Reductionism or layered complexity?
The futures of futures studies

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Abstract

Futures studies is likely to evolve through changes in five areas. They are: (1) forecasting to anticipatory action learning; (2) reductionist to complex; (3) horizontal to vertical; (4) from short-term empiricist research to the return of long-term history, including grand narratives; and (5) scenario development to moral futures. © 2002 Elsevier Science Ltd. All rights reserved.

1. Introduction

Five factors are decisive in understanding the futures of futures studies. These factors occupy knowledge fault lines, areas of creative tension and deep politics. How they play themselves out will largely define the futures of futures studies. While one can infer likely trajectories, it is yet unclear, whether reductionism (as emerging from the genetic discourse) or layered complexity (as emerging from the postcolonial multicultural discourse) will become the hegemonic paradigm. Similarly, it is unclear whether futures studies will become defined by the strategic discourse (in terms of using scenarios to clarify alternatives and gain competitive advantage over others) or the moral discourse (concerned with tapping desired visions to create ethical futures).

The context of these factors must be placed within a historical and conceptual framework. Modern futures studies has gone through a range of phases and can be divided as such. For Masini and Linstone these have been the technical (issues of nuclear war, technology and policy impact, and the details of forecasting methodology), the organizational (more effective, learning organizations) and the

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personal (inner transformation, the ecological movement) [1]. Amara's model of the nature of futures studies is perhaps the most famous and divided into: the preferred, probable and possible [2]. Clement Bezold adds the plausible.[1] In my work, I have divided the field into three stages and approaches. The empirical–predictive (concerned with forecasting the future), the interpretive–cultural (concerned with the meanings we give to data and their cultural boundedness) and the critical–poststructural (concerned with what is missing in any nomination of the future) [3]. Zia Sardar has focused more on the centrality of power, how the field has been colonized by modernist-Western classifications of knowledge [4]. Most recent has been Wendell Bell's effort to place futures studies within the epistemological school of critical realism [5] and Richard Slaughter's effort to create an evolving knowledge base of the field [6].

The evolution of the field—these classifications above—mirror conceptual challenges in the social sciences, although perhaps leading them by a few years. Futures studies can lead other fields because its interests in various knowledge and disciplinary commitments are softer, there are far fewer academic turf wars in futures studies. This is positive in that futures studies remains ahead of the curve, as it should, but negative in that legitimacy from the broader academic continues to remain problematic.

2. Forecasting to anticipatory action learning

The first factor shaping the future of the field is the move from single point forecasting (accurate and precise predictions) to scenario planning (alternative futures) to foresight (institutional capacity building) to creating a future-oriented organization, a learning/knowledge organization. Single point forecasting was popular when the future was considered knowable, when uncertainty was not considered decisive. However, with the increased rapidity of change as well as epistemological debates about the nature of knowing, living with uncertain futures instead of creating a certain world has become far more important. Scenario planning has largely developed through the work of Peter Schwartz and others in the Global Business Network [7]. The idea of foresight as a central defining concept has developed primarily through the scholarship of Richard Slaughter [8,9]. The most recent future-oriented organization perspective, while inclusive of the above approaches, draws from the ecological, action learning, postcolonial, spiritual and cybernetic discourses. These models favor participatory, interactive, knowledge and transcendent-based associations. This new perspective is concerned with using the future to create multicultural, intelligent and inspired organizations, that is, organizations that are reflexive of how current policy decisions impact future generations and how the conscious and unconscious image of the future guides the organization (or nation).

For futurists desiring to be on the cutting edge, this means ensuring that futures

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[1] Institute for Alternative Futures. Washington DC. www.altfutures.com

studies is not seen as synonymous with scenario planning, now a common tool of strategic planners and forecasters all over the world. This means moving from single point forecasting (getting it right) to alternative futures (contouring the unknown) to being engaged in mutually reinforcing and referencing foresight methods (capacity building) to a learning organization (creatively meeting inner and external challenges together). Essentially this is moving from forecasting to anticipatory action learning.

While action learning[2] is focused on the pedagogy of "questioning"—why we doing things a certain way; who benefits from them; what are our basic assumptions—and thus can lead to increased organizational efficiency and effectiveness, the future is rarely questioned. Action researchers and activists as well as organizational managers and consultants ask questions of the factors of production, of the product, of the process, of the leadership and of the worldview, of the politics, but not of the future. They rarely ask questions such as: Which direction is the organization heading? Whose futures is being privileged? What are the explicit and implicit guiding images? However, anticipatory action learning seeks to question the future, asking questions of preferred, probable and possible futures at all levels, litany and worldview [10–12].

Anticipatory action learning creates a questioning process wherein the future is explicitly explored, focused, thus, not only on, for example, how to make more effective managers (more multicultural, sensitive, visionary, etc.) but on whether we need managers in the first place. For example, will dis-intermediation cannibalize middle management leading to the end of management? Anticipatory action learning thus merges classical participatory action research and action learning with futures studies.[3] The organizational model that emerges from this is both inner and outer directed (inner happiness plus relationships plus effective efficiency) and future-oriented. Obviously there are few examples of successful organizations that live these virtues, however, the ideal is gaining legitimation. This is largely emerging from the quadruple bottom line accounting discourse—profit plus social justice plus environment plus future generations. Central to this discourse is the desire of individuals to work in institutions that reflect their internal, often idealistic, values.

3. Reductionist to complex

The process of deep questioning moves away from a reductionist view of the future to a complex multi-factorial, layered, multi-worldview of the future. There is a stark tension between litany level popular books/magazines and complex analysis. Popularity (book sales, consulting contracts, press attention) is based on delivering forecasts (the Naisbitt industry) or on writing quick and clever books about disconti-

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[2] For more on action learning, see: (accessed, May 22, 2000).

[3] Orlando Fals-Borda from the action research praxis side and Reg Revans from the management action learning dimension are the leaders of this. The International Mangement Centres— spearheads the use of action learning in organizational transformation. See as well www.aclaim.net for more on anticipatory action learning. Forthcoming is: Inayatullah [13].

nuity (the Drucker industry). This industry seeks to create ownership of particular futures, and even while challenging the present, it does so in ways that do not contest deep civilizational codes (e.g. theories of progress, individuality, materialism). Thus, industrialism or even work may be ending but the worldviews and myths that underlie industrial or postindustrial civilization are not questioned. Complex analysis in contrast seeks to reveal how our knowing efforts are complicit in our conclusions—on the politics of knowledge. But complex and layered analysis is not easy to engage in. This is because we generally do not desire to account for how our own worldview interests shape the future we predict or the alternative scenarios we posit.

There are clear market demands for reductionism. Students, governments and business organizations tend to desire one future, a clear answer. The future is already hazy in their eyes, complexity makes decision-making immediately more difficult (but much easier in the long run). Complexity requires accepting that there are many factors that explain change and that there will always be some unknown factors, partly because our knowing efforts in complicit in that which we desire to know. Complexity also assumes that the novel may emerge in our research. Our research findings must therefore be open ended and ready to be discarded if a new paradigm provides more elegant, informative and explanatory insights.

Suggestions for creating a learning organization where the main purpose of futures research is education (innovative pedagogy, content and evaluation) can be difficult to accept. Few executives really understand that self, other- and environment learning is what can help an organization innovate from the edge, from outside the norm. Instead futures studies has come to mean scenario planning, specifically the strategic clarification of alternatives. Futures qua pedagogy is demanding as it requires the continuous questioning of one's own basic assumptions. It requires learning about learning, creating a process of thinking about the future, rather than merely installing an official senior planner or futurist. Of course, this does not mean that no action is possible, that is, paralysis by analysis. Rather, it means institutionalizing (and keeping space for dissent) cycles of action, reflection, futures questioning and then action again.

Finally, complex analysis (layered, multiple approaches) requires learning about not only things we don't know about but things we don't even know we don't know about them. While there is no easy solution to this, a first step is to ensure that there is an environmental futures scanning process. A second step is to ensure that the process uses multiple methods—that is, using empirical, interpretive and critical modes of analyses. A third step is ensuring that data/insights come from arenas outside of official power—not just political power but official formulations of what is normal, what is sane, what is conventional or acceptable reality.

In the health field, this means using multiple traditions, e.g.: allopathic, homeopathic, naturopathic and aurvedic. It also means that there is no one single cause for any disease but a multiplicity of factors from genes to environment to one's emotional state to ….Of course, there are times when one factor is dominant but the point is that thinking about the future must be inclusive of different variables and worldviews behind these variables [14].

Complexity also includes emergence, that is, the new can emerge from the old.

This helps accounts for and is inclusive of wildcards, dissenting futures and other realities and approaches.

Complexity, however, is not a return to systems thinking since the systems approach tends to be apolitical. It generally assumes that subsystems are interest-free or that analysis of the future can be done in a neutral fashion. While the systems approach has been of benefit to futures studies in the past few decades, its inattention to how systems approaches themselves embody a particular type of politics, and a particular language, leaves it handicapped.

General systems theory has now been reborn as general evolutionary systems theory, and has successfully managed to include chaos (non-linear dynamics) and complexity as part of its central hypothesis. Yet, it remains tied to the Western analytic tradition and thus remains simplistic. It has not managed to include epistemological perspectives of other traditions in terms of the shape of the future, nature of the self, ways of knowing, for example.

4. Horizontal to vertical

But multiplicity is not the solution either and indeed is not the only direction that futures studies is moving toward. The use of multiple factors, while reducing the variance of the issues needing explanation, is often superficial since breadth of enquiry may have been achieved, but not depth. Organizational transformation requires a skilful use of horizontal and vertical methods of futuring. Methodological developments wherein the future is considered not just in horizontal space but in vertical space is an important development in the field. Horizontal space is best explored with scenarios and what-if analysis while depth is best explored with causal layered analysis and other poststructural methods within a critical futures framework.

Poststructuralism moves the debate away from "fact versus normative" distinctions. Things become factual (based on experimental evidence, or authority, or intuition, or based on the current episteme, or paradigm of knowledge) and are not so in themselves. As well things become normative. Genealogy thus reveals to us the particular history of a variable, how it was once normative, then factual, and now perhaps normative again. The poststructural is thus isomorphic to the genealogical or evolutionary. History is thus intertwined with futures, but it is not a continuous history but is dysjunctive wherein concepts change through history, again largely dependent on the politics of the particular epoch (or civilizational values). For example, as Foucault has outlined, it is problematic to search for a gene for homosexuality since the definition of homosexuality differs across cultures and has changed throughout history. This is also the case with attributes such as risk-taking or intelligence.

By 'layered' we mean that the causes of the future are always multifold in vertical space—technological and economic at the most obvious levels, and worldview/myth based at other levels. Indeed there is an isomorphism between typology and sage; case study and story; general theory and myth; as well as paradigm and archetype [15, 16]. While they have a functional equivalence, operating similarly in different

languages (the former the scientific, the latter the metaphorical) they are two distinct ways of knowing the world.

While there are possibilities of reaching shared agreement on the nature of desired futures, there can be no single all encompassing cause, theory or myth of the future. This is more than merely multidisciplinary but rather transdisciplinary, learning from many disciplines and many civilizational ways of knowing (since the current nature of discipline in itself is based on the Western industrial experience). It means moving to genuine alternatives.

5. Return of history—grand narratives

At the same time as the poststructural contests universals—theories of every-thing—creating only local solutions to any problem, disallowing universalist para-digms, be they capitalism or communism, western or eastern, there is a return to Big picture or macrothinking [17]. Whether from the West from Wilber, Eisler and others or the Non-West from Sarkar and others, the big story remains the elusive grail of futures studies. While some argue for the new story, others believe that traditional worldviews—critically modernized[4]—already offer the big picture of who we are, where we are going to and what is important.

The central feature of macrothinking is that there are generally grand patterns of social change. While there are discontinuities, the past and future as a whole is patterned, even if the "laws" are soft. Whether it is Sarkar's varna cycle, Toynbee's creativity–imitation pattern, Sorokin's pendulum of sensate–integrated–ideational or Comte's Positive society, minor forecasts, perturbations can be seen from grander lense. These lenses, while not immediately useful in prediction, do tell us where to look for change (look to the Bedouins, those outside of normative and political power, says Ibn Khaldun) and more importantly how to look.

Which macrohistory/macrofuture will become dominant is difficult to declare at this juncture. First, there is a real tension between localist, specific social science and macrothinking and second, there is a deep tension between linear (victory of positivism, science and liberalism) and cyclical (rise and fall, spring and winter) approaches. While we can hope they are reconciled in some evolutionary spiral fashion that corrects the last five hundred or so years of sensate, linear, technocratic history, as the Chinese say, it is still to early to tell what this next millennium will look like (and even if we will still have a category called millennium) and what the dominant mode of analysis will be.

6. Scenario development to moral futures

Behind the struggle as to what future will result is a debate between what is morally neutral and what is ethical. Alternatives cannot be morally neutral. Scenarios

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[4] See the works of Ashis Nandy, Ziauddin Sardar, and Weiming, Tu, for example.

are nested on various assumptions as are macrohistories. Those included in them see their worlds as true and others as either false, portions of the truth, shadows of the truth or states of immaturity. Rarely do they apply these categories to themselves, framing research in neutral disinterested language.

However, the vertical gaze invites back ethics, it invites back authentic interest. Ethics is a call for finding some shared meanings in a fractured world. It is about unveiling one's assumptions, questioning them, and then owning up to up one's wordlview. This is a search for shared negotiation of agreed upon values, of moving beyond the postmodern. This also means that scenarios of the future cannot just be idealized pictures of the future without taking into account who are the losers of any particular future as well as who is privileged to create particular futures.

However, this latter move in futures studies is not a done deal. The informational sciences, even as they give us a networked world that insists upon collaboration, remain within the systems paradigm. As argued earlier, systems thinking is a paradigm that is foundationally conservative, concerned with the relationship between sub and larger systems. Its adoption throughout Western universities has been precisely because it has been able to contain politics as yet another system (the political system as differentiated from the economic or the environmental). It has been oblivious to the contention that each system has interests, embedded in values.

As well, technology is seen as apolitical. Technology is considered amoral, neutral and not embedded with values and culture. This perspective is further exaggerated by developments in genetics, the search for the gene of everything, every possible behavior. It is the return of reductionist 19th century science with the overlay of social Darwinism. It is a concern for dysgenics (the futures of population—the poor are reproducing too quickly as are "other" race) and with eugenics (how can we ensure the smart are not overwhelmed by the poor, and the hegemonic race in financial terms continues well into the next millennium). This is even further exaggerated by the hegemonic power of the West, and certain nations within the West. What this does is squeeze out alternatives, either directly or indirectly through the 'mediazation' of reality. Of course, the Net to some extent reduces this (by having multiple classification systems) but again access to it is far from universal.

The tension between reductionist models of humanity and complex models will continue much longer and the divide will become larger since reductionism is an incredibly powerful mode of dissecting reality. But, of course, so is synthesis in terms understanding and insight. Layered approaches offer a way out in that while they acknowledge both modes, they do so within a vertical frame. They differ from postmodern multiplicity approaches which claim that each discourse occupies an equally valid site. The moral does not vanish, it is not just another discourse, but a guiding post.

Taken together: the move from single point forecasting to anticipatory action learning; reductionist to complex analysis; horizontal to vertical; the return of macrothinking and moral futures—the future of futures studies is likely to continue to become more complex, more multicultural, more inclusive of many ways of knowing. The challenge will be to create a coherent yet evolving knowledge base. And attempts to discipline it will likely produce dialectics that liberate it as well.

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