converts to market solutions and spreading disillusionment with the record of collectivism. But now there were new kids on the block. First in the United States, then in Britain, institutes were established whose function was not the advocacy of free enterprise, but the investigation and preparation of the detailed policies that might secure it in practice throughout the various areas of government. They made an important difference between the situation of the late 1960s and that of the late 1970s.

The new institutes took as their starting point the failure of the nominally free enterprise governments of the early 1970s to put market-oriented ideas into practice. They learned how the political system worked, and how to solve the problems it posed to would-be legislators. They researched ways in which choice and enterprise might be extended in practice, as well as advocated in theory. They gave policy makers what they were looking for: policies.

While The Heritage Foundation has occasionally described its mission as "secondhand dealing in ideas," its work has been characterized by a striking originality. Its policy research has been creative; and it has been effective. We praise the pure scientists of political thought because they add to our understanding of the world. Take note that history will also praise the policy engineers of The Heritage Foundation, the men and women in overalls who changed the world itself.

