

PREPARING FOR THE PROFESSIONAL FUTURES FIELD:

Observations from the UHCLC futures program

O. W. Markley

The futures field is an arena of increasing interest and activity. This article seeks to: (1) provide general information about key information sources for directed inquiry into futures studies; (2) sketch the origins and current status of the graduate program in Studies of the Future offered by the University of Houston at Clear Lake City—currently the largest and most comprehensive program of its kind; (3) Describe the methodology used in a recent strategic planning and program development project to update the UHCLC program; and (4) convey some guiding observations on teaching and research in futures studies, and on helping students find appropriate employment.

Keywords: futures research, education, bibliography

ALTHOUGH PEOPLE involved in different schools of thought about the future still disagree on what to call this area of study, how to define it, and/or what to call people who practice it, a definite “futures field” has emerged during the past two decades.^{1,2} Simply stated, the study of the future deals with examining—with the hope of successfully influencing—the probable, possible, and preferable outcomes of key trends and events. And, as seen later, employment opportunities for professionals in the futures field exist in all sectors of society.

People seek to influence the future through political, professional, fraternal, or religious participation, or through a variety of other voluntary activities. To the extent that they seriously seek to anticipate future events in order to influence them, these activities can be considered part of “the futures field”.

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TABLE 1. KEY SOURCE MATERIALS

The following are recommended as having general usefulness for: (1) approaching the futures field for the first time; (2) understanding the various schools of thought in the field; and (3) for staying abreast of new developments as they occur.

For an initial introduction, two books are particularly good. Edward Cornish's *The Study of the Future* (published by the World Future Society, together with a student study guide and a teacher's manual) is the most used introductory text.³ Most of our graduate students, however, prefer Paul Dickson's *The Future File* because it does not emphasize any one school of thought, and treats substantive themes better.⁴

A more substantive coverage of the field and of its principal schools of thought, can be found in:

- *Handbook of Future Research*, edited by Jib Fowles. Although not properly a handbook, this volume contains a wide sampling of articles by leading futurists on various issues.⁵
- *World Economic Development: 1979 and Beyond*, by Herman Kahn, reflecting the "positive extrapolationist" school of thought.⁶
- *Global 2000 Report to the [US] President*, by Gerald Barney, and *The Future of the Human Prospect Updated and Reconsidered for the 1980s* by Robert Heilbroner. A research study and an extended essay, respectively, that typify the points of view of the "negative extrapolationist" position.⁷
- *An Incomplete Guide to the Future*, by Willis Harman, *Building a Sustainable Society*, by Lester Brown, and *The High Frontier: Human Colonies in Space*, by Gerard O'Neil. These are representative outlooks of the three schools of thought that our Studies of the Future Program calls the "spiritual visionary", the "societal visionary", and the "environmental visionary".⁸

Perhaps the best brief overview of the methods and principal roles played in the field is "*The Futures Field*" by Roy Amara.⁹ A more in-depth survey is contained in *A Guidebook to Technology Assessment and Impact Analysis* by Alan Porter and colleagues.¹⁰ Although it doesn't deal with the entire futures field as such, the *Guidebook* is especially recommended because it is particularly well-written, and because the methodology called "technology assessment" is so comprehensive that it incorporates most other methods currently used. Other key texts used in the UHCLC program are also worth noting.¹¹

Works discussing the history of the field also provide an important frame of reference. Thomas Jones' article "The futures movement: a brief history" is perhaps the most compact and yet comprehensive summary.¹² He has also written a perceptive book examining the way differing assumptions and research methods have led to different conclusions about the future.¹³

Books that assess the methods, results, and prospects of the field include:

- *The Study of the Future: An Agenda for*

Research, edited by Wayne Boucher, sponsored by the National Science Foundation to identify science policy priorities.¹⁴

- *Social Forecasting Methodology: Suggestions for Research*, by Daniel Harrison; *On the Future of Social Prediction*, by Richard Henshel; and *Futurology: Promise, Performance, Prospects*, by Victor Ferkiss.¹⁵ Two extended essays on social—as opposed to technological—forecasting, and one on the field in general.
- "Measuring interest in the future", by Roger Evered. An attempt to use content analysis and social indicators as a basis for forecasts of activity in the field.¹⁶
- *Futures Research: New Directions*, edited by Harold Linstone and W. H. C. Simmonds; and *Handbook of Futures Research*, edited by Jib Fowles, two collections of articles, some dealing with this topic.¹⁷
- *Forecasting: An Appraisal for Policy Makers*, by William Ascher. A comprehensive examination of the historical accuracy of predictive forecasts in eg economics, energy, transportation, population, technology, and of the factors associated with predictive accuracy in general.¹⁸

Several other books, periodicals, indexes, and professional societies are useful sources to consult in order to monitor various aspects of this growing field:

- *The Future: A Guide to Information Sources, 2nd Edition* (an encyclopedic compilation of persons, institutions, curricular offerings, etc. as of 1977).¹⁹
- *Networking: The First Report and Directory* (a pioneering handbook on emergent, decentralized modes of organization, including global and futures networks).²⁰
- *Future Survey* (issued every two months and reissued as an annual compilation, this is a concise guide to the recent literature of trends, forecasts, and policy proposals from English language sources).²¹
- *The American Statistical Index*, the *Statistical Reference Index*, the *Social Science Citation Index*, and the *Public Affairs Information Service* (four of many "hard copy" indexes that can be easily accessed in most libraries).
- *Management Contents*, *ABI/Inform*, and various *Predicast* datafiles (these are all computer-based "on-line" indexes that can be accessed through such vendors as the Lockheed Dialog system, available at most research libraries on a "pay as you go" basis, typically costing approximately \$100 per connect-time hour).
- The Education Section of the World Future Society, the International Association for Impact Assessment, and the World Futures Studies Federation (perhaps the principal three professional societies).²²
- The World Future Society (the largest single activity in the futures field—with approximately 30 000 members from 88 nations).²³

Futures literature

There is much literature on the future—in general, on various aspects of it, on methods, and so on. Some literature which has been found useful at the University of Houston at Clear Lake City is listed in Table 1.

Characteristics of “futurists”

There are a variety of ways to characterize the ingredients that make up a good futurist.²⁴ Two particularly insightful lists are reproduced in Tables 2 and 3.

In *The Image of the Future*, Fred Polak, Dutch sociologist of the future, offers yet a third view of what constitutes a food futurist:²⁵

Thinking about the future requires faith and visionary powers, mixed with philosophic detachment, a rich emotional life, and creative fantasy . . . the position here is that bold visionary thinking is in itself the prerequisite for effective social change, even when piecemeal amelioration is involved.

TABLE 2. LEARNING OBJECTIVES FOR A FUTURE-ORIENTED CURRICULUM

<p>Access to information</p> <p>Reading Listening and seeing Direct experiment Libraries and reference books Computerized data-retrieval Data from newspapers, businesses, government agencies, etc. Asking experts Judging reliability Managing information overload</p> <p>Thinking clearly</p> <p>Semantics Propaganda and common fallacies Values clarification Deductive logic Mathematics Analytical problem solving Scientific method Probability and statistics Computer programming General systems Creative problem solving Forecasting and prediction</p> <p>Communicating effectively</p> <p>Speaking informally Public speaking Voice and body language Cultural barriers to communication Formal and informal writing Grammar, syntax, and style Drawing, sketching, still photography, film making, etc Graphic design and layout Outlines, flow-charts, charts, tables, and graphs Organization and editing Handwriting, typing, dictating</p>	<p>Understanding man’s environment</p> <p>Astronomy, physics, and chemistry Geology and physical geography Biology, ecology and ethology Genetics, evolution and population dynamics Fundamentals of modern technology Applied mechanics, optics, and electronics</p> <p>Understanding man and society</p> <p>Human evolution Human physiology Linguistics Cultural anthropology (including history and the humanities) Psychology and social psychology Racism, ethnicity, and xenophobia Government and law (especially US constitutional law) Economics and economic philosophy Changing occupational patterns Education and employment Issues in human survival Prospects for mankind</p> <p>Personal competence</p> <p>Physical grace and coordination Survival training and self-defense Safety, hygiene, nutrition, and sex education Consumer education and personal finance Creative and performing arts Basic interpersonal skills Small group dynamics Management and administration Effective citizen participation Knowledge of best personal learning styles and strategies Moemonics and other learning aids Bio-feedback, meditation, mood control Self-knowledge and self-motivation</p>
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Source: Draper L. Kauffman, Jr. *Teaching the Future*.

TABLE 3. CHARACTERISTICS OF A WORKING FUTURIST

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1. A sense of the dominant, key, or central elements of society—whether political, economic, technical, social or whatever.
 2. A grasp of the trends in society, from the point of view of their continuation and possible disruption from discontinuity, discoveries, invention, crises, or other events.
 3. A willingness to forecast.
 4. A sense of more than one viable, plausible, and complex alternative.
 5. Comfort in dealing with complexity and with no penchant for simplifying it so as to disassociate analysis from practical affairs.
 6. A sense of values of self and others which serves two purposes: a) sorting out the important from the unimportant in making forecasts, and b) as a means of identifying social goals. The latter is particularly valuable in normative forecasting.
 7. Imagination
 8. A theory of social change. This is usually latent, almost always overly simplified; but nevertheless it must be there.
 9. Optimism, otherwise looking to the future is not worth undertaking. Optimism is sometimes direct. Sometimes it is hidden or indirect. Sometimes it is heavily ideological in those movements which are quasi-religious or call for reform in some single dimension.
 10. A sense of history and a willingness to utilize both personal and formal history.

Many futurists and forecasters have gone awry because of the absence of one or another of the above elements.

Source: Joseph F. Coates (personal communication).

Other sources that the author particularly recommends are cited in the notes,²⁶ as well as the UHCLC Studies of the Future *Program Handbook*, and “What ten years of teaching the future have taught me”, by Basil McDermott.²⁷

Of course these views are somewhat idealized, and beyond the means of any single educational program or person to realize fully. Joseph Coates expressed it well in some comments on an earlier draft of this article when he said:

You need some clever way of saying here that to be a futurist one almost has to be a “superperson”—which may not be feasible for most of us. That’s the bad news. The good news is that the futures field is one of the few avenues left today where a professional can be truly holistic—a renaissance person where everything one touches is at least potentially relevant. If nothing else, this can undercut the sense of anomie that afflicts so many in our time.

Avenues for training

Just as there are multiple paths leading to many alternative futures, so too there are many different ways to train and to practice in future-oriented work. For example, one’s training may be in a conventional discipline (eg business administration, economics, psychology or sociology) or in an interdisciplinary field (eg engineering-economic systems, policy analysis, organization development, or peace research), and make futures studies as an additional area of preparation. Or one can concentrate on futures directly, and use studies of the future as a way to organize the study of other areas.²⁸

Futures studies at UHCLC

UHCLC is a relatively new upper-level (junior, senior, and master’s level) institution. Since its first offering of classes in 1974, the University of Houston

System and the UHCLC administration has given strong and continuing support to the building of a comprehensive, interdisciplinary graduate program in studies of the future.²⁹ In marked contrast to conditions frequently found elsewhere, this continuing encouragement and support has enabled the program to evolve, and to teach and apply the emerging tools and results of futures research as they become available. Such adjustments are seen as essential, if futures studies are to keep pace with the changing nature of the field and of society.

When the program first began, there were few precedents for how futures education should be offered. Neither the type of students it would draw nor the type of curriculum it would come to embody were known in any detail. Consequently the initial thrust of the program consisted principally of becoming acquainted with the futurist literature. Gradually, however, it became clear that most students wished to use futures studies for professional purposes, and that without adequate preparation in forecasting, futures research and related methodologies, employment in the futures field would be difficult. To prepare students in such areas, therefore, the character, direction, and goals of the program began to evolve. Thus, in 1979, a program development project was initiated in order to:

- clarify the relationship between the previously dominant 'liberal arts' orientation, and the emerging 'professional futures research' aspects of the program;
- identify future-oriented priorities regarding curriculum, governance, and other key aspects of the program; and
- make specific recommendations for updating and upgrading the program, and to do so as part of a participatory process so that a consensus regarding recommendations should naturally occur.

Following the first phase of the project, the program has stabilized into a pattern of continuing development, with a current enrollment of approximately 40, about one-half attending part-time. All required 'core' courses and the principal futures research electives of the program are offered only after 4:00 pm to enable part-time students with full-time jobs to complete the program.

The program is designed to permit completion of the masters degree in 12 months of full-time study, including both day and night classes. Approximately 10 faculty members from various backgrounds teach the principal courses. Additionally, cooperative arrangements with the schools of Professional Education, Human Sciences and Humanities, and Business and Public Administration, make it possible for students to formulate a variety of approaches to future-oriented preparation, whether or not they are formally matriculated in the Studies of the Future Program. Most of these approaches are oriented toward one of the following objectives:

- Preparation for pursuit of the PhD in a relevant area for in-depth work involving futures-research skills.
- Professional employment as a futures-researcher, forecaster, planner, or policy analyst in business, government, "consulting/think tanks", or action-oriented public interest groups.

- Teaching and/or educational planning and administration.
- Journalistic involvement in futures studies.
- Intellectual and/or aesthetic enjoyment of futures studies.

A typical “model curriculum” for one of the above directions of study is shown in Table 4. This and all other plans of study leading to the Master of Science degree in Studies of the Future require a minimum of 36 credit hours, including four required ‘core courses’ (outlined in Table 5), and a six-unit “Master’s Option”, consisting of a thesis, a project, or an internship. The degree of Master of Science in Education with specialization in Futures Studies is also offered.

Although the finding of a good job as an entry-level professional in the futures

TABLE 4. PRE-PhD/FUTURES RESEARCH: MODEL PROGRAM

Social Science Preparatory Courses (if needed) 0–15 hours	MGMT 5431—Quantitative Techniques for Managers or GOVT 6331—Research Techniques in Public Policy
ANTH 3131—Cultural Anthropology	Relevant electives SOCI 6336—World Futures SOCI 6335—Technology & Ethics in the Future GOVT 6131—Science, Technology & Public Policy SOCI 6338—Strategic Planning SOCI 6431—Demographic Projections GOVT 5332—Public Policy & Analysis ECON 5135—Resources in the Future ECON 6331—Economic Policy PSYC 5435—Visionary Futures EDUC 5531—Education/Societal Futures EDUC 5931—Futures Teaching Methodologies
PSYC 4131—Social Psychology	
SOCI 3531—Political Sociology	
ECON 4532—International Economics	
Futures Core Courses (mandatory) 12 hours	
SOCI 5432—Study of the Future	
SOCI 6734—Futures Research and Forecasting: I	
SOCI 6733—Using Systems Approaches	
SOCI 6731—Seminar in Futures Studies	
Statistics and analysis (2–3 classes) 6–9 hours	
STAT 5031—Data Analysis Techniques or SOCI 5065—Research Design & Statistical Measurement	
SOCI 6735—Futures Research and Forecasting: II	
or SOCI 5434—Technology Assessment & Impact Analysis	
	Masters Thesis 6 hours
	Total: 33–54 hours

TABLE 5. CORE COURSES OF THE UHCLC STUDIES OF THE FUTURE PROGRAM

The Study of the Future History and paradigms of the field of futures studies Overview of the philosophies and perspectives of different futurists Introduction to the major schools of thought and the central activities that comprise the field Introduction to the key topics of concern to futurists—e.g., the sustainability of society, the impact of technology, a new international economic order, etc. Exercises in alternative futures thinking.	Using Systems Approaches Overview of systems theory and systems thinking Introduction to counter-intuitive, non-analytical aspects of systems Selected applications of the systems approach in education, business and government Dissection of a complex systems model
Futures Research and Forecasting: I Problem solving and creative thinking Information retrieval Scientific analysis and justification Futures forecasting techniques Selected case studies in forecasting	Seminar in Futures Studies Survey of emerging topics in futures Critical assessment of the field In-depth analysis of an important current issue in futures Overview of personal and professional styles and strategies Discussion of the ethics of practising futurism Completion of an integrative project

field is usually difficult, most UHCLC graduates who have prepared themselves with futures research skills (ie those involving forecasting, policy analysis, strategic planning, technology assessment, trend monitoring, “issues management”, etc), and who have used the assistance that UHCLC has available to develop skills in technical writing, resumé preparation, and interviewing, have been remarkably successful. Students interested in professional employment usually take the internship option, and many such opportunities exist, principally in Houston and in Washington, DC. Occasionally they include a stipend.

Strategic planning for Studies of the Future

Before describing the strategic planning and program development project that provided a turning point in the history of the program, it may be helpful to explain the ‘working image’ of futures studies and of future-oriented policy development that have influenced the UHCLC program.³⁰

First, futures studies should have at least an implicit concern for human needs in an ecological context. Second, since people have very different images of what sorts of futures are worth consideration, we believe that studies of the future should be pluralistic in substance, procedures and conceptions, and diverse in values and objectives. Regarding the practical application of futures studies in society, we assume that social institutions should be periodically revitalized (or at least assessed) if they are to avoid obsolescence; that all social policies (and especially those affecting education) should be “anticipatory”, ie focusing on the needs and visions of the future at least as much as they are “reactive” to the preoccupations of the past.

We also believe that planning for the future should reflect the needs and aspirations of those most affected by such plans, not simply the views of those currently with power and control. And, although most studies of the future are utilitarian in emphasis (helping to make better plans and decisions in the present), they should be undertaken for their own sake as well as in the pursuit of any other art.

When we thus decided to assess and update the graduate program in Studies of the Future we understandably came to explore and implement this normative image. Specifically we initiated an on-going strategic planning and program development project, beginning with the teaching of a semester-long course entitled “Future-Oriented Organization Development”.

This course was essentially a laboratory practicum in futures research, where our students helped us apply the methods we teach, as might be relevant for this task—principally, the use of a systems approach in problem solving, various organization development techniques for facilitating future-oriented institutional change, and the forecasting of relevant issues and concerns.

Tables 6 and 7, and Figure 1, present the essential outline of the project methodology. These were prepared and distributed to all potential participants in the practicum class and to an ad hoc Program Development Committee of student/faculty/administration representatives whose function was to advise and oversee the activities of the class.

The outcomes of the semester-long project, which set in motion a continuing

TABLE 6 PROSPECTUS FOR PRACTICUM COURSE

Course Title: Future-Oriented Organization Development.

Description: This will be a practicum in futures research, ie an experience of working in a future-oriented, interdisciplinary task group with a well-defined problem, a real or imagined client, and attention given to task group dynamics as well as to the production of useful results.

Objectives: The objectives will be two-fold:

- (1) To give students an introduction to the complex art of organization development using futures research skills;
- (2) To improve the studies of the future program at UHCLC.

Problem Focus: The client of this project will be the UHCLC Studies of the Future Program as represented primarily by the Faculty Program Development Sub-committee, and secondarily by all faculty and students (past and present) in the program. The problem or goal will be to assess the state of the Studies of the Future

Program in light of current knowledge about the future. That is, to ask such questions as:

- (1) How is the program doing at this time in its history? (ie what strengths and weaknesses stand out in relation to the program's guiding vision, the hopes and fears of the faculty and students and administration).
- (2) What information about the future should be reflected in recommendations for program redesign? (ie what new job opportunities for futurists are likely to open up; what new methodologies and key topical issues are likely to emerge; how should these be included in a "future-responsive" program).
- (3) What changes should be recommended and how should their implementation be approached?

Required Text: G. and R. Lippett, *The Consulting Process in Action*.

Recommended Text: L. Bass, *Management by Task Force: A Manual on the Operation of Interdisciplinary Teams*.

TABLE 7. METHOD OF APPROACH—SUMMARY II

Main tasks			
1. Do survey of	{ employers graduates students faculty in other programs }	regarding	{ important skill areas emerging topics of importance miscellaneous suggestions } that should be considered for incorporation into curriculum.
2. Do forecast of	{ job availability for futurists emerging topics of importance }	contingent on	{ 1. economic success 2. economic distress 3. cultural transform 4. common to futures 1-3 } future contexts
3. Do brief history of program regarding	{ goals structure students faculty roles and responsibilities of key actors }	and outlook of current faculty regarding	{ hopes fears expectations suggestions (re: #1 above) }
4. List	{ potential employers potential internship sites }	categorized by	{ geographical area type of organization type of "job" (ie model program) }
5. Nominate sets of key	{ skill areas attitudes experiences }	and modes of organizing them, focused on	{ specific core courses model program areas interest group concerns program as a whole } around which recommendation would be organized.
6. Consider and pursue "other"	{ questions problems opportunities suggestions }		that relate to overall purpose.
7. Establish final report formats and protocol for documenting/draft writing of provisional results, and product final report.			

process of program development activities, were surprisingly successful—particularly since much of our work involved “internal consulting” (always a politically sensitive approach), and was carried out by relatively inexperienced students who learned by doing. All but one of 37 recommendations for program and modification were ratified by the faculty at large at the end of the Spring 1980 semester; and progress in implementing them was evaluated a year later.

A *Final Report* contains the full documentation of the methods and results (including selected ‘process comments’) of this project. A second document, the UHCLC Studies of the Future *Program Handbook*, briefly describes the mission, basic premises, and overriding concerns of the program and it outlines major administrative and curricular policies and procedures.³¹

Current and emerging characteristics of futures studies

One of the principal tasks of the strategic planning and program development project was an investigation of three broad areas:

- (1) societal concerns that are most likely to emerge during the next 10 years;
- (2) dominant methods and skills required to: (a) inquire successfully into topics that are raised by the above concerns; and (b) act on the results of that inquiry; and
- (3) the types of present and future jobs that will require the services of numerous future-oriented professionals, including self-employment.

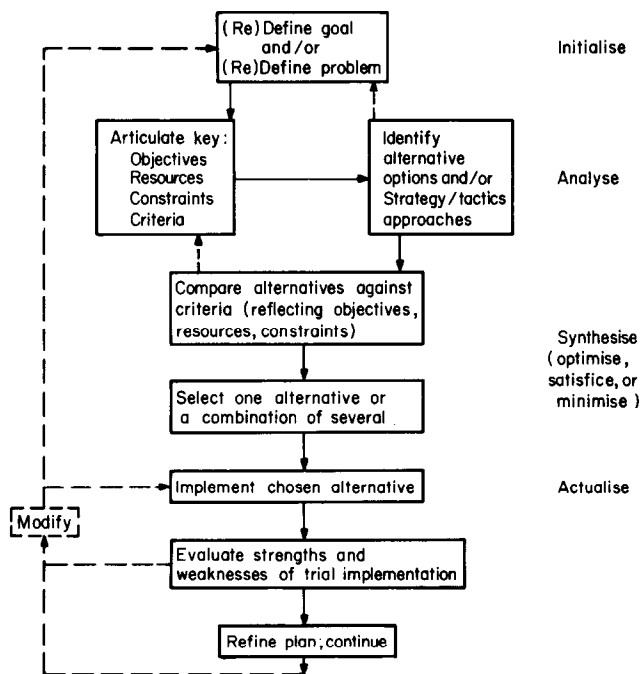


Figure 1. Project methodology

Thus, in addition to researching the kinds of information mentioned at the beginning of this article, a central inquiry of our project involved the examination of relevant literature sources and an informal survey of selected futures researchers, all leading to the identification of those topics, methods and methodologies, skills, and jobs, that we generally judged most significant in the futures field—both at present and as most likely to emerge as significant within the next ten or so years.

Tables 8 and 9 summarize these estimates in a way that has proven useful for purposes of curriculum planning and for teaching about the future of the futures field. As substantive results, they obviously represent a myriad of assumptions, hypotheses, and conclusions that are beyond the scope of this article. Several caveats and observations, however, may help their interpretation.

The first caveat is that, aside from the few exceptions noted below, these lists were generated under the assumption of a 'least surprises' future for the society at large (the scope being principally, but not exclusively, the United States in the context of the entire planet), and for the futures field in particular.³² A second is that the items in these tables are obviously not the only ones that could be justifiably included. The hope, however, is that the overall patterns are a reasonably accurate representation of current thinking in the field. Certainly any futures studies program that attends to all of these priority concerns and their interactions would go far toward filling in gaps that would otherwise exist in their offerings.

Several items may strike some readers as belonging in the category opposite to where they appear. It is important to note that one person's future is often another person's past. To illustrate, one person leaving a session on 'The Emergent Paradigm' at a recent General Assembly of the World Future Society was overheard complaining about all the confusing new jargon; the other complained that everything she had heard was 'old hat'. This is to say that when we list the status of different characteristics as 'current' or 'emerging', the lists should be interpreted as essentially field-wide tendencies.

Other items are listed as being significant in both the current and emerging time frames. Mathematical modeling, for instance, has been of enormous significance as a major methodology of the field but, due to costs involved, has been generally available only at major research centers. With the advent of high capacity, high speed, low cost microcomputers and increasingly good systems for development and distribution of software, it is likely that computer-based forecasting and modeling packages, having considerable sophistication (but nevertheless being 'user friendly') will become affordable to many more people within the next 10 years.

Perhaps the largest caveat is that various uncertainties may be more important as issues for the field than are most of the items cited on these lists. One such uncertainty lies behind the question 'how will the academic community, the leaders of institutions, and the lay public respond to the growing contributions that futurists offer them?' The relevance of some items may be little more than academic unless the futures field attains considerably more credibility with the above audiences than it is thought to have at present.

If most colleges and universities continue to insist on traditional inquiry methodologies as an essential prerequisite for academic legitimacy, and if

TABLE 8. ITEMS OF IMPORTANCE IN FUTURES STUDIES

Present	Emerging
<p>substantive topics Population/demography Energy Education Economics Technology/technology transfer Resource allocation Leisure/entertainment Ecological degradation Changing sex roles Transformational futures Appropriate technology Transportation Values/lifestyles Agriculture/food Communications/electronics/microprocessor "revolution" Policy process Future problems/opportunities Interactions among the above</p> <p>General Approaches and/or Methods of Inquiry Alternative futures/scenarios Impact assessment Issue identification/monitoring/forecasting Systems analysis/theory Systems-oriented project management Time-series forecasting Trend analysis/assessment Simulation/modeling Long-range planning Policy analysis Survey research (including Delphi)</p> <p>Skills not specifically methods Information retrieval "Number sense" Analysis and synthesis Spoken/written/graphic communications Career development (interviewing, resumé writing, etc.)</p>	<p>Sustainability of society Geopolitics War/militaristics/peace Global resource allocation Appropriate methodology Biological engineering Holistic and behavioral medicine Consciousness research Reconstructionist models of education Weather/climate NIEO—New international economic order Development alternatives Specific transformational futures Nonlinear transformation theory (Prigogine, Thom, others) Paradigm/value change Alternative decisionmaking processes and systems "Deindustrialization" of America</p> <p>Simulation modeling Strategic planning/management Vulnerability analysis Tele-/computer-assisted techniques and systems Anticipatory democracy/citizen-participation techniques Investigative reporting Decision analytic planning Intuitive/visionary forecasting and impact assessment Bayesian Statistics (of subjective probabilities)</p> <p>Explaining the futures field Networking Entrepreneurial problem solving Conflict management/resolution Social systems design Flexible use of state-specific skills Survival</p>

TABLE 9. EMPLOYMENT OPPORTUNITIES FOR FUTURISTS

Present	Emerging
<p>In business Forecasting Public relations</p> <p>In government Planning and program management</p> <p>Public and/or private interests groups Monitoring and issues management Social networking (task forces, workshops, institutes, switchboards, etc)</p> <p>Education Teaching in futures and another traditional field Educational administration</p> <p>Other areas "Think tanks" (contract research) Consulting</p>	<p>Strategic planning Issues management Simulation modeling</p> <p>Impact assessment</p> <p>Future-oriented lobbying</p> <p>Teaching interdisciplinary approaches, including futures Strategic planning</p> <p>Social networking with other sectors Journalistic and other mass media involvement</p>

societal decision mechanisms continue to be caught up in the near-term politics of interest-group expedience, and if much of the futures field continues to talk more with itself than with its espoused audiences and in terms that those audiences find uninteresting or irrelevant, then one might conclude that the future credibility of the futures field is limited—at best. If these audiences come to see the ‘futures message’ as something they want and can apply in practical ways, however, then the future could become quite different.³³

A second uncertainty concerns the types and amounts of resources that will be available, both to academic futures studies and to the futures field generally. This is clearly related to the degree and the type of acceptance that the field receives. Although available funds may appear quite dismal to many practitioners, this may reflect a lack of good marketing more than a shortage of resources.

Still another uncertainty concerns the possibility of war—whether on a large or a small scale, whether singly or in multiple conflicts occurring simultaneously. Just how futures studies might affect the probability and conduct of war, and just how they might in turn be affected by the occurrence of serious warfare, seems something of a taboo topic. This is despite the fact that most serious students of the future seem to agree that war is increasingly probable, and that war would significantly change many forecasts.

Methodological guidelines for ‘interesting times’

Perhaps the greatest uncertainty facing the futures field is reminiscent of an ancient Chinese curse, ‘May you live in interesting times’. This is the uncertainty that is associated with three related issues: what has come to be termed ‘the turbulent environment for forecasting and planning’; the complex hypotheses regarding societal ‘transformation’; and troubling questions about the very sustainability of human societies.

Because of the difficulties that these topics present for education and practice in the futures field, some additional observations seem in order.

The question whether some sort of fundamental transformation is likely and/or desirable in conceptions, values, policies and even institutions that are dominant in the USA, other industrialized countries, and in ‘third world’ societies, is increasingly an issue among futurists.³⁴ Primarily for this reason, and to avoid the near-sighted blindspots that tend to accompany surprise-free forecasts, a significant fraction of the items listed above as ‘Emerging’ were entered with the possibility of some sort of societal transformation and/or educational reconstruction in mind.

But simply identifying such items as important for study is quite a different matter than actually trying to teach and apply topics, methods, and skills that help one grapple with transformational change, societal turbulence, and uncertainty. The experience of doing so leads to a recognition that ‘being a futurist in interesting times’ requires a different approach to education and practice than traditional school preparation. Key aspects of this altered orientation in futures studies at UHCLC are as follows:

Curiosity about patterns of change, explanation, and emergence. A defining characteristic of ‘interesting times’ is that conventional theories, explanations,

and predictions tend to work poorly. In principle, therefore, the professional futurist cannot expect to find satisfactory ready made answers in the literature. Of central importance is the development of a healthy curiosity about:

- how things work,
- the major patterns of change that typify human history,
- how the human community believes it comes to understand such things,
- how the human community believes it comes to understand such things,
- how both patterns of change and of explanation may be changing, and
- how one's self as a unique individual can learn to learn about such things most satisfactorily.

Although generally self-taught, expert guidance in the process can be most helpful;

'Gut feeling' for numbers and social change. Many experts emphasize the importance of statistical competence in futures research, forecasting, and studies of social change. Of equal, or possibly greater, importance is the ability to discern patterns of meaning in 'simple' quantitative data (eg population pyramids, compound growth rates, or index numbers), to translate these patterns into accurate qualitative images of what the numbers represent, and to assess the resulting perspective regarding implications for planning and change.

Finding facts fast and tooling up quickly. In principle, futurists cannot know or have subject mastery over all the topics they will need in their work. Thus an essential skill is: finding facts fast, (the title phrase of a useful little guidebook by Alden Todd³⁵). At a minimum, finding 'futures facts' fast requires a knowledge of how to structure inquiry in several stages—revising one's objectives as necessary in the process—and having a working knowledge of literature search aids (as noted earlier); how to quickly identify and get information from knowledgeable persons in various walks of life (even if one doesn't know the kinds of expertise needed in advance); and building up a background store of current information about the future by periodically scanning one or more monitoring aids (eg *Future Survey* or various proprietary offerings).

Tolerating ambiguity; making sense of muddles; coping with information overload. Although one must often be able to tool up effectively and arrive at an accurate quantitative sense of complex situations in a relatively short time, it is equally true that simplistic answers built upon a few superficial understandings are an inadequate base for management in a closely-coupled, turbulent society.³⁶ The futurist must also be willing and able to ferret productive essentials out of muddles, to cope with information overload, to estimate needed data when otherwise not available, and to synthesize information from diverse sources whose relationship is often quite ambiguous. (It certainly helps to have a healthy amount of ego strength!)

Complementary approaches and perspectives. It is a truism that no adequate theory of social change exists to guide the rational/analytic methodologies of the futures field. Instead, most futurists seem to rely on implicit models or images of social dynamics based on their past experience.

To avoid excessive provincialism and bias, both cultural and methodological, systematic adoption of complementary approaches and perspectives is therefore desirable. This may include both rational/analytic and intuitive/visionary

modes of exploration; or the adoption of technical, organizational, personal, and other perspectives for purposes of inquiry and analysis; and it may include simulation exercises which use the point of view of contending interest groups or actors.³⁷ Such simulations are especially helpful if they include roles representing different system levels (eg individual, group, regional, national or global; worker, supervisor, executive; or student, faculty, administration). Also of great value is role playing that requires participants to think and act in new ways; particularly enlightening are those exercises requiring the use of different values or ideologies.

Experimental outlook with a cybernetic view of error. Donald Michael has convincingly argued that effective long-range socially responsive planning is not often feasible in turbulent times—if only because it requires that people be continually willing to reshape the boundaries of their ideas and institutions, so as to mirror changing circumstances around them.³⁸ To do this within the mind-set of ‘manipulative rationality’ that so deeply characterizes Western industrialized culture seems to produce more anxiety than most people are willing to bear.

In such situations, an especially helpful guideline is what Michael has called ‘embracing of error’, which means, simply, to view the feedback from unsuccessful actions as indispensable information for enlightened management, rather than as evidence of incompetence that should be hidden if possible. Incorporation of this and related guidelines into futures studies is not always easy, for it requires the creation of an atmosphere of sufficient trust that both ‘teachers’ and ‘students’ can afford to experiment with new approaches and behaviors, sometimes reversing their traditional roles in order to learn from each other what is most important in a given situation.

Discretion regarding ideas whose time has not come. Almost by definition, the main business of futurists is working with ideas that are not yet well accepted—either by opinion leaders or the masses of people. The reception of such ideas can range from simple agreement or disagreement to active support or outrage, depending on the specific audience. Although virtually all methodological writers in the futures field advocate the full disclosure of ‘underlying assumptions’ when communicating a forecast or the results of a futures research study, this idealistic injunction is seldom practised.

Often giving a fairly extensive context (including purpose, resources, constraints, data sources, research methods, and significant assumptions, uncertainties, and caveats) can encourage potentially hostile readers to be more thoughtful and receptive. But considerable discretion is often needed both in the writing of such contextual factors, and in deciding what factors to include.

Concluding observations

In conversations with futurists at various conferences and conventions, the author has found that most people’s evaluations of the futures field have more to do with what they think it should do but has not done, than what it has accomplished to date. Political activists accuse the field of being too insensitive to the *realpolitik* of the policy process in all sectors of society. Those involved in international concerns criticize the excessive provincialism that pervades most

futures studies and writing—despite our professional objectives embracing holism and a planetary orientation. Many in corporate life find futurists to be generally anti-business. And so forth. Meanwhile, future-oriented approaches (and jargon) are increasingly making headway in all sectors of society. So clearly we must be doing something right.

A central question, however, is whether the futures field should aspire to be a professional specialty. Some leaders in the field think it should. Earl Joseph, Staff Futurist at Sperry Rand Corporation, for instance, has gone so far as to suggest that the services of professional—and legally certified—futurists should be required by law in the formulation of public policies, much as engineers, architects, and lawyers are presently obliged. Others, however, feel that the futures field should not aspire to become yet another ‘professional turf’, but should instead endeavour to help other intellectual disciplines and management activities become more future-oriented in their own right.³⁹

Without taking sides, one may observe that futures studies are intrinsically interdisciplinary. Furthermore, most academic institutions are not equipped (either structurally or attitudinally) to support interdisciplinarity. For this reason, one might argue that, if the futures field is to become well established, there is need for a professional association or network that would actively build a viable tradition of interdisciplinary inquiry that is future-oriented and policy relevant—whether or not it is called ‘futurism’. By so doing, higher intellectual and professional standards could be promoted, and the field could vastly increase its already significant contribution to the continuing evolution of humankind.

Notes and references

1. The article is largely based on an earlier working paper, “Alternative Futures for Futures Studies” by O. W. Markley and Thomas J. Hurley, III, and on a program development project described herein. Although more people contributed to these observations than can be acknowledged, the following deserve special mention: students in the Spring, 1980 practicum in futures research class (Marilyn Black, Gavin Clabaugh, Thomas Hurley, Aksel Sarid, Carolyn Ulrickson, Mary Jane White); members of the Program Development Committee (Jim Bowman, Howard Eisner, Thomas McFaul, Aksel Sarid); other faculty of the UHCLC Studies of the Future Program (Peter Bishop, James Coomer, Jib Fowles, Fred Kierstead, Craig Oettinger, Robert Wegmann); and other colleagues who provided especially helpful comments and advice (Roy Amara, Wayne Boucher, Elise Boulding, Joseph Coates, Alexander Christakis, Willis Harman, Hazel Henderson, Joseph Martino). Finally, particular gratitude is extended to Professor Marco Portales for expert editorial advice.
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5. Jib Fowles, *Handbook of Futures Research* (Westport, CT, Greenwood Press, 1978).
6. Herman Kahn, *World Economic Development: 1979 and Beyond* (New York, Morrow, 1979).
7. *Global 2000 Report to the President Volume I* (Summary), *Volume II* (Technical Report), *Volume III* (Technical Documentation), by Gerald Barney (Study Director) (Washington DC, US Government Printing Office, 1981; also reprinted by various commercial publishers); and Robert Heilbroner, *An Inquiry into the Human Prospect Updated and Reconsidered for the 1980s* (New York, Norton, 1980).

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9. Roy Amara, "The Futures Field: Searching for Definitions; How to Tell Good Work from Bad; Which Direction Now", *Futurist*, 15; February 1981, pages 25–29; April, pages 63–71; June, pages 42–46.
10. Alan Porter, Frederick Rossini, Stanley Carpenter, with Ronal Larson, and Jeffrey Tiller, *A Guidebook for Technology Assessment and Impact Analysis* (New York, North Holland, 1980).
11. These include: Draper Kauffman, Jr, *Teaching the Future: A Guide to Future-Oriented Education* (Palm Springs, CA, 1976)—a rich source of good ideas, resources, and advice. J. Scott Armstrong, *Long Range Forecasting: From Crystal Ball to Computer* (New York, Wiley, 1978)—very good advice on selecting appropriate forecasting methodology and on getting it implemented successfully; contains perhaps the only comprehensive review of the research literature relating to predictive forecasting. Draper Kauffman, Jr, *Systems I: An Introduction to Systems Thinking*, and *Systems II: Human Systems* (Minneapolis, Future Systems Inc, 1980 and 1981, respectively)—two short introductions to holistic, systems-oriented thinking featuring a popular writing style and copious illustrations. Rochelle O'Conner, *Planning under Uncertainty: Multiple Scenarios and Contingency Planning* (New York, The Conference Board, Report No. 741, 1978)—a good concise overview of how various companies do strategic planning. James Brown, *This Business of Issues: Coping with the Company's Environments* (New York, The Conference Board, Report No. 758, 1979)—the best single work on monitoring and issues management. George Steinger, *Strategic Planning: What Every Manager Must Know* (New York, The Free Press, 1979)—one of the more comprehensive, yet practical, texts on strategic planning. Robert Nakamura and Frank Smallwood, *The Politics of Policy Implementation* (New York, St. Martins, 1980)—one of the few available books to portray the US-style policy process in a style suitable for students of futures studies. Dennis Pirages, *Global Ecopolitics: The New Context for International Relations* (North Scituate, MA, Duxbury, 1978)—an exploration of how a "new paradigm" policy process might emerge, function, and contribute to the transition to sustainable societies.
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16. Roger Evered, "Measuring interest in the future", *Futures*, 9, 1977, pages 285–302.
17. Harold Linstone and W. H. C. Simmonds, eds. *Futures Research: New Directions* (Reading, MA, Addison-Wesley, 1977); Jib Fowles, reference 5.
18. William Ascher, *Forecasting: An Appraisal for Policy Makers and Planners* (Baltimore, Johns Hopkins University Press, 1978).
19. World Future Society, *The Future: A Guide to Information Sources, 2nd Edition* (Washington DC, World Future Society, 1979).
20. Jessica Lipnack and Jeffrey Stamps, *Networking: The First Report and Directory* (Garden City, NY, Doubleday, 1982).
21. Michael Marien, ed., *Future Survey: A Guide to the Recent Literature of Trends, Forecasts, and Policy Proposals* (Washington DC, World Future Society, bimonthly periodical and annual updates since 1979.)
22. For information about membership, activities, and publications, write to: Education Section, World Future Society, c/o Educational Futures, Box 26, UHCLC, 2700 Bay Area Blvd., Houston TX 77058, USA; The International Association for Impact Assessment, c/o F. A. Rossini, Technology and Science Program, Georgia Tech, Atlanta GA, 30332, USA; World Futures Studies Federation, PO Box 6710, S-113 85, Stockholm, Sweden.
23. For information, write to: World Future Society, P.O. Box 30369, Bethesda Branch, Washington DC; or phone 301/656-8274.

24. Although many professionals dislike the world *futurist* as a label, it appears to be the term most frequently used by those who identify themselves as part of the futures field. It is therefore used here—albeit reluctantly.
25. Fred Polak, *The Image of the Future*, translated and abridged by Elise Boulding (New York, Elsevier, 1973).
26. See “The Objectives of Future-Oriented Policy Research”, pages 298–409 in Herman Kahn and Anthony Wiener, *The Year 2000: A Framework for Speculation on the next Thirty-Three Years* (New York, Macmillan, 1967); Tables 8.1, 8.2, and 8.3 (pages 492–494) in Herman Kahn, *World Economic Development: 1979 and Beyond* (New York, Morrow, 1979); Chapter 5, “Characteristics of an Adequate Image of Humankind”, in O. W. Markley and Willis Harman, eds., *Changing Images of Man* (London, Pergamon, 1982).
27. UHCLC Studies of the Future Program, *Program Handbook* (Houston, University of Houston at Clear Lake City, spring 1980); W. Basil McDermott, “What Ten Years of Teaching the Future Have Taught Me”, in Fred Kierstead, Jim Bowman, and Christopher Dede, eds., *Educational Futures: Sourcebook I, Selections From the First Conference of the Education Section, World Future Society* (Washington DC, World Future Society, 1979).
28. A lengthy listing of educational institutions offering future-oriented training is contained in *The Future: A Guide to Information Sources*, reference 19.
29. For information, write to Chairperson, Studies of the Future Program, University of Houston at Clear Lake City, 2700 Bay Area Blvd., Houston TX 77058, USA, or call 713/488-7170.
30. Although strategic planning concepts and methods were self-consciously used in this project, the term “strategic planning” was itself not used, so as to avoid incurring institutional resistance that might have otherwise occurred.
31. Studies of the Future Program, *Final Report: A Project for Program Development in Studies of the Future, and Program Handbook* (Houston, University of Houston at Clear Lake City, Spring, 1980 and May, 1981, respectively).
32. Perceptive readers will notice that a predictive forecast is presented in Tables 8 and 9, rather than the alternative futures forecast that one would expect given the wording of Task 2, Table 7. To our surprise, the items in Tables 9 and 10 seemed quite robust in relation to alternate future scenarios and to contingent assumptions based on specific schools of thought. For instance, what should constitute “appropriate” technology may tend to be different in each of several different alternate futures, and similarly different in the views of persons identified as “positive” versus “negative” extrapolationists. But in each case, there would probably be agreement that appropriate technology has considerable significance as a substantive topic for persons involved in serious futures studies.
33. Michael Marien has written a provocative article on this theme: “The ‘Transformation’ as sandbox syndrome”, *Association for Humanistic Psychology Newsletter*, October 1982, pages 31–32.
34. Readers unfamiliar with current thinking about societal transformation may find it useful to imagine a medium- to long-term alternative future scenario involving change on the order of a “Copernican revolution” in science, a “protestant reformation” in religion, and an “industrial revolution” in the productive economy, all happening simultaneously. Related themes have been explored by many authors, including Peter Drucker, *The Age of Discontinuity: Guidelines to Our Changing Society* (New York, Harper and Row, 1969); Sir Geoffrey Vickers, *Freedom in a Rocking Boat: Changing Values in an Unstable Society* (London, Penguin, 1970); O. W. Markley, Willis Harman and colleagues, *Changing Images of Man*, a 1974 SRI report recently republished (London, Pergamon, 1982); Jim Bowman, Fred Kierstead, Chris Dede and John Pulliam, *The Far Side of the Future: Social Problems and Educational Reconstruction* (Washington DC, World Future Society, 1978); Alvin Toffler, *The Third Wave* (New York, Morrow, 1980); and most recently, John Naisbitt, *Megatrends: Ten New Directions Transforming Our Lives* (New York, Warner, 1982).
35. Alden Todd, *Finding Facts Fast: How to Find Out What You Want and Need to Know*, 2nd edition (Berkeley, CA, 10 Speed Press, 1979).
36. By “closely-coupled” is meant the phenomena through which a change in one sector of society brings impacts in many other sectors—often quickly, and in unanticipated ways.
37. See, for example: O. W. Markley, “Intuitive impact assessment: a systematic procedure for imagistic exploration of contingent futures”, *International Association for Impact Assessment*

- Bulletin*, 1, Fall 1981, pages 42–47; Harold Linstone *et al*, “The multiple perspective concept: with applications to technology assessment and other decision areas”, *Technological Forecasting and Social Change*, 20, 1981, pages 275–325; a “Methodological Comment Involving Three Representative Views of Social Reality”, by John Reuyl, Willis Harman and colleagues in *Solar Energy in America’s Future: A Preliminary Assessment*, 2nd edition (Menlo Park, CA, Stanford Research Institute, March, 1977); and Fannie and George Shaftel, *Role-Playing for Social Values* (Englewood Cliffs, NJ, Prentice-Hall, 1967); Ken Jones, *Simulations: A Handbook for Teachers* (New York, Nichols, 1980); Robert and Anne Horn, eds., *The Guide to Simulations-Games for Education and Training* (Beverly Hills, CA, Sage, 1980).
38. Donald Michael, *On Learning to Plan—and Planning to Learn: The Social Psychology of Changing Toward Future-Responsive Societal Learning* (San Francisco, CA, Jossey-Bass, 1973). Also of great relevance is Peter Drucker’s most recent book, *Managing in Turbulent Times* (New York, Harper and Row, 1980).
 39. Roy Amara has suggested that there is a strong need for “a science of complexity and change”, and that the futures field is but one of six possible components of such a science. The other five which he lists are systems engineering, operations research, systems analysis, decision analysis, and policy analysis. Some would even question whether futures studies can properly be thought of as science. In the proceedings of a recent symposium, *Future Challenges of Management Education*, by Richard Carter (New York, Praeger, 1981, page 140), this view was expressed: “The assertion that management [or future studies] is a science in the same sense that physics is a science deserves to be seriously questioned. Isn’t it truer to say that management is to science as a bridge is to civil engineering, or a nuclear reactor to physics? We could understand management better if we considered it engineerable, in the sense that a large number of relevant disciplines, like a Ballantine sign, interact—each contributing a partial explanation to the emerging whole.