

In this Issue

Le Moigne's "French history"

Professor Le Moigne of the University of Marseille (and active editorial board member of HSM) hopes that his presentation of the history of French systems thinking and writing will be met with humor on the part of his readers. He intuitively senses the dangers of being perceived as taking himself too seriously, or as describing the French 'systemics' with unsmiling, self-admiring fascination. Yet, French contributions to systems thinking are substantial and Le Moigne provides a useful summary of their major characteristics.

Why is it that French science is so much guilt-ridden and so anxious to hide its inferiority (or superiority) complex? Why so much insistence on French as a 'second scientific language' and increasingly common avoidance of non-French publishers, journals, and conference sites by French scientists? Why is there such reluctance of the French to accept ideas that were not homegrown? (Even in 1974 Ernest Boesiger wrote that about 95 percent of all French biologists were more or less against Darwinism.)

Le Moigne does not deal with such questions directly. He does not explore the influence of the French educational system which makes it so difficult for non-Frenchmen or non-French university degree holders to teach in France. He claims French primacy for cybernetics — yet admits that Wiener's *Cybernetics* was never even translated into French. He does not even mention such great French systemists as Jean-Baptiste Lamarck, Stéphane Leduc, or Claude Bernard. On the other hand, he includes Ilya Prigogine (Russian, living in Belgium, writing in English), Henri Atlan (born in Algeria, working in Israel), Jean Piaget (Swiss), Yona Friedman (born and educated in Hungary), and also some Canadians. It is interesting to note that even Jacques Monod (whose mother was an American) called himself a *bourgeois Genève*.

Another interesting item is that René Thom's famous book on catastrophe theory was first pub-

lished in Reading, Massachusetts and in French(!); similarly with the work of Bernard d'Espagnat.

One may argue that French molecular biologists, like André Lwoff, Jacques Monod, and François Jacob, were classical reductionists rather than systemists. Monod was perhaps most perfectly and naively French in his conviction that he was a man of implacable, logical clarity, devoid of intuition. "I have to stick to a linear, logical thread", he said. Their belief in one guiding principle or mechanism, such as the DNA 'program' or 'computaton' is quint-essentially French.

Professor Le Moigne mentions a number of scientists who happen to be members of the *Circle of Human Systems Management*: Y. Barel, J. Lesourne, L. Sfez, J. Fontanet, J. Melèse, B. Munier, M. Borillo, B. Roy, L. Gerardin, and M. Bourgeois. Perhaps HSM readers will have the opportunity of seeing some of their writings in this journal — especially after Le Moigne's 'breaking the ice'.

Deserving attention is extended to Edgar Morin, this 'new Sartre' of French philosophy. Morin maintains that the basic supreme biological unit is the individual dominating his own myriads of cells (not vice versa). But what about society of individuals? Morin implies that there is little or nothing we can do about its grievous and dangerous faults. This view is likely to be misunderstood and misinterpreted by the Anglo-Saxon technocrats and social engineers. Morin is certainly worth of serious study.

Surprisingly little attention is paid to Michel Crozier; his latest book, *Le mal Américain*, is not even mentioned (but so is not Alexis de Tocqueville). This French sociologist finds America lacking the French "Plus ça change, plus c'est la même chose". He feels that America has changed from a happily confident country into a country plagued and braked by doubt. Even Le Moigne is not willing to go that far.

Glaser's "Solar energy challenges"

Glaser's article emphasizes the fact that solar energy is technologically feasible, that it is here to stay, that it is not a single source but a *portfolio of*

sources, that a vision of Solar America is neither utopian nor obvious. Fundamental changes in a society as a whole are implied by *solar proliferation*. Decentralized, on-site solar energy structures will lead to an increased bypassing of the traditional, centralized distributors of energy. These on-site technologies are unlikely to trigger a fundamental decentralization of American society — they *are* one of the outcomes of such decentralization trends already going on.

It is remarkable that only seven years after the oil embargo the demand is exploding for solar heating and other forms of sun-derived renewable energy. It is encouraging that this demand is being met by small, private, highly competitive industries and is not dependent on centralized, governmentally sponsored projects. Governments still pour money into the nuclear, synfuels, and oil-prospecting; these are the areas where governmental control and regulation can be effectively exercised by definition. Not so with solar energy.

Glaser, sensibly, understands that a *mix* of energy supply technologies will be required for meeting future needs: he rejects the artificial and fashionable separation implied by the either-or bind of soft path-hard path discussants and commentators. Yet solar is the liveliest, fastest growing and most appealing of all energy sources. There is a National Solar Heating & Cooling Information Center, but also Solar Energy Research Institute, Mid-American Solar Energy Complex, Northeast Solar Energy Center, Southern Solar Energy Center, Western Solar Utilization Network, Solar Lobby, and Department of Energy, which distribute relevant information (For the *Solar Age Information Directory* one can write to SolarVision, Inc., 7 Church Hill, Harrisville, NH 03450).

Dr. Glaser is a native of Czechoslovakia. He fled the Nazis and landed at Leeds College of Technology during the war. Later he studied at Charles University in Prague and graduated from its School of Engineering in 1948. He was forced to flee the country again, this time ending at Columbia University. His propensity towards human survival and security is natural to him, a matter of culture.

Glaser reviews the portfolio of promising solar technologies: passive solar heating, active solar heating, direct conversion, indirect conversion, and so on. It is interesting to note that the solar issue is less that of technology or economics and more of information, acceptance, and experience. Solar must become less of an elitist and status phenomenon and

more of a middle-income consumer good. There is every indication that this process is well under way. About 400 U.S. firms are developing both generic and proprietary products for the emerging markets. Grumman Energy System, Faco and Sunworks have emerged as early leaders.

Current estimates of solar energy contribution by year 2000 and beyond range from 7% to 25% of total energy consumption. As is common with all such estimates — they are likely to be wrong. They are derived on the basis of direct comparison with other energy sources and on linear extrapolation of economic indicators. The issues of enhanced self-reliance, independence, decreased vulnerability, increased defense potential, psychological comfort and minimum environmental damage are factors which are not usually taken into consideration. Yet these are the true determinants of demand for solar energy. How wrong President Carter was by declaring that the only question now is how to cut costs! Calling for massive governmental intervention is misplaced and can only lead to higher rather than lower costs. Skyrocketing prices of oil and the crisis of OPEC, as well as the resilience of institutional, social, and habitual barriers to solar will be more important factors.

Political leadership, self-reliance, entrepreneurship, solar tax credit, state and local tax incentives, etc., not the weather, will govern the growth of solar energy in the future. Solar energy is now a \$100–150 million industry, employing 3000 to 4000 persons, in the state of California alone.

Glaser goes beyond such local and state efforts and calls for increased 'worldwide' efforts to be devoted to the development of solar technologies. He calls for constructive energy policies to be adopted by governments and industry. He sees international cooperation as the key to the successful transition to a solar energy future. HSM readers are likely to ask why?

Mitroff's "Periodic table"

Professor Mitroff addresses the issue of different problem-solving styles among executives and their impacts on preferred organizational designs. He extends the paper of Hellriegel and Slocum (*HSM* 1 (2) (1980) 151–158) by enriching the four Jungian personality types (sensation thinkers, intuitive thinkers, intuitive feelers, and sensation feelers) through explicit consideration of three functioning modes of behavior: *parent*, *adult*, and *child*.

Professor Mitroff is a philosopher at the University of Southern California. For many years he has emphasized that the acceptance or rejection of claims in science often depends not so much on 'truth', but on who makes the claim and how well the claim fits prevailing beliefs. That is, the goodness of a reputation or the attractiveness of a theory often gives immunity from scrutiny. HSM has already dealt with these and similar issues in papers by Huff (*HSM* 1 (3) (1980) 219–228 and *HSM* 2 (2) (1981) 97–108 and by Grossman and Lindhe (*HSM* 1 (3) (1980) 261–267). Interested reader is also advised to consult the recent book by Chris Argyris, *Inner Contradictions of Rigorous Research* (Academic Press, 1980).

In this paper, Mitroff sheds light on the roots of 'subjective side of science', executive decision making, and organization behavior.

Small groups of like-minded types have been shown to express unambiguously what their *ideal organization*, as a place of their professional and social functioning, should be. These 'ideals' range from hierarchical bureaucracy and matrix organization to organic-adaptive and small, support-groups organization. There is a natural tendency to approximate such ideal organization as closely as possible.

Unfortunately, groups are heterogeneous and there is no single preferred organization which would accommodate all Jungian types without tension, conflict, and compromise. Mitroff now complicates the issue by claiming that all of these types can function at parent, adult, and child levels.

These three levels of functioning are of course metaphors; they refer to protective and nourishing (as well as critical), mediating, and demanding aspects of human functioning. These complex and conflicting roles are assumed by human personality and Mitroff expresses an awe and wonder that it can function at all under such demanding conditions.

Mitroff gives an evocative example of the 'adult' executive who comes up with highly rationalized sets of reasons for buying a new computer which the business 'really' does not need. The 'true' motive is that of the 'child' who wants prestige of owning or playing with an expensive toy. Such deeper motivations should be explicitly recognized and consciously acknowledged. The deeper they are buried or suppressed into one's unconsciousness, the greater the influence they exert over the supposedly conscious, 'adult' function. An adult, mature manager should be on good terms with 'the little people' of his psyche.

In summary, at the level of organizational behav-

ior, it is not enough to know that the dominant style of an organization is bureaucratic. One needs to know the history and the reasons why the organization is bureaucratic. Unless one know this, normal (adult) contingency theory of organizational behavior may not operate. It does not apply in the sense of describing either the actual behavior or an appropriate set of corrective interventions for those organizations which do not function in the adult mode.

An adult organization must be able to shift, within limits, between bureaucratic, matrix, organic-adaptive, and therapeutic organizational forms, depending on the changing context, circumstances, and time.

Mushakoji's "Scientific revolution"

Professor Mushakoji uses the term 'scientific revolution' in the Kuhnian sense, differentiating periods of 'normal' and 'revolutionary' science in the succession of scientific paradigms. Thus, his terms has nothing to do with the Soviet and East European concept of 'scientific-technical revolution' which simply labels as revolutionary today's achievements of science and does not recognize the question of paradigms. (There is however a remarkable lack of anything resembling 'revolutionary' scientific achievements in Eastern Europe today – aside from the military.)

Professor Mushakoji calls for free inter-paradigmatic dialogue across scientific disciplines, cultures, and doctrines. He dreams about conscious or even institutionalized advancement of alternative paradigms, more freedom in pursuing unconventional, risky, and revolutionary scientific ideas, and liberation from reductionism and mechanistic technocratism.

It is unfortunate that Mushakoji, Vice Rector at the United Nations University, identifies the east/west scientific and cultural differentials to be at the core of both the problem and its solution. He seems to equate holism with 'non-western' scientific traditions, without mentioning Jan Christiaan Smuts and his "Holism and Evolution". He insists that researcher and the researched are part of the same reality, but omits any mention of G. Spencer Brown, Francisco Varela, and other students and proponents of self-referential calculus. He militates against false scientific 'objectivity' and neglects the lifelong efforts of people like Fayerabend, Mitroff, Argyris, and others. Mushakoji argues against two-valued (binary) scien-

tific logic and neglects almost 20 years of work in the theory of fuzzy sets, started by Lotfi Zadeh. In his demonstration of the morphogenesis of paradigms he uses the mechanistic 'western' tool of catastrophe theory of René Thom.

These few examples show that not much can be achieved by introducing a simple east/west polarization. There are fanatic reductionists, mechanistic econometricians, and economic cyberneticians in Japan, India, Russia, or Poland, as well as devoted holists, human systems researchers, interdisciplinarians, and non-equilibrium economists in the U.S.A., Holland, Belgium, or France.

Yet, Mushakoji's article is significant in its sharp, polarized, and debate-inducing picture of science. He successfully attacks the *ceteris paribus* approach of modern forecasters. 'Leaving other things equal' can only mean that the models may suddenly cease forecasting if there is a major policy change, if people change their expectations, or some 'other things' refuse to remain equal. 'Western' theory of rational expectations is attempting to deal with such issues.

Mushakoji is deeply concerned about two-way communication between scientific elite and the 'voiceless' alienated peoples. He calls on the researchers to make all necessary efforts to listen to and understand the people's way of thinking, theories, and models. A good example of a long mutual learning process of researcher/activist and the people is — Mao Tse-tung! To which extent Mao's cultural revolution and agricultural collectivization reflected deep wisdom of 'the voiceless' is still a matter of debate.

Professor Mushakoji's paper is a good example of the type of thinking which goes on in higher echelons of Japanese academia and super-national institutions like United Nations University (The 'father' of holism, J.Ch. Smuts, was one of the founders of United Nations). This thinking and concerns are skillfully communicated to the readers of Human Systems Management and Professor Mushakoji certainly deserves the discussion, the scrutiny, and the alternative views he is calling for.

Sachs and Calhoun's "Systemic inactivism"

Wladimir Sachs and George Calhoun have just established *The Philadelphia Consulting Group*, calling themselves 'strategic management consultants', and promising organizational design, management support

systems, and tailor-made action-research consulting. They say: "Our role is to help *you* make decisions, not to make them for you." Theirs is a network consulting company of international affiliates, forming and dissolving individual task-teams according to needs and circumstances.

Sachs and Calhoun's message is equally innovative and challenging as their entrepreneurial venture. Are we witnessing an emergence of 'angry young men' — a rare commodity in these times of complacency, mediocrity, and tired professoriat? Perhaps.

Their main conclusion is that so called systems approach is being widely misused, misinterpreted, and misapplied — especially in Third World countries. Their experience at the Wharton School shows clearly through their disappointment and revolt. Their experience with Third World countries consulting is equally persuasive.

For example, they assert, privileged elites of Third World countries, usually western-educated intellectuals, often use 'systems approach' as a smoke-screen for their inability and unwillingness to do anything of consequence about the status quo of their countries. Readers of HSM are invited to read the paper by Bowonder (*HSM* 2 (2) (1981) 95–100) to see how systems view stifles the thinking of technocrats of India. Similarly relevant are the papers of Friedman, Kamenetzky, and Mushakoji, also published in HSM.

The authors have captured the nature of Third-World 'solutions' in a devastating insight: "Create an Interministerial Committee for Coordination ...".

Calhoun and Sachs are still searching for themselves. Their writing is more emotional than contemplative, they do not offer much beyond their critical insights, they are full of contradictions. For example they attack elite's attempts to produce irrelevant and general 'statement of ultimate ideals' on the one hand, while insisting that systems science must develop the capability to talk about *ideals (sic)* on the other hand. Might it be that we have been 'talking about ideals' for too long? Might it be that paleo-ackoffian ideas of systems are not sufficient for the modern world?

The authors use a very effective tool of stating basic 'principles' of systems thinking and immediately countering them with their more vulgar 'reinterpretations'. For example, principle: systems interact with their environment; reinterpretation: the environment must be changed before the system can be changed. Or, principle: systems are goal-oriented; reinterpretation: no practical matter can be addressed

until the system's ultimate ends or ideals have been determined.

In addition to *systemic inactivism*, there is another metaphoric coinage which just might make it — *ritual planning*: squandering of resources on producing plans that are never implemented or satisfactorily carried out. But ritual planning is not only a Third World phenomenon — there is a lot of ritual optimization and ritual strategic planning going on all around us.

It is self-limiting that authors have chosen to attack *homeostasis* as a dominating principle of systems thinking — it is just not so. But they do bring down a lot of systems science, systems thinking, systematics, or system design down to earth, down from their fashionable 'pies in the sky'. We might hear from this team again.

Mackenzie and Bello's "Leadership"

The concept of leadership received HSM attention at its very inception through the article of Mueller (*HSM* 1 (1) (1980) 17–27). Mackenzie and Bello are now submitting results of some studies on a new approach to our understanding of leadership. They view their results as 'stunning' and, predictably, the paper was not publishable in traditional management science literature.

Professors Mackenzie and Bello conducted a series of experiments under strictly controlled laboratory conditions — thus they dealt with 'small' or 'as if' leadership, not with the 'big' and 'for real' leadership in the world of Walesas, Mitterrands, Haigs and Sakharovs. But the authors are careful to stress that theirs are purely contrived, stringent laboratory conditions and do not claim anything beyond a laboratory testing of a certain *model* of leadership, not a scientific exploration of leadership itself.

Their line of thought is simple: designing or redesigning real organizations involves changing things — and change creates uncertainty. Leaders should be able to *control such uncertainty* to the satisfaction of those they lead. That leaders are dealing with change, leading toward new goals and new realities, rather than securing and preserving status quo, appears to be almost self-evident. In this sense, leaders amplify uncertainty, force risks and promise very little security. On the other hand, if a status quo

is threatened by turbulence of change (and thus heightened by uncertainty) leaders emerge to restore, protect and secure status quo, to reduce uncertainty, to limit change. What does it mean to control uncertainty? To amplify it, direct it, and make it work towards goals, or to contain it, limit it, and ultimately remove it? Both types of leaders do emerge and are accepted: those who support change and amplify uncertainty and those who protect status quo by reducing uncertainty.

Mackenzie and Bello propose that an explicit link between task process uncertainty and leadership be postulated and studied. They see leadership as a *task process uncertainty control process* (authors' neologism), stressing the social context of leadership as a group phenomenon. They see leaders as individuals exerting social influence on group's behavior; thus they do not address phenomena of collective leadership, leadership of ideas, and leaderless, spontaneous transformations of biological nature.

It is perhaps self-limiting to presume that various efforts to reduce, eliminate, and prevent task process uncertainty are the only acts of leadership or attempted leadership. More and more we see people choosing for their leaders those who amplify task process uncertainty, who embark on bold social experiments and risk-taking social transformations. A task process, as defined by the authors, is entirely characterized in terms of *means* (sequences of milestones and transitions) and devoid of any reference to the *goals* and *objectives* of such process. Is low task uncertainty towards inferior goals going to be preferred to a high task uncertainty towards highly desirable goals?

This paper is not easy to read. Its descriptions of experiments, its word-smithing and 'scientific' jargon are not going to attract attention of world leaders. But, HSM editors believe, leadership as a task process uncertainty control effort cannot be rejected on the basis of authors' experiments and their emphasis on dynamic rather than static features of leadership has to be promoted. Leadership *is* a process, it is context dependent, and it emerges from still mysterious alchemies of group behavior. It is not a listing of attributes, attitudes, and aspirations of a given individual! In that sense we consider the paper worthy of HSM and hope for a fruitful and continuing debate on the issues of leadership.