# Timeline 22-Step Model for Tracking and Forecasting Public Policy Change

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#### **Abstract**

Things don't just happen. A cascade of incremental developments and pressures coalesce and help to shape destiny. Basically, this article probes and describes "causes and effects." Fully mapped out and deployed, this 22-step rubric of change pattern strives to assemble an array of forces that cumulatively plot and reveal impending public policy change. These constructs of change manifest fundamental quantitatively measured components assembled into arrays of integral sub-set steps that drive change of most any sort. Many of the change drivers presented apply to forecasting matters other than public policy.

**Keywords:** public policy forecasting, forecasting methodologies, foresight model, deterministic patterns, quantitative change indicators, time series phenomena, bellwether jurisdictions

## Introduction

Outcomes rarely are fatalistic. Typically, however, they become powerfully deterministic. The incremental and steady build up and surging of phenomena surrounding change simply reaches points of "critical mass." At such junctures, it is the confluence of surging patterns prompting change that become powerfully deterministic. The earlier the stages of development, the less complete and the weaker any particular elemental aspect of change may be. In some situations a single parameter may become a "slender thread" (indicator) upon which outcomes are premised. The earlier the developmental stage and the fewer the "levers of change" analyzed, the more intuitive and judgmental becomes a practitioner's forecast.

## **Roles of Intuition, Catalysts and Wildcards**

Persons contending with specific problems and issues may have intuitive "feelings" about the course and timing of probable developments and outcomes. Uncannily accurate as such foresight

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can be, such forecasts tend to rely more on luck than reasoned analysis. A more empirical, structured and factual foundation provides a more definitive and reliable assessment of the situation.

"Wildcard" phenomena may work in some situations. This presentation treats such occurrences as exogenous "bolts out of the blue." Specifically, such factors in this presentation are termed: unusual phenomena and catalysts. Traumatizing and shocking developments – such as the Chernobyl nuclear disaster, for example, devastated public opinion and literally "turned the tide" concerning the dubious safety of nuclear power development.

# **Empircal and Quantitative Force Factors**

The 22-step model presented here strives to reveal fundamental empirical and measurable quantitative forces. The steady build up and combined effects of the data sets these quantitative incremental forces impose and generate galvanize pressures that prompt change.

At the outset of undertaking forecasting efforts, it is essential to carefully consider the basic backdrop or context of resources pertinent to the specific situation. Taking stock of such fundamentals provides understanding of potentials and limitations prevailing in the external environment gripping the matter(s) under consideration.

# **Cumulative Coalescence of Change Factors**

Trendlines plotting incremental developments that shape issues can be arrayed to cumulatively describe the cascade of forces "shaping and pushing" them. Overlaying these sequential forces driving change quantitatively reveals and reinforces estimating the potential outcomes and timing of oncoming change.

## **Stages of Issue Development**

Modular time series factors that accompany patterns of change group into three discrete categories: 1. framing topics; 2. advancing change; and 3. resolving issues and specific matters. The parameters building up these elements clearly reveal the status and the pathways toward final outcomes.

Combined overlays and analysis of these multiple change indicators provide a sound factual foundation for projecting future outcomes. The pacing and momentum provides a basis for assessing the probability and timing of their solutions or resolution. Implicit in such a forecasting model is, literally, "the power to change the world." My book entitled "The Power to Change the World" (2003), describing and graphically portraying timelines presents the myriad of steps characterizing the various incremental steps is entitled "The Power to Change the World."

# Applicability of Principles to Forecasting in General

Terse description of the methodology – as presented in this article – stresses public policy. Coverage highlights numerous public policy channels available for resolving issue outcomes – 13 such channels, as presented. Principles, however, have a wider application to patterns of change that can be used to help pinpoint outcomes of almost any matter with which forecasters may grapple.

Forewarnings elucidated by this model can provide answers up to 30 years or more prior to outcomes. Lead time for responding to anticipated end results often is ample. In practice, gaining this lead time may be utilized to bolster, accelerate, redirect, deter or defeat outcomes – a lobbyist's dream come true.

Description of rudimentary elements of change patterns presented here provides terse explanation of what this futurist has labored at developing. Methods described are based on over 50 years of hands-on experience as a lawyer, lobbyist, Presidential staff/campaign adviser and educator. Hundreds of papers and articles and several books more fully and explicitly document various components and practical applications of the 22-steps covered here. Careful and comprehensive patterns plotting progress involving governmental policies and private sector pursuits for Fortune 500 companies enjoyed an uncanny accuracy in anticipating the nature and timing of eventual outcomes. Application of these change indicators over many years has proven to be "right on the mark."

# **Public Policy Formulation: 22-Step Molitor Model**

Public policy, prompted by a series of steps, each characterized by a sub-set of internal developments, evolves over long periods – typically 6-35 years in advanced nations. Twenty-two steps and partial description of their distinctive trendlines are briefly covered here. Descriptions, as presented, highlight only a few internal sub-steps in the full sequence characteristic of each overall step. Overlaying multiple chronologies of these steps depicting change drivers reveals a convergence – points of "critical mass." Coalescence of the combined trendlines depicts mutual reinforcement and overall momentum that evince "turning points" beyond which outcomes are strongly deterministic. Each step and internal incremental sub-steps that characterize it are based on countless observations that adduced approximations of overall descriptions. Sequenced arrays of simultaneously evolving steps provides a basis to gauge the trend, direction, timing and outcomes of public policy developments.

#### **Stage I: Framing issues**

1. To begin with, assessing public policy change requires a thorough knowledge of the EXTERNAL ENVIRONMENT or setting from which the issues spring. Situational contexts entail the intrinsic advantages and shortcomings that limit or facilitate prospective undertakings: I. Natural resources (minerals, climate, water, arable land, etc.). II. Human resources (population demographics – density, age distribution, healthcare status); educational status (literacy, number of scientists); social setting (urban - rural, affluence, time use – 70-80 vs. 24-40 hour workweek); economic

system (post industrial - lesser developed economies, capitalism - socialism); political climate (democratic - totalitarian, liberal - conservative); technological capabilities (hi-tech - primitive, R&D, patent activity); institutional infrastructure (giant global companies, transportation systems, utilities); and unusual factors (wars/hostilities, mind reading and privacy invasion). Numerous other examples of these basic resources could be cited. The point is that policy maker response is circumscribed by available resources – doing with what's on hand.

#### 2. The genesis of public policy problems commences with IDEAS...

Creativity is the wellspring of public policy. Initially, facts are few and ill-defined, descriptions are fragmentary and tentative. Ongoing discussion refines and tempers concepts. Ideas evolve from abstract, to general, to specific, to detailed refinements (exceptions, limitations, special circumstances). Hypothesis are proposed and tempered by peer review and social examination. Sound ideas survive and formal theories emerge. Following testing, verification and replication, consensus forms and widespread acceptance ensues. Each step takes time to run its course.

# 3. ...leading to INNOVATIONS (technological and social) that transforms abstract ideas into practical uses...

Technological advances usually originate with scientific and technological elites. Practical experiences based on commonsense everyday problem solving add other inputs. Experimental trials prompt a flood of related efforts and may lead to coordinated efforts. Doing anything better is a virtually limitless undertaking. Change is incessant, never fully or finally finished. Constant improvements and refinements occur along the way. Adoption and use settles upon the most effective, least costly and best approach.

#### 4. ...the implementation and impacts of these activities spawning EVENTS...

Event patterns are revealed by cumulative development involving: unique occurrences (surrogate "moms for hire," quintuple parenting – donor sperm and egg, surrogate mother, contracting mom, adopting parent; cloned babies), abuses and excesses (dangerous thrill seeking, ear-shattering car audio systems, toy lawn dart deaths), increased magnitude (hi-speed roller coaster deaths), disparities (126 vs. 50 year life expectancies), subtle or latent impacts (controls based on quadrillionth criteria), unforeseen (indoor pollution caused by "tight building" energy conservation), random phenomena (packaged product tampering/poisoning, copycat crimes), long term development (up to 46 year lag from exposure to asbestosis manifestation), preventive undertakings (war toy and spanking bans to discourage inculcating violent behavior), and so on. Initial impacts are novel and few in number. Public awareness of these event patterns are sparse and dim at first. As impacts mount, incidences are aggregated. Amassed data leads to comprehensive quantification. A sense of urgency may develop as the severity of impacts mounts. After measures contending with objectionable events have eliminated or minimized excesses, demands for change wane.

5. ...with the aggregate impacts and effects precipitating the ISSUES...

Issues based on event patterns complete this initial phase. At the outset, characterization of issues is incomplete and inchoate. Basic principles or conclusions may be uncertain or unclear. As more pieces of the puzzle are pieced together, new patterns are discerned and elaboration of specifics follows. At the final stages, descriptions are complete and comprehensive and the evidence becomes clear and convincing. Postadoption developments may involve: elaboration and extension of concepts; updating and upgrading; loophole closing; and, occasionally, repeal.

6. ...and sometimes UNUSUAL PHENOMENA may precipitate unexpected developments demanding consideration.

Occasionally, "bolts out of the blue" – unusual phenomena – may emerge and galvanize scrambling for accommodating solutions. For example, prostitution legalization (The Netherlands), unexpected (but possible) catastrophes in earthquake fault zones or flood plains triggering remuneration demands.

# Stage II: Advancing issues

Once issues are defined, a succession of socio-political responses converge to sustain discussion and advance or impede further development.

7. Public policy advance may be carried along by underlying and overarching CYCLIC AND LINEAR PATTERNS.

Most public policy developments unfold in a step-by-step linear mode. Progression isn't mechanical-like and smooth; it may develop by fits or short bursts. Other undercurrents – cyclic, periodic and oscillatory patterns, among the many others – also may play a role. Generic issue categories – social-welfare reforms, environmentalism, consumerism, communication/advertising regulation, and so on – often include hundreds of related issues that receive attention in cyclic waves. Cyclic periods of socio-political activism and reforms in the U.S. average 21-30 years. Undergirding patterns are akin to those used by economic forecasters that carry change along. The Kondratieff long-wave analysis of socio-economic change patterns provides a familiar example.

8. AGENTS OF CHANGE, ranging from victims to intellectual elites, flesh out commentary...

Change agents, ranging from victims who emote problems to scientists who explicitly describe and explain them, emerge as focal points of discussion and debate. Leading experts, scholars, institutional leaders, influentials, and scientific/technological elites provide factual commentary upon which public policy is founded. Occasionally, victims (or their survivors) become leading spokesperson(s). When controversy develops, critics and crusaders with varying viewpoints take up the cause. As issue development matures, popularizers, spokespersons, and institutional leaders sustain deliberations. Rarely, splinter parties may emerge to spearhead causes (Prohibitionists, "Greens.")

9. ...that gets picked up in COMMUNICATIONS media, creating widespread public awareness...

Printed materials document available research. Scientific, technical and professional journals provide the primary research foundation. While cumulative counts indicate the verve of matters, many scientific articles involve a preponderance of writers with only 1-2 articles on a topic. Such commentaries may be interesting, but seldom are seminal. Limiting bibliometric counts to leading authorities - often as few as 6-12 "experts" addressing highly specific matters – further simplifies research tasks. Written materials flow from highly specific scientific journals to mass media coverage, from the prolix to the popular. Piecing together inputs from related fields of knowledge and synthesizing disparate parts sharpens details and perspectives. Books, integrating and summarizing accumulated findings occasionally emerge - best sellers may swell popular interest. Artistic and visionary works (science fiction, poetry, novels, posters, protest signs, rap music, etc), uninhibited by peer constraints or political correctness, may elucidate plausible ideas prior to public policy makers taking them up. Chronicles of change are not limited to printed materials. The powerful impact of television and the internet cannot be underestimated. Photo-journalism, theatrical productions, motion pictures, jokes, cartoons, rallies and demonstrations, anarchy and terrorism, and virtually every imaginable form of communication contribute to the exposition of ideas and viewpoints that moves issues along. Actions may speak louder than words. The swiftly growing spectrum of sources is vast.

10. ...moving established ORGANIZATIONS, along with new ones that form, to take up and sustain deliberations...

As ideas emerge, established organizations are joined by newly formed institutions and public interest groups that address causes and issues. The existence of activist groups attracts interested parties, provides a rallying point, maintains continuity, and provides leadership. Growing backing for causes – measured by tabulating the number of organizations, persons involved or resources committed – increases pressures for change. Starting out in local areas, organizations may expand to regions, and nations, and not infrequently become global in scope. Government advisory committee and commission reports – especially those in Sweden, Great Britain, and the U.S. – should not be overlooked as their findings often play prominent roles in deliberating issues.

11. ...all of these widespread activities shape PSYCHOLOGICAL DISPOSITION with public opinion polls mirroring moods toward change.

Accumulating forces pierce veils of apathy and indifference. Growing public awareness shapes the psychological climate and public opinion polls track attitudes toward impending change. Swelling public opinion shapes attitudes and powerfully influences outcomes. For example, negative mindsets toward nuclear power rose swiftly in response to the Three Mile Island meltdown and the Chernobyl reactor accident and responses – including phase-outs – followed.

12. CATALYSTS – shocking events and revelations – may swell public clamor for immediate change.

Calamities that galvanize public opinion, spike uproars for corrective responses. The more shocking the revelations, the greater and more voluble the public clamor. Or, in the instance of beneficial new opportunities, urgings for "getting on with it" are ratcheted along. Titanic sinking tragedy led to upgrading safety measures. Thalidomide's hideous deformity of a newborn baby's limbs (phocomelia) resulted in swift upgrading of drug laws. Accidental release of toxic chemicals at a Union Carbide plant led to stricter hazardous substance control laws.

#### Stage III: Resolving the issues

Up to this point, the change pattern has progressed beyond intellectual development and proving of ideas that introduced innovations which caused events to unfold – Framing the issues. Discussions dealing with events, carried on by champions of change and their organizations sustained deliberations that shaped public opinion (sometimes accompanied by catalytic phenomena carried along by cyclic undercurrents of change) have exerted their influences – Advancing the issues. Finally, arrays of informal and formal public policy solutions now are brought into play to accommodate change – Resolving the issues.

## 13. Public policy controversies may be resolved by INFORMAL RULES.

Informal principles and practices – without the sanctions and enforceability of written codes – often guide behavior. Generally implicit and left unspoken, these fundamental rules – ideological, philosophical, ethical and moral concepts – predispose and shape human actions. At another level, cultural influences tempering human responses include folklore, legends, ballads, fables, proverbs, parables and all other forms of practical wisdom. When such informal constraints fail – for example, when social etiquette and disgust no longer discourage chewing and spitting tobacco or smoking tobacco in public places that jeopardizes health – formal controls typically may be imposed.

# 14. INFORMAL SETTLEMENTS, including arbitration, mediation and conciliation, provide casual means for resolving matters.

Some informal rules and settlements involve more explicit and formalized procedures, sometimes including institutional frameworks for enforcement. Grievance settlements involving arbitration, mediation, and conciliation are not legally enforceable (unless specified otherwise). Less obvious approaches include labor union agreements based on "cajoling and wheedling" and "gentlemen's accords" that may be morally but not legally binding. When mere words or oral agreements fail, resort typically escalates to formal contractual and legalistic approaches. More formal avenues of pursuit include grievance complaints, letters of understanding, and a host of contractually binding steps. Many of these approaches involving responses to newsroom union member exposure to harmful radiation from early video monitors led to design modifications as well as strict safety laws.

 JUDICIAL INTERVENTION providing individual relief from social wrongs, case-by-case, highlights problems that may prompt across-the-board legislative solutions.

Judicial decisions rigorously build upon and adhere to past decisions. "Landmark" decisions in leading jurisdictions (California, New York, Massachusetts, and others), usually are followed by other domestic courts. This incrementalist approach and cross-jurisdictional adoption pattern provides long and linear patterns with predictable outcomes – the critical building blocks of forecasting. Courts provide early warning of problems individuals encounter because courts are duty-bound to respond; whereas, legislatures need not take up individual complaints. Swelling caseloads involving self-same issues often reveal utility of across-the-board statutory relief.

16. SELF GOVERNMENT responses – popular initiatives, referenda and recalls – often highlight problems not moving along fast enough through traditional policy making channels.

Self-government responses – popular initiatives and referenda, in all their variant forms – often pinpoint matters not moving along fast enough or going far enough through traditional policy-making channels. Politicians sometimes are reluctant to openly commit themselves on nettlesome and contentious issues. Instead, they may defer difficult issues to voters. Time consuming steps entail: instigation, drafting, preliminary filing, circulation and signing petitions, formal filing, educational campaigns, and voting. Issues currently referred directly to U.S. voters include controversial measures such as medical use of marijuana, gambling, and euthanasia (right to die). Occasionally, formal recalls of government officials may pinpoint substantive concerns.

17. VOLUNTARY ACCOMMODATION – self-policing by affected interests – may stave off and moot imposition of formal regulation, temporarily, if not permanently.

Facing likelihood of heavy-handed formal regulation, affected interests often devise self-regulatory measures to ameliorate, if not eliminate, difficulties and avoid burdensome governmental controls. The process begins with discussion, leading to varied experimental approaches. Shared experiences and information settles on the "best" solution. Voluntary undertakings – including self-regulation, codes of behavior, ethical practices, guidelines, and other self-help measures – are not compulsory and do not have the force and effect of law. Widespread non-compliance may prompt clamoring for formal mandates. Self-policing often becomes a mere way-station prior to statutory mandated solutions (vehicular seat belts, smoke/flame detectors, smoking in public places).

18. CONTRACTUAL ARRANGEMENTS provide a means to secure and sort out legal rights enforceable by courts of law.

Contractual arrangements that secure enforceable rights and "contract away" potential problems may elucidate widespread problems deserving public policy attention. Consider, for example, concerns involving supposed hazards emanating from powerful electro-magnetic fields (EMF). Home sales in close proximity to electric

transmission lines were among the first to grapple with suspected hazards. Affected parties – home buyers/sellers, realtors, mortgagers, insurers, among others – dealt with such situations by contracting away potential liabilities and downscaling property values. These patterns and practices led to right of way adjustment and zoning setback laws formally contending with such hazards.

19. LEGISLATIVE RESPONSE, involving 20-40 steps in a typical bicameral system, entails a drawn out process generating timelines for tracking developments.

Probably the most widely used indicator of public policy action involves formal legislative activity. Although it is easiest to monitor, it comes relatively late in the overall development of most issues. Drafting, introducing, debating and moving legislative proposals through a labyrinth of 20-40 stages of consideration, is fraught with numerous intervention opportunities imposing time consuming delays. Moving legislation from introduction to enactment, on first impression in the U.S., varies by jurisdictional level and topic. Federal laws, on first impression, require at least 6-8 years, and often decades, before becoming law (if ever). Emergency situations may speed up the process. Economic decline or wartime footing may slow down postponable matters.

19A. QUASI-LEGISLATIVE ACTS (as well as quasi-judicial determinations) tend to be overlooked in monitoring public policy developments.

Decision patterns of specialized regulatory units – worker compensation boards, labor relations boards and occupational health and safety commissions, to mention a few – may trigger demands for statutory solutions. As abuses amass, corrective regulatory mandates follow. Close, continuous, and massive exposures to dangerous situations and substances often provide first inklings of dangers. New York's Worker Compensation tribunal, for example, awarded the first worker injury claim involving massive exposure to microwave radiation in a high-volume relay station – predictably followed by regulations and laws. In similar manner, asbestos injury worker compensation board awards dating back to the 1870s in England preceded the rash of U.S. class action suits almost 100 years later that bankrupted numerous U.S. companies and gave rise to statutory relief. Had affected parties been aware of this century old pattern, untold grief could have been spared.

# 19B. STATE AND LOCAL BELLWETHER ACTS test the advantages (and disadvantages) of legislated solutions.

Jurisdictions consistently among the first to adopt novel laws are termed bell-wethers, precursors or early adopters. Adoption and actual experience establishes the merit – and shortcomings – of new laws. Proven successes are emulated and mistakes are avoided elsewhere. Listing enactments chronologically by adoption dates (not effective dates) indicates relative patterns and timing sequences – "diffusion patterns." Diffusion from one jurisdiction to another begins with initial innovators closely followed by a second tier of early adopters. Next, a surge of followers respond and diffusion winds up with the laggards (including a few holdouts). Diffusion among the 50 U.S. states (let alone thousands of local jurisdictions), takes time – at least 5-10 years,

and up to 15-25 years or longer for most state issues. Currently the U.S. vanguard includes 4-6, perhaps 10 states. Precursors vary by issue. Not unexpectedly, major agricultural states enact the earliest and toughest pesticide controls. In federated systems, state and local jurisdictions usually precede central government response. From Colonial times to the 1880s, this lapse typically spanned up to 100 years in the U.S. Beginning in the early-1900s, 15-45 years. From the 1920s to current times, 5-15 years on average. Since the 1930s, the U.S. federal government has become much more interventionist and the timeframe has diminished.

19C. NATIONAL PRECURSOR ACTS responding to the same problems elsewhere, include a small number of first adopters followed by a second tier of early adopters.

Globally, a tier of 4-8 precursor nations constitute the wedge of change that "field tests" new laws. Principles proven by one nation spread from one country to the next. These "patterns of change" during recent times commence in Scandinavian and Western European nations. Sweden and California, for many years usually the "first by whom the new is tried," provide a forecasting shortcut. These two jurisdictions typically indicate developments likely to be undertaken in later-adopting jurisdictions. Diffusion patterns – the lead-lag relationships between tiers of leading, following and lagging jurisdictions – provide a telltale indicator of response time that late-adopting jurisdictions can capitalize upon. The U.S. is an early adopter but rarely among the earliest adopters. Social welfare reforms in the U.S., for example, lag 30-40 years behind the wedge initial adopters. "What goes around, come around."

# 20. New policies move toward implementation through EXECUTIVE-REGULATORY ENFORCEMENT.

Following enactment of new laws, implementation involves time consuming administrative undertakings that can delay the force and effect of new laws. The wheels of bureaucracy often grind slowly. Following enactment, data acquisition usually requires 1-3 months. Analysis and drafting regulations, typically proceeding through many time consuming drafts, may take an additional 1-3 months (longer for new and novel matters, as well as for complicated and contentious issues). Promulgation and submission for comments, including possible formal hearings, can be protracted by due process rigors and numerous time-consuming formalities. Filling in details may require 2-3 years, and up to 6-8 years when time-delaying gambits are interposed. In a few instances, as long as 26 years of delay may be interposed when all opportunities for delays and judicial appeals are relentlessly pursued.

21. Possible JUDICIAL REVIEW challenges can be interposed to further delay finality. Judicial reviews, not infrequently, may be diligently pursued to contest (or to speed up and ensure) desired outcomes of contested issues. In the U.S., three levels of federal recourse and review may be interposed. In some jurisdictions, as many as five levels of time-consuming appeal may take up many decades.

22. In extreme cases, CONSTITUTIONAL REVISION that reverses, repeals or otherwise redefines final outcomes may be pursued.

Revising fundamental constitutional documents is rare. Pursuits of constitutional proposals often linger over long periods. Few proceed beyond the proposal stage. Formal methods of constitutional revisions entail time consuming efforts, such as calling constitutional conventions and submitting propositions to ratification among the states. These undertakings often span many decades – and usually are unsuccessful.

#### **Conclusions**

The Molitor Public Policy Change Model renders into quantitative timelines what persons interested in public policy change intuit. Change patterns unfold in an evolutionary manner that course through strongly deterministic and identifiable stages. These telltale patterns of change foreshadow eventual public policy outcomes. What comes next amounts to little more than continuations of multiple and mutually reinforcing chronologies that delineate pressures prompting change. The longer the timescale and more complete the rendition of details, the more self-evident the outcome becomes.

"Patterns of change" comprising the Molitor Model describe templates that explicate the cumulative force and effect of forces driving change. The starting point requires thorough familiarity with the external environment encompassing the natural and human resources peculiar to specific jurisdictions. Particularly important is the stage of economic development - literally a "world apart" comparing progressive post-industrial nations to laggard lesser developed nations. Public policy commences with ideas. Practical application of abstract thoughts – innovations – impose telltale event patterns that measure positive or negative impacts. Leading authorities, intellectual elites, victims, and hordes of interested parties, and organizational institutions they represent, generate public awareness and debate. The written word and expression of all kinds copiously document the verve of change. Gathering force and effects of those cumulative forces generate climates of public opinion that prompt informal (private) and public policy responses. First responses by initial adopters – a vanguard of precursor jurisdictions that spearhead change – is picked up by early adopters, spreads to more followers and eventually to laggards. Judicial intervention and constitutional revision efforts, if they fail, may lead to going back and starting legislative reconsideration anew.

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## References

- Conger, Stuart D. (1970). Social inventions. Prince Albert, Sask., Canada: Modern.
- Galtung, Johan & Sohail Inayatullah. (Eds.). (1997). *Macrohistory and macrohistorians: Perspectives on individual, social, and civilizational change.* Westport, CT: Praeger.
- Lapp, Ralph E. (1973). *The logarithmic century: Charting future shock.* Englewood Cliffs, NJ: Prentice-Hall.
- Linstone, Harold A. & Ian I. Mitroff. (1994). *The challenge of the 21<sup>st</sup> century: Managing technology and ourselves in a shrinking world.* New York: State University of New York Press.
- McHale, John. (1969). The future of the future. New York: George Brazilller.
- Molitor, Graham T.T. (2003). *The power to change the world: The art of forecasting*. Potomac, MD: Public Policy Forecasting. [Provides exposition of details inherent in individual steps "signatures of change" based on over 50 years of working on thousands of public policy issues. Fuller descriptions and characterizations are graphically displayed.]
- Shuman, James B. & David Rosenau. (1972). *The kondratieff wave*. New York: World Publishing, Time Mirror.
- Vago, Steven. (1980). Social change. New York: Holt, Rinehart and Winston.