Unitary Government Theory: A Cybernetic Miss Repeated

Ern Reynolds
Advocates of the "permanent things":


in law and public policy have a deep conceptual problem with conservatism. It's more a movement than a durable well-developed philosophy.

Anglo-American law tries to counter this instability by applying good logic, and the principle of stare decisis. Findings of fact and conclusions of law are kept narrow, the better to accord with precedent.

Such habits of mind and practice do add some useful ballast. But that constrained consistency seldom if ever reaches the most needful realm -- the philosophical underpinnings of conservatism.

As this article is being written there is much turmoil about the notion of the "Unitary Government". By what metrics shall such a Constitutional conjecture be measured? What guides can keep such a concept from being dismissed as a mere ad hoc formulation, disrespected as far-fetched and contrived out of whole cloth? The American national administration is one in which Ninth Amendment sovereignty originates with the citizenry, never the nation-state that the Unitary Government notion suggests.

For this challenge the law library, the history library, the psychiatric library, and
the theological library are not the places to look. Indeed, the gravity of this challenge militates that some other so-called secondary authority (not found in any of these mentioned collections) be privileged and yielded to.

For the holders of multiple graduate and professional degrees reading this article, it may come as a disappointment to learn for the first time that there is a science of stability. Apart from Systems Engineering it is seldom taught, little recognized, and routinely ignored. It may also be labeled the science of communication and control. It has been derived in the late 20th Century from the hardest-won lessons of statecraft, warfare, politics, religion, and commerce.

Each of these realms of thought just mentioned have their own terms of art, their own initiation rites, their own institutions, their own University departments, and their own mystiques. By comparison the science of stability is a friendless homeless orphan.

So how can this science of stability, this science of communication and control, compel respect for its universality and versatility? The answer needs to be presented here, gently and diplomatically.

Let's begin with a Socratic question of apparent simplicity. If physics is the theoretical basis for engineering, then what is the comparable theoretical basis for management?

It's this science of stability, this science of communication and control, this systems science that applies to all realms in the same terms. It is compactly defined as "political physics". The one-word label for this science is -- cybernetics. It purports to create durable structures using only components known to be fallible in themselves.

If conservatism is ever going to be demonstrated to be more than a mere movement of
fallible adherents, it better get beyond public relations ploys, to enlist more than logic and *stare decisis*. It better get down to the bedrock fundamentals so securely that its principles reveal themselves to be universal and too compelling to dismiss. It's past time to bring cybernetics into action here.

Public relations ploys to prop up "Unitary Government" theory have included disguising it under the following contrived synonyms: aggressive use of executive tools; deliberative process privilege; secret opinions policy; and internal departmental deliberation. It has also been conflated with state secrets privilege, attorney-client privilege and attorney work product -- concepts that do have nonfictional recognition in the law.

For example, advocates of the "Unitary Government" conjecture suggest that James Madison's separation of powers design weakens the federal government dangerously. But by cybernetic design principles separation of powers builds in resilience and staying power, not weakness. See the Conant-Ashby Theorem, explained below.

The most potent most durable construct to optimize what the U.S. Constitution has designed is to have -- in cybernetic terms -- components that catalyze each other, simultaneously in conflict and conjunction. For the latter phrase the reader can substitute checks and balances.

This cybernetic goal (to optimize fallible parts that the U.S. Constitution has designed to be a resilient whole) is achieved by a lattice construct: vertically placing local government in its own sphere, state government in its own sphere, and national government in its own sphere. The horizontal component of this three-dimensional lattice design is the separations of powers among legislative, executive, and judicial branches.

Just as there are widely divergent types of mathematicians, there are several flavors of cyberneticians to operate and elucidate this lattice model. The science of stability
made large advances during World War II under the rubric "operations research." The best
two practitioners for this introductory purpose are a pair of British veterans of that
conflict now dead: William Ross Ashby and Anthony Stafford Beer. The former was by training
a psychiatrist-pathologist, and the latter was a management consultant of dazzling mental
gifts.

Conservatives must love Ross Ashby in particular. The Conant-Ashby Theorem declares
that every good regulator of a system must contain a model of that system. (To the extent
that master model omits something essential for homeostatic balance, the regulator will be
expensive, overlarge, ineffective, or all three.)

The Constitution is a master model of a structure to impart stable communication and
control, although built entirely of fallible parts. Every statutory scheme is a model
striving for regulation and governance. Every court brief is a model hoping to persuade.
Every oral argument is a model (win or lose). Every written opinion stating the ostensible
reasons for the ruling is a model. The U.S. Supreme Court itself is a fallible model that
is not final because it is right; it's right because it's final.

There is much universal wisdom to be gained from the people who know the most about
cybernetic model making. Judges labeling these sources "secondary authorities" trivialize
the many basics and nuances such insights can furnish conservatism and law. Cybernetics is
as fundamental to manmade law as is logic. Apply the Conant-Ashby Theorem well and the
effort will be repaid in multiples.

What Stafford Beer has to enlighten Federalist Society adherents about is this. Some
systems are way more worthy than others. According to Ross Ashby, a system can be any set
of variables selected by an observer.²

² W. ROSS ASHBY, AN INTRODUCTION TO CYBERNETICS 106 (1956).
By that definition a random execrable failed government entity, program or military strategy (even
though it's dumber than a box of rocks) could be considered a system.

What Stafford Beer demonstrated beyond dispute is that the worthiest systems are those that are durable, sustainable, and self-reinforcing despite being constructed of individually fallible components. His chosen adjective was "viable", and his graphic implementation is called the Viable System Model (VSM).

Should one be either shaping or critiquing a federal regulatory scheme (as in a civil trial derived from statutory interpretation and government regulations), the Viable System Model with its annexed principles will reveal how good or bad is the bedrock regulatory scheme (i.e., underpinning the sustainability of Congress's statutory drafting handiwork).

Any viable system must contain the classic five sub-systems.³

³ Stafford Beer, DIAGNOSING THE SYSTEM FOR ORGANIZATIONS 130 (1985). Two components included for extremely spasmodic occasional use raise the five to seven. The extra two consist of the audit function and the alarm channel. Refer further to the Technical Disquisition at the end of this article.

In armed forces jargon the five classic components of military functional organization are command, control, communications, intelligence, and operations (C³I). Beer's VSM numbered those sub-systems respectively 5, 3, 2, 4, and 1. When all but the last of those sub-systems were graphically portrayed working together in the VSM, they were collectively labeled the Executive Box.⁴

⁴ Id. at 20.

The shorthand designation when operations are conceptually separated from the Executive Box become the well-known C³I (see cubed eye) acronym.

Cyberneticians are invariably holists, devoted to pushing holistic synthesis. This is pursued in order to comprehend any structural deficiency in the big picture of the consulting engagement in focus. Thus their most insightful work product can be baffling to
Anglo-American judges and lawyers, who depend almost exclusively on analytic reduction of some isolated fallible minutiae that is often invisible when the observer is focused on the big picture.

Attorneys fall for the professionally-induced belief that causation must be simple, proximate, and direct. Cyberneticians know better; within systems, causation is more often than not highly circular and indirect. Cyberneticians are driven by whatever facts exceed a physiological limit, to move an essential variable or disbalance a hidden simplicity; lawyers come in on what few facts fit their preferred model for apportioning blame.

For example, a cybernetician may examine a complex mess of a problem, and demonstrate the weakness, missingness or absence of something crucial. Proving a negative is always difficult if not impossible to do, rendering such a result highly suspect to someone trained to do mainly analytic reduction. Management cybernetics permits proving a negative by what its practitioners call "seeing around corners".

This quasi-mysterious process is not as suspect as it may seem. When an insightful practitioner of holistic synthesis senses s/he is in the presence of a true system (as opposed to a mere assemblage of parts), then the five to seven elements of a classic system only remain to be identified in their turn. That is how the discovery of absence gets made. Perhaps S4 or another mandatory component is very weak to the point of being practically nonexistent. Absence of evidence does not mean the same thing as evidence of absence.

Each of those five classic sub-systems in its own sphere must be equally powerful, with none dominant.\textsuperscript{5} Id. at 30.

Power of all sorts still can be measured inside the VSM by a common concept of coping ability. Ross Ashby gave us this metric in a deceptively simple term of art not confined to the VSM -- variety.\textsuperscript{6}
When variety is measured by counting precisely, units called bits are used. However, such bit-level studies are rarities. That extreme degree of granularity is seldom needed to spot structural weakness in the governance of very large complex systems. If the flaw is doctrinal then no amount of scrutiny at more detailed levels can patch that impaired foundation.

If you malevolently wish to weaken and sub-optimize any system (especially a large complex one), then you know from the VSM to overpower or underpower one or more of the classic five sub-systems. (Appropriations are one positive means but not the only way to do this. Putting underqualified people in demanding positions is another affirmative way. Selecting positive means inappropriate to ends is a third way. A fourth way is to fund an activity at the baseline level each successive year even though the activity neither improves or accomplishes its putative mission. Surprise, deception, feints and lying are less subtle negative means.) We will examine here whether proponents and detractors of Unitary Government Theory had any cybernetic insights, witting or not, positive or not.

There are other specialized cybernetic rules about dedicated communication channels, audit channels, alarm channels, resource bargaining channels, and crossing sub-system boundaries within the VSM. See the Technical Disquisition at the foot of this article. We need not reach that level of detail here, because those concerns are just the fine-tuning. But one item of fine-tuning matters hugely.

There is one sub-system (S4) that should always be the particular focus of Federalist Society adherents when any governmental system is the focus. S4 Intelligence consists of two distinct roles: (a) extrapolating from the known past; and (b) projecting into the unknown future. The shorthand reduces to $S_{4e}$ and $S_{4p}$. Liberals are routinely keen on (b)
and wish to finesse (a). People tend to be more cautious when making pronouncements in their own field of expertise. Because conservatives have far more respect for the past, they instinctively (though unaware) perform as more doctrinally rigorous cyberneticians.

Here's why conservative sensibilities are preferable. It is a competent VSM design to have career government bureaucrats in S5, S3, S2, and S1 posts -- but never in S4 slots. The latter should be reserved exclusively for untenured policymakers.

Federal political appointees are usually put in the normative S5 positions only -- command slots. That's acceptable as far as it goes. Yet the federal civil service does not place and use political appointees to anything like their best advantage (which is the way career bureaucrats prefer the matter to remain). The "Unitary Government" approach might have been more sustainable in the G. W. Bush Administration had these cybernetic insights been deployed.

Beer states clearly that one should never ever make a career bureaucracy viable, with tenured policymakers in S4 positions.\(^7\)

\(^7\) STAFFORD BEER, THE HEART OF ENTERPRISE 408. See also 14, 114, & 131 (1979).

Coping ability will inevitably be diminished for doing so. The S4 Intelligence function deals with outside and future matters, so the civil servants working there should be political appointees only, irreplaceable at will. S4 is the principal citadel of whatever coping ability the model can muster. It is the part of the entire system entitled to spend all the money that the S3 Supervisory function inside and now makes. The contention that inevitably occurs here is labeled the S3-S4 vortex. The Viable System Model is unknown to the workings of the federal Executive Branch, and it shows. Proponents of the Unitary Government conjecture missed this crucial insight totally.

In any bribe-free government agency (unitary or otherwise) there is no profit motive.
In turn, its tenured unfirable insiders expect a fresh appropriation each fiscal year no matter what. So the ordinary discipline of one's economic survival having to depend upon bottom-line results is both absent and inverted. The worse the government service function is performed, the more compelling becomes the reason to increase follow-on appropriations.

Even more perverse, political appointees corralled and diverted solely into S5 Command slots cannot command disinterested advice. Rather, all career government bureaucrats can be relied upon to furnish recommendations that privilege and promote the agenda of their institutional employer, not the needs of their nominal superiors. The needs of S5 commanders and the diffused dependent citizenry are ostensible, and get lip service only. What is durably real are dictates of the career bureaucracy to preserve their own viability and sustainability. That is where the embedded power resides. Any accurate Viable System Model will expose this imbalance -- usually at the S3-S4 vortex that S5 is supposed to resolve.

What happens if just 20% of the system accomplishes 80% of the work? According to Beer and the VSM, that outcome is just dandy so long as the productive 20% is the operations portion, not the Executive Box parts. (In economics this cybernetic principle is called the Pareto Optimal Rule. It is reminiscent of the mock admonition among cyberneticians that "thou shalt not sub-optimize".)

The Executive Box sub-systems S5-S4-S3-S2 can allowably govern more than a single S1 operation. For example, Eric Abrahamson and David H. Freedman in their business management book praising the "Perfect Mess"\(^8\)

\(^8\) A PERFECT MESS: THE HIDDEN BENEFITS OF DISORDER (2007).

claim that too much orderliness squelches Robustness (S5), Resonance (S4), Completeness (S3), and Efficiency (S2), to the detriment of three distinct S1 operations: Invention, Flexibility, Improvisation. These two authors did not use cybernetic concepts except implicitly. Indeed anyone who tries to be thoroughly systematic and succeeds, probably satisfies much cybernetic criteria without knowing it.
This link-making to impart deeper comprehension illustrates what mathematicians and cyberneticians recognize as an "isomorphic mapping". Beer advises that "there is no 'correct' interpretation of the VSM. We have spoken instead of more or less useful interpretations." 

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Isomorphic mappings from one realm of activity to another thus must be appraised for usefulness. Examine the next three examples of isomorphic mapping.

The notable investment banker Felix George Rohatyn unwittingly suggests


that the practice of merger, acquisition, and divestiture has five elements that turn out to resemble the classic elements of a viable system: Initiation (S5); Analysis (S4); Negotiation (S3); Coordination (S2); and Consummation (S1). Rohatyn worked these elements out by experience, not book learning.

11 MARSHALL GOLDSMITH & MARK REITER, WHAT GOT YOU HERE WON'T GET YOU THERE 144 (2007).

These authors say the most common mistake is to try to go 1-2-3-7, omitting 4-5-6 wooing:

First, assess and study the situation.
Second, identify and isolate the problem.
Third, report findings and outline the new approach;
Third, formulate the solution and make recommendations.
Fourth, woo up to get superiors to approve.
Fifth, woo laterally to get peers to agree.
Sixth, woo down to get one's direct reports to accept.
Seventh, turn it over to appropriate people to implement.

Goldsmith and Reiter do indeed treat their third step as requiring extra words to adequately describe it; hence it has a double listing. These seven steps unwittingly map isomorphically to what makes a system viable (i.e., sustainable) in Beerian terms, so they do not omit any element of what a classic system must include.

These seven MBA-type steps proceed from a System Three Star perspective, i.e., a
diagnostic assignment seen as a special project. Note again that Beer's System Four (Intelligence) has two distinct parts -- extrapolating from the known past, and projecting into the unknown future, designated S4e and S4p. Goldsmith and Reiter got this right, too.

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Sequence The Seven Steps of a Successful Project
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First, assess and study the situation. S3* WHY
Second, identify and isolate the problem. Alarm WHICH
Third, report findings and outline the new approach; S4e WHEN
Third, formulate the solution and make recommendations. S4p HOW
Fourth, woo up to get superiors to approve. S5 WHETHER
Fifth, woo laterally to get peers to agree. S3 WHAT
Sixth, woo down to get one's direct reports to accept. S2 WHO
Seventh, turn it over to appropriate people to implement. S1 WHERE

The lesson to be taken here from the rearranged sequence is that such a stepwise MBA-type protocol is not a strict necessity, or even a good idea. (Does one wish to be merely a Successful Politician, as opposed to being a Proven Statesman?) The seven steps once rearranged according to the cybernetic Vee Diagram labeled "Eluding Success" found below, reveal the following insights. The sequence recommended to MBAs appears less likely to prosper long term than the Beerian approach. The MBA approach may allow "get 'er done" short term, even if the stepwise sequence turns out to be ready-fire-aim. (The latter trajectory typifies a Successful Politician, as opposed to being a Proven Statesman.)

Yet this example (even when warped out of its MBA-type canonical sequence) shows another cybernetic concept -- that viable systems surprisingly and surreptitiously can organize themselves in spite of themselves. They emerge as if by an "invisible hand".

U.S. Army General David Howell Petraeus compressed the foregoing formula into many fewer words in 2007. "There are three enormous tasks that strategic leaders have to get right … The first is to get the big [theoretical] ideas right. The second is to communicate the big [descriptive] ideas throughout the organization. The third is insure proper
execution of those big [prescriptive and applied] ideas."


The Unitary Government notion in the G. W. Bush Administration never achieved self-organization (emergence) intrinsically to itself. So it never reached viability (sustainability) in the cybernetic sense. This failure could be due to having never achieved that heightened state by accidental trial and error (Darwinian natural selection accelerated), or else by not having been cybernetically designed in the first place during eight years in office. Bush was our first and only M.B.A. President. It is doubtful in cybernetic reflection whether any law-trained executive would have done better if relying upon experience in man-made law alone.

Between 2001 and 2009, the cybernetic concept of a transducer was tried (to bridge complete communication between disparate systems in real time, without gaps or lags). The attempt was adventitious. Each attempt came in the form of signing statements, appended to some legislative enactments asserted to be disagreeable to the Constitution. A signing statement changes bivalent yes/no (lawful/proscribed) logic to trivalent yes/no/perhaps. While an enactment was being signed into law, the language appended as dicta suggested that the new statute would not be enforced, due to its contravening Unitary Government precepts. This complication did not amount to a veto, but only a prospective instruction that the enactment might be ignored for putative cause.

A signing statement was said to be put forth by a unitary rational actor (President G. W. Bush). Each signing statement rested upon the dubious doctrinal notion that Presidential autocracy is plenary, exclusive, and subject only to the Constitution itself.

Bush favored strict construction of the Constitution. He also decided things based
upon his best instinctive reaction -- lone gut-level impulse, rather than conscious reflection and dialogic contention among advisors. He counted upon divine revelation, due to his having had the revelatory experience of being "born again". Coincidently, the combination smacked of the famous Czarist formula that failed Imperial Russia: "Orthodoxy, Autocracy, Nationality." That compilation, without more, fails to be cybernetically sound, both then and now. Here's why.

This attempted circumvention of cybernetic principles lacked a competent Alarm Channel. Despite the best reportorial efforts by journalists and bloggers, a warning transmitted on any Alarm Channel, if any was found to exist, would be absorbed and bottled up by the very author of the attempted transduction itself. The reason for this is that any emergency message so transmitted via the Alarm Channel rockets from a system-loyal informant to the top person of the organization. But the G. W. Bush Administration routinely squelched any such attempts out of hand. It rendered itself institutionally deaf.

There is still another isomorphic mapping applied to the Unitary Government notion that is quite telling for an Administration asserting that its policies and decisions should have been seen as faith based. Professor Charles Kimball in his book WHEN RELIGION BECOMES EVIL\textsuperscript{12} offers the five warning signs of faith corruption. The isomorphic mapping shown here closely tracks the classic five VSM sub-systems: Absolute Truth Claims (S5); The End Justifies Any Means (S4); Establishing the "Ideal" Time (S3); Blind Obedience (S2); and Declaring Holy War (S1).

The notion of the "Unitary Executive" in the 2001-2009 American national government seemed to lack Professor Kimball's S3 element just mentioned, so it could not have been very
viable; the Constitutional conjecture did have demonstrably strong components reminiscent of S5, S4, S2, and S1. It remains to be seen how far this Constitutional conjecture was actually developed, but the earliest answer seems to be that it failed as unsustainable.

Unitary Government implementation in the G. W. Bush Administration 2001-2009 was demonstrably sub-optimized vis-à-vis the entire Executive Branch. Tenured policymakers in S4 positions guaranteed that outcome (an instance of doing the right thing for the wrong reason, i.e., reigning in the sovereign to satisfy bureaucratic convenience). Clearly the Legislative and Judicial Branches never acquiesced either, but did temporize. So the Constitutional conjecture under examination here was sub-optimized as to them as well.

But the civil libertarians' genuine anguish over the "Unitary Government" theory of Constitutional interpretation, vital as it may be, also promises to be transient. George W. Bush and company did not know enough about conservatism to do it much permanent damage; those of us who voted for a Republican administration in 2000 and 2004 got a radical administration instead. Of longer lasting concern is what can be done to shore up the philosophical underpinnings of conservatism. Cybernetic insights wittingly deployed can accomplish much to remove the taint of conservatism being a mere movement.

**Conclusion**

The readers of this journal of law and public policy are accustomed to seeing manmade laws applied to issues of widespread concern. What has been missing is making use of universal laws of communication and control.

Religious people see those principles as the way God made the world to work. But one need not be religious to make use of universal laws of nature. ("Natural law" is too freighted a concept to be of use here, because it is so burdened with moral precepts. In contrast, "universal law" expressed in
cybernetic terms remains as potent though non-controversial as the Law of Gravity.

Conservatism in American political thought can be bolstered philosophically by learning from the contents of universal law, from cybernetics. Without such fundamental help, conservatism is relegated to the plaything of an elite few banded together in a movement. It can continue as an exercise in public relations without becoming widely sustainable. But cybernetic insights wittingly deployed offer a new way -- perhaps the only way -- forward.

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[TECHNICAL DISQUISSION HERE]

Portions of this technical disquisition were taken from the author's 2006 article for management consultants: "The Heaviest Hammer in Your Bag: Reynolds' Lattice", Cybernetics and Human Knowing, Vol. 13, no. 1, pp.81-85
Eluding Success

Which/Whence/Whither

A Why

B What

C Whether

D How & When

Who & Where
This vee-shaped graphic rendered using a word processor requires considerable unpacking to understand. The tiny degree symbol where the vee cones down to a point is a visual representation of the "wormhole of success", or the "eye of the needle". And the sides of the vee are very porous.

This two-dimensional graphic expresses a 3-D concept seen from the side. The vee looks flat in profile, though it has at least three dimensions, like the sharpened point of a pencil. The latter shape corresponds to a permeable cone.

"The wormhole of success", the "eye of the needle", are metaphors in words that attempt to express in shapes "how strait the gate".

William Ernest Henley's 1875 poem Invictus asserts "It matters not how strait the gate, How charged with punishments the scroll, I am the master of my fate: I am the captain of my soul."

The 1611 King James Version of Matthew 7:13-14 is even more pointed. "Enter ye in at the strait gate; for wide is the gate, and broad is the way, that leadeth to destruction. And many there be which go in thereat: because strait is the gate, and narrow is the way, which leadeth unto life, and few there be that find it."

These sentiments may be mytho-poetic, but they offer solid mathematical physics advice. Control engineering achieves its numerous successes by aligning just enough relevant factors to allow a computable path of the calculus to be shot through it. Give the integral and the derivative respectively a proper chance to cooperatively work their magic. The integral Central Regulatory Model behaves like a wave, while derivative Local Autonomy acts like a particle.

The relevant factors from natural physics might be very concrete chemical elements
chosen from the periodic table, as in materials science. The desirable trajectory of the
calculus will there depend upon atomic structures and forces that are quite reliable though
dimly imperfectly understood.

Yet, for instances in which political physics comes into play (such as commerce and
religion), the desirable trajectory must come (if at all) from systems science -- from
cybernetics. In the latter realm the property of recursive nesting is constantly deployed.

The relative pronoun "Which" is a useful starting point to identify the system-in-
focus. (Whence and Whither are similarly useful temporally.) Navigation of logical nested
plys can proceed from that entry point. The vee-shaped graphic shows the A ply to be the
broadest path, recursively nested down to the increasingly more straitened B-C-D.

Reynolds here offers a synthesis and reconciliation of the three different tables
shown below, presenting what he considers to be four fundamental plys that are useful for
considering any problem cybernetically. The plys represent levels of organizational
structure.

Because one encounters all of them deployed simultaneously, they are sometimes
difficult to tease apart, distinguish, and apply with sufficient understanding. The mash-up
is not merely an amalgam, it is recursively nested.

Here is what the steep-sided vee graphic tells us about driving the trajectory to a
successful result. The porous sides allow many constructive attempts to fail, by falling
through the cracks. The A ply offers the broadest of paths. Even if the attempted
trajectory hews to the straight-line vertical it has plenty of opportunity to fall to
failure through the cracks.

Truth in this context should be considered affirmative, constructive and positive,
even if it falls to failure. Deception, feints, and lying in this context are consciously
designed to fail, i.e., deliberately aimed to stay plausible for a spell, though aimed to
eventually pass through the cracks.

For example, so long as a lie stays obscured and opaque its conjectural possibility is prolonged -- until its falsity can be denied no longer. Lying is a technique for prolonging a conjecture's power to persuade, and stave off entropy a bit longer, until the putative power of the untruth dissipates. But when the lie's conjecture is revealed to be unsound and unsupported, its news value collapses into what could linguistically be labeled "olds". When the state secrets privilege is imposed and upheld, the conjecture shifts or springs from "not guilty" to what Scottish criminal law denominates "not proven" (perhaps true perhaps false). The bivalent logic has been altered from yes-no, to yes-no-maybe. The latter state of affairs is plausible, because the comprehensive truth is usually nuanced, attenuated and many-sided. What is truer-than-truth is made artificially clear -- unsubtle amplified propaganda that is contrived to be one-sided, i.e., black letter law.

Information as understood in a cybernetic way carries with it a peculiar property that either explodes or deflates secrecy and ignorance. This occurs because what we consider information turns out to be "negative entropy". Entropy (the positive kind) involves the tendency of any system to inevitably lose energy and wind down. Secrecy and ignorance prolong positive entropy, but the injection of relevant information (true or false) collapses secrecy and ignorance. Hence information and "negative entropy" are one and the same when given a mathematic valence. Whistleblowers who persist in doing the right thing for the right reasons when revealing cleansing information too often elude success, and find the prosperity of the wicked to be amazing and overwhelming. Yet this peculiar amoral property of "negative entropy" is what allows people to do the right thing for the wrong reason and yet succeed thereby.

In this connection, one would be well advised to avoid the adjectives "open" and "closed" when applied to any system. The reason is this. Technically a closed system is one from which any fresh injection of energy is barred; yet the exclusion of energy seldom means that information is also kept at bay. That in turn means that a system accurately described as open to information is organizationally open, even though closed to fresh
energy. Worse still, the truth or falsity of the information inflow does not change a closed-to-energy system to one that is receptive to such supplemental vitality.

Four insights about the truthful affirmative trajectory coursing from top to bottom through the nested plys should be taken from the vee graphic. First, the positive trajectory piercing those plys to success might be very unsymmetric and twisted, though computable. Second, the trajectory piercing those plys to success may be a series of straight lines connected stepwise. Third, the trajectory piercing those plys to success may be an entirely straight line, a special case. Fourth, the trajectory piercing those plys to success may be an entirely straight line rotated on multiple axes.

Let's have a clarifying example, applying the 80-20 Rule. In elective politics the doctrinal orthodoxy of conservatism is worth at best 20% of the solution, and still offers the broadest possibility of eluding a successful outcome. The same is true for liberalism.

In contrast, pragmatism consists of driving the affirmative trajectory piercing all four plys to success, not just the broadest ply. You know you have crossed the boundary from one ply to another whenever paradox appears. What seems inconsistent or mutually contradictory to the orthodoxy is nevertheless both true and valid at every boundary crossing.

All these factors of straitened gates, twisted paths, and daunting paradoxes seem to auger failure. But there is hope in all this apparent negativity. The value in these many stumbling blocks, paradoxically enough, lies in identifying a constraint or two that is reliable. For a constraint that can be counted on across a wide range of conditions is the key to designing any robust regulator. It is only the solidly sourced regulator that permits a system to cope with its hostile environment and carry through to success. Otherwise success will elude you.
Fating Conservatism to Succeed

To remove the taint of conservatism being a mere movement, we must begin with distinguishing four levels of logical thought:

Levels of Logical Thought

A. Doctrinal or Theoretical Foundations
B. Descriptive or Developmental Functions
C. Prescriptive or Therapeutic Diagnoses
D. Practical or Applied Actions

Conservatism is very strong at A; less strong at B; losing steam at C; and fizzles at D. Dogmatists and ideologues make a doctrinal statement at level A. But it weakens at level B, grows more necrotic at level C, and gains no respect at all by level D. For example, what attorneys Gandhi and Mandela accomplished they did not manage as didactic doctrine-bound lawyers. The same can be said for attorneys Thomas Jefferson and John Adams. The father of the Constitution, James Madison, eschewed legal training. These examples from history provoke the question: How can cybernetic insights rectify this slippage for conservatism?

Stafford Beer used nine recursively nested levels of logical thought in his Syntegration Model (BEYOND DISPUTE 253 (1994)). This is five too many for most projects. More than 30 years previously he described much more understandably the four plys A, B, C, and D set out above. (In May 1995 Beer, Dr. Allenna Leonard, and Reynolds met and agreed that this is what Stafford had written and published, although none of the three of us could locate the proper citation.)

Mechanisms of intelligence operate at these four plys or simultaneous levels of logical thought, recursively nested. That's why these four plys are the minimum for most consulting engagements. Cybernetics is also defined as the science of governing very large complex systems. For really big problems Beer labeled his nine-ply approach (proceeding inside out): neuron, ganglion, plexus, cerebrum, neighbourhood [sic], community, profession,
Gaia and cosmos (BEYOND DISPUTE 253 (1994)). For comparison the range from proton to cosmos in mathematical physics represents 43 orders of magnitude (MICHIO KAKU, PHYSICS OF THE IMPOSSIBLE Preface p. xvi (2008)). By contrast the A, B, C and D above proceeds outside in. Plys A and B amount to the strategic; plys C and D amount to the tactical.

Here's an example of how these plys are used in practice grounded in journalism. The newest greenest reporter is forced to supply who-what-when-where-why-how-whether. We shall distribute these hoary chestnuts of newspaper narrative across the four plys, and salute the distinction between strategy and tactics along the way.

The Which selects the system-in-focus from which to stably launch one's model, as follows:

<table>
<thead>
<tr>
<th>The Which</th>
</tr>
</thead>
</table>
| A. The Why
    Foundations Wisdom |
| B. The What
    Functions Knowledge |
| The Whether |
| C. The How & When
    Diagnoses Information |
| D. The Who & Where
    Actions Data |

Plys A and B amount to the strategic. The implementation or handoff at the boundary with the tactical C and D is conditional; namely "whether" suggests it may happen or it may not, it may work or it may fail. (The Prussian General Staff model assigns "whether" to the G3 Operations Officer. Anglo-American forces in the two World Wars linked strategy with tactics much more consistently and qualitatively than did their German adversaries, despite where the method of organization originated.)

The six numerals used militarily (and the five found in the VSM) suggest neither cardinal nor ordinal importance, but serve only as brief designators. The Prussian General Staff Model maps precisely to the civilian VSM functions, with a slight wrinkle for S2:
Reynolds' 2005 conversations with Prof. Brian J. Hilton, who has been an inspiration to many British Commonwealth military officers over the years, yielded the insights just mentioned. Hilton also teaches Beer's Viable System Model (VSM), which Reynolds carries a bit further on this point than he does. The G3 Operations Officer personifies the all-important VSM transducer. By Beer's rules the transducer must translate strategy to tactics, in real time and without hiatus or lags.

Given the criticality of this role, the G3 Operations Officer at several levels below that of a General Staff may be ranked as a Major, while most of the other officers comprising Beer's Executive Box at that level of recursion might be 1st Lieutenants. In the VSM at any level of recursion all the five fundamental sub-systems are supposed to be equally powerful in their contribution and importance, though the correlative military officer ranks corresponding to those five sub-systems need not be equal within any level of recursion.

Using Heinz von Foerster's insights into the English language, mathematics, and cybernetics, these plys distribute:

A. The Implicit Zero Order Cybernetics achieve
B. The Explicit First Order Cybernetics understand
C. The Complicit Second Order Cybernetics learn
D. The Displicit* Third Order* Cybernetics discover

* Reynolds' coinage (the Devil's in the details)
Problem solving is less a eureka experience than one of proceeding with increasingly acute tools for deploying lessons of symmetry from (A) analogy; to (B) heuristic; to (C) algorithm; to (D) isomorphic mapping. This coned-down array is more precise than that for memory studies, which lack exactitude proceeding from (A) preconscious to (B) subconscious to (C) unconscious to (D) conscious.

Reynolds here offers a synthesis and reconciliation of the three different ways of presenting what he considers to be four fundamental plys that are useful for considering any problem cybernetically. The plys represent levels of organizational structure. Because one encounters all of them deployed simultaneously, they are sometimes difficult to distinguish and apply with full understanding.

Here we tease apart all the various combinations of tactics (empathy) and strategy (solutions) by following this chart:

<table>
<thead>
<tr>
<th>A. Doctrinal or Theoretical Foundations</th>
<th>WHY (Wisdom) the implicit zero order + yields the complete absence of a decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tactical defensive + Strategic defensive</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. Descriptive or Developmental Functions</th>
<th>WHAT (Knowledge) the explicit first order + yields an engagement decided without deep results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tactical offensive + Strategic defensive</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C. Prescriptive or Therapeutic Diagnoses</th>
<th>HOW &amp; WHEN (Information) the complicit second order + yields a win without results &amp; opponent undeterred</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tactical defensive + Strategic offensive</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D. Practical or Applied Actions</th>
<th>WHO &amp; WHERE (Data) the displicit third order + yields results won &amp; thorough deterrence achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tactical offensive + Strategic offensive</td>
<td></td>
</tr>
</tbody>
</table>
The above chart maps Stafford Beer's deep VSM structure onto that of HARRY G. SUMMERS, ON STRATEGY: A CRITICAL ANALYSIS OF THE VIETNAM WAR 110 (1982). Note that Beer did have some substantial military experience as he was a WWII Captain of Ghurkas. Col. Summers derived his structure from an analysis of the principles and form of war by the WWI German Field Marshal BARON COLMAR VON DER GOLTZ, THE CONDUCT OF WAR: A BRIEF STUDY OF ITS MOST IMPORTANT PRINCIPLES AND FORMS, translated by Joseph T. Dickman, (1896).

The way the text is presented above, namely in two dimensions on a plane, it may appear that a mere hierarchy such as found with a ladder or trellis is being portrayed, rather than a recursive nesting of plys. In this form the author referred to the above trellis as "Reynolds' Trellis." Indeed a trellis is entirely adequate when two dimensions are all that any given problem requires. Nonetheless, a practitioner using the trellis should stay alert to the fact that it is missing a dimension.

When a problem ramifies from height and width to depth as well, then a third dimension is needed. The third dimension is often scaled not as distances but rather as elapsing time. Since the third dimension of a lattice portrays space, this can be construed as space in time or space in geography, i.e., distance. There is no rule that constrains the practitioner from conceiving that third dimension phase space as a time series. The scale of the time series would of course depend on the circumstances. It could be as simple as dawn noon sunset and night, or it could be minutes hours day and years.

There is another way looking at the A-B-C-D scheme that yields insight. Oftentimes all the interesting actions occur at the boundaries, in the overlaps. This was something Stafford Beer understood very well; he was a careful student of philosophy long before he began to explicitly practice cybernetics, or undertook wartime national service. What he absorbed from Hume and Kant (especially pre-war) he folded into his Viable System Model.

Philosophically, one can locate between A and B the Rationality Requirements proposed by David Hume: namely, an action can violate reason only by being based on a factual error. In cybernetic terms this would occur when the system in focus loses isomorphism, such as
when one selects means insufficient to the ends.

Philosophically, the vicinity that anneals B with C disproves Hume's Law, which Hume contended means that one cannot derive an "ought" from an "is" in the moral sense of the terms.

Philosophically, and paradoxically, the region melding C with D follows Kant's Law, to the effect that "ought" implies "can". Every decision at a conditional branch offers an ethical choice if we look hard enough.

Most people, specifically most clients and academics, dislike and distrust paradox. This often makes cybernetics seem the "science of bad news" to these people. However, as cyberneticians we are trained to seek and appreciate paradox. The reason is that the presence of paradox is a sure indication that a distinct logical level has been jumped. On the two-dimensional trellis such a jump would be an artifact of climbing or shifting. On the three-dimensional lattice such a jump would be the result of branching or springing. (Judges and lawyers should think back to the ancient Property Law details of future interests.) For our cybernetic clients we make the implicit explicit and thus more familiar, if not more comforting.

Jumping a logical level is one of Beer's concepts to portray recursive nesting that is perhaps the most difficult of his insights to grasp intuitively. The Viable System Model indicates this dramatic transformation with the notation that the Executive Box (S5-S4-S3-S2) a level below "becomes" the System One Production the ensuing level above. For Reynolds this is biologically reminiscent of the lashing tail dropping off a sperm cell once the head has arrived at ‘Mission Central’.

Stafford Beer condensed much of his most transferable practical and applied thinking into his Viable System Model. He sketched out his gorgeous instrument in his flowing diagrams within the constraints of two-dimensional paper.

For example, Stafford represented the role filled by the above mentioned military G3
According to Reynolds' reading, Beer designated this "anchor point" as a transducer (DIAGNOSING THE SYSTEM FOR ORGANIZATIONS 47). While the VSM was represented and conveyed in two dimensions, Stafford apparently thought of its workings in three dimensions all along. This was especially true for its treatment of time elapsing.

With these linguistic, logical, and philosophical loose ends stabilized, let us now examine the quasi-"Cliff's Notes" of the Viable System Model. Whistleblowing (principled dissent, ethical resistance) will in each instance be used as a clarifying example.

Strategic Diagnosis to Prescribe & Heal the Systemic Breach
(presented in problem-solving order)

Repeat this Outline for each level of nested recursion.
S5+S4+S3+S2 below = S1 one level up.

I. A. Environment: It's both hostile and nurturing with the sought-after Coping System embedded.

1. Variables: Extrinsic to the sought-after Coping System but impacting it heavily. For example: Energy ~ S5; Time ~ S4; Matter ~ S3; Space ~ S2; Force ~ S1's.
2. Access Points: Places where the Coping System is invoked, as well as where/when it interacts with other systems found in the Environment.
3. Incoming Relevant Variety: Information that disbalances the Coping System we are focused on; it consists of imponderable surprises both incidental and inevitable.

B. Coping System: It's the selector for handling the Environment. But it's embedded; as the Central Regulatory Model it senses the Environment only via connections into S1 Operations.

1. Parameters: Intrinsic like Security, Reliability, Predictability, Safety, Privacy. For example, instincts WHICH become thoughts; thoughts WHY become words; words WHAT become actions; actions WHETHER become habits; habits HOW & WHEN become character; character becomes WHO & WHERE destiny; and destiny signals organizational closure as System 1's.
2. Management Sphere: Six plies of central regulators/governors; 6 of 7 subsystems.

See V. infra a. Alarm to S5: Instantly bypasses chain of command -- Channel ought to be
designed in. Lack of it is labeled nociperception. Otherwise the
signal must leak out via Environment such as through news media. Only
other use is to register delight and pleasure, not just distress or pain.

b. S5 Management: [Military G6] -- doing the right thing.

   i. S5 Command is policy / identity / norm setting / closure /
      the executive function.

   ii. Staffing or Hiring is an example of norm-setting by S5.


   Reports only to S5 like S3. S4 is the one
   structural location which should be staffed
   only with removable relievable firable people,
   never with nonrotating career bureaucrats.
   Never NEVER make a bureaucracy viable.

   i. Focus is on outside and future concerns; often misstated
      as "R & D".

   ii. The modeler extrapolates from the known past: (S4e)
       Corporate Memory must get transmitted; PLUS

   iii. The vidette reconnoiters or explores forward, projecting into
      the unknown future: (S4p). Make sure your mounted scout does not
      become the perdus (the lost man or outermost sentry who never gets
      to relay back what he last saw before being overrun fatally).

d. S3 Supervision: [Military G5 Executive officer] -- doing the thing right.

   i. S3 controls/comptrolls Budget and Finance; but note that S4 spends all S3 makes.

   ii. Merely attracting a fresh appropriation each year does not measure up to cybernetic
       sustainability.

   iii. Focus is on inside and now concerns; directions come from supervisors.
e. S3* Sporadic Audits: System Three Star must report only to S5 and S4, never to S3.
   i. Issues Management, Special Projects, Ad Hoc Teams, one-time Litigation.

f. S2 Administrative Services: Sympathetic versus S3*'s Parasympathetic Autonomic.
   i. S2 Communications combine military G1 Personnel & G4 Logistics functions.
   ii. Focus is on clerically damping would-be oscillations; a stability monitor.

3. Operations Sphere: The 20% of the full System producing 80% of its outputs.
   S1 Operations: This is sole site for channels reaching the environment; in military context this is
   the G3 Operations Officer; reminiscent of the tooth-to-tail ratio.
   i. Operations report only to S3; must be sole site producing what is rewarded.
   ii. Operations alone must determine what you're in business to do. The purpose of a
       system is whatever it does (POSIWID), including spreading cruelty and misery.
   iii. Operations is the only place to measure efficiency or effectiveness.

4. Dedicated Directional Channels: Virtual information conduits.
   a. "Dedicated" means it amplifies or attenuates just one specialized function.
   b. "Directional" means carrying information flow one way only; go / no go.

5. Boundary Transducer: Interprets at each point message crosses another system or sub-
   system.

6. Outgoing Requisite Variety: What the Coping System generates to rebalance all.

7. "Requisite Variety" Defined: The ability to meet and match, control and cope, or
   anticipate and adjust to troublesome scenarios only dimly definable in advance.

8. "Variety" Defined: All the possible states of the system; that which disturbs,
   disbalances, or threatens stability and hence must be met, matched and countered.
II. Metrics for Regaining Systemic Balance

9. Summary: The power of S5, S4, S3, S2, and S1(s) ought always be equal vis-a-vis each other, and ought never exceed 20% each of all the power in play.

10. The Four Principles of Organization:
   a. Managerial, Operational, and Environmental varieties, diffusing through an institutional system, tend to equate; they should be designed to do so with minimum damage to people and to cost.
   
   b. The four (horizontal) directional channels carrying information between the management unit [S5, S4, S3 & S2], the operation units [S1's], and the environment must each have a higher capacity to transmit a given amount of information relevant to variety selection in a given time than the originating subsystem has to generate it in that time.
   
   c. Wherever the information carried on a channel capable of distinguishing a given variety crosses a boundary, it undergoes transduction; the variety of the transducer must be at least equivalent in bandwidth to the variety of the channel.
   
   d. The operation of the first three principles must be cyclically maintained through time without hiatus or lags.

11. The Law of Cohesion:
   
   a. For the System-in-Focus to hold together at the same logical level throughout and remain viable overall, all the variety from combined S1s accessible to S3 must equal the sum of systems at the next logical level below. (This is a restatement of the First Principle stated at 10. a. above.)

12. The Three Axioms of Management:
   
   a. The sum of horizontal variety disposed by all of the S1 operational elements (that amount to Local Autonomy) equals (the Central Regulatory Model's) sum of vertical variety disposed on the six vertical components of corporate cohesion, (i.e., Alarm Channel, S5, S4, S3, S3*, & S2).
   
   b. The variety disposed by S3 resulting from the operation of the First Axiom 12. a. equals the variety disposed by S4.
   
   c. The variety disposed by S5 equals the residual variety generated by the operation of the Second Axiom 12. b.
† It takes two things to win any battle, contest, or dispute: an impregnable base, coupled with freedom of movement. Cybernetically the former is the Central Regulatory Model, while the latter is Local Autonomy. This always-with-us, conflict-and-conjunction, push-pull is reminiscent of the calculus's integral and derivative respectively, as well as physics' wave explanation and particle explanation respectively. Newton's Third Law means forces occur in reciprocal pairs. Jung's notion of personality types comparably relies isomorphically upon this dual yoking. The bicameral human brain pairs left-brained exact ordering (S4e) with right-brained freeform imagination (S4p). The left side engenders focused analysis, while the right side provides holistic synthesis. Logic and rationality resides mostly in the left hemisphere, while improvisation and inspiration arise predominantly in the right hemisphere.


III. Universal Laws for Maintaining Systemic Balance Once Achieved (listed alphabetically in no particular order of importance, preference, or sequence of appearance):

Ashby's Law of Requisite Variety: The control achievable by a given regulatory sub-system over a given system is limited by (1) the variety of the regulator, and (2) by the channel capacity between the regulator and the system. Only variety in the regulator can destroy variety coming out of the environment as a disturbance. The upper limit on the amount of regulation achievable is given by the variety of the regulatory system divided by the variety of the regulated system. (Whistleblowing only occurs where coping ability, or requisite variety, has already been sacrificed.)

Basins of Stability Principle: Complex systems have basins of stability separated by thresholds of instability. A system "parked" on a ridge will roll downhill. (Reminiscent of the properties of the environment in which the system-in-focus is embedded. It also suggests why crossing system boundaries is always potentially destabilizing. Whistleblowing is ineffective short term and medium term because even if the alarm gets repeated multiple times, a rotten system will seldom crack all at once. That only happens with rotten fruit or rotten eggs.)

Circular Causality Principle One: Given positive feedback (i.e., a two-part system in which each stimulates any initial change in the other), radically different end states are possible from the same initial conditions. (Reminiscent of amplifiers in reverberation; equifinality. Repeating the alarm disbalances an already teetering system.)

Circular Causality Principle Two: Given negative feedback (i.e., a two-part system in which each part tends to offset any change in the other), the equilibrial state is invariant over a wide range of initial conditions. (Reminiscent of attenuators. In whistleblowing situations this represents the peace-at-any-price purpose of retribution.)
**Complementarity Law:** Any two different perspectives (or models) about a system will reveal truths about that system that are neither entirely independent nor entirely compatible. (Reminiscent of the environment's properties and paradoxes, as well as Heisenberg's Uncertainty Principle. The whistleblower and his nominal superiors each have distorted incomplete views of the system, neither of which is totally consistent with the other.)

**Conant-Ashby Theorem:** Every good regulator of a system must contain a model of that system. (Reminiscent of concentration of forces upon essential variables. Whistleblowing usually reveals that the model inside is partial or fragmentary, if not missing entirely. To the extent that master model omits something essential, the regulator will be expensive, overlarge, ineffective, or all three.

**Darkness Principle:** No system can be known completely. (Reminiscent of a chance or gamble; decisions under uncertainty. This is why whistleblowers stir up much more grief than anticipated.)

**Eighty-Twenty Principle:** In any large complex system, eighty percent of the output will be produced by only twenty percent of the system. (i.e., by the System One's combined; consider concentration of force. Whistleblowers tend to inadvertently strike the tenderest of spots.)

**Entropy: The Second Law of Thermodynamics:** In any closed system the differences in energy can only stay the same or decrease over time; or, in any closed-to-information system, the amount of order (or organization) can never increase and must eventually decrease. This universal law of nature is not absolutely true but is merely statistically reliable. (Whistleblowers are a breath of negative entropy to a dying system, i.e., they impart critical information that if heeded would preserve and heal.)

The disintegrative force of entropy is exactly half as strong as the one forcing coherence, which R. Buckminster Fuller labels "syntropy". *Cosmography*, (Macmillan, New York 1992), pp. 56-57. (This measurement places a whistleblower's truth as double the strength of a reprisor's falsity.)

**Feedback Dominance Theorem:** For high gain amplifiers, the feedback dominates the output over wide variation in input. (Reminiscent of panics. This explains why retaliation against whistleblowers has such bite.)

**Gödel's Incompleteness Theorem:** All consistent axiomatic foundations of number theory include undecidable propositions. (Nobody can measure why retributions are so out of proportion to what the whistleblower revealed.)

**Heisenberg’s Uncertainty Principle:** The more precisely the position is determined, the less precisely the momentum is known in this instance, and vice versa. (Observation changes the behavior of any phenomena.)

**Hierarchy Principle:** Complex natural phenomena are organized in hierarchies with each level made up of several integral systems. (Reminiscent of overlaps. Whistleblowers tend to puncture multiple levels
of recursively nested systems without consciously setting out to do so.)

**Homeostasis Principle:** A system survives only so long as all essential variables are maintained within their physiological limits. (Reminiscent of balance, coordination, integration, and boundaries. Quite simply whistleblowers inadvertently disrupt a precarious trembly homeostasis.)

**Predictable Outcomes Principle:** Every system is perfectly designed to get the results that are achieved. (There are no real surprises about what makes whistleblowing necessary. Lack of a reliable constraint to protect an essential variable is always noticeable and determinative of "unintended consequences" in advance. **POSIWID:** the purpose of a system is what it does.)

**Recursive System Theorem:** If a viable system contains a viable system, then the organizational structure must be recursive, or, in a recursive organization structure, any viable system contains, and is contained in, a viable system. Reminiscent of overlaps. Whistleblowers are surprised by the retribution heaped upon them because they have inadvertently needled a blister down below that is a tipoff symptom for a much larger cybernetically unsustainable canker above.)

**Redundancy of Information Theorem:** Errors in information transmission can be protected against (to any level of confidence required) by increasing the redundancy of the messages. (Lines of communication bring reinforcement and resupply. Retaliation works against whistleblowers so long as the intimidation can keep the alarm from being repeated.)

**Redundancy of Potential Command Principle:** In any complex decision network, the potential to act effectively is conferred by an adequate concatenation of information. (A victory on main objective settles all minor issues.) (A whistleblower gathers enough information to make the command decisions that ought to be coming from above in the hierarchy but are not. Reminiscent of synergy.)

**Redundancy of Resources Principle:** Maintenance of stability under conditions of disturbance requires redundancy of resources. (Think once again of concentration of forces. The only person comfortably situated to be a whistleblower needs to be independently wealthy. This applies emotionally as well as financially.)

**Relaxation Time Principle:** System stability is possible only if the system's relaxation time is shorter than the mean time between disturbances. (Retaliation must be repeated to permit the whistleblower no respite; otherwise reprisal is too weak to suppress any recurrence. Not every hiatus or lag is entirely bad.)

**Self-Organizing Systems Principle:** Complex system organize themselves; the characteristic structural and behavioral patterns in a complex system are primarily a result of the interactions among the system parts. (Whistleblowers emerge spontaneously and inadvertently because a system in peril seems to cry out for rescue. Whistleblowing can only be prevented by having good effective systems, not bad ones.)
Steady State Principle: If a system is in a state of equilibrium (a steady state), then all sub-systems must be in equilibrium. If all subsystems are in a state of equilibrium, then the system must be in equilibrium. (The whistleblower does not disrupt an ongoing steady state, but merely reports that such a condition has already vanished.)

System Holism Principle: A system has holistic properties possessed by none of its parts. Each of the system parts has properties not possessed by the system as a whole. (Reminiscent of concentration of forces. A whistleblower cannot get away by commenting on a fragment of the sick system, because that fragment is connected to the whole.)

Viability Principle: Viability is a function of the balance maintained along two dimensions: (1) autonomy of sub-systems versus integration of the system as a whole, and (2) adaptation versus stability. Sustainability is an often-used synonym. (Whistleblowers only arise where the central regulatory model is wrongly overwhelming local autonomy, where stability is being overrewarded at the expense of healthy adaptation.)

IV. Most Alleged Systems Are a Mere Assemblage of Parts.

A. Nature's laws apply equally well for atheists or believers. This is an aspect of grace not often recognized by those who reject and those who embrace the way God made the world to work.

B. It is nature's laws that prescribe whether an apparatus rises to the highly coordinated level of being a genuine system. Otherwise all you have is an assemblage of semi-coordinated parts.

C. One essential characteristic of a genuine system is that it is designed to continue performing reliably though entirely constructed of fallible and undependable parts.

D. Principled dissent becomes possible only where there is sustained systemic failure. Then retaliation happens when one of the seven elements critical to being a true system simply was not present -- the all-important Alarm Channel.

V. The Organizational Element Missing -- the Alarm Channel

A. The characteristic that separate an institution from a company, a firm, or a governmental body is that its processes must be self-validating. Does it teach, does it heal, does it furnish society with a steadying influence without regard to popular passions or passing enthusiasms?

B. An institution is far more vulnerable to charges of hypocrisy, rationalized avarice, and sanctified misunderstanding precisely at the time the self-validation of its internal governance fails. Lack of an Alarm Channel really bites cruelly, because it's not ready when it's most needed. Money can only delay but not cure the collapse.
C. Any genuine system, but most especially one that is a church, an army, or other institution upholding society, cannot get along with a compromised Alarm Channel. A dynamic threat usually can't be met and matched quickly, due to such "learned helplessness" and "institutional deafness."

D. The Alarm Channel is a virtual conduit for information of a special narrow type. (Virtual means in existence intangibly.) Designed for very occasional use, this conduit carries a signal that bypasses all normally-operating structures. It is only suitable for emergency alerts; this conduit must not be overused. It carries a warning to the executive that physiological limits of the system have been dangerously exceeded, and that a crash is imminent. For the good of the system, the Alarm Channel does not respect the chain of command, but goes from the bottom of the hierarchy straight and unfiltered to the top of the organization. No competent system worthy of the name can long survive without having an Alarm Channel designed in, and robustly available for very sparing use.

E. When the Alarm Channel is compromised or lacking entirely, an individual who wants to believe in the weakened system may have to go outside it. One path is through the environment provided by the news media. Another path is via litigation. Such relief often comes too late.

F. Like the person who pulls the emergency cord to halt a speeding train, that individual who sends such an extreme signal needs to be sure, not guessing.

G. When the institution is alerted to acute-to-chronic rot within, by a person loyal to that institution, two feedbacks must be reflexively and instantly returned: (a) the alarm has been heard; and (b) the alarm sender will be cherished for the timely warning. Retaliated whistleblowers barely get (a) and are irretrievably denied (b) because of the slowness of the institution to act. The requisite alertness takes leaders, not lawyers. Attorneys are in place as counselors to take orders, not give them. The facts dictate what manmade law applies; not the other way around.

H. A principled dissenter has the reasonable expectation that some rational modern improvement upon the Grand Inquisitor Tomas de Torquemada will spring into action, take charge, and right the dangerous imbalance caused by the heresy. This reasonable expectation can be proven a cruel illusion whenever retaliation occurs. Inspectors General are designed to fail as appropriate inquisitors, because they are inside rather than outside the chain of command. They also try to be a cybernetically impossible thing -- a permanent System Three Star.

I. Lesson to Be Learned: An institution never protects itself by proscribing or banning its victim, but only by promptly embracing the principled dissenter.
VI. Problem Solving Using Universal Laws for Maintaining Systemic Balance Once Achieved

The 24 arguably most important principles of cybernetics are listed alphabetically at outline marker III above. They are asserted to be paramount, because they are constantly restricting whatever action can take place. These two dozen imperatives are always at work and in play to hem in, frustrate, and jam up any attempt to go forward.

Every leader, strategist, or consultant has the task of turning these 24 cybernetic principles to advantage. They cannot be escaped or even delayed; only when ambushed can one dare to fall back upon training and instinct alone. A projected engagement (collective effort, battle, consulting gig) ought not be considered adequately planned or concluded until each of these 24 cybernetic principles have been consciously brought to bear.

For instance, a consulting engagement cannot hope to reach the stage of competently projecting into the unknown future -- until at least one plausible compelling example keyed to the situation at hand and tailored to local facts can be written out for each of the 24 principles. This is hard to do. It is System Four work of the highest order.

Fortunately, inspiration and instructive examples are at hand, both in printed text and online. Isomorphic mapping comes alive with the right authors. A person capable of reading will unconsciously and automatically leap beyond mere dubious analogy when furnished the right exemplary material. We are all cyberneticians unaware.

Perhaps the most gifted and clarifying strategist to be found in textual form is Carl von Clausewitz. His 1831 strategic masterpiece "On War" has the power to catalyze and accelerate the imaginative capabilities of anyone attempting the projective System
Four challenge within a large systemic task -- be it in religion, statecraft, politics, commerce, or warfare. The trick is to tachistoscopically page through or flip through that great thinker's many compact examples -- so long as each nugget of an instance has been flagged ahead of time as a concrete expression of one of the 24 most important principles of cybernetics.

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