

**HOLISTIC INTEGRATIVE ANALYSIS
OF INTERNATIONAL CHANGE:
A COMMENTARY ON TEACHING
EMERGENT FUTURES**

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INTERNATIONAL CHANGE: A COMMENTARY ON
TEACHING EMERGENT FUTURES**

by

Guntram F. A. Werther, Ph.D.

About the Author

Guntram F. A. Werther earned his doctorate (defended with “distinction”) from Washington University in St. Louis (1990): having it also twice nominated as the best work in comparative politics nationally (APSA Gabriel Almond Prize nominations for both 1991 & 1992).

Since 1986, Dr. Werther has taught at four major universities, consulted at the senior executive levels of multiple Fortune 100 firms and for governments, and—as department chair and otherwise—has developed cutting edge holistically integrative, multi-disciplinary, cross-cultural programs in both online and standard formats. Currently, he is Executive in Residence at Thunderbird—The School of Global Management, is Associate Faculty (graduate level strategy) at Arizona State University’s W. B. Carey School of Management, and is a Professor at Western International University, as well as a contractor to Fortune 100 firms and U.S. government projects addressing senior level operational decision-makers.

Dr. Werther maintains membership with several security and defense groups in North America and Europe. Most prominently, he is a Fellow at Proteus USA (Office of the Director, National Intelligence), is a long-time Fellow at the Inter-University Seminar on Armed Forces and Society (IUS – USA & Canada), is a charter member of the Canadian Association for Security and Intelligence Studies (CASIS), and of the European Group on Armed Forces and Society (ERGOMAS), among others.

Dr. Werther’s current specialization is in developing holistically integrative training and assessment techniques for better forecasting emerging international trends and patterns of international change; perhaps currently the most serious defect within our business and government intelligence analysis capability. Dr. Werther’s “profiling international change processes” approach is a holistically integrative, syncretic, and socio-psychologically grounded approach to understanding how change happens within and among different societies and actors within a complex adaptive international environment.

Previously, Dr. Werther’s 1992 comparative study of conflict styles and the mirroring management approaches of governments dealing with ethnic national self-determination movements was reviewed as the best work in its field (Dr. Jay Sigler). The book was evaluated, by the Australian Journal of International Affairs, as among the best publications on the subject of ethnic conflict then available internationally; listed therein with world leaders Ted Gurr, Walker Connor, David Brown, and Morton Halpern, among others.

He may be contacted at: gfwerther@gmail.com or 480-671-1304.

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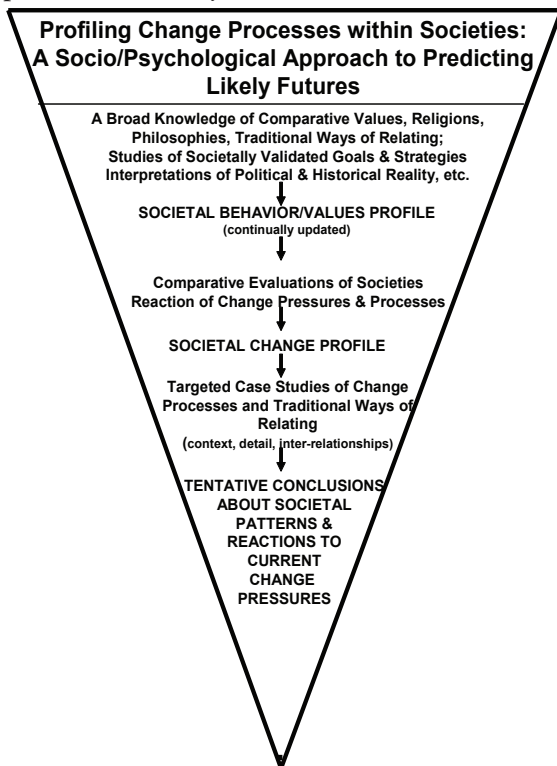
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HOLISTIC INTEGRATIVE ANALYSIS OF INTERNATIONAL CHANGE: A COMMENTARY ON TEACHING EMERGENT FUTURES

Introduction

To accomplish—properly, correctly, and regularly—an holistically integrative assessment of international change dynamics, and forecasting therewith emerging international change (futures), is to demonstrate a taught skill within a found talent.

Such a talent cannot, any more than can world-class piano playing or gymnastics, be downloaded, reverse engineered, standardized, or otherwise short-circuited, nor is it the province of the many. One must do the considerable prefatory work, constantly maintain and update one's ability, and understand that one's work must be properly



grounded across many disciplines. This well-grounded ability must be enfolded within a capacity capable of achieving integrative mastery of insights from many sciences through the art-like skill necessary for success in emerging international futures forecasting. Part of this blended art and science is to see things dynamically and holistically: to see flows and their emergent dynamics. (See figure 1.)

Figure 1

Facilitating the teaching of such an orientation to the world and to change within it is this monograph's goal. Doing so, of necessity, involves discussing basic and advanced issues. Many people can be taught basics, fewer can achieve competence in integrating basics from many disciplines, and fewer still attain mastery. Mastery at an advanced dynamic level is yet more rare. This is the reason for highlighting that a competent emerging international future forecaster is a found talent, but one that we can to some degree train and create.

Teaching this necessarily holistic orientation to emerging international futures forecasting is significantly at odds with many current pedagogic and analytic practices. In any event, the relative lack of holistic orientation and of the ability to reason forward in an integrated and holistic manner has proved costly in both lives and treasure for the United States of America.

It is this context of misalignment between need and necessity that provides justification for a commentary on the more proper teaching of emergent international futures analysis.

Wherein Lies Our Best Opportunity For Advancement in Emerging Futures Forecasting?

Since the 1940s, the norms of scientific analytic practice within the humane sciences, international affairs among them, have increasingly tended toward the more technological and the mathematically empirical solution sets: indeed, often toward building modeling-type solutions that seek to apply the methods and orientations of the physical sciences to the social sciences and humanities. Here, nuanced reality produces failures in forecasting.

Technology change futures forecasting has a better record, but the ability of models to predict "timing" is problematic (Kurzweil 2006, 2) because "sequence, procedures, and emphasis [must be] exactly correct... [where] a small change" can shift the whole modeling outcome (Kurzweil 2006, 5). Seeing thereby "patterns of information as the fundamental reality" (Kurzweil 2006, 5) suggests we ought to think in terms of patterns.

Mathematical modeling and artificial intelligence-type forecasting orientations, which seek to reverse engineer how humans and societies think and change in order to forecast emerging futures, have a decent record within some hard science and financial services applications, but overall evince a poor record within the broader realm of human and societal change forecasting. In part, this is due to the nuanced, shifting complexity normal to human affairs. Soft data realities (religion, ethnic identification, political views, etc.) are simply harder to measure; additionally, non-objective biased thinking defines and typifies each culture. Every society thinks according to *its* bias; not objectively. Human features of adaptive complexity do not muddle technology and natural systems' change forecasting, yet their forecasting record is also not good (Pilkey and Pilkey-Jarvis 2007).

Summing, reverse engineered Frankenstein-like models constructed bottom up to mimic the actions of the real thing have a poor record in humane and social affairs forecasting, and not a good one elsewhere.

Economics is the social science most closely aligned methodologically with mathematical model building, and it is consequently among the most criticized for its too-statistical orientation at the expense of broad reasoning, for its unreal methodological assumptions, and its numerous forecasting failures. However, an arithmetic critique is generic to forecasting in several fields (Drucker 1998; Fialka 1997, 132, 194; Hill 2003, 146-147; Fuerbringer, Feb. 23rd 1999; Economist, Jan. 31st 2004; Economist, June 23rd 2007; Economist, Jan. 13th 2007; Economist, July 2nd 2005; Pilkey and Pilkey-Jarvis 2007).

When speaking about constructing better methodologies for forecasting emerging international futures, the stand-alone mathematical modeling approach is chimera.

Werther addressed this emerging international futures forecasting incapacity as evincing simultaneously a failure of imagination, training, and education, a lack of respectful attention to Aristotle's ancient injunction about the limits of precision and accuracy appropriate in discussions across different sciences (Thomson 1983, 64-65), and ultimately, as a failure to achieve holistic integration: a failure stemming from an over-simple view of change dynamics as something capable of

being constructed from available parts rather than as something to be achieved through understanding interpenetrated and highly nuanced emergences (Werther 1997, 1998, 1999, 2000a, 2000b, 2001, 2006a, 2006b, 2007).

Much has changed respecting evolving ideas about what best practice futures forecasting orientations will look like. Mr. Timothy Bright (2007) of the Office of the Director, Program Analysis and Evaluation [OSUD (P)], commented with respect to *Unrestricted Warfare* inquiries: “Qualitative analyses are the coin of the realm; for which we attempt to build metrics.... [This is so because] the required data are usually nuanced and thus cannot be modeled, such that the best outcomes possible are best described as “rules of thumb.” Bright (2007) argued that informed judgments have provided the most insight, and that traditional—that is to say, current—analysis approaches are not applicable.

Far more than “rules of thumb” are possible, but Bright’s general view is correct.

Following generically upon this theme, Mr. Michael Bauman, Director of the U.S. Army’s Training and Doctrine Command (TRADOC) Analysis Center, commented that typically “the data base is miserable...the models are inadequate,” and furthermore that we are in an emerging environment where open sources will cross over all domains. “Hence the problem lies in comprehending them and integrating from them” (Bauman 2007).

Comprehension of and integrating from what are essentially complex systems in motion—both internally and also endlessly with respect to each other and their environment—but which are, for all that, constantly open to observation, define the analytical landscape to be negotiated in emerging future’s forecasting. This work is largely qualitative and mostly open source, requiring skills at achieving synchrony: a point about information abundance amid lacking synchrony made by Wilson (1998, 85, 269) in his *Consilience: The Unity of Knowledge* and by Sir Isaiah Berlin (1997, 1-37), among others.

Apparently arriving at a similar conclusion from the modeling side, Dr. Andy Ilachinski suggested that multiple agent models were the only appropriate models for understanding complex adaptive systems, but further concluded: “a multiple agents based model is only an adjunct for what the analyst has in mind” (Ilachinski 2007). That is to say, the analyst is the key element of successful analysis of complex adaptive systems.

International emerging futures forecasting lies within the family of complex adaptive systems problems; and the optimal solution set places the model as an adjunct to broader analyst capacities.

Within this realm, the highest eventual goal will be the holistic integration of qualitative and quantitative methods and perspectives; but the framework and foundation will be qualitative, with the quantitative providing adjunct, and most particularly temporal, depth.

The relationship between the complex adaptive problem (emerging futures forecasting), the analyst, and the qualitative, nuanced nature of the data is of primary interest precisely because this kind of analysis cannot be objectively modeled absent a qualitative base.

Aristotle says of this, “The good critic in general is the man with a general education [who is]...versed in the practical business of life” (Thomson 1983, 65). Many men esteemed for their wisdom, Confucius and Sun Tzu among them, have emphasized this necessary happy nexus of talents leading to insight (Dawson 1993; Demna 2002).

We see here a clear understanding of a necessary, wise, and complex relationship between the broadly trained and experienced analyst, the variously nuanced types of data to be evaluated, and the kind of training and education necessary to forecast successfully.

A nuanced, complex systems form of understanding, embedded as it needs to be within the practical and real experience of humankind, was common during antiquity, at least within the rationalist elements of classic cultures. It remained the coin of the realm during Age of Reason and Renaissance discourse, and was only largely abandoned in favor of specialization and disciplinary exclusivity during modern times

as a kind of love affair with technology and mathematically grounded science replaced Alexander Pope's more enfolding notion that "(to use my Lord Bacon's expression) [to] *come home to men's business and bosoms*, I thought it more satisfactory to begin with considering man in the abstract, his nature and his state...[to do which] it is necessary first to know what condition and relation it is placed in (Pope 1965, 3).

Reading certain classic scholars provides some of the most illuminating thinking on holistic complex systems' action and assessment; and this leads to a significant "back to the future" aspect within any current inquiry into better emerging futures forecasting.

One school of Enlightenment thinkers, the Encyclopaedists, and their modern spawn, are now influential within many modern scientific disciplines. The Encyclopaedists replaced a traditionally tentative, cautious, conservative, and nuanced view of scientific inquiry concerning how change can occur with a positivist drive for total information and for a mathematical orientation thought useful in forcing and managing change: an often tragic juncture with implications hurtful to reason itself, as clarified by Hayek (1979).

This unfortunate trend of applying mathematics and technology solutions *inappropriately*—that is, beyond their disciplinary limits respecting precision—to humane matters in a non-embedded (specialized) and ahistoric way is a kind of techno-barbarism: a willful ignorance of and/or exclusion of complex and interpenetrated humane factors in an attempt to build models of human societal activities. These are precisely the models that modern scholars increasingly tell us cannot work well for futures forecasting.

What can?

Of Mindset and Forecasting Practice

Contemporarily expressing a too common generic weakness in assessment practice with respect to *Unrestricted Warfare* forecasting problems, the TRADOC Analysis Center's Director, Mr. Michael Bauman, commented that currently social, cultural, political,

economic, and other non-kinetic data *are not entered in the databases* (Bauman 2007).

How then, can such creations succeed in illuminating human and societal problems?

Within the Western science and philosophy tradition, modern scientific empiricism arose *as a late-Medieval reaction* to Scholasticism and other heavily religious-philosophical learning and thinking traditions. The great, even stunning, advances in knowledge made possible by applying scientific empiricism, meaning largely mathematics, to hard science and engineering problems has not been replicated within the social and humane sciences, though a concerted effort to do so ‘took off’ beginning in the late twentieth century.

This ‘take off’ period witnessed a shift away from more holistic, integrative, qualitative, and sociological norms attending studies of human action and social change by importing hard science empiricism into many social science and humanities disciplines, especially within economics. One can understand this concisely by noting the relatively historical, cross-cultural, and multi-disciplinary writings of great eighteenth and nineteenth century minds as various as Jefferson, Adam Smith, Bodin, Rousseau, Locke, Mill, Voltaire, Montesquieu, Montaigne, Machiavelli, Burke, Goethe, Schiller, Herder, Leibnitz, Schopenhauer, Nietzsche, Hegel, and Marx; and especially by comparing the late nineteenth century holistic sociology tradition of Max Weber, Emile Durkheim, and others to the single disciplinary, empirical-mathematic traditions that became standard disciplinary practice during the late twentieth century. This trend advanced somewhat during the Second World War era, but it accelerated after the Sputnik event and the United States’ subsequent panic about being behind in science and mathematics education. “What is your specialty?” became *the* standard question; and being a generalist became viewed as lower-tier scholarship.

It was never before thus in human history. Traditionally, great thinkers and many secondary others moved across disciplinary boundaries with ease, crafting comparatively integrated and holistic explanations for why humans and societies acted as they did. To

be a specialist was to be not well rounded. Non-Western thinking traditions always had, and to some degree still retain, this more holistic and integrative focus on humane issues.

Generically then, the twentieth-century Western science approach was a choice to simplify social explanations, first by positing economics as a primary driver of social motive, action, and change, and then by applying arithmetic models to proposed solutions sets.

At senior executive levels within the Fortune 100 community, perhaps also within government service, there is simultaneously a demand for “simple and easy-to-use analysis tools [where]...cost effectiveness is a constant theme.” Unfortunately, “seeking simplicity, much of what ‘sells’ there is more about trendy marketing than merit” (Werther 2000b, 41). Kurzweil frames this as a demand for brevity (Kurzweil 2006, 5). Brevity and simplicity have the merit of being brief and simple; they cannot often clarify emerging international change in complex adaptive human systems of the interpenetrated and nuanced kind. Complex real-world arrangements of things and their complex processes require appropriately sophisticated levels of thought to understand them—usually of the integrated and holistic kind—and to consequently suggest complex assessments to explain them.

Finally, there remains the bureaucratic and societal problem of fostering normal thinking versus permitting insight and new concatenation, which such as Einstein (Isaacson 2006) and Kuhn (1970) so eloquently emphasized as being necessary. Once scientific empiricism *becomes* the norm within humane studies, other traditions are crowded out. This is what occurred in our modern world, and it is principally why we cannot now effectively leverage exciting and entirely new technological information storage, management, and assessment possibilities to forecast futures well: we currently lack the integrative holistic grounding necessary to that task. This lack squanders great potential.

Summing these considerations we can inquire: Is the world of data, of facts (total information awareness-type lacks), and of processes *the* problem, or are we insufficiently competent at “comprehending them

and integrating from them” (Bauman 2007)? The former seems very implausible, so recent interest is now more focused upon the latter.

Consequently, the notion: “The problem lies in the art of analysis, perhaps in our attitudes about analysis, and certainly in our mastery of the demands of analysis [seems reasonable]....Said otherwise, is there some lack in the nature of paint and brushes that keeps us from painting like Rembrandt?” (Werther 2000b, 41) A negative answer directs one’s attention toward the mind and skills of the analyst.

We have wonderful new tools in technology, but lack the ability to holistically assess.

Of Futures Forecasting: Learning to Stand, Walk, and Run

The enhancement of the trained mind of the analyst is our best opportunity for advance in emerging international futures forecasting. However, training international affairs analysts to think in a truly multi-disciplinary, cross-cultural, comparative, historically informed, integrative, and holistic way about the world is mere preface for an advance.

Eventually the element of interpenetrated change dynamics needs to be confronted. This requires two competencies: (1) holistically seeing how things are put together (and how they support or oppose each other) at a static systems level, and (2) seeing how holistically interpenetrated entities move, both (2.1) internally in response to change pressures, and (2.2) simultaneously with respect to their external environment and to other bias systems operating within that environment. Other actors, each seen as different bias systems operating within the overall environment, also respond via their respective interpretations of change. The metaphor of biased dancers dancing clarifies the dynamic aspect that needs to be holistically captured.

This is, baldly phrased, the landscape of the dynamic advanced assessments’ ground.

Building upon a well-grounded capacity for understanding the varied interrelationships among things—the “what-goes-with-what-and-why?” and “what-leads-to-what-and-how?” questions—permits this advanced kind of thinking about change, about change processes, and about emergent path development, and only then is it possible to speak about doing dynamic forward-oriented assessments of change: futures forecasting.

This is, summed, a statement of the analytical kernel, its holistically integrated intermediary solution sets, and its dynamic forward-directed forecasting manifestation.

Each element is addressed herein by building up, onion-like, interpenetrated learning, assessment, and forecasting capacities: standing, walking, and running.

One thing mainly constrains our ability to more effectively forecast emerging futures: groundwork is lacking. Particularly, those qualitatively nuanced “what-goes-with-what?” and more dynamic “what-leads-to-what?” competencies that are today artificially rare.

The second generic error is a drive for inappropriate precision amid comprehensiveness: evincing simultaneously a lack of wisdom about Berlin’s (1997) qualitative “sense of reality,” which must always operate both through “the crooked timber of humanity” (Berlin 1992), and within a “cragged hill” world of operational reality (Kennan 1993). Wrong scientific methodological orientations critiqued by Przeworski and Teune (1982, 17-26) and others detail costs and opportunities attending to appropriateness of method.

These twin dysfunctions, lack of grounding and inappropriateness shown by unwisely applying precise methods to imprecise, adaptively dynamic, nuanced, and contextually rich data, largely describe our current situation. We have also, by way of educational choices made and the assessment methods we have preferred to use, precluded doing effective forecasting. In order to effectively forecast emerging international futures, these errors need to be undone. There is no simple or brief way of remedying the current state of affairs, but remedy it we must, if emerging international futures forecasting is our goal.

What is the Justification for Such an Investment?

The entire U.S. effort toward producing integrated security solutions, including integrated and holistic assessments of international environments and thus of emerging futures forecasting, rests upon having effective basic and intermediary holistic education and training programs that we do not now have (Werther 1999; Werther 2001). Beyond that, and only beyond that, can one speak usefully about training people in advanced holistic types of dynamic assessment and emerging international futures forecasting: our goal.

The problems that the United States increasingly faces internationally are indeed multiple-agent *dynamic* complex systems problems. There are many complexly nuanced moving parts, and we do not know how to model their solutions. We have the facts, but too often cannot predict their consequences within embedded complex adaptive systems dynamics.

Seeking democracy and globalization, we engender anti-American electoral outcomes and broad regional movements toward socialism. Seeking international development, we engender insurgencies and destabilizing societal movements. Aiming here, we hit there.

The realm of application is vast, and the consequences of continuing to misjudge are dire.

If the wisely educated and holistically trained mind is key, we have our problem.

What is presented herein requires a considerable sunk cost investment. There is no other way to achieve holistic integrative abilities leading to effective futures forecasting.

Where are We Going in This Discussion?

This treatment of the training and education problem to be solved, leading necessarily to analytical capacities co-emergent with each style of analyst world-view, understanding, and ability, proceeds thusly in terms of core topics to be initially addressed.

The core topics enfold building up these foundational competencies: *Layering the Onion* (building cross cultural, multi-disciplinary, historical, and comparative competence), *Interpenetration* (understanding relationships, patterns, and their supports/weaknesses), *Path Development and Harmonics* (learning how change happens within variously interpenetrated complex systems), *Streaming and Emergence* (learning how "normal" change and responses to it are built up and subsequently dealt with within systems), *Perturbations and Multi Systems Bias Responses* (learning to think within bias within contextually shifting and nuanced complex adaptive systems analytic spaces), *Profiling International Change Processes* (doing emergent futures forecasting from this holistic and integrative *dynamics* grounding), and *Future Needs*. Some topics have multiple sections and, quite logically for an integrative and holistic treatment, these sections enfold insights from other sections. Holistic integration is never straight-line thinking.

Each section treatment is necessarily brief, hopefully not over-brief, and proceeds from a fundamental premise: human systems are historically emergent and humanly constructed systems of bias; and people, groups of them, and the societies that they form and of which they are a part, attempt to be rational within their accepted normative systems of bias. They are not objectively rational in some mathematical or physical science sense.

Borrowing significantly from the famous phrases of Alexander Pope and Isaiah Berlin: the "proper study of mankind is (wo)man," and requires the right kind of (wo)man capable of attaining correct dynamic complex adaptive systems mindsets adequate to actually doing emerging futures forecasting and dynamics illumination (Berlin 1998).

Consideratins for Teaching the Futures Forecasting Art

Strangely, nobody expects to fly an airplane, drive a submarine, or engineer a building without *all* of the prefatory mathematical, scientific, and technological work appropriate to that task, yet we expect somehow to judge complex human affairs without doing the prefatory work of attaining serious and broad familiarity with many humane disciplines

and many cultures and societies, which is basic to that task. Instead we want simplicity and brevity, and we hope to take it on one discipline at a time, ignoring thereby interpenetrations of human experience. Nobody wants a pilot who only learned on-board electronics, but we tolerate a social scientist who learned only economics or political science. Indeed, we normally teach to just that expectation.

Current pedagogies tend toward the single disciplinary focus, or latterly—at best—toward multi-disciplinary and cross-cultural formats that are typically descriptively and statically presented. Our problems are multiple-agent complex adaptive systems-types, all dynamically interpenetrated across time, regions, and disciplines. We rarely teach toward their dynamics, and if so, yet still more rarely to the holistically integrated kind of change dynamics necessary. As previously stated, such efforts are historically arithmetic.

Forces (or factors) approaches—economic forces, political forces, cultural forces, legal forces, and the like—found now in some international business curricula, remain basic: static and not often integrated with respect to contextually nuanced multiple impacts of the various forces upon each other. The forces selected for study are generic and rarely defined contextually by the problem to be solved, but more often are one-size-fits-all categorical topics thought, pre-inquiry, to be universally relevant.

One is left with the idea that multiple factors and forces are important, but how they are so and how they might systemically inform us about integrated patterns of behavior, connected trends, and emerging futures is not well specified or much attempted (see Hill 2003; Czinkota, Ronkainen and Moffett, 2003).

Lacking a fundamentally appropriate integration ethic and holistic insight—which must in each applied instance also be contextually nuanced—one may wonder whether any assemblage of available parts from such a presentation could make a well-proportioned whole were holistic integration seriously attempted?

We require something more.

What is necessary is an approach properly grounded in many disciplines, yet also holistically integrative throughout respecting its orientation to human action amid change. It's ultimate focus, and competence-building style, *is directed toward studying the change process holistically*. This is fundamental. Things proceed according to their idea in the sense that every grouping of persons and every society is an idea manifested: a strategic solution set acted upon according to its normal, and defining, bias system. Multiple philosophic and religious traditions have noted this about cultures and societies.

Thinking this way requires recursive thought throughout that is placed within a dynamic study of *bias-motivated* flows within complex adaptive environments. The great scholar Moses Maimonides' (Maimonides 1956) *The Guide for the Perplexed* contains a fine Judeo-Aristotelian exposition of such embedded complex adaptive systems thinking, but one sees embedded complex adaptive systems thinking as fundamental in Hindu, Buddhist, and Taoist traditions, as well as in selected Western thought. Insights from classic traditions are folded in to support the forecasting learning argument and to direct attention to the importance of ancient wisdom in modern problems—both as foundational to differing modern societal norms, and as accumulated insights from human experience.

A holistically oriented dynamic teaching/assessment framework addressing modern complex adaptive systems forecasting problems was developed through Fortune 100 corporate lectures as *Doing Business in the New World Disorder*, beginning in 1993, and then more formally in *Profiling 'Change Processes' as a Strategic Analysis Tool* (Werther 2000a, 20). This used modified Przeworski and Teune (1982) “most-similar systems” and “most-different systems” design logics in holistically integrated dynamics fashion. Much of what follows presumes familiarity with these and other basic ideas.

Following Maimonides' advice that “the truth should present itself in connected order” (Maimonides 1956, 1), what follows is also an attempt to explain the teaching of emerging futures forecasting competencies in terms of a connected order of learning.

This treatment merges the stepwise competencies discussed in the *Where are We Going* section above, with the broad framework presented in the *Profiling* schematic.

Layering the Onion: Building Cross Cultural, Multi-Disciplinary, Historical, and Comparative Competence

The first teaching level of this effort is termed *layering the onion*, hoping to convey thereby the vision of a kind of learning that begins from a core and proceeds to add layer upon layer of additional learning holistically and naturally upon previous understandings. (See figure 2.)

The core contains the teaching of comparative cultures, comparative social psychology, comparative religions and philosophies, and comparative political-economic history (Werther 1997, 2000a) because this is where the systems of values and practice originate (bias systems) by which people, and societies of people, seek to navigate the changing future. Within the political-economic component, one should include the legal and institutional formations that societies erect to manifest their idea biases. More values and practice-producing considerations might be added, but these are the central groundings.

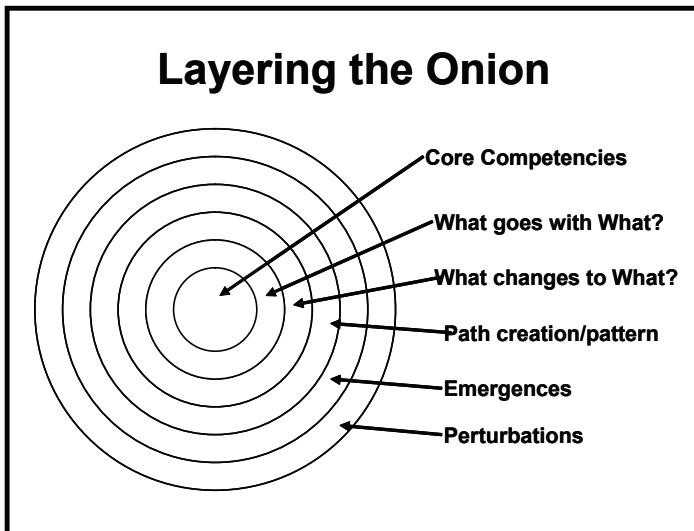


Figure 2

Each different human society is a successful, more or less, solution set, historically emergent through iterative human agency constantly interacting with their world: a kind of marketplace of competence selected for endlessly (Hayek 1979; Berlin 1997, 1998).

This is a conservative and mainstream idea, though now only uncommonly applied.

“Men,” says Montesquieu, “who are fundamentally reasonable place even their prejudices under rules” (Cohler, Miller, and Stone, 2004: xxi). Nietzsche would notice that prejudices and rules derived from them define each different society (Kaufman 1966): an outcome Benedict Anderson has termed *Imagined Communities* (Anderson 1991).

In society’s search for goods amid prejudices—whether religiously or secularly defined—the following manifest themselves as mind-paths: their neighbors, their land and sky, their *need*, and *why* they climb to their hope on *this* ladder, to use Nietzsche’s metaphor.

Every major religion and most philosophies, it seems, convey the notion of being a teaching of *the* path or *the* way: Lao Tzu’s teaching as *The Way of Life*, Buddhism’s Dhammapada (meaning teaching/path of truth/virtue), Hinduism’s Upanishad (to sit beneath [a master]) and dharma (that which supports/essential order of things), Islam’s notion of living in the “way of God,” Jesus’ comment that He is “the way,” and so forth through their many interpretations (e.g., *tasawwuf* as “way of the Sufi”) to produce in their manner the integrated notion of a teaching of a path/way explaining why things are so and are done so (Bynner 1980 [1944]); Kaviratna 1989; Holland 1979; Burt 1982; World Publishing Company 1962; Ahmed 1993; Easwaran 1985; Mascaro 1965; Bodhi 2005).

Secularly, among comprehensive thinkers, one gets this same message of our *necessarily* learning an essential path or a way in order to interpret reality and change through the understanding of different minds: Gertrude Himmelfarb’s (2004) *The Roads to Modernity—the British, French, and American Enlightenments*, Theodore Rabb’s (2006) *The Last Days of the Renaissance and the March to Modernity*, Gordon S. Wood’s (2006) *Revolutionary Characters—What Made the Founders*

Different, Russell Kirk's (1986) *The Conservative Mind from Burke to Eliot*, and F. A. Hayek's (1972) *The Counter-Revolution of Science—Studies in the Abuse of Reason*, Benedict Anderson's (1991) *Imagined Communities*, and Marc D. Hauser's (2006) *Moral Minds—How Nature Designed our Universal Sense of Right and Wrong*, among numerous others, all convey a critical linkage of mind, path, and resulting outcomes.

What are people about is their question.

For the analyst interested in forecasting emerging international futures, what it is firstly important to learn about is cultures, societies, and respective institutions (politics, economics, laws, comparative psychologies, philosophies, religions, histories, etc.), not facts, nor even relationships among facts merely. One must *learn animating principles and ways*, learning how these animate society and contribute to forming its essential *idea*.

A Polish student once described Poland as “an attempt not to speak German.” This nicely sums Poland's neighbor, land, sky, and ladder of hope capsules Poland's core problem, and says something about how Poland hopes to solve it.

Among the things it is necessary to know about modern Turkey is Kamal Ataturk's idea of a modern, secular state, militarily secured; of America, legalism among other core ideas; of China, historic centralization, order, *guanxi*, striving for harmony, among others; of Fiji, conflicting indigenous tribalism and Indian immigration, among others, etc.

Typically, such skeletal and notional architectures are not pretty, their beautifying public facing having not yet been added by society. One supposes that psychologists do not deal only in pretty things; then why ought social psychological kernels of societies be pretty?

How do we know these things? Societies arrange themselves to solve the problems they need to solve. One sees this in their words and actions, their efforts and accomplishments.

These foundational understandings and insights about what is important to any society must next be combined to form an

interpenetrated understanding of normal societal patterns and relationships within their animating idea(s), one with the other; the topic and methodology of which we now address. We need to teach what goes with what, and why.

Interpenetration: Understanding Relationship Patterns, and Their Supports/Weaknesses

So far, the serious student with capacity has done considerable work, and the many, unfitted as they are to emerging futures forecasting, have dropped voluntarily away.

As it should be, every major philosophical and religious tradition that has animated the culture of a society has emphasized the importance of diligence and hard effort of a particular kind in order to understand properly: there is nothing simple or brief about this.

In reality, it seems that the former task of broad learning about foundational ideas plus the next-presented task of interpenetration is best taught to the fitted mind simultaneously through the process of *folding in*. This is the *layering the onion* metaphor.

Illustrating this, Confucius remarked “you think of me as one who studies many things and remembers them, don’t you?...It is not [so]. There is one thing I use to string them together” (Dawson 1993, 60). We really want to get away from descriptions and facts.

We need some string.

For Confucius this string was virtue: to be understood in the classic Chinese sense as enfolding humane correctness and practical accomplishment (Dawson 1993, xxi-xxii).

For the futures forecaster, that string helps to holistically and integrally see complexes: understanding things *as* complexes with defining characteristics normatively grounded in ideas and in resulting habitual goals and processes that are fairly stable in time.

At this stage of learning one is relatively static and is not primarily concerned with dynamic change patterns. One would like to be, but that capacity is not yet developed.

Folding In

Operationally, asking students to evaluate a society in terms of *listing* its main normative features, customary arrangements and processes, justifications, goals, and so forth is followed by next asking how these considerations *fold into*—that is, influence and shape (iteratively building up, if they can see it)—then existing generic *social institutions* of that same society.

For each society, the student considers how cultural norms and traditions, customs, ways of behaving, and so forth animate societal institutions, and how these variously support (or do not) each other. What is the under-girding values architecture of each society, and what are its institutions? Institutions are both formal and informal arrangements.

Having achieved this generic bi-level of interpenetration (kindly notice that we have not used the term *integration* yet), the student is next asked to discover main features of specific social institutions (formal or not): political, economic, legal systems, etc.

Iterating sequentially, the student *folds in* during this learning experience whatever previous perspectives they have formed respecting culture-social institution links to form broader culture-social institutions-political links, to the yet broader culture-social-political-economic institution links...and so forth, deeper and broader simultaneously.

Each projective iteration requires the student to explain to the professor and the class how—for his/her country—previous insights are holistically linked to the next topic added, particularly how they support or do not seem to support each other. One cannot, for example, have incommensurable cultural and social features supporting democratic capitalism, or fascism, or communism, or Asian Way

democratic capitalism. They must be appropriate. We are trying to teach the student “what goes with what to produce what.”

As a part of holistic learning, a comparative and historic element is introduced by having students sequentially present their iteratively wider and deeper understandings of how their chosen society *developed*, thereby constantly also folding in comparative and historical developmental observations that emerge across systems as learning proceeds.

One method that is basic is to have each student sequentially explain what were the lifestyle and institutional arrangements (cultural, religious, political, economic, etc.) in ancient times (pre 1 BCE, to 1,000 CE, to 1500 CE, to 1900 CE), and thusly to the current country arrangements. Again, this developmental *folding in* approach requires the student to see his/her country, and other student’s countries as emergences that spring from previous societal arrangements and ideas (Christian, Hindu, Buddhist, Islamic, etc.): nothing comes from nothing. This method is particularly useful in area studies courses.

For international business and international economics/economic history courses, a parallel folding in approach, whereby the student begins with describing the market placement of the chosen firm, industry, or economy within the global space, and sequentially and iteratively folds in its competitor, political, legal, economic, and other influences upon its strategic choices, is similarly useful. As before, iterative, comparative, and historical presentations are made and defended by the various students.

The applications of folding in are almost endless.

What it is necessary to notice is that each culture, society, or business is an idea animating a specific and unique complex system formation, holistically to be understood as a “what goes with what to produce what” solution set. The focus upon functional relationships in action rather than upon imposed categories permits further complex system discussion.

Each society is put together in specific and unique institutionally and ideologically reinforcing ways because it *acts* in characteristic and

definable ways. The *idea* animates *this* formation, and *this* formation manifests *the idea*: recursively. The society *must* solve such a definitive *integration* respecting its idea, basic societal arrangements, and normal ways, and also reach a functional degree of internal harmony about them because, as Abraham Lincoln reminds us, a house divided against itself cannot stand. It will fail.

What becomes obvious to students in due course is that the generic types of societies and styles of arranging societies are not endless in their variety, nor are they random; there are interpenetrated patterns and broad styles for solving society's change problems. Specificity is, however, unique. For example, democracies as a generic type have core defining processes and institutions broadly in common among themselves, but each specifically acts uniquely: Britain, Germany, Canada, and the USA are not the same in action. Futures forecasting within and among them is therefore not identical. These lessons in appropriateness are emergent in the teaching process as the student folds in new information recursively, just as they were emergent originally as appropriate when each society folded in learned and defining lessons over centuries of time.

More to the point, the so-common teaching and analysis practice of externally ascribing categorical denotations (democracy, tribal, capitalist, socialist, etc.) is soon seen to be simplistic and inadequate to doing forecasts, but complex, emergent, and interpenetrated understandings grow to have increasing power. To say that a society is a "democracy" or is "socialist" or "capitalist" is to say relatively little. To see how it is put together and animated, has developed, and acts to produce *this* particular outcome over others is powerful.

We are approaching—but are not there—the realm of teaching internal movement and teaching about styles of movement characteristic to various uniquely different societies, and about genera of them. How societies move is animated by their problems and goals, their idea (seen as their strategy for success), and by what they imagine themselves to be: in sum, by their particular system of biases.

Nietzsche commented in *Beyond Good and Evil*: "The differences among men become manifest not only in the difference between their

tablets of goods—in the fact that they consider different goods worth striving for and also disagree about what is more or less valuable, about order of the rank of goods they recognize in common—it becomes manifest even more in what they take for really *having* and *possessing* something good” (Kaufman 1966, 106; emphasis in the original).

It is entirely necessary that analysts interested in emerging futures forecasting see things holistically and as integrated complex systems that are animated uniquely and definitively by their desires for achieving particular “goods” and by aversions to their particular “evils.”

These are nowhere exactly the same between societies that are *imagined communities*.

The dynamism of a society’s internals (bias system) interacting with their perceived externals, which we shall in due course need to teach, forms their specific generalized stylistic path: their way. There is a market-based idea that now needs to be introduced and later discussed and folded in.

Their *way* is their *idea* of how to be in the world, and the world selects for the appropriateness of a person or a society’s judgments during every moment. Thus, since societies are successful, more or less, strategies, they confront new change in their way.

If there were not patterns to this, all would be a hopeless jumble. There are patterns.

Kurzweil called himself a “patternist, someone who views patterns of information as the fundamental reality” (Kurzweil 2006, 5). Replace the word “information” with notions such as “systems of bias,” “syndromes of relationships,” and “idea-strategies” and the comment applies well to Hayek’s view (1979) and to human systems futures forecasting. Arthur Schopenhauer and his German contemporaries worked heavily in this idea-species and conforming idea-strategy area as leading to societal patterns (Schopenhauer 1969).

Learning to See Solution Patterns

Cultures and societies *are* solution sets with stable patterns because “involuntarily, parents turn children into something similar to themselves—they call that ‘education’...no mother...[and] no father contests his right to subject it to his concepts and valuations” (Kaufman 1966, 107; emphasis in the original). One might add that no modern state-supported system of education (or state system of law, politics, economics, and other normative practice) does so either.

More to the point for emerging international futures forecasting—*ways* of “striving for...having and possessing something good” (Kaufman 1966, 106) are constantly shaped by the unique idea path representing that culture, society, its institutional arrangements of politics, law, economics, and so forth holistically understood as it confronts internal and external challenges.

This integrating effort and its path-like outcome are *not* deterministic, but is fundamentally influential and stable over time. This is far broader and more enfolding of the truth than seeing modern, objectively rational, profit-loss oriented, and maximizing economic man.

Although the teaching approaches presented above are quite basic, even primitive, compared to what is eventually possible, their most important feature for eventually teaching emerging futures forecasting is that outcomes are not ascribed to pre-formed categories or views about what is important. Rather, the recursively integrating folding-in process builds up a holistic view through which emergent understandings about what a society is about, and how it changes to achieve its chosen aims. The comparative and historical recursively folding-in procedure builds up knowledge of types of complex systems, which are differently animated and have chosen differently respecting goods sought.

Adam Smith, in *The Theory of Moral Sentiments*, denied that men in society are motivated by narrow self interest, economic or otherwise, but stated rather that they were primarily concerned with securing the good opinion of their fellows, with their social position, with superfluities, with fostering thereby positive mutual regard: a consideration he phrased as sympathies (Smith 1982). This more

holistic notion fits the idea of societal norms as social drivers, as Hayek presumed in his view of markets acting within law. Gordon S. Wood makes this point too, especially about George Washington and shaping motivations within the era of his society (Wood 2006, 14-63). One sees Confucius' superior man of virtue in this perspective (Dawson 1993). Many other ancients thought this way as well: "Vanity of vanities...vanity of vanities. All is vanity....And I applied my mind to seek and search out by wisdom all that is done under heaven... and behold, all is vanity and a striving after wind" (Ecclesiastes 1-15). Objective rationality is overdone.

Our attention is thus turned to teaching striving, kinds and forms of striving, and their various stable societal dynamics as seen from the ground of their various defining *biases*.

On the way to learning path development, we must use holistically oriented comparative systems analysis, and similarly holistic historical analysis, in a new way: to understand how any society normally moves. This is a necessary futures forecasting competence.

A Transnational Overview of Path Development and Harmonics' Issues Under Conditions of Complexity: How Change Happens Within Various Interpenetrated Human Complex Systems

If the above is well comprehended, the proper analytic ground for emerging international futures forecasting is best understood as socio-psychological (in its integrated holistic sense of an ever-recursively emerging ground deriving from *the endless interactions* between humans, their created institutions of culture, philosophy, religion, politics, law, economics, and so forth, and their external environment) because every major religion and philosophy, save a post-Age of Enlightenment/Renaissance *scientific* assertion of a rational actor man as something mathematically to be understood, has thought so.

These older and broader traditions focused upon the notion of idea manifesting action, and shaping forms of action, as fundamentally explanatory (Hayek 1979).

This orientation presents at once a simplifying and integrating procedure of considerable power for understanding complex systems change: even complex interactions between complex systems changing with respect to each other and their changing environment.

In *The Problem with Precision*, Werther (1998) disagreed fundamentally with views such as Edward O. Wilson's assertion that "The greatest challenge today...in all of science is the accurate and complete description of complex systems" (Wilson 1998, 85).

Completeness and accuracy is impossible within this realm, for technical and Aristotelian epistemological reasons (Przeworski and Teune 1982; Thomson 1983).

Accurate and complete is asking too much, just as settling for "rules of thumb" (Bright 2007) is expecting too little. The issue lies in knowing *appropriateness* systematically.

Aristotle in *The Nicomachean Ethics* at Book One (iii) correctly—I think—stated

Our account of...science will be adequate if it achieves such clarity as the subject matter allows; for the same degree of precision is not to be expected in all discussions. Any more than in all products of handicraft....Therefore in discussing subjects, arguing from evidence, conditioned in this way, we must be satisfied with a broad outline of the truth; that is, in arguing about what is for the most part so from premises which are from the most part true we must be content to draw conclusions which are similarly qualified...for it is the mark of a trained mind never to expect more precision in the treatment of any subject than the nature of that subject permits... (Thompson 1983, 64-65)

Wilson is on happier ground when asserting that "The answer is clear: synthesis. We are drowning in information, while starving for wisdom. The world henceforth will be run by synthesizers, people who are able to put together the right information at the right time, think critically about it, and make important choices wisely" (Wilson 1998, 269).

The operational question really is: How do we, in contextually sensitive ways, extract the right information at the right time? The answer is that we illuminate the system's nature.

Through modern specialized education, we trained ourselves to think otherwise, and made our children think like ourselves (Kaufman 1966, 107). Technology and mathematics held out the chimera of finding precision respecting human and societal things that are not by their nature precise.

Desiring “accurate and complete” descriptions (Wilson 1998, 85) is the problem.

What it is possible to do is to consider complex systems change holistically, and extract insight into their emergences in ways that have futures forecasting utility.

One doesn't need to see the last nail pounded to understand the form and future content of the house. No futures-oriented synthesizing analyst does. One gets a pretty good idea from the manifesting ideas and intentions of the planner, and especially from key embedded actions, properly understood in context. Aristotle defined the educated mind as that which argues from conditioned assumptions to conclusions *similarly conditioned in this way*. In a world of shifting nuance, not much is more critical than such maturity.

We need some teaching and analysis tools that add *appropriate* precision to the chaos of typically having too much information.

If *emerging* international futures forecasting were about being 100% correct, Edward O. Wilson would be correct. It is not, so we need to move upstream to the simplifying areas of path formation and harmonics—and the teaching thereof to futures analysts.

Werther (2006b) addresses this in the advanced middle ground, moving specifically and generally as needed, by focusing on the emergence of futures insight via the study of change processes, which are in complex, systems-like, communication with each other.

In terms of the profiling change processes graphic (figure 1), we are proceeding into the realm of understanding movement as holistically seen *within any given iteration of circumstance*.

This learning transition is extremely difficult, the more so when our orientation is about the movement of integrated wholes, the internal with respect to the external, particularly.

Among the best generic descriptions of this dynamic process of societal path formation are those given by Sir Isaiah Berlin, F. A. Hayek, Arthur Schopenhauer, and Moses Maimonides, and in Buddhist doctrines of change, dependent origination, and causation.

Presuming the primary audience to be Western, this discussion proceeds from the more familiar Western perspectives to the perhaps less familiar non-Western perspectives, folding in, as is ever our habit, analytical complexities and their limits as we proceed.

Negotiating these complexities includes the problem of key variable identification and isolation, which we discuss using—by way of iteration—the holistic most-similar systems and most-different systems design orientations of Przeworski and Teune (1982), various historical developmental perspectives, and other holistically integrative perspectives.

The Logic of Comparative Social Inquiry: Using Most-Similar and Most-Different Systems Comparison

Adam Przeworski and Henry Teune's (1982) *The Logic of Comparative Social Inquiry* began as a study of "values in politics" leading next to "a focus on within-systems relationships rather than attributes of systems," finally becoming thereby a "frontal attack on the problems of comparative research" (Przeworski and Teune 1982, ix–xii).

Przeworski and Teune noticed "social events occur in syndromes that have a specific spatiotemporal location; in other words societies constitute "systems," and therefore various elements of societies interact with each other....The problem therefore is to find a set of criteria that can be used to evaluate the *appropriateness* of comparing

social phenomena observed in different social systems” (Przeworski and Teune 1982, 10; emphasis added).

Because “social phenomena are not only diverse but always occur in mutually interdependent and interacting structures, possessing a spatiotemporal location” these social phenomena must be treated as components of systems—that is, holistically and contextually (Przeworski and Teune 1982, 12-13). This they accomplished by strategically using most-similar systems and most-different systems designs to illuminate the functional characteristics of interdependent and interacting structures in conditions where “a change in one element of these syndromes...would bring about...a change in the entire pattern” (Przeworski and Teune 1982, 29). By focusing upon the syndromes, if you will, it is possible to replace the names of systems with an understanding of their interdependent functional characteristics, naturally motivated in terms of their values.

It is not difficult to see that strategically selecting, for the purpose of targeted functional illumination, most-similar system designs and most-different system designs leads to judgments based on parsimony and generality (what-goes-with-what-and-how type statements) across different complex systems embedded in their contextual spatiotemporal relations.

In short, we can see how complex adaptive systems are variously arranged with respect to addressing their functional needs and desires. Under conditions of basic internal change, appropriately iterated most-similar systems and most-different systems analysis leads to further judgments about their functionally interdependent and interacting constituent syndromes: to what changes to what and why insight at the systems and sub-systems levels.

For example, if one wants to illuminate the probable key variables surrounding a problem from a near infinity of potential variables, one way is to turn most of them into constants by strategically selecting several most-similar systems (identical as possible is best) and searching for different *systemic* outcomes. Any observed different outcomes cannot be due to the maximized system constants among the purposely

chosen most-similar systems, but must lie in relation to their purposely minimized differences among them.

Naturally, the operation of the different variables and their arrangements within these systems has not been specified, but simplification of potentials, and especially of *plausible* potentials, has occurred. Please notice that, as with Aristotle's basic insight and—as we shall later notice—also with Buddhist, Confucian, and other philosophical holistic traditions, the term *appropriate* occurs often. The ability to know appropriateness results mainly from broad learning and, especially, philosophy. Einstein, emphasizing his grounding in philosophy, operated in this way when testing different appropriate rearrangements within fields, using his famous thought experiments; this, one must express, we are not doing abstractly here (Isaacson 2007, 20, 95, 113, 117-118, 127).

Using strategic iteration of different most-similar systems designs, plus appropriate notions of simple causal argument (time priority, connectedness, co-variance, plausibility, non-heteroskedasticity, and non-recursiveness) and also of complex causation (INUS systems: insufficient, necessary, unnecessary, and sufficient, where all necessary-sufficient elements are included and all unnecessary-insufficient elements are excluded), it is possible to limit core variables via emergence to ever-smaller plausible sets.

If very similar adaptive systems *with respect to a question of interest*—say Sweden, Norway, and Denmark for education level impacts—have different system outcomes, we can holistically illuminate via iteration and causal inquiry (simple and complex) variables, and soon syndromes of variables, wherein the potential answer likely lies.

In this essay we have emphasized folding-in of integrated learning capacities so that eventually we can study 'emergence' holistically for the purpose of forecasting. This process, interestingly, Einstein termed "unfolding" to achieve increasing clarity (Isaacson 2007, 114). Many other philosophical traditions variously label this as insightfulness.

Most-different-systems designs, when strategically chosen, can give insights as to the generality of proposed causal variables or syndromes within complex system operations.

We can iterate endlessly, limited only by our creative imagination, and can also study natural perturbation to illuminate syndrome response behaviors.

There is, at a significantly advanced level to be discussed later, the potential to qualitatively set minima and maxima limits within which particular societal complexes, and their constituent syndromes, normally operate. Toward the end of this discussion, I will use this to address how the strategic design iteration of most-similar systems and most-different systems designs and viewing the natural perturbation of systems, can achieve insights into emerging change and emerging futures forecasting.

Leibniz and Newton developed the calculus to solve previously opaque mathematical problems related to motion and rates of change, both integral and differential, using notions of minima and maxima toward limits. Przeworski and Teune's comparative social inquiry methodological insights offer a parallel window, but not the one they think, to address this difficult issue *qualitatively* respecting normal societal styles and their path-like behaviors. This is an important insight to bound normalized societal harmonics.

It is also additionally possible to use Przeworski and Teune's basic insights into the correct nature of the logic of comparative social inquiry—using scholars both ancient and modern—as a bridge over the gap between, (1) the holistic analysis of static complex systems' composition and their functional holistic reaction to basic change, to (2) more complex considerations of normative and traditional path formation according to complex system societal ideas (bias systems) in communication with their external environments, and then to (3) yet more complex considerations about how these form emergent harmonic paths within which change is thereafter normally addressed. Hayek's idea (1979, 43-44, 59, 65-71) of emergent unplanned market-based behavior is particularly important here.

An over-simple way to see this is to consider how an individually “stupid” ant finds a desired good (perhaps food) by mere luck, thus forming, unplanned, a “smart” community path of ants to exploit it efficiently. Were this to develop a normalized and societally enforced cultural response, as it does in all varieties of human societies, we would have an unplanned emergent harmonic path develop (Hayek 1979, 71). This emergent path *is* society’s bias system, and the harmonic aspect is its normal deviation from this biased emergent path.

All social systems act from within their bias. From this ground, it is possible eventually to functionally address complex adaptive systems of bias in communication with other complex systems of bias within their change environment—emerging futures forecasting.

The critical method is *strategic iteration* to illuminate how a complex system moves and why it moves so under various conditions of change. The focus is on the *change process* at the level of complex systems dynamics, internal and external. These emergent complex systems’ profiles, continually updated, become the basis—not facts or total information awareness—of an intelligence analysis system oriented to emerging futures forecasting.

This is a critical difference from a non-holistic intelligence orientation that seeks facts.

There are, broadly, two ways of approaching this from a holistic most-similar systems and most-different systems perspective. The first is to compare functional syndromes comparatively across selected complex systems at a particular spatiotemporal moment. The second is to note how syndromes developmentally and comparatively change over time. This implies a holistically integrated and functional study of comparative histories.

Most-similar systems designs lead to understandings of functional parsimony. Most-different systems designs lead to understandings of functional generality. This is critical.

As said, most-similar systems selection (in terms of the complex adaptive system consideration of interest) illuminates the functional natures of key syndromes when different outcomes become evident

among systems that are, by pre-selection, very similar. For example, the different function of higher education in similarly highly educated societies when in communication with other functional aspects of the society tells us important things about how each society acts. Various iterations, we can see how syndromes interact with other characteristic syndromes of that society internally: we illuminate a societal pattern. In time, we see emerge a relatively parsimonious view of how various patterns of interaction, within otherwise most-similar systems, function.

An example here would be the comparative usefulness of having a high level of education within a corrupt who-you-know versus a non-corrupt merit-based society. All the internal syndromes will be skewed differently, but relatively stably between them.

Przeworski and Teune note that,

If stable... patterns of interaction can be treated as systems. Social systems are composed on interacting elements, such as individuals, groups, communities, institutions or governments. What is important to for comparative inquiry is that systems with which we ordinarily deal, such as societies, nations, and cultures, are organized in terms of several levels of components and that the interactions within these systems are not limited to any particular level but cut across these levels.... If social phenomena are treated as components of systems, two major implications follow. The first is that the behavior of any component of a system is determined by factors intrinsic to the system and is relatively isolated from influences outside of the system.... The second implication... is that specific observations must be interpreted within the context of the specific systems. (Przeworski and Teune 1982, 12-13)

The word *determined* should be replaced by the phrase *seen in terms of*, and the notion of *levels* should be replaced by a more interpenetrated understanding.

This is to see, for example, in an interpenetrated manner how tribalism functions within different countries at a given moment in time, how religion functions as an interpenetrated phenomenon, how

voting so functions, how ethnic division variously functions, and so forth. Students would investigate the function of tribalism in most-similar and in most-different systems to illuminate its specific syndrome and the respective contextual variations thereof.

A most-different systems design looks at complex systems that are most different with respect to the syndrome under consideration—say, religious division—in order to illuminate statements of generality regarding that syndrome. For example, in some societies democratic election and parliamentarianism is associated with political stability and economic well-being, whereas in others it is not. In some societies, religious or ethnic division is associated with instability and lack of development, whereas in others it is not.

Through repetitive strategic iteration of most-similar and most-different systems designs, and a course of study designed to illuminate the functional syndromes of various societies as they interact with and interpenetrate each other, it is possible to learn stable patterns.

Werther (1992) uses this general approach to explain historic developmental and modern patterns of ethnic national disputing involving self-determination claims among most-similar (2X) sets of countries, and also between most-different systems (involving comparisons between the two sets of countries). Levine (2002) regards this as one of the few international studies that links government policy claims and disputing style and claimant policy claims and disputing style across several levels of comparative analysis.

Through this iterative learning process focused on finding patterns, where facts are always embedded within their functional contexts, it is possible to build up both a “what-goes-with-what and why?” and a “what-changes-to-what and how?” competence.

Przeworski and Teune comment “we have concluded that general theory consisting of nomothetic statements can be formulated and tested in the social sciences if proper names of social systems are replaced by variables in the course of comparative research and that most problems of ‘uniqueness versus universality’ can be redefined as problems of measurement....Our position is that the characteristics of

particular systems can be expressed as general variables” (Przeworski and Teune 1982, 12).

It is likely that measurement will normally be qualitatively rather than quantitatively understood, and that nomothetic systems of reason are factually systems of bias definitive of the idea that any given society manifests in its actions. Consequently, variables there will be, but these variables are embedded within a system of good and evil: bias in action.

Przeworski and Teune correctly point to the necessity of establishing equivalence of measurement instruments such that comparable phenomena can be expressed in a “standard language” across systems if a modeling approach is to be valid: “any measurement requires a common language with standard rules of interpretation” (Przeworski and Teune 1982, 92-97). In their relatively mathematical and statistical modeling interpretation of comparative inquiry, this is required.

It is not similarly required in an iteratively emergent formulation of comparative inquiry where the relevant “standard rules of interpretation” *are the specific societal bias systems in action*, but certainly not in synonymous standard rule-like ways uniform across systems. Indeed, a profiling change processes approach to emerging futures interpretation requires the very opposite: that systems operate internally according to their respective standardized biases and act so also externally with respect to other, different, acting bias systems within the larger environmental domain. Each system acts according to *its* bias.

Such is the dance.

Teaching Appropriate Iteration

The reader may have noticed that the very useful and insightful aspects of Przeworski and Teune’s (1982) holistic approach to comparative method, and especially their analysis treatment of values as being variably operational within human action (social science) as nuanced complexes, is couched inappropriately in the language and orientation of the mathematical and physical sciences. Aristotle’s appropriateness critique arises again.

Indeed, an almost Einstein-like relativity linguistic is presented. We hear about finding a “general theory,” and searching for “universality,” which is conceived as theoretically and operationally approachable through solving “problems of measurement...and [finding] standard rules of interpretation,” of societies in their “spatiotemporal location,” of finding “standard language,” and of an operationalizing agenda for it all that is seen, ultimately, as moving intellectually from our qualitative knowledge of values as they are operative within different cultures and societies during specific and changing “spatiotemporal” complexes (sensible), toward an assumed necessary math conversion useful for solving problems of “measurement” and finding “standard rules of interpretation” (Przeworski and Teune 1982). This last notion is not sensible, and it is not appropriate.

Although speculative, it seems odd that so classically grounded a historian as Toynbee, who in his authoritative *A Study of History* begins modestly enough, “Historians generally illustrate rather than correct the ideas of communities within which they live and work” (Toynbee 1946, 1), has by a mere decade later decided to quote Eliot’s “Only through time time is conquered” on the front piece of *An Historian’s Approach to Religion*. Toynbee proceeds then to the rather grandiose and physical-science-oriented claim regarding “A Historian’s Point of View” beginning “When a human being looks at the Universe...the human observer has to take his bearings from the point in Space and moment in Time at which he finds himself” (Toynbee 1956, 3).

By page seven, we learn from Toynbee, about “claimants, standing at different points in Time and Space... Time-Space does not have any central point at all” (Toynbee 1956, 7)—relativity, if I do not misread my Einstein. This seems a very physical-science-oriented statement of the problem of thinking about human events from the different normative and temporal perspectives of human actors.

What has occurred?

The period of the World War II was, of course, the beginning of an American social science movement toward metrics, which one can see no more clearly in the ideological and methodological walk of classic 1930’s era departments of “government” or “politics” being re-branded

as “political science” departments beginning in the 1950’s, to political science departments as becoming enterprises that are heavily about math and modeling by the 1970’s. Economics, particularly through its separation from political economics, shows extreme concatenation with mathematics: all the social sciences do (Cohen 2007).

This apparent violation of Aristotelian appropriateness, wherein all discussions are not to be subject to the same degree of precision, is what needs remedial clarification now.

Taking whole—seeing matters at a holistic complex systems level—is more a pre-modern and Renaissance (in the West) than a post-modern learning perspective; it requires an analysis tool for extracting insights about the behavior of the whole in varying contexts. More simply, one needs to see how it moves and why it moves so in different conditions.

Math modeling, a rather recent stab at the apple of complex systems analysis, simply cannot contain it, as was previously discussed herein, and as Orrin Pilkey and Linda Pilkey-Jarvis make clear in their *Useless Arithmetic—Why Environmental Scientists Can’t Predict the Future* (Pilkey and Pilkey-Jarvis 2007).

It would be nice if we had holistic analysis tools between mere intuition and educated guesses, and those striving toward using universal mathematics language: tools that are, as Aristotle notes, sensitive to the different precision capabilities of different discussions by allowing “such clarity as the subject matter allows” (Thomson 1983, 64).

Iteration is one such tool, and, as it happens, Einstein was a master of this.

Speaking of Einstein’s famous “thought experiments,” in which “every day, he would do thought experiments based on [varying] theoretical premises, sniffing out underlying realities,” (Isaacson 2007, 78) so that “on page after page of the notebook, he approached the problem from either side” (Isaacson 2007, 197), or said otherwise, while “think[ing] in pictures...improvising melodies while he pondered complicated problems” (Isaacson 2007, 9, 14, 26). In these experiments, we see an essentially iterative perspective on taking things whole and within

their field. Einstein was very clear that any arithmetic came after the clarification.

The difficulty, of course, for human futures forecasting, is that men are not molecules; they move according to their normative biases. Consequently, at best, there are strategic human bias fields operating within the field of natural reality, to borrow, one hopes not too inappropriately, from the physical science language. Einstein's method is not ours.

From our teaching and learning perspective, this is an important *dual* orientation to the problem of futures forecasting that needs to be clear. Learning is an onion-like layering on of sequentially interpenetrated insights into the matter of interest whereby "truth" emerges (unfolds), but this learning process *should not* inappropriately conflate natural science and humane science investigative methods and orientations for achieving insights. What works for understanding the behavior of molecules may not work for understanding the behavior of humans and their institutions.

We iterate to illuminate functional societal dynamics. Some are circumstantially linked to particular societies at one point in time. Another group comprises those that are stable in different times, contexts, and frames of mind. These tend to interpenetrate somewhat.

Iteration, in this "spatiotemporal" sense, is indicated when one sees that "one of the major patterns identified by social scientists such as Comte, Marx, Durkheim, Weber, and Spencer is that societies undergo a structured process of development" (Przeworski and Teune 1982, 4), which to conservative and traditionalist thinkers such as Burke, Randolph, Calhoun, Sir Henry Maine, and others would be seen in their slow and organically changing body of tradition, custom, law, and societal norms, and which Enlightenment thinkers such as Montesquieu and Jefferson would place in the spirit of the laws or of the age.

In any event, interpenetration of societal operators under conditions of change by clarifying interacting, systems-like entities that are to be

seen holistically—and learned iteratively—is the necessary learning and futures forecasting condition.

We have discussed that this iteration can occur, naturally, quasi-experimentally, or experimentally (although this is usually unethical), at one moment in time or in near simultaneous time/conditions using a most-similar/most-different systems design approach, or it can be seen within systems as they change in time and attendant conditions (historical or time series comparison approaches).

One cannot study change, in complex systems or otherwise, statically.

Most-similar systems and most-different systems comparisons that show different reactions to enacted perturbations over brief periods of time, such as globalization pressures upon various societies, are very useful studies in system change dynamics.

For example, since NAFTA and the push for Latin American globalization, almost the entire region has shifted toward elected socialist governments: some hostile to globalization per se, and others wanting to change the rules of the game. Within certain countries, indigenous groups have variously mobilized, in some instances capturing the state for the first time in four centuries. In Europe and North America, the question of immigration and jobs loss has shifted politics away from broad support for globalization. In China and India, as well as other countries objectively gaining from globalization in terms of per capita income growth and high rates of foreign investment, internal instability and normative equity issues have become predominant features of social debate and a new source of problems and policy.

How countries internally react is a critical insight into their change dynamics.

Most-similar systems and most-different systems comparisons in terms of natural change, such as demographic decline in Western Europe, Russia, and Japan, are similarly useful for studying change response holistically across and within systems.

With respect to enforced system perturbations—hence, almost experimental designs—such as externally pressured moves toward holding democratic elections in places like Algeria, Gaza Strip, and Lebanon, interesting systems change dynamic lessons (they each elected anti-Western and Islamist parties) are possible.

Perturbations, whether they are enacted or natural, serve to illuminate change patterns.

Hoping to clarify this, Przeworski and Teune used the language of determination (1982, 12) and a probabilistic language of statistical modeling (1982, 76-87), both of which are usually inappropriate to our tasks.

The clarification that is necessary deals with nuanced, embedded syndrome phenomena under conditions of change, and is mostly qualitatively—not mathematically—expressed.

Observing *the sub-system's qualitative expressions of interpenetrated syndromes*—to use Przeworski and Teune's language where “a change in one element of these syndromes...would bring about...a change in the entire pattern” (Przeworski and Teune 1982, 29)—*as they shift*, when this observation is coupled with previous knowledge of how such “what changes to what to produce what” play out in various contexts, allows us to enter basic emergent forecasting competence. We will discuss advanced issues later.

At this level, it is necessary to creatively and holistically use the deep knowledge that “social systems are composed of interacting elements, such as individuals, groups, communities, institutions or governments. What is important to for comparative inquiry is that systems with which we ordinarily deal, such as societies, nations, and cultures, are organized in terms of several levels of components” (Przeworski and Teune 1982, 13-13).

As a final contemporary example to illustrate this, please consider: the Latin countries with large indigenous populations—Mexico, Guatemala, Bolivia, Peru, and Ecuador—all experienced globalization and, for the latter three, War on Drugs-related enacted perturbations

that had the effect in four of them of collapsing a stable societal syndrome of mostly unchallenged white rule four centuries in the making.

Mexico and Guatemala have a relatively continuous history of indigenous Mayan insurgency, often related to recurrent globalization-style regional development agendas, throughout their history; but in the former, a modern socialist-indigenous insurgency link was developed whereas in the latter, it never gained traction. This lack of socialist-indigenous linkage is also true of Atlantic-coast Nicaragua.

Among the Andean Rim countries, each experienced a post-2000 political resurgence of the indigenous community leading to a functioning socialist-indigenous link, which has embedded indigenous peoples into ruling institutions for the first time in four centuries.

These patterns of change were foreseeable, and their dynamics predictable in terms of the shifting internal rearrangements of societal syndromes that had been stable for centuries.

We are at the edge of dynamics: from seeing what-goes-with-what? to seeing what-changes-to-what?

The best additional holistic learning lessons to mature this analyst ability involve using history in a particular holistic way. The advantage here is that seeing comparative history as changing flows involving shifts among syndromes leading to known holistic outcomes provides longer-term learning insights. These insights are not available—although certainly complementary to most-similar systems and most-different systems case iterations over shorter periods—in any other way, and they impart a sense of system dynamics broadly understood. This view of history is NOT determinative. It seeks to study how, in various known historic contexts, syndrome shifts produced emergent holistic systemic changes. Nothing changes from nothing.

Historical Complex System's Dynamics, Leading to Knowledge of Varily Interpenetrated Developmental Dynamics

History does not repeat itself, but human problems requiring solution, seen in their various new contexts, seem to recur. Studying

the solution dynamics pursued by any society provides a kind of holistic time-series iteration, which illustrates their norms, values, and institutional ways.

Seeing the regularities and divergences within and across these complex systems' dynamics is an important learning experience. Done properly, one begins to see how things became as they are and not otherwise. To use Przeworski and Teune's language, names, proper and otherwise, such as France, India, democracy, religion, tribe, caste, and so forth, are replaced by variables interpenetrated functionally within their complex system contexts. One focuses upon how things work together to produce dynamics capable of solving or not solving human problems. Tribalism per se is not the same within different societies and at different times any more than is democracy, but there exist functional regularities, variously contextually iterated, that can be learned dynamically better and more usefully than they can be labeled statically.

Tribal or democratic or autocratic ways generically shape how one approaches things. When one begins to see tribe, caste, democracy, and so forth as a generic way of acting that becomes specific in specific contexts, one is moving toward dynamics competency.

Few historians are capable of expressing things dynamically, but comparative dynamics can be intuited even from a merely sequential presentation of facts. Given the happy circumstance of dynamically oriented integrative histories actually being presented, quasi-experimental time series comparisons and cross systems comparisons (most-similar systems designs and most-different systems designs) *can be constructed* by the analyst to illuminate various societal paths, and their path dynamics, *with known outcomes for each*.

This is one method of learning how any particular society normatively and empirically responds to change pressures under different circumstances. What will be learned in this instance is revealed onion-like again from the general to the more specific kind of relationship paths: knowledge about change processes widens as it deepens.

The previous is a critical point. For teaching and doing predictive forecasting, broadly interpenetrated comparative knowledge, which may initially be relatively shallow as to particular cases, is more useful than isolated and deep specific knowledge. This is why, in this kind of learning, particular cases are taught last—when people begin to know where to appropriately place specific facts into their holistic systemic contexts.

While comparatively rare, integrative histories are available.

Thomas Bender's recent work, *A Nation Among Nations*, asks us to "recognize the historical interconnections and interdependencies that have made America's history global even as it is national" (Bender 2006, ix).

Peter Wells' (1999) *The Barbarian Speaks: How the Conquered Peoples Shaped Roman Europe* is an important history with more than a few lessons for would-be modern global economy/global democracy enthusiasts with visions of transforming the world without themselves being transformed (Wells 1999, 266). Wells applies to the ancient Roman world's change dynamics a perspective similar to Werther's (1992) clash-of-claims framework as seen in modern nation-state/ethnic national self-determination change dynamics. Both have forecasting relevance on several fronts in how they see change occurring and why styles of disputing and relationships change.

Similarly, Robert A. Kann's (1974) *A History of the Hapsburg Empire 1526-1918* notes,

The problems of the Hapsburg Empire can be fully understood only if equal attention is given to the various political entities and ethnic groups that formed it. There is no one stage of action but several stages, which have to be presented in a synchronistic view. This does not mean that all areas are necessarily of equal importance, and certainly not at the same time. The part of the stage where the action takes place is illuminated, and then falls back into darkness when history shifts to some other place. It is necessary, however, to keep in mind that that specific aspects of history have to be viewed in the first place from the angle of particular groups. This method

applies to national and cultural problems but also to political and socioeconomic ones.... These are important aspects of the history of the Hapsburg Empire but not the essence of its history. It rests in the synthesis between the supranational and national problems. In correlating them as seen from different angles, this study has tried to break new ground. (Kann 1974, xii)

Noticing that what Kann has done looking backward helps us “be nearer the task necessary for emerging trends prediction” (Werther 2006b), with particular attention directed to his holistic, change-oriented analytic architecture consisting of “several stages (perspectives) ...[forming a] synchronistic view” such that “the stage where the action takes place is illuminated, and then falls back into darkness...[and is] to be viewed in the first place from the angle of particular groups.”

In Kann’s manner of presenting history, where “the essence of each group’s perspective is critical and the analytic solution...rests in the synthesis...correlating them as seen from different angles...” (Kann 1974, xii), is excellent for our forecasting purposes.

This is, for the social sciences, an analog to Einstein’s thought experiments where things are considered from different angles to illuminate underlying reality, appropriately seen within social science inquiries with respect to the nature of the contending bias systems of the various actors upon the stage.

Thinking through such holistic and syndrome oriented histories is very useful because it forces the student/analyst out of a personal (worse, an ideological) view.

Toynbee comments “The historian’s profession...is an attempt to correct self-centeredness that is one of the intrinsic limitations and imperfections, not merely of human life, but of all life on the face of the Earth...by consciously and deliberately trying to shift his angle of vision away from the initial self-centered standpoint” (Toynbee 1956, 4). The Japanese master Hokusai presents this non-egoist perspective elegantly in his *One Hundred Views of Mt. Fuji*, “showing life in all its shifting forms...[in order] to see further into the underlying principle of things” (Smith II 1988, 7).

From the author's perspective, the most useful histories for building future's forecasting abilities that incorporate those non-egoist abilities requisite for seeing things from multiple perspectives simultaneously are developmental histories, especially comparative and integrative developmental histories, that proceed from the study of the history of ideas (or states of mind) as mechanisms animating different societal change dynamics.

We benefit by considering Havel's *Disturbing the Peace*, which depicts the collapse of the Czechoslovak communist system as having occurred when "all the civil structures simply turn their backs on the aggressors" (Havel 1991, 109), a subtle syndromes shift that caught the communist authoritarian state by complete surprise.

Gordon S. Wood's *Revolutionary Characters—What Made the Founders Different*, explains the American formative experience through the personal and societal values of its revolutionary leaders, who "were not modern men" (Wood 2007, 17).

In a most profound essay, his classic *The Counter-Revolution of Science: studies in the abuse of reason*, F. A. Hayek (1979) clarified how the alternative ideas paths generating various modern societies produced different forms of modern society.

In his various writings on the history of ideas, Sir Isaiah Berlin reminds early and often "that these great movements began as ideas in people's heads: ideas about what relations between men have been, are, and might be and should be" (Berlin 1992, 1).

Gertrude Himmelfarb's *The Roads to Modernity: The British, French, and American Enlightenments* comparatively examines three outcomes of modernizing ideas within three different societal contexts—American, British, and French syndromes—showing thereby the differing influences of the same Enlightenment ideas upon these different systems.

In his *Enemies of the Enlightenment*, Darrin McMahan, by asking "who abandoned the field of experience for the nothingness of systems and the emptiness of words," reminds us that not all agreed and that

these counter-movements had systemic implications (McMahon 2001, 104).

Holistic developmental histories are also valuable: Rhondo Cameron's *A Concise Economic History of the World* (Cameron and Neal 2003), which frames global temporal syndromes as a logistic; Lach and Van Kley's (1993) monumental *Asia in the Making of Europe* as a lesson in interpenetrated historic change; George B. N. Ayittey's (1992) *Africa Betrayed* as a study of ideas and policy as seen from the perspective of colonizer and colonized as to outcomes implications; and Peter Flora and Arnold Heidenheimer's (1984) *The Development of Welfare States in Europe and America* as a comparative study in the interconnected nature of change—change as ancient regime syndromes, industrial revolution syndromes, and modernizing agendas, both capitalist and socialist, interact toward different country-specific outcomes. Each study exemplifies change emergence.

Notice that we have not yet studied case studies heavily; the teaching emphasis has been holistically comparative, whether static or historically oriented.

Latterly, we focused more upon comparative change.

Case studies, national histories, and biographies of great persons are for later—after the student knows where to place particular facts within their broader contexts. Contrary to the current motif of teaching cases first (History of the United States, of France, of China, of World War I, etc.; or of studying business cases involving Motorola, Intel, Ford, Toyota, etc.), we begin instead with the comparative and time-series study of the origination of things and of the relationships among things and then fold in specifics onion-like to enfold ever greater depth/breadth of understanding in the student.

For teaching emerging futures forecasting, this point is about as important as they get.

Using both the integrative histories of ideas and the comparative study (using most-similar system and most-different systems designs iteratively) of how different ideas, values, customs, norms, and ways of relating variously interact as syndromes and, operationally through

time, shape complex systems, how they produce particular dynamics leading to particular societal solution paths and ways, and how they lead to a kind of bounded knowledge about how each society plays within the conflict space is a serious teaching precursor to competence at emerging trends forecasting (Werther 1992).

One cannot forecast future emergence until one attains comparative mastery of what is changing, how, and why.

It is to the issue of emergence that we now turn.

Confronting The Great Divide: On Teaching Embeddedness and Emergence for Forecasting Change

Students and analysts must move intellectually and operationally from perspectives involving more or less broad and deep understandings of relatively static multi-disciplinary, cross-cultural, and comparative positions—the mastery of which is no small achievement—to dynamics, and eventually to comparative dynamics. This is *the* critical shift for students and analysts concerned with learning and doing emerging futures forecasting.

The discussion thus far has focused on learning *what goes with what and why* as well as the more complicated inquiries into *what changes to what and how*. These were understood as being holistically interpenetrated, always developing and developed, normative societal *architectures and ways* that are in fact definitive of every particular society; things form, develop, and move according to their bias. This bias of good and evil and of ways of attaining good is what defines and separates each society as an imagined community.

These *embedded* comprehensions must be put in motion to produce in the mind of the student and analyst understandings of how things flow. Students must learn to see flows.

So far also, these matters were discussed mostly from the Western intellectual tradition, presuming that the audience is from this tradition. Henceforth, other major traditions will be folded in, although eschewing entry into minor and aboriginal *ways* for clarity's

sake. Necessarily, analysts involved in emerging futures forecasting do not have the option of ignoring the input of minor or aboriginal ways on a complex systems' performance. Small and relatively powerless groups can have large influences upon systems, as the insurgency and irregular conflict literature, for example, teaches.

Operationally, the above preamble perspectives, even at basic undergraduate levels, can be taught to most people by using comparative multi-disciplinary developmental histories, comparative histories of ideas, most-similar systems comparisons at particular points in time, and most-different systems designs at particular points in time; but you cannot teach people to see how things flow. This is neither a point of censure nor of congratulations; it simply reflects differences in how individuals' personal constitution and mind are made.

This core point was covered in *Integrated Learning as a Necessary Ground of Integrated Security Solutions*, wherein it was noticed that "at truly predictive levels...it is a study in synchronous flows....This last capacity...was a trained mind within a found talent" (Werther 2006a, 13). This essay also illuminated the *emergent* nature of such teaching.

Therein were elucidated some of the generally dysfunctional characteristics of people who see things dynamically and in flows, which bear repeating here:

Persons fitted for integrative learning self identify – because they cannot, by virtue of their manner of seeing the world, remain within their assigned bucket.

If one likes clarity, order, and precision with all the ducks lined in a neat row, if clear directions, structures, and procedures are a preference, if statistics excite, then be well: integrative learning beyond the bare minimum is not for you.

If, alternatively, learning by objectives seems entirely inadequate and artificial, if rules look like advisory opinions emanating from dubious sources due in part at least to your clear knowledge of what – like sausage making – goes into making them, and of why and how it is added, if statistics and calculus classes looked like a prison

sentence and you saw therein the form of the answer before your arithmetic caught up; we can speak.

*If yet further, by a stroke of luck and/or a misfortune of nature, you were doing something akin to digesting a thirty volume encyclopedia cover to cover in your teen years, thought Gibbon's (1909) *The Decline and Fall of the Roman Empire* in seven volumes an exciting read, and felt misplaced in every class except perhaps history because the topic at hand clearly was related to all the others; please call.*

If, in the immediacy of a moment, when an scholar or bureaucrat shows you a set of variables attending to a complex, multi-disciplinary study, you see correctly the form and perhaps scope of the answer, its several faults and strong points, its potentials and lacks, and a round dozen different ways of going about it; you will be called upon and are truly called – because you see wholes.

You likely failed Logic, because your personal thinking style intuitively and holistically integrates a manner of reasoning, which is, for you, neither linear nor unidirectional.

If you see the comings and goings of things with their variously emergent possibilities within ever shifting complexity, and if the last five years makes pretty good sense to you: You are already an integrative thinker. (Werther 2006a, 9-10)

This is the cut point: can the student see the relationships of things, how they operate, and how they move? If so, we can proceed. This is a search parameter of ancient vintage.

Confucius remarks in *Analects, Book 2:10* “See how he operates, observe what path he follows, examine what he is satisfied with, and how can a man remain inscrutable, how can a man remain inscrutable!” (Dawson 1993, 7). Of integrated learners, he comments in *Analects, Book 7:8* “If I raise one angle and they do not come back with the other three angles, I will not repeat myself” (Dawson 1993, 24).

Moses Maimonides, in *The Guide for the Perplexed*, says “When I commenced by way of hints, I noticed that you desired additional explanation...and enjoined you to continue your studies systematically;

for my object was that the truth should present itself in connected order, and that you should not hit upon it by mere chance.... We must, therefore, begin with teaching these subjects according to the capacity of the student.... You, however, know all these subjects are connected together.... It is thus necessary to examine all things according to their essence (Maimonides 1956, 1, 44-46).

The *Dhammapada* begins “All phenomena of existence have mind as their precursor, mind as their supreme leader, and of mind are they made”—results follow (Kaviratna 1989, 5). The process of “investigation culminates in the discovery of the process of dependent origination, which thereby becomes the cornerstone of [Buddha’s] teaching...for the benefit of those with little dust in their eyes” (Bodhi 2005, 47). Each of the major Eastern traditions, Hinduism, Buddhism, Confucianism, and Taoism, enfold as basic this aspect of the interpenetrated relations of things, manifesting causes and effects, inflows and outflows from their essences/ideas/states of mind, originations, and so forth.

Secularly, Aristotle, wrote in *The Metaphysic*, “all consider what is termed wisdom to be conversant about first causes and principles” (McMahon 1991, 13), and this understanding is by no means unknown in more modern Western intellectual traditions.

We see this view within the holistic-organic societal change perspective of the classic Western conservative traditions, which are careful and thus skeptical of positivist interventions due to human complex causation dynamics and its inevitable unintended consequences (Kirk 1987, 19, 29, 38). We see it in the Enlightenment and Age of Reason traditions—minus the French Positivists and their modern spawn—and on until such as Einstein, who strongly believed in a “harmony of nature” interpenetrating all (Isaacson 2007, 7).

It is a purpose of this essay is to *overtly* isolate the modern, singularly focused, scientific specialist as historically aberrational in terms of higher-level questions, and to further isolate the attempted mathematical modeling of holistic complex systems of human action as a most recent—and so far mostly unsuccessful—side path.

At this juncture, for a mostly self-selected few, we explore animation and path formation, emergence, harmonics, and perturbation: as these processes foster holistic emerging trends forecasts.

Hokusai has a rather depressing perspective on this learning process:

From the age of six I had a penchant for copying the form of things...At seventy-three, I was somewhat able to fathom the growth of plants and trees, and the structure of birds, animals, insects, and fish...at ninety to see further into the underlying principle of things...at one hundred and ten, every dot and stroke will be as though alive. (Smith II 1988)

Thankfully, Hokusai was a very great master, while we aim for a modest mastery.

For the futures forecaster, how do we facilitate learning this, since it cannot be taught?

Learning Animation and Dynamic Path Formation

We commence “by way of hints” and “raised” angles, as Maimonides and Confucius suggest, because at this juncture we have mostly left off teaching and entered learning.

Everyone still reading, and a great many talented specialists no longer with us, is a considerable talent: through broad formal learning and/or broad experience in the world.

My suggestion is that these talents, for whom the above discussions are comprehensible, now need to be applied somewhat systematically to answering the following questions.

Generically, how is a society’s idea formed, how does this idea translate into its stable and definitive forms of action, how should we come to see this for our society and for societies not our own, and how do we use this understanding in forecasting future action?

Germans, mostly of the nineteenth century Romantic School, coupled with classic thinkers from several non-Western traditions, inform us about the *first* question.

F. A. Hayek applies free market principles to the *second* question very admirably.

These, together with some insights about complex systems analysis written by Sir Isaiah Berlin, address the *third* question, while the *fourth* necessarily folds in a number of traditions precisely because all things proceed according to their bias, internally and with respect to each other. This last arena is complex adaptive systems dancing, conflicting harmonies, and so forth—basically, for example, the United States fighting a war in Iraq and Afghanistan according to its biases and norms of acting, and every other society acting and reacting within the international sphere according to their biased norms of action.

It is all quite rational—simply not solely involving our forms of being rational. Emerging futures forecasting begins archeologically from this socio-psychological ground of action.

This conversation was introduced formally at the Proteus 2006 Complex Systems Analysis Conference via *Profiling International Change Processes: introducing a holistically integrative and socio-psychologically grounded approach to emerging trends prediction* (Werther 2007, 17-19). Interested readers are directed there and to the earlier *Profiling 'Change Processes' as a Strategic Analysis Tool*, which presents a useful graphic overview of the “archeological perspective on analysis” which leads to emergent futures insights (Werther 2000a, 20), and also to *Beyond the Blocking Tree: Improving Performance in Future-Oriented Analysis*, wherein Werther notes, “In order to produce future-oriented analysis, it is necessary to evaluate how our method(s), philosophy, and the art of analysis interact” (Werther 2000b, 42).

The current teaching/learning-oriented discussion of emerging international trends forecasting extracts some key points from these papers, adds additional considerations of a more sophisticated kind, and builds on them.

We begin thusly with F. A. Hayek's topic addressing dynamic societal path formation rather than its particular idea animation because, likely, in the beginning was the deed.

Philosophers will often tell us that it is ideas that matter, and that different societies, cultures, and nations are at root "them versus us" idea-strategies in action about desired goods and detested evils. This is all very intellectual and rational in its way.

More likely an ancient someone zigged when they should have zagged, contemporaries noticed, and society learned thereby. After repetitions, a "look what Grog do" idea-path was born naturally and without heavy thinking—or at least, so thinks F. A. Hayek. "Since circumstances vary worldwide and temporally, variation arises and solidifies. This process is compositive and synthetic, more than analytic" (Hayek, 1952, 65-68).

Because of the fluid and shifting nature by which complex events move, people need to make their best judgments on the spot in the circumstances as they find them at that time.

Some judgments are useful, others not, and it is by this process of constant market-like selection and rejection that each particular group generates their various normalized solution patterns as "successive people find themselves who are to seek their way *and who by the cumulative effect of their action create a path*" (Hayek 1952, 70-71).

Imitation really is the highest form of flattery, and as each society constantly imitates and passes on what traditionally, customarily, and normally works in their time and special circumstance, a unique path is formed, one institutionally and normatively endowed.

Such variations about societies, cultures, and nations are not innumerable in their basic forms, or in their basic strategies and ways of acting. There are patterns within patterns, but they can be understood. This is why we began with the study of religions, cultures, philosophies, histories, and societies: comparative mostly. These build understanding.

Moses Maimonides thinks “The majority of scholars, that is to say, the most famous in science, are afflicted with this failing, viz., that of hurrying at once to the final results...without treating of the preliminary disciplines (Maimonides 1956, 47), which Confucius calls concerning oneself “with the root“ (Dawson 1993, 3). So also does Buddhist (Bodhi 2005, 47, 317, 356, 405) and Hindu tradition (Mascaro 1965) advise consideration of whole complex causal relationships, given attention to basic learning.

Interestingly, Einstein, who read a great deal of philosophy, particularly Hume, Spinoza, and Mach (Isaacson 2007, 81), when asked near the end of his life what schools should emphasize, said “In teaching history, there should be extensive discussion of personalities who benefited mankind through independence of character and judgment (Isaacson 2007, 6). He also considered visual understanding to be key (Isaacson 2007, 9, 26), and famously said that “imagination is more important than knowledge” so that “a new idea comes suddenly in a rather intuitive way...But intuition is nothing but the outcome of earlier intellectual experience” (Isaacson 2007, 7, 113). This intellectual experience, Isaacson thinks, mainly came to Einstein from his “deep understanding and knowledge...and his grounding in philosophy” (Isaacson 2007, 113).

One probably cannot say too often that no historical society has vaunted the specialist and denigrated the deeply and broadly educated generalist as much as has our modern, science-based society, especially America (Werther 1998, 24, 1999, 287-290, 2006a, 2.).

That is why we are so poor at emerging futures forecasting in human affairs, even given that, for the first time in human history, technology permits us to see global, regional, and local change in nearly real-time and almost holistically (Werther 2007). This ought to be, by any rational construction, the profoundest era of futures forecasting.

Broad ignorance within the analytical population about many disciplines, roots, formations, interconnections, and animating ideas and their emergences, principally prevents this. What is being claimed here is that we cannot take advantage of technology because we lack

the capacity to self-organize masses of information within holistic constructions.

Building up this ability dynamically is critical.

Proceeding by way of hints, some simple examples of what must be learned about path formation and its implications for emerging futures forecasting are useful. In real emerging trends prediction, these various considerations will be holistically interpenetrated to form a “change profile” for each country or societal association of interest (Werther 2000a, 2007). Here, they merely draw attention to the process of building up insights into path formation, path dynamics, and national style of change, especially as these are normatively embedded as ideas.

Among the paths so formed by Americans is legalism. The United States employs roughly seventy percent of the world’s lawyers, its original complaint involving the rights of Englishmen versus the monarch was legal, its Constitution is a negotiated contract, its behavior in almost any serious dispute of policy then and now is to work it out within the courts, repetitively, until a kind of societal consensus occurs. Nobody uses lawyers the way that Americans use lawyers, so that today we even embed them into combat situations as battlefield lawyers in Iraq “in day-to-day operations...[where they] define rules of engagement, give advice on targeting issues...They’re involved at all levels of decision making (Schauffler 2003, 1): a use for lawyers that seems not to have occurred to Iraqis, Somalis, Afghans, Chinese, Fijians, African warlords, or, for that matter, to anyone else.

Legalism, as one defining feature of American behavior, has analogs with tribalism in places like Yemen, Somalia, Iraq, and indeed, in much of Africa and the Middle East-Central Asia, with guanxi-type embedded relations leading to strong and centralized governments in East Asia and Singapore (among others), with egalitarian democratic welfare statism in Europe, with “family” networks of governance in Philippines and much of Latin America, with devolutionary cantonment in Switzerland, with consociational power sharing in Belgium and Malaysia, with military enforced secularization in Turkey, and so forth.

For any society, not all insights will be laudable or welcome to all, such as those respecting observations of American dysfunctional bureaucratization (Olson 1982), widespread cheating (Callahan 2004), lack of staying power in society combined with a short-term focus in operations (Berner 2006, 59), and so forth.

Societal meanings also change, for what is corruption under American legalism is not similar to corruption under African tribalism, Sinic *guanxi*, Latin family, and/or other embedded systems of mutual obligation. A Japanese executive may resign shamefaced and publicly because his brother did wrong, but an American would consider this quite irrelevant to his/her legal and social obligations.

None of these insights into societal path formation is to be simplistically understood as operating in isolation from the specific contexts in which it manifests itself, nor without being interpenetrated with the other defining path-like features by which that society normally moves. Nor are these path-like features static. They may be glacial, perhaps, in their rate of evolutionary change, but not static.

Their personality-like societal character has usefulness in emerging change prediction because, once formed, in the way that Hayek suggests when speaking of such wholes within the realm of individual choices and *subsequent* societal actions.

At first everyone will seek for himself what seems to him the best path. But the fact that such a path has been used once is likely to make it easier to traverse and therefore more likely to be used again; and thus gradually more and more clearly defined tracks arise and come to be used to the exclusion of other possible ways.
(Hayek 1952, 70-71)

Different society's specific exclusion/inclusion features, operative within their varied contexts, are precisely what mathematical treatments positing scientifically rational human action cannot capture. Rather, they are why we are learning this manner of approaching emerging futures forecasting, and they are why Bright (2007) commented that informed judgments have provided the most insight, and that [now] traditional metric analysis approaches are not applicable. Expert holistic

and synthetic analysis requires wielding a general knowledge capacity applied simultaneously to many different specific circumstances, and means doing so in an immediately flexible manner (Wilson 1998, 269).

The previously learned “what goes with what?” and “what changes to what,” now seen as motors of action within and among societies, need to be animated in varying contexts.

Sir Isaiah Berlin contributes to this insight:

What makes statesmen, like drivers of cars, successful is that they do not think in general terms—that is, they do not ask themselves in what respect a given situation is like or unlike other situations in the long course of human history... Their merit is that they grasp the unique combination of characteristics that constitute this particular situation—this and no other... that communicate to them the specific contours and texture of a particular political or social situation.... To integrate in this sense is to see data... as elements of a single pattern, with their implications, to see them as symptoms of past and future possibilities, to see them pragmatically... Above all this is an acute sense of what fits with what, what springs from what, what leads to what... It is a sense for what is qualitative rather than quantitative, for what is specific rather than general; it is a species of direct acquaintance... It is a capacity, in the first place, for synthesis. (Berlin 1996, 45-47)

Quite so: exactly. Neither Confucius, nor Buddha, nor Sun Tzu, nor Dale Earnhardt, nor any Zen master could have said it better.

We can now also usefully see national histories such as Jutikkala and Pirinen's (1988) excellent *A History of Finland* as a particular problem set to be solved, one centrally involving Sweden, Russia, and Prussia in what it means to be and act as a Finn.

Similarly, one sees Norman Davies' (1991) *Heart of Europe—A Short History of Poland* as a Polish problem set to be solved—Poland as “an attempt not to speak German,” as my student framed it. One sees in Billington's (1970) *The Icon and the Axe—An Interpretive History of Russian Culture* the formative and path development influences of forest

society and the Orthodox church; within Korean history, a Korean, Chinese, and Japanese ongoing dance of influences and conquests; so for Vietnam, for Croatia, for Iraq; indeed to see for any society the creation and maintenance of their normalized forms and styles of behavior as being accepted solution sets, normatively endowed through long practice because “gradually more and more clearly defined tracks arise and come to be used to the exclusion of other possible ways” (Hayek 1952, 70-71).

Now one can also more fruitfully read excellent biographies with a deeper grasp as to why, as a problem of direct acquaintance, some great statesmen did that and no other thing, within the context of their moment.

This onion-like folding in process is endless, but its core feature is that everything has a place within a broadening and deepening understanding of dynamic change processes. The *Learning Forecasting by Layering the Onion* figure should thus be understood as part of the iterative process shown in the *Profiling Change Processes within Societies: a Socio/Psychological Approach to Predicting Likely Futures* schematic. These learning and assessment orientations interpenetrate each other.

We arrive at using societal animation via its idea operating within these paths.

Applying Dynamic Animation

Like any human composition, there are theme and harmony animating groups, and within *this* realm of ideas, each normally acts. We discussed how societal paths are formed and how they can be learned in a holistic and interpenetrated manner. At the yet higher level of analyst ability, it is a capacity to use those whole *themed* compositions that is attained.

This means we now need to learn about a society’s constitutive and animating ideas in action. This style of action is seen philosophically/religiously and strategically/formally.

In the beginning was the deed, so we begin with ideas as *a species*: a species manifesting form and a strategy for survival. There is another reason for so beginning.

For example, in Muslim societies one hears frequently about faith and honor, in the way that in America one hears about rights and law. Osama Bin Laden speaks regularly in this interpretive language of faith and honor versus humiliation (Berner 2006, 59, 69, 83).

American experience in Afghanistan and Iraq exemplifies the tribal importance of honor.

The *Holy Koran* 2:191, 217 says, “Tumult and oppression are worse than slaughter,” although 2:190 warns one to “Fight in the cause of Allah those who fight you, but do not transgress limits; for Allah loveth not transgressors.” Some tribal codes enfold honor.

It certainly seems that Sir Henry Maine’s (1890) classic observation about behavior and organization within status society versus contract society is informative here, as are other insights about shame-based societies—which modern America certainly is not—where loss of honor is more consequential than loss of life (Wood 2006; Boehm 1984; Benedict 1989). Modern secular America and Europe is about rights and contract; not honor.

The Hindu Bhagavad Gita, 2:33-34 warns “But to forgo this fight for righteousness is to forgo thy duty and honour; is to fall into transgression. Men will tell of thy dishonour both now and in times to come. And to a man who is in honour, dishonour is more than death” (Mascaro 1984). In the West, we called this chivalry, and it was once prime. In Japan, we say *giri*—the obligation to keep one’s name unspotted (Benedict 1989, 145).

What is being expressed is that, in their philosophical relations, cultures, societies, and nations advise action within bounded norms of behavior, which manifests core ideas. This is the systemic expression of the good they aspire to and the evil they seek to avoid.

Wood (2006) asserts that behavior is fundamentally channeled through such ideas and that a society cannot be understood other than with proper reference to them.

However, as a practical matter, a society always lives its idea path, but no society I know of lives up to its philosophical/religious principles. The latter shape, but do not determine.

This is another Aristotelian “such precision as the subject matter allows” moment: neither to be over-specified nor ignored because it is not, *inter alia*, precise enough.

Schopenhauer and the Romantic era Germans rescue us via talk of *national styles as idea*.

Theirs was, in part, a negative reaction to the predominantly external Newtonian and Cartesian empiricism that was growing dominant during the Age of Reason, coupled with their emerging recognition and statement of how inward nature normally reflects outward in worldly actions. Schopenhauer (1969, 141) says of his time “everything is ascribed to things working from the outside, and nothing to the inner nature of things. If we could actually succeed in this way, then, as we have already said, an arithmetical sum would ultimately solve the riddle of the world.” This these Germans, and a few others, did not believe, and so they looked inwardly for another way of knowing human action.

They proceed from the position that “every organism represents the Idea of which it is the image or copy” (Schopenhauer 1969, 146), and that this “Idea” is formalized in a species (defined as a natural form and simultaneously *a natural strategy for existence*). A species thus represents *a normalized strategy of action for survival*. It acts, via Schopenhauer’s willing—a concept not to be simplistically or crassly understood—according to its “Idea.”

Schopenhauer’s “Idea,” which is the definitive solution set of any societal *species* (and its constituent individuals) in response to its complex environment, gets at this precise notion of moving from the inside out *in each and every context* (my emphasis). There are likely infinite (or at least very, very many) particular situational cases, but in each case, the

various species (and their members) definitively respond according to their nature—according to their idea-strategy, if you will—and thus respond to problems in ways consistent with their “path.”

Learning this is not about learning a single thing captured in any one single study, but about learning endlessly changing contextual lessons. Such observations mean that a case study is not the thing to be studied *per se*, but *is* rather the idea-species’ problem being worked upon at that instant. Every case is a snapshot of a behavioral moment, or some few behavioral moments, upon an idea path. Similarly, comparative history’s forecasting lessons are not *in* the particular facts or even their relationships, but *in* the characteristic ways of addressing problems that each group adopts. This species-as-idea-strategy analysis focus is also appropriate for studying biographies and current news.

An excellent example of this is Peter Katzenstein’s (1985) *Small States in World Markets—Industrial Policy in Europe*, which examines why some of the richest countries in the world are small, generally resource poor, open, and highly flexible trading nations—they have each manifested, to use ecological language, a successful niche strategy for efficiently appropriating desired resources. They can be rich no other way, and to become rich, their idea and actions must conform within a narrow realm of contextual possibility.

Schiller (1855) expresses this, in *History of the Revolt of the Netherlands*, as being about how seven small, resource-poor, trading provinces of the dominant Spanish Empire, where Philip II, “the most powerful sovereign of his line—whose dreaded superiority menaced the independence of Europe,” was overthrown in his possession of the United Provinces (Netherlands) not by heroes, but by a necessity “where necessity made genius, and accident made heroes” (Schiller 1855, 10). Necessity is a strong guide.

At the sub-national level, James C. Scott’s (1985) *Weapons of the Weak—Everyday Forms of Peasant Resistance*, addresses how relatively powerless groups *typically* respond to much more powerful dominant groups via “forms of struggle [which] stop well short of collective defiance ... make use of implicit understandings and informal networks... that require little coordination and planning” (Scott 1985, xvi); which all

sounds rather useful in understanding in part why we are losing, or at least not winning, the War on Terror, why insurgent recruitment is spreading to new countries, why Great Britain among others is worried about the enemy within, and why a metastatic, largely disjointed, and self-directed orientation has developed worldwide (Windrem 2007).

There is nothing unpredictable in this—that is how powerless groups *must* fight back.

They cannot win fighting stupidly, so they strategically adapt to the dominant power's conflict dynamic. Werther (1992) shows how small groups win major concessions against large powers in this way. The major power and the minor power *dance* in this manner quite predictably, a fact that nicely permits forecasting emerging futures (Werther 1992).

The Combating Terrorism Center of the United States Military Academy currently notes that “adherents of al Qa’ida and like minded groups do not value self-preservation in the way that the United States had anticipated,” and now—half a decade into the War on Terror—wants new ideas on how to effectively combat such persons (USMA/CTC 2007).

In his initial declaration of war, published in *Al Quds al-Arabi* on 23 August 1996, Osama bin Laden said, “These youths love death as you love life. They pass the traits of dignity, pride, courage, generosity, truthfulness and sacrifice from father to father. They are most delivering and steadfast at war. They inherit these values from their ancestors, even from the Time of the Ignorance before Islam” (Berner 2006, 60).

In the same declaration of war, bin Laden said, “Terrorizing you, while you carry arms in our land, is a legitimate and morally demanded duty....Those youth are different from your soldiers. Your problem will be how to convince your soldiers how to fight, while our problem will be how to restrain our youth to wait their turn in fighting and in operations” (Berner 2006, 64). Rather depressing, really, but not unpredictable surely.

If one accepts 2006-2007 era American domestic views—amid admitted expanding insurgency recruitment—that the U.S. military

is at or near the breaking point and that retention bonuses and stop-loss orders are needed to staunch the flow of personnel, and if current Congressional debates regarding funding and staying in or leaving Iraq are valid signals; Osama bin Laden has been a pretty good emerging futures analyst from 1996.

Furthermore, his target was, and is, destroying the U.S. economy through overspending and its reputation through defeat in Muslim lands: “In summary, America is a great country which possesses tremendous military might and a wide ranging economy, but all this is based on a frail foundation, and it is possible to target this frail foundation.... We are continuing in the same policy [as with the USSR]—to make America bleed profusely to the point of bankruptcy, God willing... Armies do not triumph with large numbers, but are defeated if the spirit of defeatism prevails” (Bernier 2006, 225, 309, 213).

Respecting the September 11th, 2001, attacks, bin Laden said “They shook America’s throne and struck the U.S. economy in the heart.... This is clear proof that this international usurious, damnable economy.... can easily collapse” (Bernier 2006, 169).

As this is being written, majorities of Americans now believe the Iraq War cannot be won, and general optimism—as measured by an AP-Ipsos poll and other surveys—is at record lows, with merely 25% believing the country is moving in the right direction (Fram and Tompson, 2007, A6). Simultaneously, anti-globalization and domestic economic dissatisfaction is rising, prompting the conservative *Economist* to place the picture of a beached, rusting ship hulk on their cover with the lead “The future of globalisation” (*Economist*, July 29th-August 4th 2007), followed shortly by “Rich man, poor man—the winners and losers from globalization” (*Economist*, January 20th-26th 2007), while the *New York Times*, among other major sources, regularly writes stories such as “Cracks in the Foundations,” wherein it said “A crisis mood has descended over the [World Trade Organization trade] talks ... a new era of protectionism could be ushered in... leading to a slowdown in the global economy” (Weisman 2007, C1).

The purposes of this timely—if painful—example of War on Terror/Iraq War/Economics holistic emergent dynamics, includes

looking at dynamic group animation problems as that group/species' stable, bounded action parameters seen in terms of their idea-strategy confronting the world. Painful as this is to say, Osama bin Laden understood this well. We, however, mostly have not understood. Just in this way, most analysts missed emerging Andean Rim syndrome shifts as precursors to a basic complex system change.

Second, as in several of the previous examples, notice that societal complex systems behave quite nicely within their normal action patterns, and whenever they begin not to, one can notice it because the interdependent functional characteristics of interacting syndromes within complex systems suggest that "a change in one element of these syndromes...would bring about...a change in the entire pattern" (Przeworski and Teune 1982, 29). That is unlikely to be subtle and is never invisible, and thus it can be investigated as to emerging consequences. I will have more to say about this as a forecasting tool later.

Third, societies and other actors *tell you* what they are up to, why, and how; if not directly through words, then directly in actions grounded within their idea-strategy (personality, if you like). Understand this, and you can forecast emergence effectively.

A deer cannot move without leaving signs, and if you understand the nature of the deer, its goals and problems at various times, and its environment, you can predict the future movement of the deer within its complex environment. Any good hunter understands this.

Apply this to societies and other groups in an embedded fashion, and emergence occurs.

Fourth, societies are constrained by what went before and by what their current reality and perception thereof is, and they move from that complex systems syndrome position. China and India may be growing at high rates with excellent foreign direct investment, but they still have massive numbers of very poor people, huge and growing inequality gaps, perverse demographic realities, growing political and social-cultural conflict, strategic limitations, infrastructure and resource challenges, and so forth *that they must address* and which they will try to address

from within their idea-strategy, that is, as Indian bias systems and as Chinese bias systems, not objectively.

Schopenhauer commented too generally, “We know the psychological character of the species, and from this we know exactly what is to be expected from the individual” (Schopenhauer 1969, 131). This is too determinist, but it is broadly useful.

Although overstated as to precision, Schopenhauer’s general observation about the importance of psychological character and of idea-as-species-strategy *as a valid predictor of future action within and by formations* provides the necessary groundwork for a broadly holistic behavioral solution to emerging futures forecasting based on stable or changing behavior of such formations.

It must be emphasized that it is actual actions and their dynamics that must be profiled.

Herder intuitively applied character to the actions of nations and societies in the form of their national styles. His was an inward-oriented, romanticist alternative to the mostly external scientific-mechanical explanations of the era. Of course, for human individuals, and thus for their collective actions within and between their societies, the problem of behavioral prediction is—as was said—eminently more complex than Schopenhauer’s comment implies, but the basic orientation of action stemming from one’s psychological character differentiates this perspective from the externally oriented and objectively rational empiricism of other schools. And do notice that idea-species psychological character is stable, whether for an individual or for society (Schopenhauer 1969, 114).

The forecasting solution derives from holistically integrating known and established societal patterns of responding to change pressures (society’s harmonics) with currently observed situational changes. For example, when confronted with a chronically slow economy during the 1990’s, Japan elected patience for over a decade. The United States would not choose this. Similarly, Afghan, Somali, and Vietnamese ways of fighting are not the same, nor are they the United State’s ways: as we

learned to our detriment. Our pattern is not theirs', nor theirs' ours'. Forecasting must consider this, and derives from it.

According to Sir Isaiah Berlin, enterprises should show “a capacity for integrating a vast amalgam of constantly changing, multicoloured, evanescent, perpetually overlapping data, too many, too swift, too intermingled to be caught and pinned down, and labeled like so many butterflies.” (Berlin 1996, 46). Berlin is a realist cure for the Romantics.

Berlin believed that enterprises—meaning both human actions and judgments based upon them—ought to practically reflect human experience as it really is: enterprises being dynamically complex systems “too many, too swift, too intermingled to be caught and pinned down.”

The trick lies in not trying to “pin” them down: watch them move instead. Profile their change processes, and understand, with Przeworski and Teune’s insight always in mind, that changes among interconnected syndromes are important.

The specific problem is to integrate effectively Berlin’s data-driven complex systems realism with systems’ inwardly motivated action styles. This should be done for humanly constructed wholes by profiling their change processes according to socio-psychological natures. Such societal ideas-species as biased “change process” are always exhibited—never hidden—and permit seeing future action which therefrom proceeds.

But this requires ongoing difficult syntheses that one can only learn by doing. Synthetic solutions are not seen in categories, but in intermingling syndromes amid change.

Learning Synchrony and Harmonic Path Dynamics

Every culture, group, society, nation is—in Schopenhauer’s sense—a will, an idea, and a constituted whole who’s normalized set of individual choices is constructed so that “by the cumulative effect of their action [they] create a path” (Hayek 1952, 71).

Schopenhauer saw the species' (a natural form plus its strategy for survival) idea-strategy creating their way, and he applied this to humanly constructed forms, whereas Hayek posits that the cumulative effects of individual actions creates that "way" or "path" which is definitive over time of that particular social form. Benedict Anderson and Nietzsche think of societies as imagined communities of ideas, goals, methods, problems, and neighbors. In combination, these perspectives seem rather iteratively reinforcing as a complex systems syndrome view.

All saw constructed/emergent societal wholes as real entities with known characteristics.

In plainer physical/biological science English, societies are wholes, but since no two things occupy the same space at the same time in the same way—they diverge. Using business parlance, we say that firms and economies develop strategies according to their comparative advantage, by which we mean they want to efficiently avoid competition if they can and achieve monopoly if they could. Socio-psychologically and historically-anthropologically, societies learn over time what works to solve their problems—given their environment, neighbors, desires and dislikes—and stick to that idea-strategy as a normative and behavioral feature in subsequent actions. We see this developmentally, as Max Weber, Emile Durkheim (1973), and others previously quoted, have said, and also emergently as societal paths, as Hayek, Schopenhauer, Berlin, and others noticed.

Path-like thinking, with perspectives of human action based upon 'paths' that are distinctive to cultures and societies, is not new: it is probably among the oldest conceptions about complex systems' dynamics involving human affairs going.

Let us, finally, play with these old ideas a little and see what emerges, why, and how.

Using Dynamic Harmonic Perturbations for Emerging Change Forecasting, and Other Advanced Applications

What strikes one over years of doing emerging international futures forecasting is how stable in time societal paths and idea-species manifestations are. Any change is obvious.

People simply do not easily change their accustomed *ways*, nor do they easily change their *ideas* about how things are or should be. This basic insight about *The Structure of Scientific Revolutions* was presented by Thomas Kuhn decades ago, where supposedly highly reasoning scientific communities cling to traditional, *normal* science, ways of doing things, and continue to teach them long after convincing new evidence renders their positions obsolete (Kuhn 1962). Hayek's point about path formation and exclusion fits like a glove.

Mancur Olson, in his classic *The Rise and Decline of Nations*, places this societal immobility and consequent inability to rationally change in response to changed environments within the entrenched interests that seek to preserve their prerogatives, even as the ship of state goes down (Olson 1982).

Arguing two major implications of his views on collective action within society, Olson claims "organization for collective action takes a good deal of time to emerge" (Olson 1982, 39), and that "those organizations that have secured selective incentives to maintain themselves will often survive as organizations even if the collective good they once provided is no longer needed" (Olson 1982, 40) such that, "stable societies with unchanged boundaries tend to accumulate more collusions and organizations for collective action over time" (Olson 1982, 41).

The operational result, which Olson likens to, "wrestlers struggling over the contents of a china shop" (Olson 1982, 44), is that "members of 'small' groups have disproportionate organizational power for collective action, and this disproportion diminishes but does not disappear over time in stable societies" (Olson 1982, 41).

Thus, these societal paths and their harmonics, once slowly established and normalized, persist as stable characteristics of that society. This interest group maintenance mechanism produces the internal syndromes, to use Przeworski and Teune's language, as stable artifacts of any society. Hayek's path formation, Schopenhauer's idea-species, Herder's national styles, Nietzsche's systems of "good and evil," Arnold Benedict's "imagined communities," Buddha's dependent origination, Confucius' root, and Berlin's complex system integration, are all about seeing and clarifying this. As Maimonides said, "You, however, know how all these subjects are connected together" (Maimonides 1956, 45).

When one grasps this about a society—how its syndromes are connected together and how they normally change—emerging change forecasting proceeds within that harmonic range of disputing, not as exact dependence, but as synchrony and probabilistically, to future choices: "they vary as far as their nature permits (Maimonides 1956, 116).

If you can do the above, you can do simple emerging international futures forecasting. Thinking dynamically, where several bias systems move holistically with respect to their biases within the conflict space, is mere practice for a competent analyst with the necessary facility.

There are some advanced considerations it is useful to close with.

In the previous discussions, the issue of societal harmonic perturbation (external and internal) was discussed, as was the notion of using natural and quasi-experimental iteration as a way to see the functioning of internal and external path dynamics within their harmonic range. Also discussed was the idea that endless iteration, historic and contemporary, is a way to reduce the range of uncertainty regarding the behavior of societal path dynamics: the what-goes-with-what? and the what-changes-to-what-and-how? aspects that permit thinking in terms of distinctive societal dynamic flows.

Due to the interpenetration of facts, relationships, and processes to form syndromes and the interpenetration of syndromes to produce societal complex systems with given stable dynamics, it is not necessary to know all the facts any more than it is necessary to see the last nail pounded in house construction to know the coming shape of the

house. One can enter flows anywhere and perceive their syndrome-like relationships as an idea-species and idea-strategy manifested. In reality, all you need to do is iteratively recognize the idea-species and its change manifestations in normal behavior.

This is initially relatively gross, but a societal dynamics-oriented library attending to such things would permit holistically iterative learning in ways useful to emerging international futures forecasting. The “thing I use to string them together” (Dawson 1993, 61) is the profiled societal change process.

In discussing these matters and the teaching/learning thereof, this essay, along with the works of many scholars and practitioners quoted, was hostile to the possibility that mathematics and modeling are fundamentally useful to emerging futures forecasting. The issue was the contextually nuanced nature of syndromes in dynamic complex adaptive systems as they interact with other bias systems according to their biases, all operating simultaneously in the world.

Picturing such complex system dynamics in action is similar to watching a biased surfer upon a wave, operating simultaneously from his judgment of the coming actions of other differently biased surfers, and from his judgment respecting the future movement of the wave itself. To forecast and act successfully within such a complex system, the surfer must simultaneously consider both. The key point is that each individual surfer operates from their biased style, and not objectively.

The second image involved dancers projecting, at every moment in time, the emerging movements of their partners, other couples, and the anticipated tune.

This simply seemed too complex, in contextual variations, for mathematics to capture.

In writing this essay, a thought emerged which is presented here as preliminary; although likely it is correct. It is this:

Nothing useful can be achieved by using mathematical models to *create* societal change profiles. The constituent syndromes, their relatively stable change relationships, and the complex systems

dynamic they create, which are cast herein as their harmonics, must be qualitatively understood via holistic complex adaptive systems iteration. Przeworski and Teune were incorrect to think of this in uniform metric measurement terms.

However, once such societal complex systems dynamics and their syndrome constituent parts are understood, the stable and interpenetrated nature of the beast—that is, its *holistically stable change processes*—where a change in one syndrome causes a change in the whole complex system, ought, if this is reasoned correctly, permit mathematical specification of the societal harmonic. The idea is simply specifying known societal limits, minima and maxima within which that system operates: the more, the better.

We can, in theory, enter anywhere.

Knowing the nature of the deer, and its goals, needs, and orientation to the environment, we can pick up the track anywhere and project the emerging behavior of the deer.

Building measurements of patterned societal change processes—not of facts and of categories—permits illumination of coming change, whether internal or external, because when one syndrome changes, the complex system itself changes. In short, you can immediately notice the pattern change mathematically even as you cannot know its complex reasons and future emergence path. This seems mathematically treatable in the sense of measuring normal system stasis—but not coming change. Most of the models of complex adaptive societal systems are much more accurate when nothing fundamental is changing, precisely because of the interpenetrated syndrome dynamics during change.

Once you perceive a systemic change, you are back to qualitative emerging change process assessment, but in theory, stable societal harmonics ought to be subject to useful calibration. The changes in process are too nuanced and embedded in complex societal norms to treat as mere mathematical artifact.

This does nothing for modeling the emerging future, per se, but it does scream out about when the beast is fundamentally changing and when you can and cannot safely rely on the beast to behave.

The second broad area for potentially useful mathematical treatment—that is, treatment that interacts with qualitative judgments about emerging international trends—involves timing change issues.

This has been an intractable problem, where, even when the emerging change pattern, its style, and the sequence of change are accurately forecast, the forecast of when the change will occur, the timing, is often wrong. In philosophic terms, the ripening is apparent, but we do not know when the fruit thereof will fall. Kurzweil (2005, 3) made this point even for technology change forecasting, which is—like stock market forecasting—easier to accomplish than futures forecasting involving multiple whole societies.

It seems quite probable that qualitative knowledge of emerging change can usefully be interfaced with mathematical modeling techniques to better inform future forecasts. Indeed, mathematical and technology enhanced forecasts may be most useful in addressing the timing of future change issue.

Nevertheless, we end as we began, with the comment that all major classic learning and analysis traditions—from whatever culture—have enfolded a holistic complex systems view of human affairs and of emerging trends forecasting involving them, wherein broad learning was a preamble to success. Only one post-Enlightenment tradition (really, two major streams thereof) has focused on mathematics and modeling of complex systems human affairs as a potential solution set for futures forecasting. That chimera has failed.

The above is, as we came to understand it, the necessary teaching and learning path for producing analysts capable of doing emerging international future's forecasting. It is neither easy to achieve nor easy to maintain—one is constantly iterating to specify emerging patterns. That is the game. There is no simple solution to understanding human complex systems dynamics under conditions of change. All is change within change.

“When the Master was standing by a stream, he said: ‘Things that go past are like this, aren't they? For they do not set aside day or night’” (Dawson 1993, 33).

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