

**Leadership, Environmental Scanning, and the Future of Public Health:
The Case of Peak Oil**

By

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*There is a failure here that topples all our success.
John Steinbeck*

*I don't have a pessimistic view -- I have a long view.
I.F. Stone*

Introduction

Good afternoon. Lacking a warm-up joke or anecdote, I find myself a messenger bearing distasteful news: the future of the public health system, as well as academic public health, is endangered by the coming energy crisis, known to some of you as peak oil and to others of you, I fear, known only elliptically or not at all.

I will not make the case for peak oil. This well-established geological theorem has until recently been “The Greatest Story Never Told” to the American public (American Assembler 2006). Now it has begun to migrate from the fringe of discourse into the consciousness of the nation as the most reasonable explanation for the jagged upward trend in energy prices, along with other energy-related concerns. As a helpful aside for those of you needing information on peak oil-- there is a great deal of misunderstanding and outright propaganda denying it-- I urge you to visit three websites:

- *The Oil Drum* <http://www.theoil Drum.com/>
- *Energy Bulletin* <http://www.energybulletin.net/>
- *Peak Oil Medicine* <http://www.peakoilmedicine.com/>

Leadership and Environmental Scanning

The title of my talk features leadership and environmental scanning, two essentials of strategic management, which derives from systems theory. I will refer to them throughout this presentation, but the thrust of my comments today is to explain the failure of public health to address our inescapable energy crisis. As I'm sure you know strategy concerns an organization adjusting to the ever changing configuration of its external environment. Creatively aligning with the obdurate realities of the environment leads to survival and success; a failure to do so leads to decline and demise.

When I submitted this topic last January to the review committee I imagined a report on the various peak oil planning activities and research I thought I would identify in public health. I have searched and inquired with little avail. Aside from a tiny number of faculty members and a smattering of administrators here and there it seems peak oil is a non-issue and widely unknown to the profession. Given the enormity of the challenge, I must confess to a “Wylie Coyote off the cliff” feeling. The hour is late and much opportunity for risk assessment and mitigation is past, but that is public health's situation. The macabre consolation is that, aside from the US Military, all of society's institutions are unprepared for the great unknowns of the energy downturn.

In this case, I want to discuss how public health finds itself in the illogical but all too human position of ignoring this epochal challenge to the health of the nation as well as to its own survival. Consider this definition from the Institute of Medicine (IOM), the flagship organization for studying the future of public health.

Public health is what we, as a society, do collectively to assure the conditions for people to be healthy. This requires that continuing and

emerging threats to the health of the public be successfully countered (IOM 1988: 19).

Leadership and environmental scanning are implied in this ambitious definition that gives public health the mandate to identify and develop strategies to overcome emerging threats. It renders three positions regarding the significance of peak oil:

- 1) It poses no public health threat.
- 2) Someone else will solve the energy problem before it becomes a public health threat.
- 3) Public health is unaware of/ignoring/discounting this threat.

If anyone here today wants to be constructively subversive please put these three options to a public health expert as a multiple choice question; then share the answer with me so that I can add it to my data base. I'm quite serious about this.

Position 1) assumes that some form of risk-assessment has determined that peak oil is not a serious threat; to my knowledge this has not been done. Position 2) which is the “free-rider” strategy (Olson 1965), assumes that the threat is being addressed by “them” (science & technology, government, the market), who are sure to solve the problem. The classic optimistic assumption here is that humans are infinitely ingenious in a crisis situation. (As Tina Turner used to say to Ike, “I think it’s gonna work out fine.”) This is, I speculate, a minority position in public health taken by those who have some awareness of peak oil but who in the end evade and marginalize its consequences. Position 3) is --to the best of my knowledge-- the modal position of the discipline. On the other hand, in terms of risk, due diligence recommends that peak oil at the very least, and in accord with the Precautionary Principle, should be examined given its potential for damage.

Why is Position 3) public health’s default position? My conjecture is that the enormity of peak oil is an assault on our metaphysic of national identity, our belief in:

- The American Dream
- Our ability to accomplish anything we choose
- Inexorable social and technological progress
- An abundant perpetual supply of natural resources, and
- Our “non-negotiable” lifestyle

To acknowledge peak oil’s potential threat is to admit the possibility of wide-spread social, political, and economic chaos that will palpably and unavoidably affect public health –and throw the above beliefs into radical doubt. It is to admit that we are not fully in charge of our collective destiny; it is to court the possibility that we are constrained not merely by our imaginations, but by the laws of thermodynamics, geology, and the physical-biological ecology –in short, by the natural environment of which we are an organic part. This is the origin of systems theory.

For these reasons, and also for short-sighted political/economic ones, our media and government have been slow and largely unwilling to describe forthrightly our energy

situation; and they should not be expected to do so until alternative explanations prove false (Phillips 2006; Bednarz 2006; Newberry 2005).

Public health, which is adept at reacting to tangible threats, like SARS, faces a qualitatively and quantitatively different threat from peak oil. Whereas the field typically reacts to disease outbreaks or other emergency events with the presumption of returning to “normal,” our energy crisis calls for proactive preparation for a largely unknown period of chaos followed by a redefined state of “normal” characterized by lower per-capita energy consumption. There is considerable uncertainty in this future because in a typical crisis the script calls for exogenous relief—to New Orleans after Katrina, to New York City after September 11—in which slack resources pour in from non-affected locations in the social system. Peak oil is about the lack of exogenous relief—it is about the systemic worldwide scarcity of an indispensable multifaceted resource.

Therefore, what’s needed to deal with peak oil is:

- Conceptual blockbusting –the mental liberation to create alternative ways of thinking about complex and deeply emotionally upsetting problems-- (Adams 1970) and
- The audacity to report on the logical implications and degrees of uncertainty associated with a declining availability of the one truly unique and pervasively employed resource supporting our material way of life: petroleum.

Additionally, natural gas has peaked in North American and is more than three times as expensive today as it was in 2000; its role in modern life is almost as vital and integral as that of oil. A nearly simultaneous peak in both these resources signals the twilight of the fossil fuel era. Coal, a controversial fossil fuel in several respects, simply cannot –due to global warming, the ecological insults of current mining practices, and the costs of coal liquefaction-- be viewed as a quick-fix for the decline of oil and gas (Lundberg, 2006). And it will be exhausted in a few decades anyway if turned to as a replacement for dwindling supplies of oil and natural gas.

What inhibits conceptual blockbusting and audacity? Three sets of factors which function to support and stabilize society but in this case distort and inhibit environmental scanning and genuine leadership:

- **Brains:** Humans appear to have a cognitive bias of attraction to optimism and repulsion from “worst-case” thinking (Cerulo 2006; Friedland and Alford 1991; Weinstein 1989).
- **Beliefs:** As social creatures we naturally participate in various institutions that establish our values and beliefs, and criteria of evaluation and judgment (Fleck 1979; Douglas 1986). It is quite difficult for an individual to “think independently” of these institutional memberships.
- **Bureaucracy:** Organizational hierarchies allocate status, power, rewards, and other incentives; and also control communication and information patterns, (Cerulo 2006). Bureaucracies tend to rigidify and lose sight of their mission (Weber 1946; Merton 1957; Crozier 1964).

A terse summary of social science literature reveals our penchant to downplay “bad news” coupled to our inability to construct detailed worst-case scenarios (Cerulo 2006; Vaughn 1996; Perrow 1984) reflects our optimism bias. Top level leaders frequently either ignore or, more commonly, receive positively skewed or sanitized information as it filters up through “aim-to-please” subordinates who are themselves inclined to Panglossianism. Further, even when leaders and planners recognize a risk it is difficult for them to concretely visualize and quantify worst-case scenarios, (Cerulo 2006; Weick 1995). Paradoxically, this socially rare ability to envision and detail the worst-case exists in public health but has failed to be activated in the case of peak oil. I say more on this in the following section on the future.

The attraction to optimism and repulsion from “bad news” is typified by the old Harold Arlen-Johnny Mercer song that goes: *accentuate the positive, eliminate the negative, latch on to the affirmative*. Here are a few such cases of avoiding or ignoring “obvious” (*post-hoc*) worst case scenarios only to reap appalling outcomes:

- NASA’s two Space Shuttle disasters
- Hurricane Katrina: anticipation of, and the response to
- The CIA briefing memo: “Bin Laden Determined to Strike...”
- The attack on Pearl Harbor
- The Ford Pinto
- Exploding Firestone Tires
- Union Carbide’s Bhopal Disaster
- Peak Oil itself will become a candidate for this list

A number of you might term some or all of the above gross incompetence or criminal acts. However, these labels should not cloud the profundity of the insight that cognitive and sociological forces hamper our ability to comprehend and act on threats, especially unprecedented ones whose solutions might challenge institutional thinking (Douglas 1986; Bednarz and Crawford 2006).

As implied above, addressing major hazards can upset hierarchies of status, power, communication, information control and flow, prestige, and resource allocation. For example, hiring an employee who possesses needed “expertise” alters organizational relationships and can pose a threat to the culture of the organization.

In summary, to deal with “bad news” leaders must overcome all three of the perceptual filters/deterrents imposed by **brains**, **beliefs**, and **bureaucracy**. This is as true in public health as anywhere else in society.

To be clear, in most instances it is not that organizations have absolutely no prior information on a given risk; “bad news” is more often than not articulated by one or two staff in the lower echelons or on the periphery who attempt—usually unsuccessfully and sometimes at harm or cost to themselves—to sound a warning (Lively and Heise 2004; Thoits 1996). “Across culture and throughout history, one can identify recurring strategies designed to distance the worst from a group’s or community’s vantage point” (Cerulo 2006: 73).

The Future of Public Health

The third subject in my title is the future of public health, an item high on the profession's agenda at the turn of the Millennium. As a wag once said, "Prediction is very difficult, especially about the future." Nonetheless, I want to venture a few remarks on the discipline's future given the changes our energy predicament will introduce, the embarrassing incongruity of our commitment to the Precautionary Principle, and, finally, because I believe some members of this audience will reflect upon my message, not because of its sterling persuasiveness, but for the pedestrian reason that it is only a matter of time before the "obdurate [geological] reality" of peak oil undermines the received definition of public health (Blumer 1969).

Ø First, let me address those of you who wonder what public health has to do with energy by pointing out that in 2004 the APHA passed a resolution calling for a national energy policy. This resolution needs to be revised to reflect the dangers created by peak oil. Energy is not just another issue; it is a pre-conditional public health crisis (Bednarz and Crawford 2006). By this I mean that the widening gap between demand –spurred by economic and population growth-- and soon to be dwindling supply of oil will endanger population-level health in a variety of ways. No public health concern, be it AIDS, bird flu, SARS, or manufacturing and dispensing vaccinations and tongue depressors, can be addressed without the foundation of energy to support highly complex public health activities and systems. Public health's knowledge base on energy is primitive and thoroughly inadequate given what lies ahead as the concept of "energy" moves from the hinterland to the forefront of public health.

Ø As the post-peak oil world introduces chaos (Levey 1994) perhaps in stages of economic decline (Bednarz 2005) --which depend upon the speed, severity and duration of the annual decline in oil production (Novak 2006)-- into the healthcare system, it is possible for the following scenario to unfold. Public health practice will experience a "cold-comfort-renaissance" in government support in tandem with the frenzied nationalization of the clinical/acute medical care system. Operationally, the government will transfer funding from treatment (and medical technology innovation) to prevention as the optimal way to preserve the health of the nation under dire economic conditions. As long as there is organized government --from left to right of the political spectrum-- there will be some form of public health system. Our present clinical/acute medical system over-consumes energy because it is abundant and cheap. This era is closing even if peak oil is twenty years away.

Ø Significantly, the trajectories of academic and public health delivery systems may diverge for the same reason clinical/acute care will be nationalized. Overall, academic public health is not essential to the health of the nation; and, more generally, for all its beneficial contributions, much of academic-based science is mediocre and of marginal contribution to society. Furthermore, "Big Science" is an epiphenomenon of economic affluence. In the new climate of energy scarcity and economic distress academic public health will have to

scramble to learn about energy to remain relevant –align itself with its external environment-- as the government and foundation grant systems that supports schools of public health narrows in focus, declines, or is abandoned. However, epidemiology, biostatistics, and perhaps portion of the expansive environmental area –because they have the tools for worst-case modeling and disease vector identification-- appear salient academic fields in a post-petroleum world.

Ø Unmistakably, those who wish to discuss the future of public health must integrate not only peak oil into their thinking but the larger ecological context outlined in *Limits to Growth* (Meadows, et al. 2004), *Overshoot* (Catton 1980), and E. O. Wilson's "Bottleneck" thesis (1999). How can public health continue to marginalize ecological problems such as population growth (Smail 1997; Abernethy 2004), species extinction, and resource depletion (Morrison 1999)? From this perspective, peak oil appears to be the first limiting resource. In related fashion, conferences books and other documents on public health's future end with a clarion call for additional fiscal support, moral fervor, and willpower to undertake change. Unfortunately, these projections of the future suffer from the common problem of "planning backwards" and presuppose perpetual economic growth, an invalid basis for futurism.

Ø Interestingly, The IOM's latest report on the future of public health calls for an "ecological" perspective without unmistakably defining the concept. The IOM use of "Ecology" appears to refer generally to the symbolic macro-environment of political, economic and social forces (IOM 2002). The concept of physical resources, let alone mention of their scarcity, is astoundingly absent from consideration. Likewise, there is no hint of this contemporary definition of ecology that is in accord with Wilson's "Bottleneck" and the "Limits" worldview:

[T]he scientific study of ..._living organisms and how the[y] ... are affected by interactions ... [with] their environment. The environment of an organism includes both physical properties, which can be described as the sum of local abiotic factors such as solar insulation, climate and geology, as well as the other organisms that share its habitat (Wikipedia 2006).

Ø As public health evolves –or goes through "punctuated equilibrium" (Eldridge and Gould 1972) -- into an ecological metaphysical stance/paradigm it will begin to inform the citizenry about energy conservation and develop a "Gospel of Energy" (Bednarz and Crawford 2006) narrative that also locates the human being in the biosphere. Until such sober communications are defined as received wisdom –think women's suffrage and the end of slavery-- rather than as "Green" or "tree-hugging" political rhetoric, the necessary national awakening to our energy situation will be delayed. Finally, given the lateness of the hour, it now appears that only the crisis precipitated by peak oil will spur this paradigmatic shift.

Ø Last, the previously mentioned variables of speed, severity and duration can nullify or drastically alter the preceding speculations. We simply do not know what lies ahead except that it will be a world of less available energy, not more, for the foreseeable future --and perhaps permanently.

Summary

This past January I sent an e-mail to the deans of schools of public health inquiring whether they knew of any faculty examining the energy issue. Six of the deans replied saying peak oil seemed important, but they knew of no one doing research on the topic. One of the deans commented, "This [peak oil] is scary," and in a later email lamented that concrete action by public health prior to a state of crisis was unlikely.

Returning to the insights of strategic management, this collective response from the deans --those answering with silence as well- indicates that public health is moving out of alignment with its external environment by ignoring the geological fact of peak oil and its astounding sociological and "ecological" implications. This is tantamount to holding onto Ptolemaic cosmology after Copernicus (Kuhn 1970).

On a note of hope, I want to expand a previous point that, unlike many other institutions in society, there is in public health a professional role that runs counter to the three sources of bias leading to unrealistic optimism, avoidance of bad news, and the inability to envision worst case scenarios. Public health practice, primarily using the tools of epidemiology and biostatistics, is premised upon specifying the path and patterns of health threats --that's one exemplary reason why the discipline has embraced the Precautionary Principle. This professional capacity to map harsh realities has been overshadowed, suppressed even, in the case of peak oil because this time it is not just about an at-risk population. As the energy crisis emerges this latent role for constructing worst case scenarios is likely to create insurgencies (Zald and Berger 1978) due to the inability of establishment leadership to grasp the situation, adequately define it, and then respond to it. These insurgencies --based around ecological metaphors-- will come from below and the periphery, from those less integrated into the discipline's institutional thinking and its reward and status hierarchies; and perhaps from a few "old-timers" who feel they have nothing to lose by following their consciences and acting on a lifetime of tacit knowledge (Cerulo 1984; 1998; Burt 1997; Kuhn 1970; Rogers 1972).

Finally, in lieu of a formal conclusion I leave you with a recent quotation to ponder:

[B]y the time a sustained energy crisis fully motivates market forces, we are likely to be well past the point where we can save ourselves from extensive suffering.... This is the very essence of a problem requiring citizen, business, and governmental action.

Although this sounds like a 1960s liberal, it is Senator Richard Lugar, R-Indiana, announcing the need for a national energy plan at Purdue University in late August of this year.

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