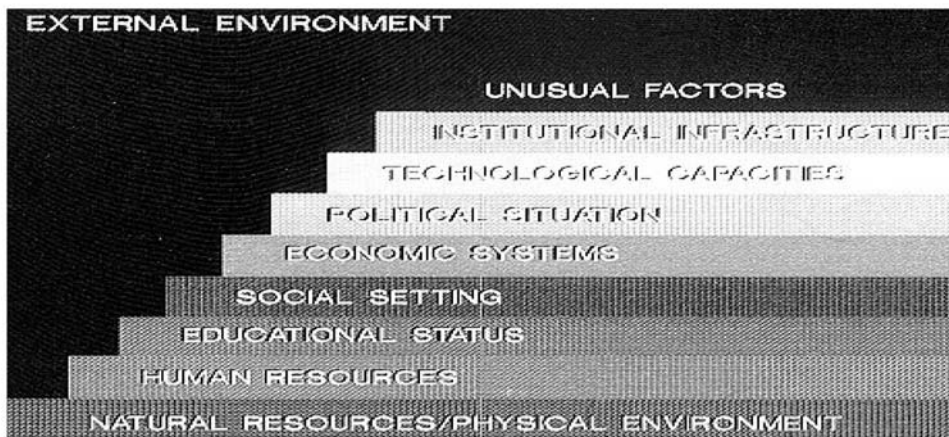


# Molitor Forecasting Model: Key Dimensions for Plotting the "Patterns of Change"

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Key arrays depicting the developing dimensions of change processes comprising the Molitor Forecasting Model reveal future trends with an extraordinary accuracy. Observing policy making -- ranging from the White House to Fortune 500 Companies, from politics to business -- the author organized, piece-by-piece, the practical experiences from which these "patterns of change" were derived. Based on the innumerable policies and programs being developed, for nearly 50 years Molitor

wrote down the step-by-step activities giving rise to change. Over 100 different patterns of change processes have been developed, including the nine described in this short article.<sup>1</sup> This article presents and briefly explains nine of these template timelines. Each one contributes a piece of the puzzle. Arrayed together, the cumulative effect reveals and corroborates the trend and direction, the verve and deterministic outcomes of impending change.



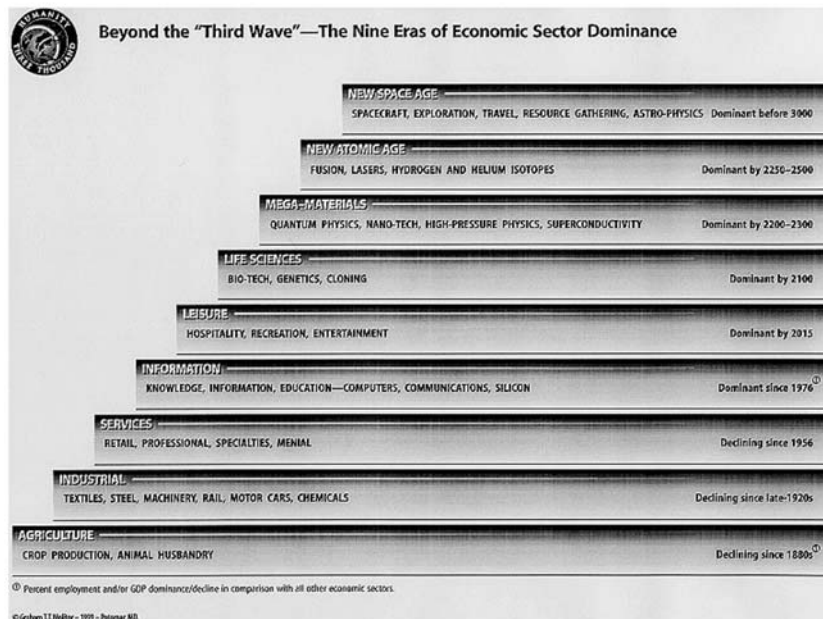
To begin with, forecasting presupposes a thorough knowledge of factors prevailing in the EXTERNAL ENVIRONMENT provide the setting or context for sizing up any situation. This undergirding backdrop consists of the two great divisions of reality or "being" in which civilization is ensconced:

1. The natural or physical science realities constituting

the particular environment. Constants of natural phenomena (including cyclic patterns) basically structure the parameters of a given environment. Ambient freezing a boiling temperatures impose known constraints influencing states of matter, climate differences, ocean currents, and so on. Geological conditions influence the coming and

going of Earth's features, tectonic plate movements, earthquake potentials along geographic fault lines, volcanic activity, and so on. Both factors influence distribution and survival of flora and fauna. On a cosmic scale, the lifecycles of stars and planetary systems script Earth's beginning and demise. Who's got the oil (OPEC), coal (U.S. and Russia), and the "lockhold" on nuclear fusion. The list that encompasses what "nature" has provided, could go on. It doesn't take a rocket scientist to figure that out. Countries with scant resources and adverse weather, like Bangladesh, face great adversity and dim prospects. Nations endowed with abundant natural resources, favorable climate, good soil, and so on have a much more positive base to build upon.

2. The other great sphere involves the man-made and human resource dimensions that continually shape any given situation or environment. What any given jurisdiction or organization "brings to the table" has a material bearing on potentials for making the most of what they've got. Educational status and illiteracy materially affect these potentials. So too, does a population base of 1.25 billion. Small groups typically have limited potential compared to huge ones. It's impossible, for example, for an individual to construct a Boeing 747 in a backyard, but huge aerospace companies can. Totalitarian organizations/states have different potentials than democratic ones. Capitalist societies have different opportunities than communistic ones. Downtrodden castes or minorities have different possibilities than elites.



First and foremost in shaping the human condition is the all-pervading influence of the ECONOMIC SECTOR DOMINANCE, ranging from households to civilization itself upon which humanity is dependent and around which it is centered. Everybody has to "make their way." Jobs and livelihoods overwhelmingly dominate prospects for individuals and their dependents, as well as entire communities, nations and the

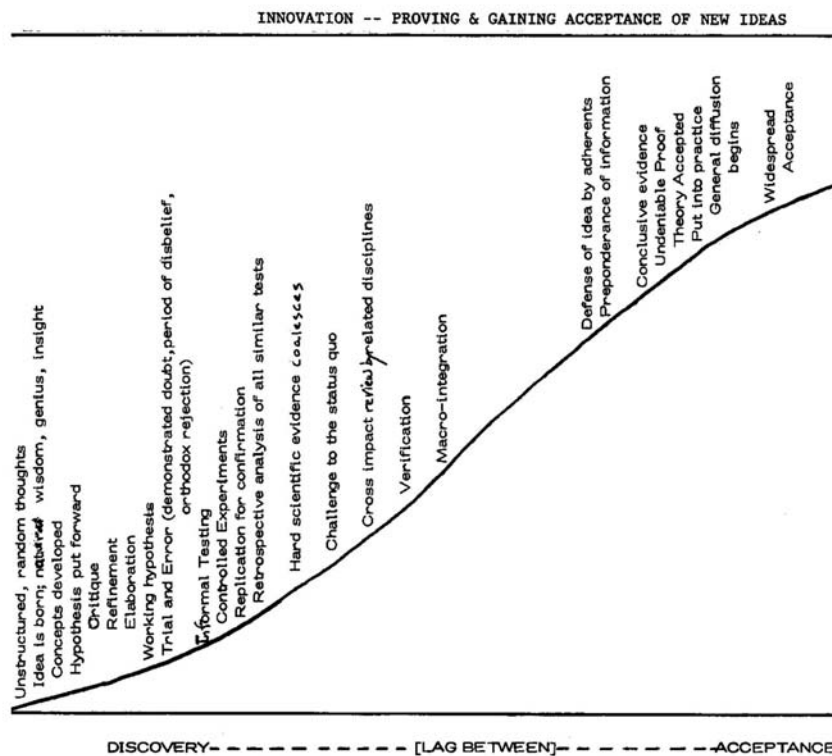
entire world. Sizing up the potentials of ongoing "progress," researchers tend to look at the economic levels of development prevailing in a given situation. Eras of humanity have been molded by the overshadowing influences associated with shifts from agriculture to manufacturing, on into services, and currently (among so-called advanced economies) centered on infor-

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mation-based undertakings. Millennial prospects indicate at least five major new economic eras that will drastically alter the shape of things to come. Incremental factors, step-by-step, inch entire nations headlong toward these new epochs. Outcomes are deterministic, not fatalis-

tic. The powerful momentum of developments lead, sooner or later, to foregone conclusion.

Lifestyles, values, ideology, philosophical principles each are profoundly altered by the dominant mode of activity abroad in a community. Hard work ethic associated with agriculture



and manufacturing, waned as society moved into service sector dominance. Hedonistic tendencies came to the forefront. Impending leisure-dominated societies will further accentuate that stance. Life science era capabilities to alter genetic outcomes and transform/control life portends human control over the very nature of life itself. Mega-material potentials, including the eventual ability to reconstruct inorganic matter and fashion designer materials to order, entail powers to control the very shape of matter that makes up and configures the nature of our environments. Awesome powers to control and manipulate animate and inanimate matter, organic and inorganic matter to whim totally alters human conceptions of "being." These radical changes will necessitate new concepts of the soul, spirituality, and religious beliefs.

If you understand the past and present, and assess prospective breakthroughs and possibilities within the limits of possible change, then projecting outcomes becomes a cinch. Easier said, than done.

The genesis of change originates in creative minds. Merely conceiving innovative ideas is not enough. Concepts must be put forward and nurtured. Ethereal musings require application if they are to make any difference. Although most great ideas emanate from the gifted few, a fair share of important ideas emanate from practical experience and experimentation by hordes of less gifted individuals.

INNOVATION involves applying abstract concepts to practical purposes. This phase carries ideas to culmination. Patent filings and grants provide a one indication of advances, as

do venture capital investments, and - overall -- research and development activities across a broad spectrum of involved institutions.

Sound ideas affecting sciences are posed as unproven hypothesis. All manner of enhancement and refinement follows. Eventually, proofs provide verification. Overcoming grudging resistance at the outset, acceptance generally develops in time. As Victor Hugo once put it, "No army can stop an idea whose time has come." Widespread acceptability, sooner or later

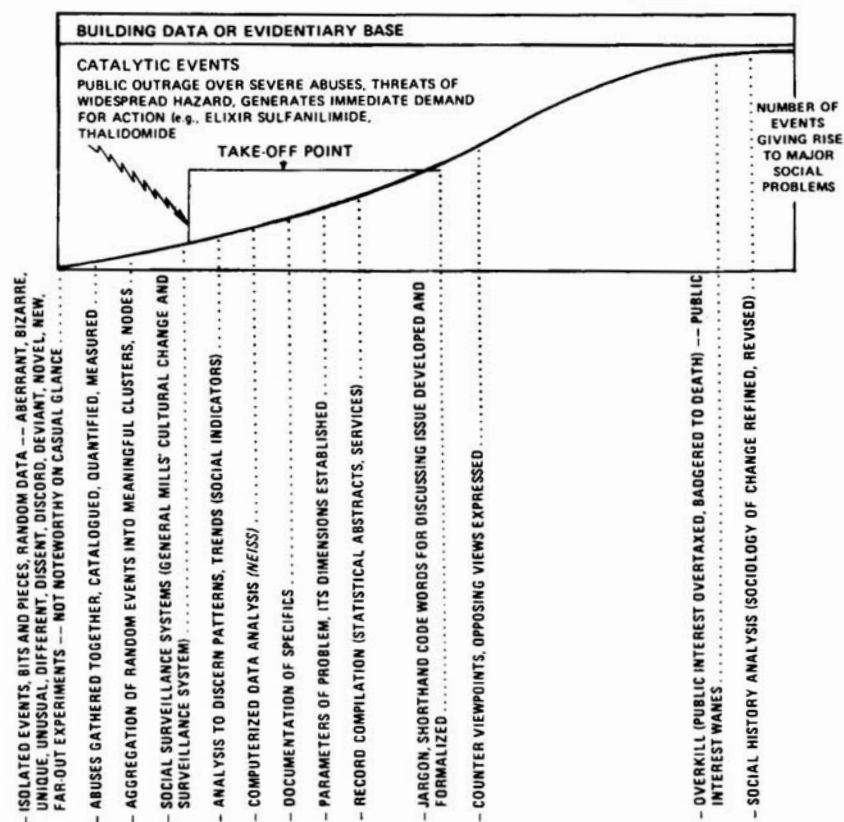
congeals. The old gets displaced by the new. But, even as a new "comfort zone" is found with the new, the ceaseless search already is underway for carrying development along one step further. That perpetual search for doing things just a little better is the driving force behind the perpetual chain of successive technological improvements. Progress itself is measured by the very status of ongoing quests.

There is a tendency to think of ideas in terms of physical sciences, technology and

**Leading Events --**

Deployed in a time-series, isolated events build up to a "data wall" describing an abuse or excess so unconscionable that remedial action is virtually assured.

**Key Tracking Point:** "Data walls" amass to "critical mass," "take off" points at which time (depending on "cost benefits") a virtually irreversible course for change is reached.



"things." Social inventions involving the "soft" sciences tend to be an overlooked dimension of change processes. Social inventions include phenomena like marriage and divorce, legislative bodies and courts, democracy, and so on.

Inventions of this sort may have societal impacts far greater and far more important than those based on hard sciences.

Following adoption of new ideas and their

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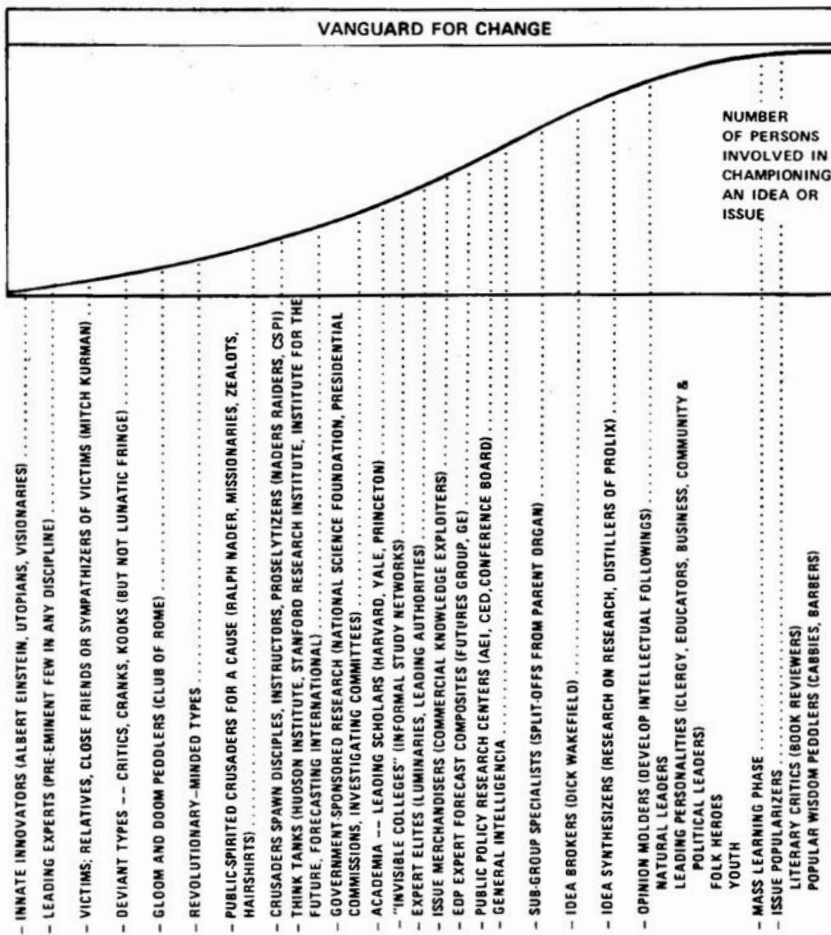
practical application (innovation), ramifications or impacts of those new phenomena - EVENTS - creates another pattern of change. Impact of events can be positive or negative. The good are

welcomed with open arms, and rapid acceptance and widespread use soon follows. The "bad" influences or effects, the downsides pose problems. Speed of response depends, to a large

### Leading Authorities/Advocates —

Intellectual elites who analyze and articulate social problems tend to emerge around an issue — likewise the victimized, even though less capable of articulating their plight, emote their feelings and often become powerful propaganda symbols for change.

**Key Tracking Point:** Usually less than 12 innate innovators can be pinpointed on any issue; by monitoring these early vanguards whose ideas ultimately are diffused widely, early indications of change can be forecasted.



extent, upon the severity of the problem posed. Serious problems tend to be swiftly dispatched.

No matter how meticulous the risk-benefit analysis may be, the unpredictability of human nature often interposes bizarre situations that require a second look. Nobody recognized that refrigerators provided an "attractive nuisance"

that led to entrapment and death of many young children. The response, following these events was to require low-torque magnetic door closures, and removing hinges and doors prior to discarding older models. Effects sometimes take years to fester and be recognized. Toxicity of worker exposure to vinyl chloride workers was



not identified until 29 years after production commenced. Once recognized, the number of known cases skyrocketed. Onset of disease resulting from asbestos exposure may not be manifested until 46 years after exposure.

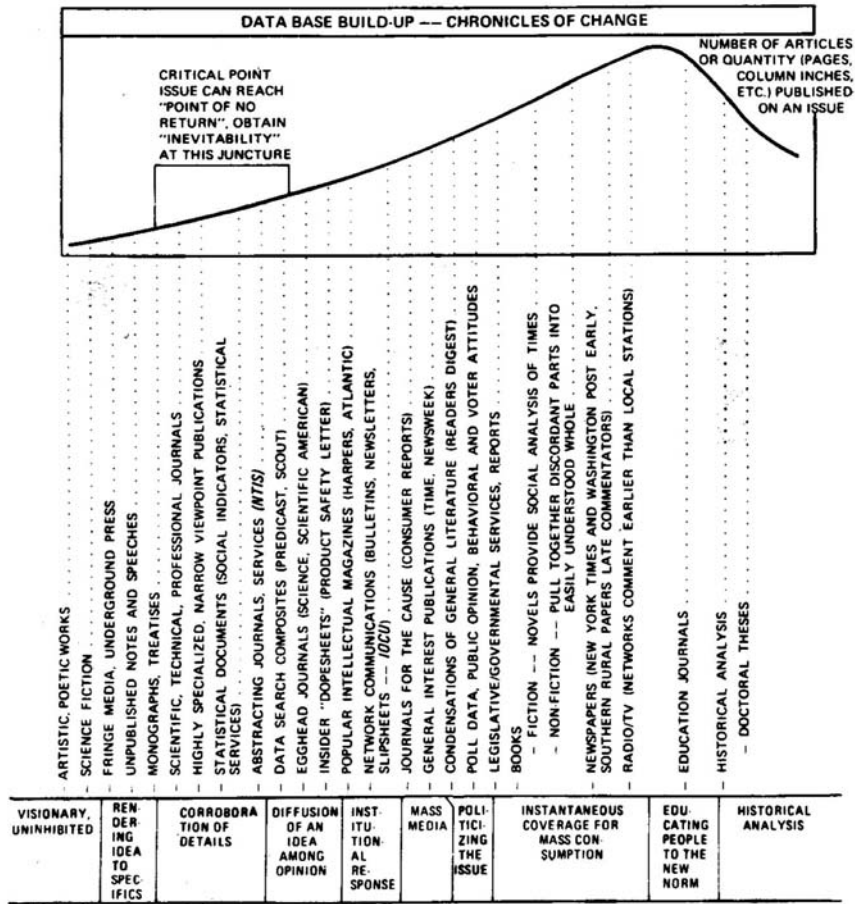
Lawsuits involving hundreds of thousands of exposed individuals still plague the courts.

Elaborate systems and institutions have been established to monitor serious event patterns. Specialized data collection units within

**Leading Literature --**

Written records progress from modest beginnings to the more prolix which serve to explicate parameters and refine thinking, then to mass literature for public consumption.

**Key Tracking Point:** Various classes of literature emerge at different times -- lead-lag times of up to 100 years can be involved -- therefore, "early warnings" about emerging problems can be obtained from careful literature search.



companies, non-governmental organizations, universities, government, and other institutions have been established to gather and assess posed risks. Statistical refinements, including terms to characterize special problems or situations, emerge as more is known about a specific phenomena. Following recognition and quantification of serious (and sometimes not so serious)

problems, remedial steps are undertaken to eliminate, reduce, or ameliorate risks. Corrective measures pare back adverse event incidence, and thereafter public interest wanes.

**LEADING AUTHORITIES.** A vanguard of leading authorities, experts and advocates are at the forefront to elucidate, explain and otherwise

advance the process of change. A gifted few intellectuals hatch the ideas, scientists develop them, researchers refine them, sales and marketing professionals disseminate the fruits, and users popularize responses or use.

True "fountainheads" of ideas/innovation are few in number. In any specialized area of interest, discipline or specialty there always is a small handful of individuals who are head and shoulders above the others. It is not unusual for true originator expertise to number as few as 6-12 individuals, perhaps 20 worldwide. After original ideas or concepts are wafted, entire echelons of others get involved in forwarding the matter under discussion. Once set in motion, a vast horde of scholars, institutional leaders and influential opinion molders become engaged in moving matters along. Occasionally, person(s) victimized by a phenomena evoke sympathy, and may wind up personifying and spearheading a specific problem. Champions of causes step into the limelight to carry problems (or opportunities) into the public spotlight and popularize them, gather support for taking action. Each of these leader categories can be further broken down into sub-groups that prove useful in measuring the extent and degree of influence exerted in a given situation. The sheer din and number in the vanguard of change create pressures that become increasingly hard to ignore.

New ideas begin as inchoate thoughts. Informal deliberations and oral discussions are prelude to shaping thoughts into coherent form. Over time, new ideas find their way into more permanent media. Often there is a considerable lag between the time creative thoughts are first conjured up or mentioned and the point that they find their way into written form. Sometimes, creative thinking never gets beyond the thought stage, never finding its way into print. Most important, widespread publication puts new concepts before much larger audiences. Initial expression typically is found in scientific and technical literature. This process usually starts with the most narrowly focused topical coverage journals. Dissemination of ideas grows as the more popular and widely read journals pick up on them. The trendline of this accumu-

lating pressure is plotted by chronological date, the number of articles or column inch counts indicating the relative "push." Increasing familiarity by the widening circle of interested persons increases and speeds up the pressures for change.

No matter what the issue, or even how novel it may be, a vast range of thought already has been expressed somewhere and someplace. Getting on top of things simply involves "mining the data." It's there - somewhere. The trick is to find it. Written materials provide a more permanent and readily available data base for documentary research. Scientific, technical and professional journals are of greatest importance in any search. That's where the answers, in one form or another, will be found. Sometimes this involves piecing together inputs from far-flung fields of knowledge. Synthesis of disparate parts often helps to reveal more obscure matters. The trick is to know when to "cut bait." Avoid the mistake of overkill, researching matters to death.

The Molitor Model, based on observations over many decades and construction of innumerable massive literature counts, reveals and corroborates a flow of coverage. This sequence flows from highly specific, serious scientific journals to mass media coverage. It proceeds from the prolix to the popular. Literature counts arrayed year-by-year reveal a slow take-off, an increasing pace at mid-point, and a tailing off that often occurs about two-thirds of the way through the covered time period, and a radical drop off during the last year or so (due largely to reporting and compiling delays).

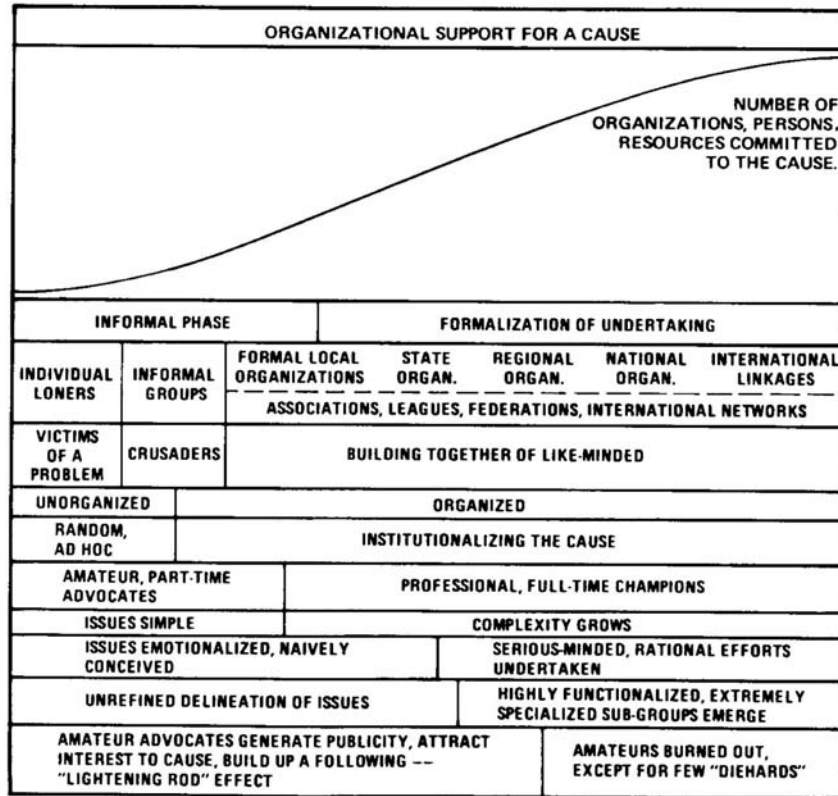
Bibliometric counts that measure only the works of leading authorities on a specific topic, also follow a similar pattern. The overwhelming bulk of most surveys of scientific literature turn up an overwhelming preponderance of writers with only 1-2 articles on a topic to their credit - these are the "kibitzers," the "wannabes," and the "camp followers." Their commentaries may be interesting, but they are not seminal.

As new and interesting developments come about, entrepreneurial publishers are there. The first automotive magazine, *The Horseless Age*, was published in 1895 and it heralded advent of motor vehicles. The *Fish Protein Concentrate*

**Leading Organizations —**

Innate innovators attract adherents which build up into formal followings and usually become institutionalized.

**Key Tracking Point:** Growth of institutional backing for a cause — whether measured by number of organizations, persons involved, or resources committed—follows exponential increases which tend to force serious consideration of the issue by public policy makers



News made its debut when global protein deficiencies topped foreign aid agendas. Obscure and highly specific publications, such as The Bioelectro-Magnetic Society Newsletter, identifies a unique and limited-focus organization, and typifies how narrow coverage may be. Years ago, this author maintained a collection of over 60 different publications limited to covering sugars and sweeteners out of an estimated hundreds surmised to be published worldwide! Who would have ever thought such a thing!

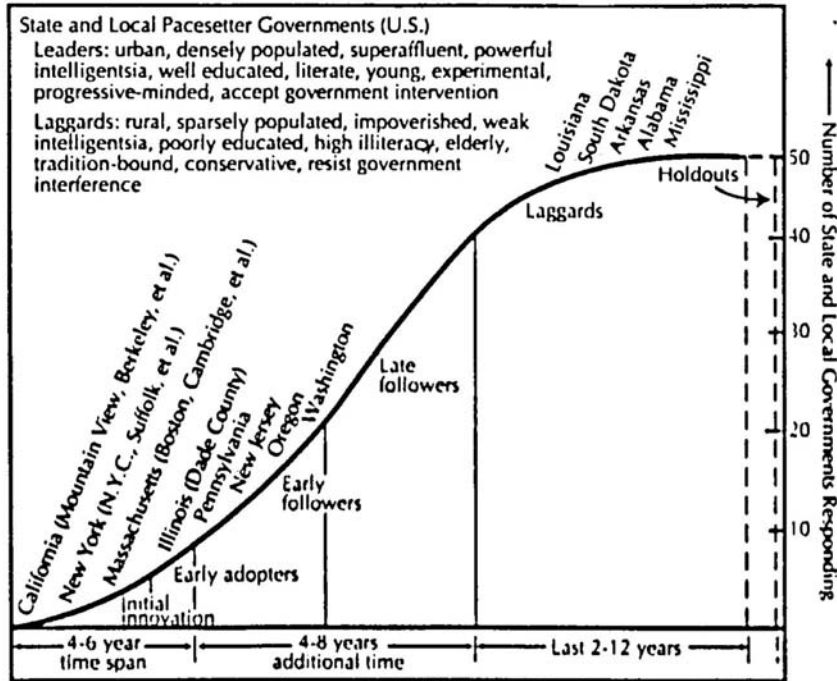
Books, integrating accumulated knowledge on a given subject, emerge sometime after treatment in periodicals begins. Books written by some authors may sum up their life long work in a coherent coverage of it entirety. Persuasive

influence of coherent and compelling explication of issues may launch a new discipline, discovery or destiny of nations. Harriet Beecher Stowe's Uncle Tom's Cabin, dealing with emancipating slaves, was credited by President Lincoln for starting the Civil War! Rachel Carson's Silent Spring, triggered renewed interest in saving the environment, Ralph's Nader's book, Unsafe At Any Speed, brought about automobile safety laws and initiated a new wave of consumer protection. The power of the pen can be mighty.

Artistic and visionary works (science fiction, poetry, novels, posters, protest signs, rap music, etc), uninhibited by peer constraints or political correctness, often elucidate plausible ideas long before serious scientific minds take them up. In



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like manner, scientists often ruminate about, conceptually articulate, and write about what might be within the realm of the possible, long before scientific advances make those distant dreams a reality.

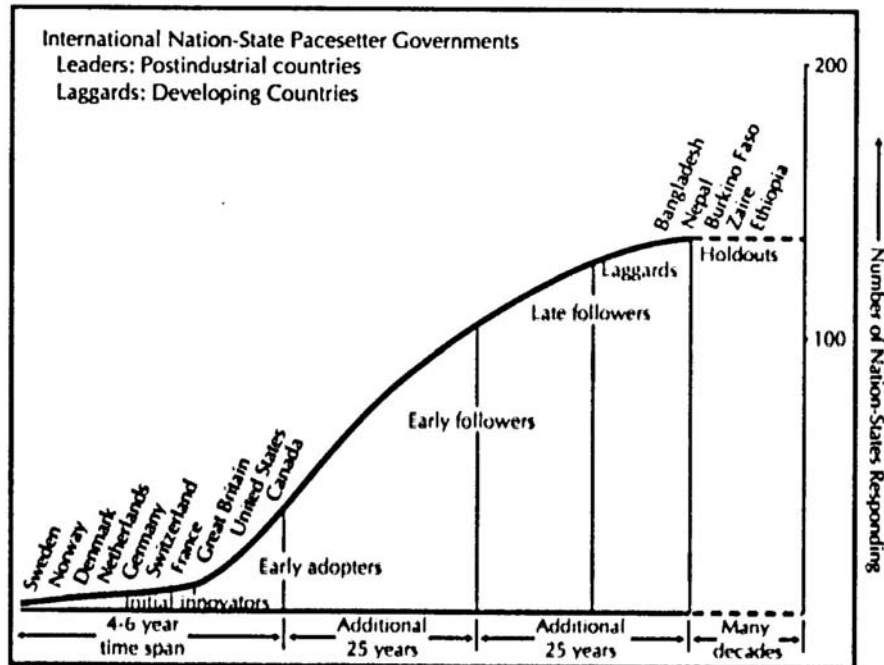
Chronicles of change are not limited to printed materials. Hard copy, however, does provide a permanent and easily consulted data base that "anchors" serious research. Photo-journalism, theatrical production, motion pictures, jokes, cartoons, even rallies and demonstrations, all of these and literally every other imaginable form of communication, are part and parcel of the expression of ideas and public opinion that help move ideas, events and issues along across the stage of advancing change.

As ideas emerge, hosts of newly formed or on-going, organizations and institutions of every imaginable sort enter the change process. Once established, the very existence and activities of groups that take up a cause become a lightning rod that attracts other interested parties and new adherents. Expansion of activities often flow from originating local areas, to regions, span nations, and may become global in scope. Trendlines depicting organization growth are

plotted by tabulating the number of organizations, persons involved or resources committed. Typical timelines of these measurements depict a slow onset, a jolt upwards at the early outset, followed by steady but slower growth. Ultimately, critical mass is achieved when the numbers or volume of activity become so large that it simply forces serious and sustained consideration of matters at stake.

Things rarely "just happen" randomly and without coherent direction. Organizations and institutions provide a rallying point, a central place to collect data, ensure continuity, and provide a responsible cadre to manage and lead further development of ideas or issues.

There's no limit to the kinds of organizations that emerge to champion a specific viewpoint or cause of any kind. For example, The Exotic Dancers League (burlesque house strippers) was established primarily to oppose growing competition from more permissive topless/bottomless bars. Protestors objecting to British taxation of the Colonies staged the Boston Tea Party, that contributed to overt rebellion. The role of "Greens" in defining, advancing and controlling environmental deprecations has been quite successful.



Expert advisory committees and commissions established by national governments - especially those in Sweden, Great Britain, and the U.S. - have played prominent and pivotal roles in innumerable causes and issues. In fact, one of the starting points for many of my studies has always been to secure all available "blue-ribbon" reports from just these three countries! Virtually every important issue is carefully and expertly researched by numerous organizations in most very nation. Reports developed by acknowledged experts provide a ready resource for delving into new issues. The secret is recognizing their value and knowing how to obtain such reports.

A small vanguard of governments, during any time in history, consistently tend to be the most venturesome, experimental, and progressive. Precursors -- also termed bellwethers, pacesetters, leading jurisdictions -- test the mettle of solutions.

When adversities need to be curbed or beneficial developments need to be encouraged, governments often establish laws supporting desired outcomes. Before dwelling on legislative lead-lag relationships, it must be emphasized that a host of "public policy" responses invariably

are inveighed. These responses range from informal rules and settlements, to judicial settlements between parties (or classes), self-government, voluntary accommodation (such as industry-wide solutions), contractual arrangements between parties, and on into the full range of executive, legislative, regulatory and judicial decision making. Setting matters straight entails such a range of responses, each one providing a separate "barometer" of change, its direction pace, and timing.

Based upon plotting thousands of chronological timeline arrays of state and local laws reveals a predictable sequence of legislative leaders and laggards. Listing enactments by chronological adoption dates (not the effective dates) indicates sequences that indicate likely timing for responses over the course of the coming years. These "patterns of change" follow an S-curve shape. Lawmaking never occurs everywhere at the same time. The sequence starts cautiously with initial innovators and early adopters, followed by a surge of followers during mid-course, and terminates with a slow finish (if ever) by a few laggards. One proven success leads to emulation elsewhere.

Local government bellwethers among U.S.

county and city governments include: Berkeley, New York and Boston. Sub-jurisdictional bellwethers internationally include: Stockholm, Oslo, Copenhagen, Amsterdam, The Hague, North Rhine-Westphalia, Bonn, London, Brussels, St. Gallen, Zurich, Basel, Bern, Saskatchewan, Tokyo and New South Wales. Laggard state and local jurisdictions include Mississippi, Alabama, Arkansas, South Dakota and Louisiana in the U.S. Internationally, lesser -developed and impoverished countries, such as Bangladesh and Ethiopia, are among the laggards.

Response by nation-states also occurs in predictable patterns. After actual implementation somewhere, the principle(s) involved ceases to be merely theoretical. As it undergoes "field testing," validity and desirability of particular approaches for coping with matters tests and proves its mettle. Principles proven by one nation spread from one country to the next.

The usual S-curve patterns also pertains to nation-states. Once the initial tier of 4-8 earliest adopters have established a particular policy or program, the successes (or failures) amassed stimulate similar responses elsewhere. These "patterns of change" commence in Scandinavia and Western European nations. Responses there almost always foreshadow what's ahead for the U.S. Precursor jurisdictions, corroborated by innumerable timelines arrays, currently include: Scandinavia (Sweden Norway, Denmark, sometimes Finland), and Western Europe (Netherlands, Germany, Switzerland, France, U.K.); North America (U.S., Canada). Additional nations sometimes included among early adopters include: Australia, New Zealand, Japan and Iceland. Eastern European nations (Poland, Czechoslovakia, and the former USSR) also have been leaders for some issues, such as environmental matters (pesticides, synthetic food colors, electro-magnetic field hazards). Lesser developed nations in Asia (Bangladesh, Nepal, et al), and Africa (Burkina Faso, Zaire, Ethiopia, et al) consistently are among the laggards. Rank ordered adoption of legislative solutions typically follows the sequences arrayed in the chart and described here in a lock-step-like manner.

One parting tip: I have found that Sweden and California so often have been the "very first

by whom the new is tried," that they provide a forecaster's shortcut (at least for later-adopting jurisdictions). In other words, activities in just these two jurisdictions provide a somewhat reliable indicator for anticipating developments likely to be undertaken elsewhere.

Concluding thought. The nine "patterns of change" from the Molitor Model describe some of the elements or templates that explicate cumulative "drivers" of change, most any kind of change. Starting from a baseline of thorough familiarity with the external environment, the natural and human resources prevailing in a specific situation, especially the stage of economic development, constitute the preconditions and the starting point for forecasting. Everything starts with ideas. Practical application of abstract thoughts - innovations - generate "ripple effects," telltale event patterns that measure impacts, positive or negative. Leading authorities are the "guiding lights" that champion and advance the new. Cadres of intellectual elites, victims, and hordes of interested parties generate a wave of debate in all mediums of expression, the written word best documenting that progression or regression of change. In turn, these hordes of individuals rely upon organizations and institutional arrangements that sustain and lead discussions. All of the pressures involved generate climates of public opinion that prompt governments to respond, hopefully in a manner that advances humanity's best interests.

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### **Notes**

- 1 A forthcoming book entitled *The Power to Change the World* will describe over 100 of these "patterns of change."

