

## *Fred Emery*

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### Planning for Real but Different Worlds<sup>1</sup>

Many of our treasured ideas on planning derive from experience in changing peripheral aspects of systems under conditions of social stability. Under those conditions many things could be taken for granted and a high-minded air of rationality could be sustained. This is not so when central matters have to be changed under conditions of social instability.

Let us say that my concern is with the State of Lilliput. Lilliput is going to take over the schools in its territory; it is going to establish new kinds of junior colleges for a hitherto unrecognized minority group; it is going to have to negotiate new kinds of industrial relations with its teachers; it will take over the training of its own teachers; it will be considering new forms of examination controls over its students. All of this coming onto its plate at once constitutes a first-class headache. So what is done in Lilliput?

Let us look first at what is the most likely course of action. Lilliput draws together its own resources of experienced educators, promises them the support of other resources that can be leased, loaned or coopted, and charges them with looking at the whole problem with a view to recommending the best design for a new educational system. They are also expected to recommend how the new system will be brought into being, in what stages and at what expense.

Let us call this group the planners. There may at this point be some persons added to their ranks whose function is to represent various "client" interests (for example, teachers' associations and parents), but no one will doubt that the key contribution must come from the experts.

The first planning step that the group will take is to follow the wisdom of René Descartes and decompose the total problem into manageable parts. We can be fairly sure that most of the parts will still be so complex that they will each require a plan for a network of interrelated decisions to be implemented at different times. That is, the planning task cannot be made to disappear into a set of independent decisions to which certain decision rules could be applied. Planning remains more than just decision making. This the case even more so because the plans for the various part problems will need some degree of meshing together. No matter how the planners divide up their overall task, they will

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have to find some way of bringing it together again before resources are too heavily committed to implementation of the different parts.

The principles of decomposition may not be spelled out and may, in fact, reflect little more than the fortuitous array of expertise in the group. However, the notion of a “manageable problem” is very likely to include that

- It is so defined as to allow an existing body of vast experience and expertise to be brought to bear on it.
- It is a problem that is currently a focal issue in the local education setting and hence has to be managed—or at least appear to be.
- Its solution is likely to involve resources and social supports more closely tied to each other than to those that will be required to solve the other “manageable part problems.”

Thus, in this very first—and sensible—planning step we can see the building in of a blindness to what may be new and emergent. The essence of productive thinking lies in the ability to “recenter” a problem (Wertheimer, 1945) and yet decomposition to make the best use of existing resources is likely to center attention on what was relevant in the past. That past may be more relevant to the laurels of the chosen planners than to the future. Being guided by what are currently focal issues may not be much of an improvement. Current issues have their own history. A lot of water may go under the bridge from the time when certain insights are first made to when they seize the imagination of a significant public. Thus in the 1950s we were still busy designing health insurance services to solve the problems of the 1930s. Last, the way resources and social interests are tied together by their past may be a hindrance to coping with the future rather than a reasonable guide to how to look at the future.

Having redefined the overall problem as a set of manageable problems, our planners may adopt any of a number of procedures for handling them; for example, subcommittees, sequential treatment or review mechanisms. The mechanics need not concern us. What is of interest is that the planners know that they do not have limitless time to review and reconsider their plans in light of other plans being made and of changing circumstances. They have to choose courses of planning action that they believe—not know—will probably have the desired planning outcome. In this act of choosing, one can start to identify the style of the planners. It is the style of planning that I think we should start to worry about in planning educational innovation.

The choices that planners must make in carrying out their function are about how they will identify ends, select means, determine required resources and their allocation, design an operational plan for implementing the change and propose mechanisms for monitoring and controlling the implementation. It is in looking at these choices that I will try to identify the two main styles of planning that are to be found in the educational as in other fields. Following Ackoff (1970) I will refer to these as the “satisficing” and the “optimizing”

styles. In any planning group, one would expect both styles to be manifested, not only because planners sometimes live in different worlds from each other but because the problems themselves are sometimes more conducive to one style than another.

### *The "Satisficing" Style in Planning*

In this style of planning it is typical to seek a statement of ends that will be as uncontroversial as possible and hence as little likely as possible to arouse dissatisfied parties to engage in their own counterplanning. In pursuit of these ends the planners will aim at going as far as is necessary to satisfy the major parties. Note that the planning context is seen as a political context and that there is no demand to do as well as possible, only to do well enough.

This style carries over to the selection of means. As the aim is to find only a satisfactory solution, not the best possible in the circumstances, the most practical way to proceed is to search first among existing courses of action—ones that have been tried and tested. Admittedly, the very novelty of the situation that has been brought into existence by the planning group will make it necessary to reconsider these known courses of action in the light of the new circumstances. It may even be necessary to give consideration to courses of action that were previously thought to be beyond the pale. But then this is presumably what the planning experts won their laurels for doing in previous such exercises. The overriding consideration in this search for suitable courses of action will be what is feasible. What courses of action are likely to yield a passable result and yet least arouse some people to thinking that they—as distinct from others—are being asked to pay too high a price for ends they otherwise agree to be desirable?

This approach inevitably creates a tendency to keep clear of central issues and focus on the marginal matters; to look for solutions in new procedures and practices rather than in organizational innovations; to suggest changes in the subject areas of sport and crafts rather than in the three Rs—no more than that. Since the most feasible changes will be those that are actually welcomed and supported by interested parties, rather than just accepted, attention will tend to be directed to correcting deficiencies in the past operation of the educational system. In these happy circumstances changes can be recommended even in areas of considerable centrality, thus conveying the impression that the planners have been going to the roots of the educational system—have been doing some really radical replanning. This is added icing on the cake for those who expect to be satisfied by the plan because they will undoubtedly have some problems, in a complex and changing setting, with getting all of their relevant publics to share their satisfaction. However, a preoccupation with correcting

the deficiencies of the past can mean that the planners will lead us backward into the future. As suggested earlier, our difficulties in coping with the future may have been exacerbated by our insistence in the 1940s and 1950s on implementing solutions to the pressing problems of the depression-ridden 1930s.

A similar style can be observed in the determination of resources and their allocation to various courses of action. Overall, the tendency will be to ask for what the traffic will bear, but not to ask for amounts or kinds of resources that will threaten other statutory bodies or current issues. Again, we have a body of planners concerned with the art of the possible and, again, it is not a question of whether certain resources can or cannot be better used in the educational system but whether there will be enough to do a satisfactory job. Allocation of resources to different courses of action brings its own problems. If enough is forthcoming, it may be possible to design in the new solutions with minimal upset to existing statutes and powers. If, as is more frequently the case, all the efforts at maximizing feasibility still leave an uncomfortable shortfall in resources, the tendency will be to minimize upset to the present system and to get maximum appearance value from the innovations. Appearances can be kept up by stressing how few resources can as yet be used because of the need for tentative explorations, pilot studies, development of new staff, of new facilities and so on.

In this style of planning, implementation and control of implementation are not seen as part of the planners' job. They might, of course, be kept on as advisers or even, in rare cases, as administrators after they have presented their plan, but that is seen as a different matter. The plan itself may indicate steps for implementation and control, but this will usually be done warily. For example, "we feel that enough teachers with these qualities might be found in existent teachers' colleges" (meaning, raid other states) or "this desirable course of action might cause some concern among teachers about differential workloads" (in other words, monitor this, watch it). This wariness is understandable in such areas of public activity as education. It is a political responsibility to decide that circumstances require a concerted planning exercise, and it is a political responsibility to decide whether the plan is acceptable and how it should be implemented. No matter how sharply the brief to the planners spells out the disjunction between educational planning and the politics of education, the fact remains that a major effort will be made to lessen the disjunction by selecting planners who will decompose the overall problem with a keen eye to the political context within which the planning must proceed and be implemented. Planners who are as skilled as politicians in the art of the possible when it comes to selecting courses of action and determining required resources and who can accept when *their* task is finished and the time has come for respectful silence. This is certainly not to suggest that the planners in this style are political tools in a simple means-end relation. It is to stress that public

planning is a political process. The need for planning must stem from some public feeling of a discontinuity between the past and the future that requires a planned response, and the planned response must be publicly judged to meet these expectations at least in some way that is better than if things had been allowed to coast along. The lack of time, skills and impartiality make it necessary for some essential parts of the planning process to be delegated to experts, but in its totality the process is and must remain politically oriented.

### *The “Optimizing” Style in Planning*

Having noted some of the more obvious difficulties of planning to satisfy, it might seem that the accumulation of experience with planning would in itself lead to the innovation of better ways to plan and an increasing use of these better ways. Certainly, this is the picture presented by the “management sciences” people. Operations research, in this view, was just a natural extension of experimentalism and mathematical modeling from the physical and biological spheres to the activities of *homo sapiens*. It happened to emerge with the special stimulation of war, but it clearly had to come. Computerization emerged to cope with massive exercises in arithmetic (for example, artillery tables, wage payments and inventories), but clearly it was just what was needed to reduce complexity to the point where rational planning for whole sets of interrelated decisions could replace intuitive decision making and blind prejudice.

It is possible at the present time (1973) to distinguish between the planning styles of satisficing and optimizing. They are not different across the board, but they differ in enough respects to warrant comparison. What I am suggesting is that the difference is not simply between more or less sophisticated versions of the same planning style (although the claims and the mathematical sophistication of the optimizers might suggest this). I think the difference is more profound. Optimizing and satisficing appear to be planning responses to different environments. The satisficer appears to assume that he is planning within a relatively stable framework of institutions; that, no matter what he plans, much the same scale and kind of resources will be allocated to education for much the same kind of purpose; that employment, family life and the community will continue to make much the same demands of the schools. In contrast, the optimizing planner accepts that the social framework is changing; that there are as a result “big stakes up for grabs” and hence that there is a new planning game to be played. A game in which the aim is winning, not just getting by. Or, perhaps more accurately, the art of planning viable changes is for the satisficer the art of letting sleeping dogs lie; the optimizer has to work from a knowledge (or belief) that the dogs are already awake.

I have stressed this as the basic difference between the two styles because

the style of optimizing may still be present in the absence of the apparatus of mathematical modeling, simulation exercises and the like. Furthermore, it suggests why such differences in approach are not simply differences in personal tastes for quantification, or differences to be settled by arguments about whether the costs of data collection and model building are worthwhile. There should always be room for argument about the relative cost and value of information collection and analysis, but the satisficer and the optimizer are likely to start from points that are too far apart to permit of fruitful discourse. The satisficer may, for political reasons, engage in major exercises of quantification but he will not be expecting a quantitative analysis of the costs and benefits of such studies, for example, the massive Coleman survey on the U.S. Congress funds of equality of educational opportunities (1966).

The most prevalent difference between the two styles of planning is the role attributed to the planning function in the political process of "leading the horses to water and getting them to drink." The optimizer says, in effect, "We do not have to be satisfied with just satisficing or muddling through. Just let the politicians make up their minds what precisely it is they want from the changes; let them give us statements of desired ends that can be operationalized and we can do the rest of the job. We can determine the best course of action that follows from the optimum allocation of resources and devise an effective system for implementation, monitoring and control." The strength of the optimizer's case, apart from its environmental relevance, is in the power of the techniques he can bring to bear to determine optimal allocation of resources to a finite determinate set of alternative courses of action. He brings nothing in the way of special expertise to the other phases of planning; that is, to identifying the ends, to direct comparison of alternative courses of action or to implementation and its control. This may seem a harsh characterization of the optimizer. He certainly seems to take the view that he has made it possible for the rationality of means-end relationships to be applied to human affairs. Looked at more critically, I think we will find that the influence the optimizer has had on the other phases of planning are a flow-on from his central strength of resource allocation, not independent contributions.

If the optimizer is to utilize his skills for determining optimal allocation of resources, he must know beforehand what are the alternatives to be examined and, more fundamentally, alternatives serving what ends. For technical reasons the end must be so defined that one can derive a measure of what would constitute progress to that end. If more than one end is involved, as is usual in such human affairs as education, they must be so ordered, hierarchically, that a single overriding measure can be calculated. Given such a measure, the optimizer can, it is hoped, proceed to determine the best path by which to pursue the chosen end, provided he has a further measure for comparing all the significant resources that would be required for any of the possible paths. In other words, it is not enough to be able to measure the benefits that will follow from

pursuing different paths. It is also necessary to be able to determine the costs that would be incurred. If the benefits and the costs can be put on the same scale of measurement (for example, money or time saved), so much more power behind the elbow of the planner.

Unlike the politically sensitive way in which the satisficer goes about defining ends, the optimizer almost inevitably stirs up a hornet's nest with his demand for an explicit overriding objective that can be operationalized. The specification of such a measure of achievement must challenge the balance of power between institutions that have developed around values of their own—values that serve their function best by not being too closely analyzed. Conflict will also be generated within the institution because no single measure, or hierarchical set of measures, is going to give adequate representation to the very many things that people are committed to doing. This will be very much the case in such psychosocially oriented systems as education, where encouraging, trying, commitment and development of character seem to defy quantification and yet are essential to the educational process. A good example of the furor that the optimizer can create is what happened when Robert McNamara introduced this style of planning into the U.S. Department of Defense and President Johnson ordered that it be extended to a number of other departments. It rapidly became the center of a political battle in which this style of planning was seen as an unfair tactic whereby young upstarts were trying to wrestle funds from established bodies who had proven their rights. McNamara had only to order a cost-effectiveness study of the aircraft carrier to bring the naval establishment down around his ears. In the struggle to assert this style of planning, there tends to be a preoccupation with the numbers game; for example, military concern with “bangs for a buck” and body counts, television concern with ratings, marketing concern with percent of market share and oil refinery concern with barrels per man. In education, we have had the increased concern with “staff/student ratios,” “return on capital as reflected in life earnings against educational investment” and even, at the extreme, some educational contracts being farmed out in the United States on the basis of measurable improvements in reading test performance.

This search for explicit definition of the objective can involve the optimizer in some deeply conservative assumptions that could nullify his very radical proposal to examine any probable course of action objectively, provided it is measurable. This risk arises from the fact that only a powerful authority could force diverse interests to agree to plan for achieving a single measurable objective. Clearly they are going to prefer a measure that will give good weight to the resources they control. The planners may therefore get their explicit definition of the objective but be implicitly constrained to look at those sorts of futures most likely to maintain the power of those currently holding the power; that is, planning for the best of a conservative set of futures.

Turning now to the problems of choosing paths of action and allocating

resources, we find the planning activities of which the optimizer is so proud. There are grounds for pride. Without these planning skills it would not have been possible to plan the massively complex construction and operational tasks of the space missions. However, there are certain limitations that are significant for planning in education because in education we are not engineering inanimate matter but elements that are quite capable of doing their own planning or counterplanning. The critical limitation is the optimizer's need to deal with commensurate, quantifiable variables. The selection of paths must be restricted to those that show significant variation on a few measures that are relevant to the criterion of change and can themselves be reduced to a single measure. Thus time and people may be reduced to a money measure and hence made comparable—and substitutable—for simulation exercises. The various courses of action will not be considered in themselves but in terms of the resources they require and the effects they have. No weighting will be given to the fact that some of these paths are more familiar to the actors and some more in character with the institution. The fact that some paths have goal qualities, satisfactions of their own, is an added complexity that will usually be avoided. Finally, for technical reasons, the optimizer will tend to ignore courses of action that are likely to involve any but the simplest organizational changes. His mathematics just will not cope with them. Insofar as organizational structure embodies the past history of an institution, this constitutes a further conservative tendency or at best a pressure toward a simple, centralized organization.

We find a similar situation with respect to resources. The optimizer will be concerned with those resources that can be measured in common terms. Human resources will come into planning as costs for training, maintaining and replacing. Their morale, creativity and cooperativeness will not be represented in his model except possibly as estimated costs for the absence of the qualities—for example, costs of labor turnover, absenteeism and time wasted on the job. This concern with money will extend to the optimizer's planning for implementation. The skeleton of the plan will be the series of nodal points at which decisions must take effect to release money for the resources required for the next steps. In similar fashion, the controls will tend to be based on the flow of monies. When the planned funds do not suffice for a given step, or leave a surplus, the discrepancy will trigger off a review mechanism.

This is a familiar enough picture. Unfortunately, we are equally familiar with what happens in practice. No matter how sophisticated the planning techniques, reality always manages to be a bit richer than predicted and human nature a bit more cunningly perverse than expected. To the first criticism the optimizer replies that the increasing sophistication of planning concepts and tools is constantly reducing the gap. In addition to the planned commitment of resources, he can, if the client is so worried, build in contingency plans for the slippages that might be expected from past experience. This is true but ignores the increasingly significant role, in a changing society, of what is genuinely

new—emergent opportunities and obstacles and unpredicted restructuring of the situation in which the plan is being implemented. Pursuit of the predicted “best path” may be proceeding according to plan, and hence not triggering off the review mechanisms, at the same time as a new and better alternative has become possible or the original relation between the path and the objective has changed. An example of such restructuring is the freeway that was to drive through San Francisco to the Golden Gate Bridge. Conceived to serve the citizens, its implementation as a great concrete strip driving into the southern suburbs generated a popular conviction that it was against the public’s interests. The freeway stopped in mid-air, not because the planners had miscalculated the funds or the engineering but because they had failed to consider the people who would become involved as implementation proceeded.

The blind eye of the optimizer is turned to the fact that his plans for social change are going to be implemented by others and for others. These may be people who have never shared the planner’s enthusiasm for his overriding objective; they may be people who come to see a conflict of interest only as the plan materializes; they may simply be indifferent to the plan. One thing is certain—the divergence of the plan from reality will provide all the excuses and opportunities that people will need to subvert and sabotage it, if they so desire. Tighter, centralized authority will be the planner’s recommendation. If he does get his “overlord,” his supreme authority, he is even less likely to get the commitment and involvement of people who will be affected, and the implementation will be increasingly blind and insensitive to what is happening at the workplace. That such “command planning” sometimes appears to be effective seems to be due either to measuring effectiveness in terms of reducing sins of omission or to operating within a defense context that permits drastic overshooting of costs in order to get the weapon system in question. Neither of these conditions is very relevant to planning strategic innovations in education. Costs are not going to be allowed to overrun too far, and if sins of omission are too prevalent there will be little that is innovative. In assessing the value of different ways of planning, a distinction must be maintained between what is effective and what is efficient; a sledgehammer is undoubtedly a very effective way of killing an ant, but hardly efficient. Command planning in education could be a sledgehammer.

### *Active Adaptive Planning*

I have picked over the bones of satisficing and optimizing planning so that we might identify what kind of planning will reduce some of their shortcomings. All planning is adaptive, but I think satisficing and optimizing are essentially passive—they are adaptations to what is given. “Active adaptation” would im-

ply that the planners deliberately seek to influence the future conditions for their planning (Emery and Trist, 1972). In the review that follows I shall try to achieve a higher aim of identifying what planning will be needed for a social environment that is significantly more complex and less stable than that assumed even by the optimizer. The differences may be illustrated by an analogy. In the Seguin Form Test the testee faces a board that has in it star-shaped holes, round holes, square holes and so on. At hand are a collection of star-shaped and other-shaped pieces. The task is to select pieces quickly and place them in the holes that they fit. The satisficer seems to assume that this is the nature of his planning task. He determines the deficiencies, finds the solution and plugs it in. The optimizer grants that the board on which he is playing is in a process of change. By building up his database about past and present transformations and by computer simulation of the various possibilities, he makes projections of what the shape of the holes will be at a future time. Thus his projections may indicate that at time  $x$  in the future the star-shaped hole will be round; so he bases his plan on moving a round piece to be fitted in at that time. This is complex enough but consider the planning difficulties if the pieces are themselves undergoing change of shape and in some way these changes are influenced by the ways the pieces are picked up, held, moved and slotted in. This last situation seems close to that which is faced in educational planning. We need a style of planning that starts by assuming this order of complex change.

In making comparisons, it is obvious that certain things are going to be involved in planning regardless of differences in style. The decision to plan implies some commitment to bring into being a state of affairs that does not presently exist and is not expected to occur naturally within the desired time. The kind of planning we are looking for is one that will produce plans that will *probably* come to pass. It is not enough to have one of the optimizer's *possible* plans. We need a plan that will probably come to pass because the people involved in or served by its implementation want it to succeed. The hard-won agreements that the optimizer has for the initial, hard-nosed definition of objectives are no guarantee of active support when it comes to implementation. On the contrary, I think that these agreements carry within them the seeds of subsequent subversion (as insistence on doctrinal purity in other fields of human endeavor carries the seeds of deviationism and heresy). Nor can the optimizer carry the day with his array of facts, statistical forecasts and impartial, objective calculations of the cost-effectiveness of alternative paths. These things do carry weight and may silence overt opposition, but where there is a feeling that justice is not being done, facts will not convince otherwise. One has only to recall the instances where the nagging doubts of one individual have eventually led to a murder case being reopened.

The way of the satisficer might appear to be the way we are looking for. At all critical points, he acts to ensure that what he plans will be what people will

want to realize. However, this will not fit our assumptions of social change. The satisficer will plan to give people what they think they want today. What people want today is not necessarily even what they need today. Tomorrow they may well want what they need today and wonder how the planners could have been so blind. In the stable world of the satisficer this is not an unreasonable risk to take. In a world that is rapidly undergoing substantial changes, this flaw is fatal.

In noting the apolitical character of the optimizers, we must avoid any assumption that they are foolish or unworldly. If the political arts of the satisficer had been applicable to the problems of the optimizer, they would have been used. (Obviously they must act politically sometimes because the world is not so neatly divided up as we are assuming for purposes of analysis.) The optimizer avoids them because there is a clear need for the expert scientific analysis of what is and what can be. The apparent dilemma is, "How does the expert make his contribution to planning without alienating people?" This almost has the markings of a paradox for social planners: the more knowledge the expert accumulates, the greater the gap in understanding between him and the people, and the less likely they are to go along with his plans for implementation or, to put it otherwise, the more we know, the less we can do. In his own context Mao Tse-tung posed it as the problem of "red or expert."

I do not think I can suggest any way to resolve this dilemma unless we confront simultaneously another dilemma. Planning to produce a new state of affairs seems to presuppose that we know where we want to go; that we know where we are now; that we know what paths will take us from here to there and that we know what means we have for traversing those paths. For large social changes, this presumes an awful lot of knowledge. When the social setting and the human instruments of change are both changing, the knowledge we have today is increasingly less relevant. The dilemma is, "How can we expect to improve our planning in the face of relatively decreasing knowledge?" Again we come close to a paradox: the more society changes, the more we need to be able to plan but the less the knowledge with which to plan.

The common element in the two dilemmas is the notion of "expert knowledge." If we are to resolve these dilemmas, we will have to ask whether what we understand to be "expert knowledge" is the kind of knowledge required for planning social changes in a changing society. I think there is room for doubt on at least three scores.

First, I think we mistake the nature of the situations for which we are seeking a planning solution. Even the optimizers seem to think they are engaged in problem solving. They know the problem and simply have to search through existing knowledge in order to come up with a range of probable solutions that they can then compare. Social planning has come to be more like puzzle solving than problem solving. Each situation is so complex and unpredictable that