WORLD FUTURE SOCIETY
BULLETIN

Towards a Critical Futurism

by Richard A. Slaughter

With this article, British futurist Richard Slaughter begins a three-part look at the futures field today, and how a reevaluation of key assumptions could enhance the applicability and impact of future studies throughout the world.

The case for a critical approach to futures study rests on at least three major considerations. First, in many of its institutionalized forms it has become associated with the needs of relatively powerful groups and may thus be skewed in favor of particular applications. There is reason to believe that this represents an artificial narrowing of vision, a closure rather than an expansion, of options. Second, futures study is of immense potential value in areas like education, professional services of all kinds and the various levels of social and economic policy-making. But the open-ended nature of the field and the lack of an agreed framework of explanation/theory makes it difficult for observers to draw upon it as freely as they might wish. Finally, the futures field remains strongly associated with North America. While there have been many contributions of great value from other countries, futurism remains basically an expression of American consciousness. It may therefore be useful to attempt a view which interprets this phenomenon with the help of European traditions of enquiry.

From this viewpoint a number of deficiencies can be identified and these provide a starting point for this enquiry. However, the major thrust of the paper resides in the attempt to refine and revise common understandings within the field such that the theoretical and practical competencies of its members can be further developed and applied to major problems. Beyond this is the possibility that futurist expertise can move toward a position where it is largely free of mystification, reflexively aware of inherent ideologies, interests, commitments and more openly accessible to the general public. We therefore complete the work with a general model of critical futurism which may have wide applicability within the field.

It cannot be emphasized too strongly that what is offered here is *an interpretation* of contemporary futurism, particularly as it exists in North America. As such, it invites further critical comment and dialogue. As will become clear below, the view is taken here that there are few certainties in futurism, and hence no final or complete answers. Rather, there is a continuous stream of propositions, understandings and interpretations which, properly understood, reflects the wider ebb and flow of historical continuity and change in which we are all immersed.

Critique

In an earlier work I proposed that the futures field could be divided into three broadly interacting elements: a largely knowledge-seeking component deriving from various "hard" forms of futures research; a largely communication-oriented component founded in activities like education, criticism and writing; and a strongly normative, change-oriented, component with roots in a globally distributed social movement (see Figure 1).[1] I also suggested that the utility of a "futures perspective" may actually derive less from imputed characteristics of the parent field than from the selective deployment of resources available within it. Perhaps the most important of these resources take the form

of a widely shared set of ideas, or central themes. The latter have been described at length by many people, but here it is useful to express some of them as brief propositions. There are ten.

1. There exist a wide variety of **alternative futures** at all levels.
2. These are commonly divided into **possible, probable** and **preferable** futures.
3. They suggest a need for **conscious choice, participation** and **purposive action**.
4. The future is **not predictable or predetermined**, but may be affected by individuals.
5. Human actions and decisions (or their lack) **shape the future**.
6. The present period is **unique** and **crucial for all future generations**.
7. It is necessary to exert human control over **change processes**.
8. In so doing, **"preaction"** is preferable to **"crisis learning."**
9. **Holistic, global** and **long range perspectives** are indispensible.
10. **Images** of the future guide actions in the present and affect what seems possible in the future.[2]

Various writers have examined the extensive network of assumptions and premises upon which these ideas rest and we will not duplicate their efforts here.[3] Our concern is to concentrate on those difficulties which arguably rob the field of much of its effectiveness, and which a more critical approach

---

"Futurist expertise can move toward a position where it is largely free of mystification . . . and more openly accessible to the general public."

---

may attempt to resolve. The former include problems of language and presentation, ideology and bias and the extent to which an internal tradition of critical analysis may already be developing.

It is not really surprising that a fairly high level of consensus seems to exist in respect of the central concerns of the field but there is less agreement about fundamental assumptions and approaches. This is true of many disciplines. But some observers see the lack of an overall, shared, foundation in theory as a weakness which "prevents futurists from recognizing . . . and . . . . contributes to. . [their] confusing one set of objectives with another."[4] Again, Nelson suggests that this basic uncertainty leads to failure to distinguish between concerns that are substantive and others that may be faddish.[5] One may sympathize with this view, yet, at the same time, we will suggest below that the search for a more coherent structure, for standards, norms and greater certainty is to some extent ill-founded. It can, in fact, be seen as reflecting a somewhat discredited view of science, a model to which many have turned in a fruitless search for legitimacy. But, while we

must doubt if any field dealing with practical, uncertain, open-ended and value-laden problems could possess a single, unified, theoretical base, it is possible that certain core prepositions discussed below may be the next best thing to this.

The American Mindset

It will be evident to all that the futures field is nothing if not ambitious. It tries to monitor global trends (most of which are poorly understood), to act as a societal "early warning system," to explore and illuminate a bewildering range of possibilities and choices, to influence public and private decision-making in a multitude of contexts, to disseminate its ideas and conclusions as widely as possible—in short, to help create the future. In view of the enormity of this task it would be reasonable to expect low-key, self-effacing approaches hedged around with qualifications of many kinds. But when Edward Cornish writes of the "great future that we all know is possible," he is articulating the deeply felt and widely shared American attitude that "if we can create believable dreams of a better future world, then we can build for that world, for we live in an age when a peaceful, prosperous and happy world is a genuine possibility." This view reflects a sense of optimism and power which is, perhaps, central to the American experience.[6] Another, much reprinted, paper exposes the darker side of this sensibility by concluding that "the only possible conclusion is a call to action." It continued, "the task is clear. The task is huge. . . . time is horribly short. . . . today the whole human experiment may hang on the question of how fast we now press for the development of a science for survival."[7]
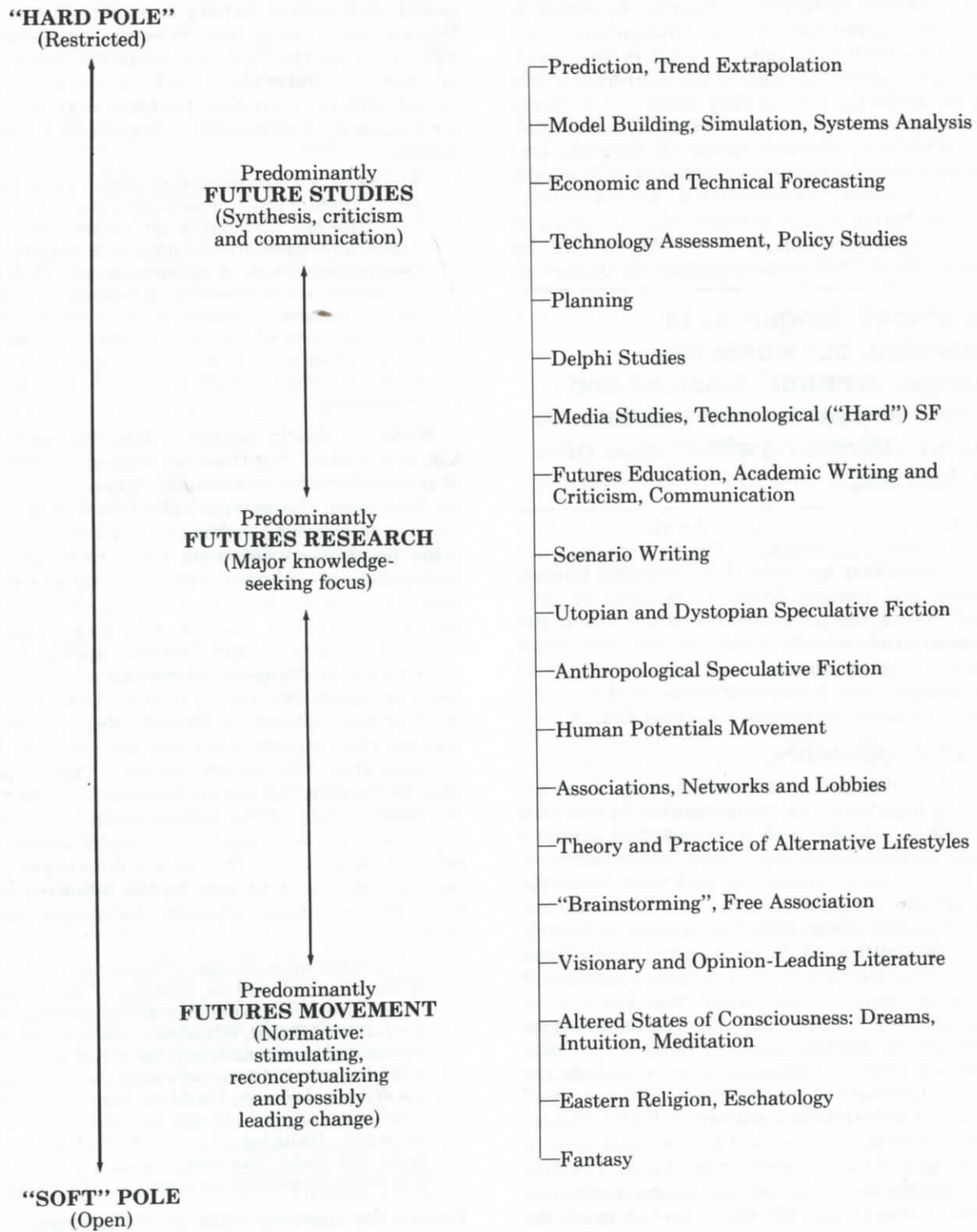
Statements of his nature express the ideals and the fears of much of mankind. But, sympathize as we may, they simply do not travel well, and it is important to try and explain why this should be so. In these, and other, cases, it is not always clear how, or in exactly what sense, people may begin to exert control over events or act to prevent threatened crises. Regardless of whether the view expressed is optimistic or pessimistic, whether the task is to create utopia or merely to avoid dystopia, *something is missing*. Part of it may be that people who are deeply involved in particular ways of life, values, logics-in-use, traditions and so on, people whose world views differ in many substantial ways from those quoted are being asked, from a great distance, to cooperate in a demanding series of more-or-less well-defined tasks which lack historical precedent or, so far as they are concerned, contemporary sanction. Thus, generalized "calls to action" may be a very ineffective way of communicating if their implicit view of individuals and societies is an underdimensioned one that glosses over more than is prudent of the substance of social life and social being.

Most people realize that the future is inherently uncertain and conditional. Its relation to the present is very problematic and complicated by a host of social, cultural and ideological factors. The sense in which it may be "built" or "chosen" needs to be clar-

Figure 1

The Futures Field: A Spectrum of Activities and Influences

"HARD POLE"
(Restricted)

—Prediction, Trend Extrapolation

—Model Building, Simulation, Systems Analysis

Predominantly
FUTURE STUDIES
(Synthesis, criticism
and communication)

—Economic and Technical Forecasting

—Technology Assessment, Policy Studies

—Planning

—Delphi Studies

—Media Studies, Technological ("Hard") SF

—Futures Education, Academic Writing and
Criticism, Communication

Predominantly
FUTURES RESEARCH
(Major knowledge-
seeking focus)

—Scenario Writing

—Utopian and Dystopian Speculative Fiction

—Anthropological Speculative Fiction

—Human Potentials Movement

—Associations, Networks and Lobbies

—Theory and Practice of Alternative Lifestyles

—"Brainstorming", Free Association

Predominantly
FUTURES MOVEMENT
(Normative:
stimulating,
reconceptualizing
and possibly
leading change)

—Visionary and Opinion-Leading Literature

—Altered States of Consciousness: Dreams,
Intuition, Meditation

—Eastern Religion, Eschatology

—Fantasy

"SOFT" POLE
(Open)

N.B. It must be emphasized that the above attempts to provide only an overview of the field. Examples listed are representative, not exhaustive. Similarly, positions upon the spectrum may vary according to numerous factors.

Source: Slaughter, R.A. *Critical Futurism and Curriculum Renewal*, University of Lancaster, Ph.D. 1982.

ified in some detail by those with ideas about what it *should* be like. That this seldom happens is not really a comment on individuals. It has more to do with the fact that people who are necessarily embedded in their own historicity cannot easily aspire to the almost supernatural (or supra-historical) powers involved. As Radnitzky puts it "what is 'irrational' in human history is that men make their history but .. do not know the history they make . they have not yet been able to make it with full consciousness."[8] This is a dilemma facing all futurists and others who would wish to direct "change." To build a "science of survival" or to design a "peaceful, prosperous and happy world" not only begs a number of very important questions, it would also require the development of "full consciousness" to unknown,

---

"It is always dangerous to generalize, but words like 'change,' 'control,' 'choice,' and 'action' appear to mean quite different things on either side of the Atlantic."

---

and perhaps impossible, heights. As McDermott has noted, the grand ambitions of the futures field are usually unfulfilled because they overrate human knowledge and human ability to act free of constraint.[9] Hence the presentation of particular futures ideas (and indeed, of the futures field more generally) may be marred by exaggeration, by a rather naive view of human capacities and by over-optimism about the potential for social change.

Alternative Approaches

A number of futurists have made suggestions for improving techniques of presentation. Amara and Jones both stress the need for conceptual explicitness and analytical clarity.[10] They recognize that there are limits to certainty and that futurists should confine themselves to modest and supportable claims. But their attention focuses primarily upon the disciplines of futures research. While there are exceptions, the field as a whole lacks strategies of presentation and communication that *build* upon peoples' existing "life worlds," their skills, interests and perceptions. Furthermore, the possibility of dialogue is pre-empted whenever futures options are framed and presented as pre-given "alternatives" which invite selection, but *not* revision and reinterpretation. The latter is central to a critical view of futurism, as will be explored further below. For now we may simply note that the taken-for-grantedness and lack of reflexivity that characterizes much futurist writing can also be related to a "one dimensional" use of language. This remains an unresolved, and largely unexamined, problem.

As the present inquiry proceeds it will become increasingly evident that the literature and rhetoric of the futures field is replete with examples of ideas, assumptions, claims and concepts presented "at face value," in a wholly unproblematic manner, as if language bore a clear and unambiguous relationship to the "real" world. In American work this may be taken as evidence of the dominance of empirical-rational traditions of inquiry in social science, an influence which many writers accept as normal and natural. Since the USA is perhaps *the* major center of futures related activity, such tendencies have pervasive effects. That this problem may not be restricted to the futures field is implied by Carey, who writes,

> European and American work derives from quite different kinds of intellectual puzzles and is grounded in two different metaphors for communication. American studies are grounded in a transmission or transportation view of communication. They see [it] as a process of transmitting messages at a distance for the purpose of control. By contrast, the preponderant view of communication in European studies is a ritual one: [it] is viewed as a process through which a shared culture is created, modified, and transformed.

While we should beware of drawing exact parallels, it is evident that there are analogous differences of approach in the futures field. American work is, as we have seen, characteristically broad in scope, optimistic in tone and ambitious in character. On the other hand, European work tends to be more limited, equivocal and frequently preoccupied with substantive or parochial concerns. It is always dangerous to generalize, but words like "change," "control," "choice," and "action" appear to mean quite different things on either side of the Atlantic. Each presupposes a theory of some kind and a network of assumptions, so their frequent unproblematic use risks superficiality and incoherence. When we read that "the steam engine .. made human muscle obsolete, but the microprocessor is initiating the obsolescence of the human brain" it is obvious that the writer has simplified complex issues to the point of caricature.[12] That this is not simply an isolated example may be seen by the following extract from *Future Shock*, wherein the author suggests that

> in the three short decades between now and the turn of the next millennium, millions of psychologically normal people will experience an abrupt *collision with the future*. Affluent, educated citizens of the world's richest and most technically advanced nations, they will fall victim to tomorrow's most menacing malady: *the disease of change*. Unable to keep up with the supercharged pace of change, brought to *the edge of breakdown* by incessant demands to adapt to novelty, many will plunge into future shock. For them the future will have arrived too soon. [13] [My emphases]

One of the startling features of this passage (and others like it) is that it underrates sources of stability and continuity in human culture. Another is the way the author is somehow assumed to stand outside the processes he is attempting to describe. Again, "change" is portrayed as an irresistible and wholly *external* force that leaves individuals "shocked" and incapable of effective responses. Even without these

defects, the presence of such tortured metaphors as "collision with the future," and "disease of change," suggest that something is badly wrong. Clearly the whole passage, and indeed the "future shock" thesis itself, propounds unacceptable views of language, culture and the possibility of personal agency. Yet the book achieved best seller status and, more seriously, many of its terms and assumptions can be found unquestioned throughout futures literature.

It goes without saying that there are many writers who labor hard to avoid these pitfalls. However, there are few American futurists who show an awareness of the permeability of language, of the ways it is interwoven with inherited meanings, of how it both reveals *and* conceals aspects of the world we take to be real. Hence, in a critical futurism we need to recognize that *language mediates the interpretation of experience and is constitutive of understanding*. It follows that *normative statements about what should, or should not be, inevitably reflect the preferences and interests of those who utter them*. This renders the possibility of objectivity and value-free knowledge extremely problematic, and cuts the ground from under the feet of anyone who implicitly or otherwise, assumes a superior viewpoint. More positively, it points the way to metaphors for communication that have less to do with persuasion and control than with dialogue and negotiation. The grounds for this position are set out below.

Ideology and Bias

Limitations of space preclude an in-depth treatment of ideology, but we can outline some of the issues with a bearing upon it. Prominent among these is the way that claims to scientific status regularly recur within the field. From the viewpoint adopted here such claims detract from futurists' credibility because they unintentionally misrepresent what the latter can aspire to achieve. Furthermore, when such claims embody notions of "objective" and "value free" knowledge, they serve to *obscure* the political and ideological dimensions of futures problems.

A number of observers have stressed the unavoidable *subjectivity* of the futurist, but this notion has little explanatory power. It is a long way from the idea of "situatedness" which is arguably of greater value. The latter implies that the complex network of meanings and relationships encompassing individuals can be viewed not as a weakness to be avoided, but *as an unavoidable and positive attribute of all social life on which the researcher can, and must, draw*. Concepts and understandings of this kind appear to be uncommon in American futurism as is suggested by Geoffrey Fletcher's reasons for reacting against one more proposal for a 'science' of futurism.

Fletcher's main objections were, in summary, that first "a science of futurology" and the pursuit of a consensus view which this implies "would severely limit—if not eliminate—a wide range of potentially functional images, methodologies and roles." A second objection concerned the proposition that universities were the ideal place for this new "science." This, he suggests, would "disenfranchise a large majority of stakeholders in futures study" (i.e. non-academics). The final objection arose from the view that such a "science" would be concerned with prediction. He writes, "a search of the literature I did in 1978 made it clear that the term 'predict' is not normally used in the field... [hence].... I maintain . that we should not speak of 'correct' forecasts, but of usable ones."[14]

There is no doubt that such objections play an important corrective role and may be seen as part of the developing critical tradition within the field. But critiques of this nature do not penetrate to the deeper sources of difficulty—in this case the question of whether or not the implicit model of science involved is applicable to futurism. In part two of this paper I will suggest that it is not. Here we may note

---

"The 'future shock' thesis propounds unacceptable views of language, culture, and the possibility of human agency."

---

that concepts such as reductionism, bias, subjectivity and elitism tend to fall short of the mark because they de-focus questions of ideology, power relationships and fundamentally conflicting interests. One consequence is a marked dissonance, frequently encountered in futurist writing, between the clear emancipatory *intent* of the work and the instrumental undertones in the language used. This is particularly noticeable when notions of control, regulation and urgent warning are present. Hence, one task of a critical futurism should be to reveal these internal contradictions and further develop the emancipatory potential of the field.

Ida Hoos' critique of "scientific" and quantitative approaches to forecasting illustrates the value, and some of the limitations, of an approach utilizing notions of reductionism and bias. She suggests that the use of techniques "encompassing systems analysis, cost/benefit analysis and program budgeting" led researchers to overlook their own biases and to simplify problems, emptying them of much of their human significance. "The avalanche of figures" she writes, " .. present a simplified and often distorted view of reality because only the quantifiable is taken into account; the non-quantifiable, which may be crucial, is systematically excluded." Hence, she concludes, "the data base (of futures research) is more often than not its Achilles heel."[15] We should bear in mind that these comments apply predominantly to the "hard" pole of the research spectrum which is now, perhaps, less dominant. Similarly, quantification is more commonly seen as one approach among many. Nevertheless, her caution is well founded. The risk of reductionism remains whenever aspects of the real world are taken from their living context and translated into computer models, simulations

and exercises in systems analysis. The critique remains useful, but it locates the source of the problem in techniques and methodologies rather than in the fundamental meanings and presuppositions deriving from cultural and disciplinary traditions. These insights can be deepened and extended via a critical/hermeneutic perspective without which it is doubtful whether questions of reductionism and bias can be adequately defined, let alone resolved.

Some of the most penetrating critiques of the ideological content of futurism appear to originate in Europe. Futurists here have been less willing to look to what Mulkay calls "the standard model of science" for support. Hence, while the USA remains the heartland of futurism, European writers and critics may have an important role in evaluating its assumptions and claims. Indeed, *it may well be that*

"The tendency [of futurists like Bell and Kahn] to take as 'given' the existing socio-political status quo . . . could be viewed as an attempt to 'colonize the future' on behalf of existing elites."

inter-cultural comment and debate may be inherently more penetrating due to the differences in perspective arising from immersion in different cultural and academic traditions. Thus, for example, Goldthorpe detected strong historicist elements in American work not least of which is a "clear concentration on economic and technical forecasting." The tendency to view change in these dimensions "as the key dynamic or . . . constraining forces within modern societies" is, he suggests, associated with neglect of "the way social actions can impinge upon [such] processes to speed, check, divert them, etc."[16]

Goldthorpe stands for many writers, not all of whom are Europeans, who reserve particular criticism for the work of Bell and Kahn. Here he found a neglect of values and their role in bringing about, or resisting, social change, a tendency to take as "given" the existing socio-political status quo and a technocratic, meritocratic view of post-industrialism. The seeming inevitability of such phenomena could be viewed as an attempt to "colonize the future" on behalf of existing elites. Furthermore, and this is the key point in the present context, Goldthorpe reveals the ideological significance of viewing factors other than economic and technical trends as "social problems." He writes:

> the language of social problems can be used to discuss what are often in fact situations of social conflict in such ways as to politically 'de-fuse' them—minimizing the apparent relevance of partisan differences or rival ideologies, while maximizing that of non-ideological, pragmatic techno-administrative solutions. Politics then becomes reduced to little more than haggling over the respective merits of those 'solutions' which the experts deem to be feasible.

In the view of the foregoing it is difficult to see how the World Future Society, or any other organization, can be "nonpartisan and ideologically neutral."[18] All viewpoints are supported by commitments some of which cannot help but be ideological in nature even if this means pursuing an *ideal of neutrality* within a context of specific power relationships. The latter are now clearly global in scope and Miles comments that futurists who fail "to challenge the dominant interpretation of world economic relationships as being mutually rewarding to rich and poor alike," risk the charge of ethnocentricism.[19] Elsewhere the same writer reminds us that "underlying even the most sophisticated quantitative analysis is a core of assumptions that are political, not solely technical." In this view, "the dominant features of forecasting are structured by a set of dominant—but not monolithic—interests."[20]

This is not the place to analyze the ideological commitments of American futurism, important as this task is. However, it is clear that a good deal of futurist expertise is committed to maintaining the status quo and, further, that by focusing on lower order concerns, the developing internal tradition of criticism has not yet dealt effectively with such issues. Thus Miles' contention that "the essential complement to the widening and deepening of public debate about the future is a critique of the ideological dimensions of all futures research" seems well founded.[21] Where deep-seated oppositions of interest are obscured by a functionalist, conflict-free, view of society, futurism can be mystificatory in effect if not in intent. That this is a key issue for the whole futures field, not just the professional futurists, can be seen in the popular works on both sides of the Atlantic which extrapolate uncritically from the present, taking as "natural" the existing web of social relations. Obscuring questions of power, value and purpose behind an impressive facade of technical wonders may be particularly dysfunctional, the effect being to close off futures potentials from exploration by the wider public. Thus ideological naivety may, in some cases, actually prevent futurism from fulfilling one of its deepest purposes: the elaboration of alternative futures.
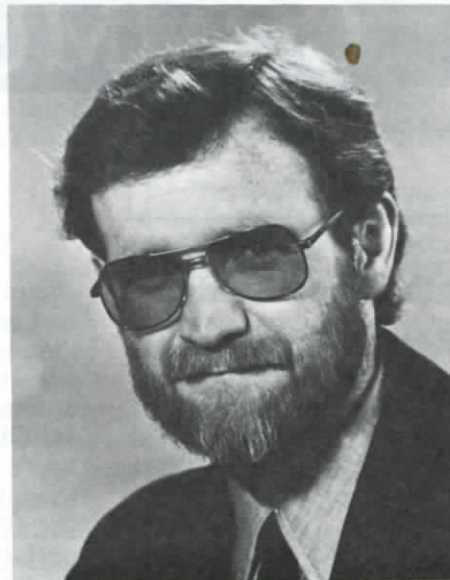
There is evidence that some American futurists are reaching similar conclusions. For example the account of "negative futurism" advanced by Wagschal and Anzilone, while not without its defects, repudiates the attempt to maintain an apolitical stance.[22] Such developments indicate that, while not yet approaching maturity, the futures field may have passed beyond its infancy. Earlier claims now seem overstated. The once popular "future shock" thesis with its exaggerated view of the inevitability of technical change and its grossly under-dimensioned view of human personality is no longer convincing. Indeed, the recognition that there are limits to what the field may hope to achieve can lead to a more realistic assessment of its strengths and weaknesses. The area is complex, dynamic, evolving and it may be too much to expect that internal problems and

inconsistencies will pass away. Complete or correct answers are less likely than more or less adequate ones. Michael Young's comment that "the gazer into the future has never yet found a really comfortable intellectual position, and perhaps never should unless, that is, he is a preacher," has wide applicability.[23] But this does not mean that there is nothing to be done. On the contrary, futurists can do much to put their own house in better order.

To be more effective, the futures field can begin to clarify its use of guiding concepts and metaphors, relating these to cultural presuppositions and traditions of inquiry which can be easily mistaken as inevitable, neutral and value free. One result could be a more accessible style of discourse. In this regard, it should emphatically disown the hectoring, insistent tone adopted by some in the past and consciously develop strategies of communication based more on dialogue and negotiation. It can also seek a more credible balance between stability and change, recognizing the mutual existence of each rather than tending to overstress the latter. Above all it can seek to develop a better understanding of its own, often obscured, ideological commitments.

Richard A. Slaughter recently completed a doctoral programme at the University of Lancaster on the theme of critical futurism and curriculum renewal in Britain. He is now an independent consultant and WFS Chapter Coordinator. His address is 16 Church Hill Avenue, Warton, Near Cranforth, Lancaster, LA5 9NU, England.

NOTES

1. A fuller account of this view of the futures field may be found in Slaughter, R. Critical *Futurism and Curriculum Renewal* Ph.D. dissertation University of Lancaster 1982.

2. See ibid 184-194 for the sources of these themes.

3. See for example Henchey, N. "Building a Framework for the Study of the Future," *WFS Bulletin* 11, 5, 1977, 1-9.

4. Amara, R. "The Futures Field: How To Tell Good Work from Bad." *The Futurist* 15, 2, 1981, 63-71.

5. Nelson, R. "Evaluating Futures Literature," *Futures Canada* 4, 3, 1980, 19-21

6. Cornish, E. "Creating a Better Future: the Role of the World Future Society," *The Futurist* 14, 5, 1980 pl 7.

7. Platt, J. "What We Must Do," in Tugwell, F. (ed) *Search For Alternatives* Winthrop 1973 2-16 Cambridge, Mass.

8. Radnitsky, G. *Contemporary Schools of Metascience*, Akademiforlaget, Goteborg, 1972 p 119.

9. McDermott, W. *The Quest for the Perfect Issue*. Paper for the First Global Conference on the Future, Toronto, 1980.

10. See Amara (1981) above, and Jones, R. "One Man's Organizational Experience," in Linstone and Simmons (eds) *Futures Research: New Directions* Addison-Wesley 1977 194-209.

11. Carey, J. "Mass Communication Research and Cultural Studies: An American View," in Curren, J. (et al) *Mass Communications and Society*, Open University, UK, 1979, 409-425.

12. Moore, D. "Will Robots Save Democracy?" *The Futurist* 15, 4, 1981, 14-19.

13. Toffler, A. "Futureshock," in Cross, N. (et al) *Man-Made Futures*, Open University, UK, 1974, p 39.

14. Fletcher, G. "The Case Against a Science of Futurology," *WFS Bulletin*, 15, 3, 1981, 27-32.

15. Hoos, I. "Some Fallacies in Futures Research," *Technological Forecasting and Social Change* 10, 1977 335-344.

16. Goldthorpe, J. "Theories of Industrial Society," *European Journal of Sociology* 12, 1971, 263-288.

17. ibid p 284.

18. Cornish, E. (1980), 15-19.

19. Miles, I. "The Ideologies of Futurists," in Fowles, J. (ed) *The Handbook of Futures Research*, Greenwood, 1978, p 73.

20. Miles, I. "The Development of Forecasting," in Whiston, T. (ed) *The Uses and Abuses of Forecasting*, Macmillan, 1979, 5-41.

21. Miles, I. op cit (1978), p 81.

22. Wagschal, P. & Anzilone, S. "Coming of Age and the Case for Negative Futurism," *WFS Bulletin* 13, 6, 1979, 9-12.

23. Young, M. *Forecasting and the Social Sciences*, Heinemann 1968. Introduction.

In part two of this three-part essay, to be published in the September/October 1984 issue of the BULLETIN, we will consider how critical/hermeneutic approaches and insights from the sociology of science can assist in this process.