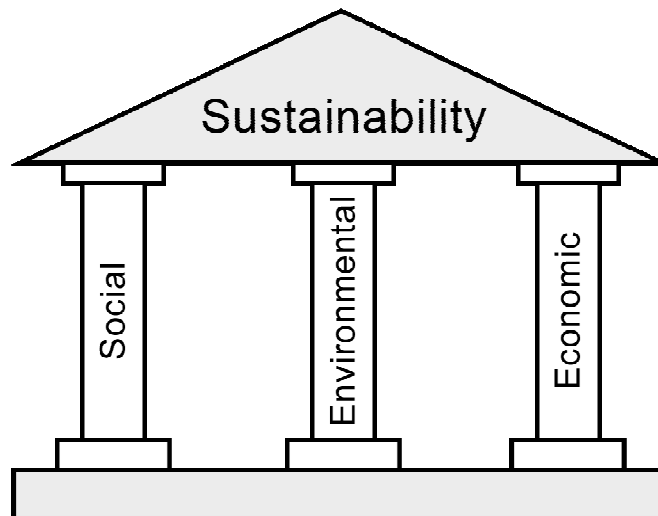

The Dueling Loops of the Political Powerplace

Preface to the Second Edition

It's been seven years since the first edition of this paper in 2005. The second edition changes little. But what it changes makes all the difference.

This edition clarifies the all-important fact that *the Dueling Loops model is generic*. It explains far more than what the first edition focused on: the world's inability to solve the environmental sustainability problem. The second edition emphasizes why society is unable to solve *any* important problem whose solution would benefit the common good, like environmental sustainability, excessive income inequality, avoidable recessions, unnecessary wars, and corruption.

This paper addresses the *complete* sustainability problem. The long term sustainability of any society rests on three main pillars: social, environmental, and economic. All three pillars must be strong and sustainable for a society to be sustainable. When this paper says "sustainable" it means far more than the popular definition of the word, which is only environmental sustainability. In this paper **sustainable** refers to all three pillars, which is *complete* sustainability.



Abstract

Most effort on solving the sustainability problem focuses on its *technical side*: the proper practices that must be followed to be sustainable. But surprisingly little effort addresses why most of society is so strenuously resisting adopting those practices, which is the *change resistance side*.

This paper presents a root cause analysis of the change resistance part of the problem using a simulation model. The model shows the main source of change resistance lies in a fundamental structure called *The Dueling Loops of the Political Powerplace*. This consists of a race to the bottom among politicians battling against a race to the top. Due to the inherent (and well hidden) advantage of the race to the bottom it is the dominant loop most of the time, as it is now. As long

as it remains dominant, resistance to solving sustainability problems will remain so high they are insolvable.

The analysis has, however, uncovered a tantalizing nugget of good news. There is a promising high leverage point in this structure that has never been tried. If problem solvers could unite and push there with the proper solutions, it appears the change resistance side of the problem would be solved in short order and the Sustainability Revolution would begin.

Why Overcoming Change Resistance Is the Crux of the Problem

The transformation of society to sustainability requires three steps: The first is the profound realization we must make the change, because if we don't our descendants are doomed. The second is finding the proper practices that will allow living sustainably. The third step is adopting those practices.

Society has faltered on the third step. By now the world is aware it must live sustainably, which is the first step. There are countless practical, proven ways to do this, which is the **technical** side of the problem and the second step. But for strange and mysterious reasons society doesn't want to take the final step and adopt these practices, which is the **change resistance** side of the problem. *Therefore overcoming change resistance is the crux of the problem.*

Let's first examine the environmental pillar. Here's what the 2004 third edition of *Limits to Growth* had to say about the change resistance side of the problem:

[The second edition of *Limits to Growth*] was published in 1992, the year of the global summit on environment and development in Rio de Janeiro. The advent of the summit seemed to prove that global society had decided to deal seriously with the important environmental problems. But we now know that humanity failed to achieve the goals of Rio. The Rio plus 10 conference in Johannesburg in 2002 produced even less; it was almost paralyzed by a variety of ideological and economic disputes, [due to] the efforts of those pursuing their narrow national, corporate, or individual self-interests.

*...humanity has largely squandered the past 30 years...*¹

What about all three pillars of sustainability? For that let's turn to a recent study of the US political system by Thomas Mann and Norman Ornstein:

We have been studying Washington politics and Congress for more than 40 years, and never have we seen them this dysfunctional. In our past writings, we have criticized both parties when we believed it was warranted. Today, however, we have no choice but to acknowledge that the core of the problem lies with the Republican Party.

The GOP has become an insurgent outlier in American politics. *It is ideologically extreme; scornful of compromise; unmoved by conventional understanding of facts, evidence and science; and dismissive of the legitimacy of its political opposition.*

When one party moves this far from the mainstream, *it makes it nearly impossible for the political system to deal constructively with the country's challenges.*²

The US Republican party is causing high change resistance to solving pressing problems that need to be solved today. This pattern is typical across all industrialized nations. None have been able to give their top problems, those dealing with social, environmental, and economic sustainability, the full attention they deserve. That's why so many common good problems go unsolved. It's why the world is in such a perilous mess.

What is the underlying cause of such stiff change resistance? Whatever it is, it must be incredibly strong to cause such a powerful effect.

We might begin to find that elusive cause if we drilled down and tried to determine why change resistance occurs at the level of nations. For example, looking at the world's sole remaining superpower, why did the US Senate vote 95 to zero in 1999 to reject the Kyoto Protocol, despite a democratic President and a strongly pro-environmental Vice President, Al Gore? Why has opposition grown to the point that progress in solving the environmental sustainability problem, the rising income inequality problem, and other common good problems is moving backwards? Why has Republican Newt Gingrich "created a norm in which colleagues with different views become mortal enemies?"³ Why do US activists face "the most hostile environment in which we have ever struggled to advance our goals," as the Union of Concerned Scientists describes it?⁴

If we could find the root causes of why the political system works the way it does, we could answer these questions and go further than we've ever gone before. *We could find the high leverage points in the system that would allow changing that "hostile environment" into one that actively welcomed solving common good problems, and thus overcome change resistance.*

This paper attempts to do this by performing a root cause analysis using a simulation model. Because the structure of the model so clearly exposes the root

memes they can transmit, and the loop starts over again. As it goes around and around, each node increases in quantity, often to astonishing levels. The loop stops growing when most supporters are committed.

A **degenerate** is someone who has fallen from the norm. They have degenerated. The loop explains why this occurs so easily. The term is not meant as a pejorative label, but rather as a hopefully temporary fall from virtue.

The dynamic behavior of the loop is shown below. The behavior is quite simple because the model has only a single main loop.

Run 1. The Race to the Bottom among Politicians

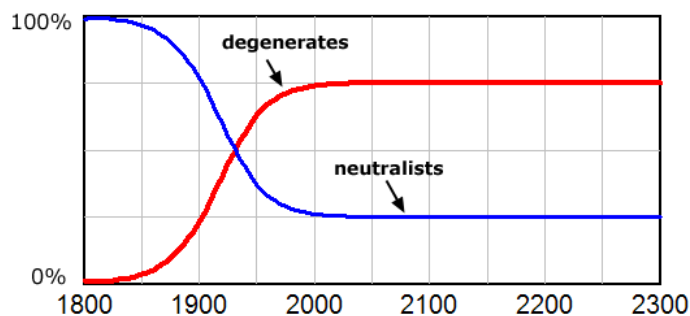


Figure 2. The simulation run starts with 1 degenerate and 99 neutralists. Over time the percentage of degenerates grows to 75% and stops. What keeps it from growing to 100% is the way degenerates can recover from their infection, after a degenerates infection lifetime of 20 years.

Corrupt politicians exploit the power of the race to the bottom by broadcasting as much falsehood and favoritism as possible to potential supporters. This is done with speeches, interviews, articles, books, jobs, lucrative contracts, special considerations in legislation, etc. The lies and favors are a cunning blend of whatever it takes to gain supporters. *The end justifies the means*. Note that the more influence a politician has, the more falsehood they can afford to broadcast, and the greater the amount of favoritism they can plausibly promise and deliver.

The race to the bottom is the loop driving politics to extremes of falsehood and favoritism in far too many areas of the world. This loop is the structural cause behind most of the corruption and bad decisions in government today.

Deception is the act of propagating a belief that is false. The race to the bottom employs a dazzling array of deception strategies. These are usually combined to

increase their power. The five main types of deception strategies are:

Deception Type 1: False promise

A **false promise** is a promise that is made but never delivered, or never delivered fully. False promises are widely used to win the support of segments of the population, such as organized special interest groups, industries, and demographic groups like seniors or immigrants. False promises flow like wine during election season. The next time you see this happening, think of it as proof the race to the bottom exists, and as proof that few politicians can escape the pressure to join the race to the bottom.

One of the largest false promises in recent history was the way Russian communism promised one thing but delivered another. It promised rule by the masses for the masses but delivered a totalitarian state. To justify its continued existence and hide the broken promise, the communist system manufactured a steady stream of soothing lies and used harsh repressive techniques on those who did not swallow the lies.

Near the end of the collapse of Russian communism, Václav Havel, writing in 1978 in *Versuch, in der Wahrheit zu leben* (An Attempt to Live in Truth) pointed out the diabolical, self-destructive nature of the communist approach. It was the ultimate vicious cycle because:

...it turned victims into accomplices: by threatening them and their descendents with disadvantages, it coerces the victims to participate. When Havel became President [of Czechoslovakia in 1989] he reminded his fellow citizens of their complicity arising from their coming to terms with life in lying. Consequently, he exhorted them... to vote for candidates who 'are used to telling the truth and do not wear a different shirt every week'.⁵

Civilization has a learning problem. *It does not seem to learn from its mistakes, even when they are pointed out.* It has not learned the lesson that false promises work so well to destroy lives en masse that their effectiveness must be eliminated somehow. This is nothing new, however. We have been warned before. For example, long ago in the 14th century Machiavelli explained why false promises are so rampant in *The Prince*, in the chapter on "How Princes Should Honor Their Word:"

Everyone knows how praiseworthy it is for a prince to honor his word and to be straightforward rather than crafty in his dealings; nonetheless contemporary experience shows that princes who have achieved great things have been those who have given their word lightly, who have known how to trick men with their cunning, and who, in the end, have overcome those abiding by honest principles. ...it follows that a prudent ruler cannot, and must not, honor his word when it places him at a disadvantage and when the reasons for which he made his promise no longer exist. ... Everyone sees what you appear to be, few experience what you really are.

Deception Type 2: False enemy

A **false enemy** is something that appears to be a significant threat but is not. Creating a false enemy works because it evokes the instinctual fight or flight syndrome. The brain simply cannot resist becoming aroused when confronted with a possible enemy.

The two main types of false enemies are *false internal opponents*, such as negative campaigning, the Salem witch trials, and McCarthyism, and *false external opponents*, such as the “threat” of communism and the second Iraq “war.” While communism and Iraq were true problems, both were trumped up enormously to serve the role of a false enemy. False enemies are often scapegoats. A **scapegoat** is someone who is blamed for misfortune, usually as a way of distracting attention from the real causes or more important issues. Name-calling, the straw man fallacy, the biased sample, the irrelevant premise, and dozens of other types of fallacies are used to create false internal enemies. Most fall under the category of the *ad hominem* attack.

When it comes to creating false internal enemies, the winning strategy is to *attack early and attack often*. This becomes doubly successful when those attacked are politicians in the opposing party: (1) The fight or flight instinct is evoked, which clouds the judgment and causes people to want a strong militaristic leader to lead them out of harms way. The attacker proves his militaristic capability by the viciousness of his attack, causing those witnessing the attack to frequently swing their support to him. (2) Attacks cause the attacker’s own supporters to fervently support him even more, because he has just pointed out why the opposition is so bad.

This form of deception works so well that attack politics has become *the* central strategy for many degenerate parties. Look around. Are there any political parties whose most outstanding trait is they are essentially one gigantic, ruthless, insidiously effective attack machine?

Deception Type 3: Pushing the fear hot button

When a politician talks about almost everything in terms of terrorism, or communism, or crime, or threats to “national security” or “our way of life,” and so on, that politician is pushing the fear hot button. It’s very easy to push. Just use a few of the right trigger words, throw in a dash of plausibility, and the subconsciousness is automatically hoodwinked into a state of fear, or at least into wondering if there is something out there to fear. Whether or not an enemy actually *is* out there doesn’t matter—what matters is that we think there *might* be one.

Fear clouds the judgment, making it all the harder to discern whether there really is an enemy out there. Because we cannot be sure, we play it safe and assume there is at least some risk. Since people are risk averse, the ploy works and we become believers. We have been influenced by statements of what *might* be lurking out there. Our fear hot button has been pushed and it worked. How well this works is echoed in this quote:

Fearful people are more dependent, more easily manipulated and controlled, more susceptible to deceptively simple, strong, tough measures and hard-line postures,” [Gerbner] testified before a congressional subcommittee on communications in 1981. “They may accept and even welcome repression if it promises to relieve their insecurities. That is the deeper problem of violence-laden television. ⁶

That was 1981. Today, little has changed. Al Gore, writing in *The Assault on Reason* in 2007, included an entire chapter on The Politics of Fear. It may as well have been called The Politics of Pushing the Fear Hot Button. Below are some excerpts: (Italics and comments added)

Fear is the most powerful enemy of reason. Both fear and reason are essential to human survival, but the relationship between them is unbalanced. Reason may sometimes dissipate

fear, but fear frequently shuts down reason. As Edmond Burke wrote in England twenty years before the American Revolution, “No passion so effectually robs the mind of all its powers of acting and reasoning as fear.”

Our Founders had a healthy respect for the threat fear poses to reason. They knew that, under the right circumstances, fear can trigger the temptation to *surrender freedom to a demagogue promising strength and security in return*. [This is an example of a false promise.] They worried that when fear displaces reason, the result is often irrational hatred [which creates a false enemy] and division.

Nations succeed or fail and define their essential character by the way they challenge the unknown and cope with fear. And much depends on the quality of their leadership. If leaders *exploit public fears to herd people in directions they might not otherwise choose*, [which is why they push the fear hot button] then fear itself can quickly become a self-perpetuating and freewheeling force that drains national will and weakens national character, *diverting attention from real threats....* [A wrong priority]

It is well documented that *humans are especially fearful of threats that can be easily pictured or imagined*. For example, one study found that people are willing to spend significantly more for flight insurance that covers ‘death by terrorism’ than for flight insurance that covers ‘death by any cause.’ Now, logically, flight insurance for death by any cause would cover terrorism in addition to a number of other potential problems. But something about the buzzword *terrorism* creates a vivid impression that generates excessive fear. [Here terrorism has been used not only to push the fear hot button. It doubles as a way to create a false enemy.]

Deception Type 5: Wrong priority

A **wrong priority** is a goal that’s promoted as high priority, when in fact it should be a medium or low priority, due to the presence of other goals with legitimate high priorities. Wrong priorities stem from hidden agendas. A **hidden agenda** is a plan or goal a politician must conceal from the public, due to an ulterior motive.

There are many ways a hidden agenda can come about. A politician may support a certain ideology, and so bends everything to support the goals of that ideology. He may have accepted donations and/or voter support from special interests, such as corporations, and therefore must promote their agenda. Perhaps he had to cut a deal.

A politician with a hidden agenda must make the wrong priorities seem like the right ones in order to achieve what’s on the hidden agenda. How can he do this? For a corrupt politician such matters are child’s play—manipulate the public through false promises, create a false enemy, push the fear hot button hard and often, repeat the same lie over and over until it becomes “the truth,” and so forth.

The low priority environmental sustainability receives from most governments today is rapidly becoming the textbook example of how devastating wrong priorities can be. It should be the most important problem on every government’s list. But it’s not, due to mass deception using the wrong priority strategy.

The ultimate wrong priority is the wrong societal goal. For example, the original goal of democracy in the United States was “life, liberty, and the pursuit of happiness.” That’s a quality of life goal. A similar goal was expressed in France’s *Declaration of the Rights of Man and of the Citizen*. But today the goal is maximization of short term profits. Proof lies in the daily stock market indexes found on the front page of many leading newspapers in the US, Europe, China, Japan, India, and around the world. Market indexes measure future anticipated profits. If the stock market goes up that’s good news. If it goes down it’s bad news. *The implicit goal is everyone should do everything they can to make the market go up*. But nowhere on any of these newspapers will you find a daily quality of life index or its equivalent. Society is marching to the beat of the wrong priority and the wrong drummer.

Wrong societal goals are the ultimate form of deception because once in place none of the other types of

deception are needed anymore. The wrong goal is the new truth and any other viewpoint is by definition false.

Once the wrong goal is in place there's no longer any need to lie because the lie is now the truth. That's why George Orwell wrote in *Nineteen Eighty-Four*, Part Two, chapter 9, that:

All rulers in all ages have tried to impose a false view of the world upon their followers.

Deception Type 5: Secrecy

The fifth main type is actually a way to make the other four types ten times as easy to achieve. **Secrecy** is hiding or withholding the truth. It's a powerful form of deception because it creates a false impression without actually having to openly lie about anything. Secrecy makes it impossible to tell if a politician is lying because key premises cannot be tested. One type of secrecy is the sin of omission.

Secrecy is so important to the success of the first four types of deception that without it they would crumble into ineffective mumblings. But with secrecy they work most of the time, because there is no way for the population to tell if a politician is telling the truth or not. When you see a politician, administration, or party using much more secrecy than normal and there is no reasonable justification, you can be certain its purpose is deception.

* * *

The right steady drumbeat of false promises, false enemies, pushing the fear hot button, wrong priorities, and secrecy creates the ultimate political weapon: lies that work on entire nations. That's why history has given us these gems of dark wisdom:

Next the statesmen will invent cheap lies, putting the blame upon the nation that is attacked, and every man will be glad of those conscience-soothing falsities, and will diligently study them, and refuse to examine any refutations of them; and thus he will by and by convince himself that the war is just, and will thank God for the better sleep he enjoys after this process of grotesque self-deception. – Mark Twain, *The Mysterious Stranger*, 1910.

The whole aim of practical politics is to keep the populace alarmed (and hence clamorous to be led to safety) by menacing it with an end-

less series of hobgoblins, all of them imaginary. – H. L. Mencken

A lie repeated often enough becomes the truth. – Vladimir Lenin.

It does not matter how many lies we tell, because once we have won, no one will be able to do anything about it. – Statement by Dr. Joseph Goebbels to Adolf Hitler, early 1930s, from *The Rise and Fall of the Third Reich*, by William L Shirer.

More modern history has given us this one:

The Greatest Story Ever Sold: The Decline and Fall of Truth from 9/11 to Katrina – This is the title of a 2006 book by Frank Rich. A review in the New York Times gives us a deeper look at Rich's message: ⁷ *“The truly cynical political operator, whether Republican or Democrat, could read this book as a manual for how to use deception, misinformation and propaganda to emasculate your enemies, subdue the news media and befuddle the public, and not as the call to arms for truth that Mr. Rich seeks to provide.”*

It sounds like Machiavelli is alive and well, and working as a consultant to any government who agrees that *the ends justify the means*. Notice Rich's intuitive realization that the “Fall of Truth” is the cause of the corruption problem currently haunting America (any many other nations) and that a “call to arms for the truth” is the cure. This leads to what Henry David Thoreau wrote in *A Week on the Concord and Merrimack Rivers*, in 1849:

It takes two to speak the truth—one to speak, and another to hear.

Which in turn leads to our own observation:

It takes two to speak the lie—one to speak, and one to be deceived.

The Basic Dueling Loops

Opposing the race to the bottom is the race to the top. The two loops are joined together as shown. Because each loop competes for the same Not Infected Neutralists, they are “dueling loops.”

In the race to the top **virtuous** politicians compete for supporters on the basis of the truth (on the model this is called true memes). No favoritism is used, because those who tell the truth treat everyone equitably. Virtuous politicians can help improve things so that society benefits as a whole, but they cannot promise or give anyone more than their fair share.

The race to the top works in a similar manner to the race to the bottom because the two loops are entirely symmetrical, with one crucial difference: in the race to the top, the size of the truth cannot be inflated. Corrupt politicians can use false meme size to inflate the appeal of what they offer their supporters. But virtuous politicians cannot use falsehood to promise more than they can honestly expect to deliver. Nor can they use favoritism to inflate expectations of how well they can help particular supporters. ⁸

By examining how the basic dueling loops model behaves in a series of simulation runs, we can better understand why the political powerplace works the way it does. The table below lists the first six simulation runs we will examine. The first two variables are the **changeable variables**. By varying the changeable variables from run to run, we can try different scenarios. Each scenario is a logical experiment. The third variable is a **result variable**. It is the outcome of a simulation run, after equilibrium is reached.

The Basic Structure of the Dueling Loops

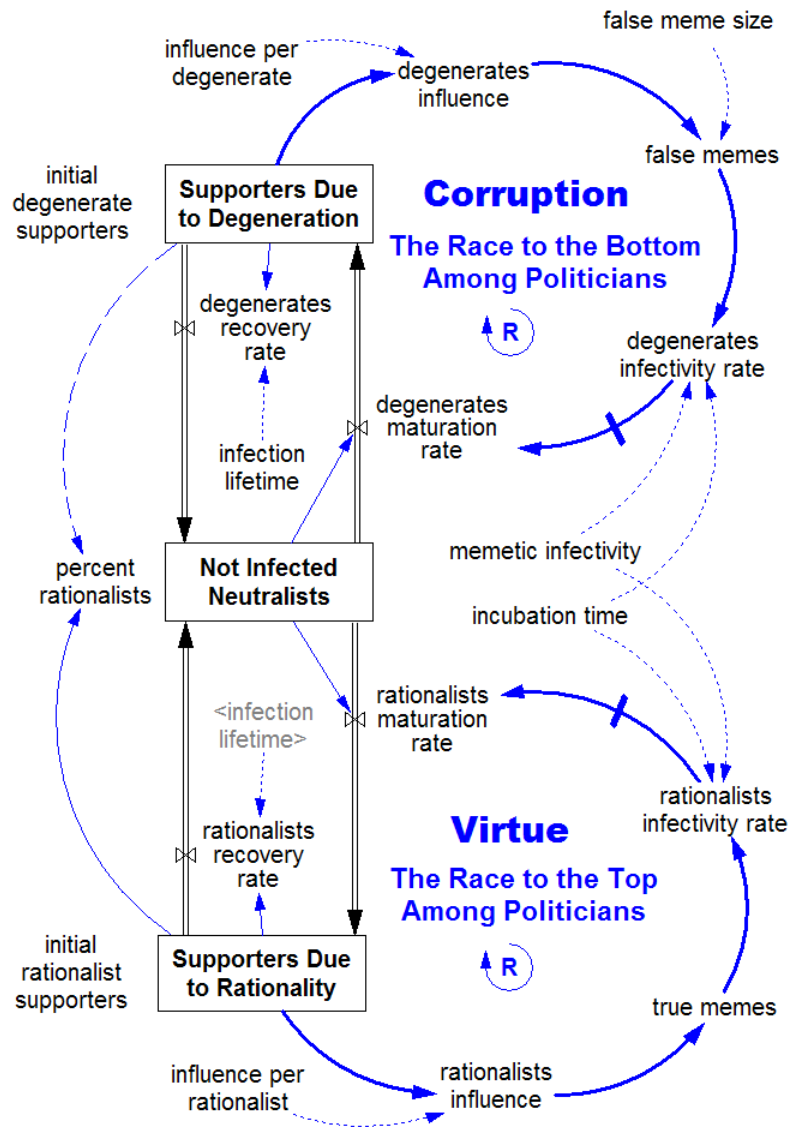
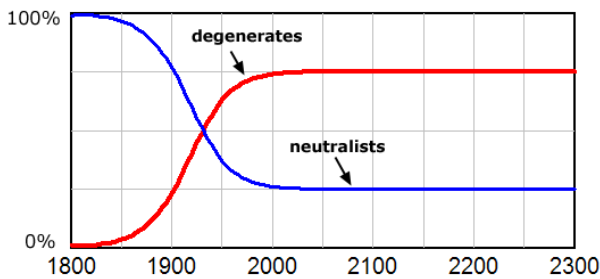


Figure 3. This is the basic structure of the dueling loops of the political powerplace. There are many variations. This structure, combined with agent selfishness, is the fundamental cause behind the behavior of all political systems, both ancient and modern. In particular this structure explains why corruption is what dominates politics, no matter how hard society tries to stamp it out. But once the structure is deeply understood it becomes possible to arrive at a way to eliminate corruption indefinitely. This is required to achieve sustainability of any kind, because **sustainable** is defined as the ability to continue a defined behavior indefinitely.

Basic Dueling Loops Model Variables	Simulation Runs					Table 1
	1	2	3	4	5	6
Initial rationalist supporters	0	1	5	1	1	1
False meme size	1	1	1	1.1	1.3	2
Percent rationalists	0%	50%	83%	20%	5%	0%

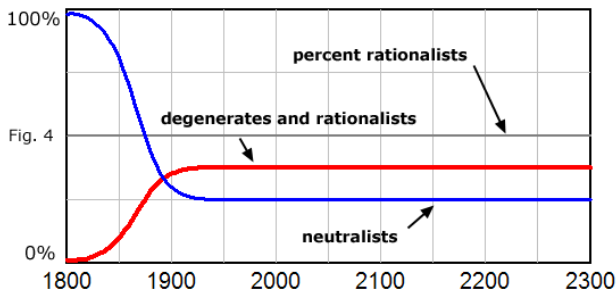
Run 1 – This was presented earlier in figure 2. By setting initial rationalist supporters to zero and false meme size to 1, we get the equivalent of the race to the bottom loop and graph that was presented earlier.

Run 1. The Race to the Bottom among Politicians



Run 2 – In run 2 the number of initial rationalist supporters is increased to 1. Now both loops have the same number of initial supporters. Because neither loop has an advantage over the other loop, the result is both loops behave the same. Each attracts the same percentage of supporters.

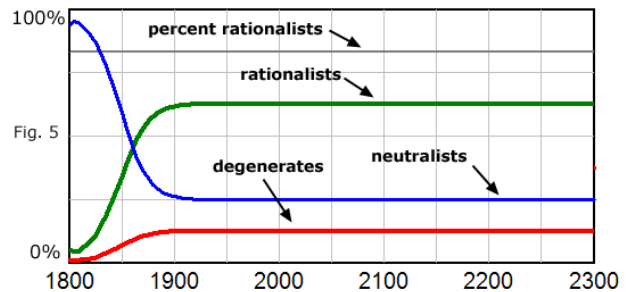
Run 2. Reference mode, no advantage



This run exhibits the most basic behavior of the dueling loops, without the whistles and bells of giving one side an advantage. Notice how in this run the percentage of degenerates and rationalists are always the same, so the degenerates' curve covers the rationalists' curve. Both curves will be seen in later runs. Percent rationalists is the number of rationalists divided by degenerates plus rationalists. Naturally the higher this percentage is the better. In this run percent rationalists is always 50%.

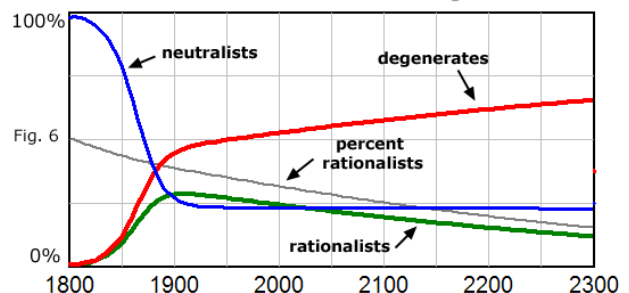
Run 3 – In this run we increase initial rationalists to 5. This shows what happens if we give one side a head start on their number of supporters. Because we have not changed false meme size, neither size has an inherent advantage. But even a small head start, if all else is equal, can quickly become a large advantage, as the results show.

Run 3. The rationalists get a head start



Run 4 – Now things get interesting. The number of initial rationalist supporters is set back to 1 and false meme size is increased from 1 to 1.1. This is only a tiny bit bigger, by 10%. It would seem that itsy bitsy lies and favors wouldn't make much difference, but no—they make a huge difference over a long period of time. As the run 4 graph shows, the good guys get wiped out. After 500 years they are down to about 20%. After 5,000 years (not shown) they are down to 0.345879 persons, which in the real world would be zero.

Run 4. Even a little lie makes a big difference



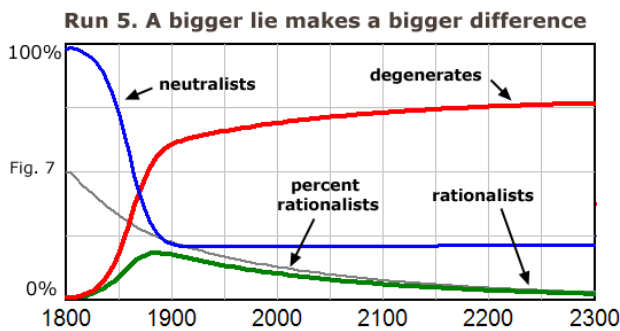
Run 4 is an example of the **Principle of Accumulated Advantage**, also known as the **Mathew Effect** from the biblical parable in Matthew 25:29, "For to all

those who have, more will be given, and they will have an abundance; but from those who have nothing, even what they have will be taken away.” The principle appears in the proverb “The rich get richer and the poor get poorer.” Run 4 show how when one side starts with a small advantage, if a reinforcing loop is present and there are no sufficiently strong balancing loops, the small advantage will grow into an overwhelming one.

This explains why “balancing” policies like progressive income taxes are necessary. If such policies don’t exist the reinforcing loop grows until one group has most or all of the advantage and the other group has little or none. This causes horrendous amounts of suffering. Eventually revolution is required to restore the balance that would optimize the common good.

In run 4 notice how slowly the lines for degenerates and rationalists diverged for the first 50 years. What might happen if the bad guys decided to tell bigger lies and give out bigger favors?

Run 5 – If false meme size is increased from 1.1 to 1.3, system behavior changes dramatically. It only takes about 30 years for the degenerates to pull away from the rationalists. Now the degenerate and rationalist

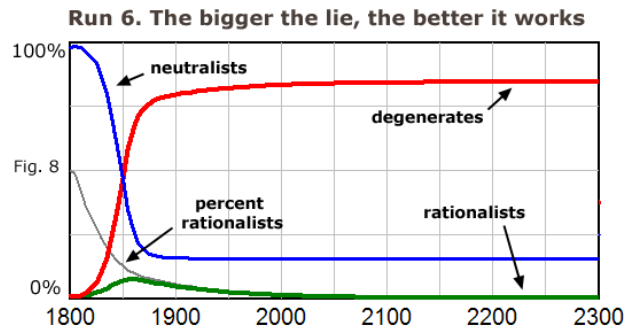


lines flatten out after only 500 years, instead of the 5,000 years it took in run 4. The end result is the same. The lesson is that the bigger the lie, the faster a corrupt politician can take over a political system. I wonder if that explains anything we might be seeing in politics today? For example, does it explain why:

“Rep. Allen West, a Florida Republican, was recently captured on video asserting that there are ‘78 to 81’ Democrats in Congress who are members of the Communist Party.”⁹

Of course it does. The bigger the lie the better the race to the bottom works, up to the point of diminishing returns as we will see later.

Run 6 - Finally we see what happens if a corrupt politician decides to tell real whoppers. False meme size has increased to 2. In other words, every false promise, every false enemy, and so on is now twice as big as they really are.



The results are no surprise. Now the system responds so fast the good guys never even make much of an impact on politics. They are smothered so fast by such big lies that the graph line for rationalists is starting to look like a pancake. Now, after only 500 years, there are 0% rationalists left in the system. They have been exterminated.

There is a limit to how big a lie can grow before it starts to make detection easy. Later we will add the effect of size of lie on detection variable to the model, which will impose diminishing returns on the size of a lie.

This is the basic structure of The Dueling Loops of the Political Powerplace. The two loops are locked in a perpetual duel for the same Not Infected Neutralists. In addition, each politician has his or her own loop, and battles against other politicians for the same supporters. It is these many loops and the basic dueling loops structure that forms the basic structure of the modern political powerplace. The outstanding feature of this structure is:

The Inherent Advantage of the Race to the Bottom

Because the size of falsehood and favoritism can be inflated, and the truth cannot, the race to the bottom has an inherent structural advantage over the race to the top. This advantage remains hidden from all but the most analytical eye.

A politician can tell a bigger lie, like budget deficits don’t matter. But they cannot tell a bigger truth, such as

I can balance the budget twice as well as my opponent, because once a budget is balanced, it cannot be balanced any better. From a mathematical perspective, the size (and hence the appeal) of a falsehood can be inflated by saying that $2 + 2 = 5$, or 7, or even 27, but the size of the truth can never be inflated by saying anything more than $2 + 2 = 4$.

Because the size of falsehood and favoritism can be inflated and the truth cannot, corrupt politicians can attract more supporters for the same amount of effort. A corrupt politician can promise more, evoke false enemies more, push the fear hot button more, pursue wrong priorities more, and use more favoritism than a virtuous politician can. *The result is the race to the bottom is normally the dominant loop.* Thus the reason that “Power corrupts, and absolute power corrupts absolutely”¹⁰ is not so much that power itself corrupts, but that the surest means to power requires corruption.

Due to lack of an in-depth analysis of the fundamental causes of the change resistance side of the problem, problem solvers have long been intuitively attracted to the low leverage point of pushing on “more of the truth.” *On the model this point is the true memes node.* The truth is discovered by research on technical ways to live more sustainably, such as better regulatory control to avoid economic bubbles, alternatives to fossil fuels, the need for a graduated income tax to reduce excessive income inequality, and various methods of reducing the effect of money on election outcomes. The truth is then spread by scientific reports, popular articles, magazines, lobbying, pilot projects, lawsuits to enforce the legal truth, demonstrations to shock the public into seeing the real truth, and so on. This works on problems with low change resistance, such as local pollution problems and conservation parks. But it fails on those with high change resistance, like climate change, high inequality of wealth, and the recurring recessions problem, because activists simply do not have the force (wealth, numbers, and influence) necessary to make “more of the truth” a viable solution.

Because of its overwhelming advantage, the race to the bottom is the surest way for a politician to *rise to power*, to *increase* his power, and to *stay* in power. But this is a Faustian bargain, because once a politician begins to use corruption to win, he joins an anything goes, the-end-justifies-the-means race to the bottom against other corrupt politicians. He can only run faster and keep winning the race by increasing his corruption.

This is why the race to the bottom almost invariably runs to excess, and causes its own demise and collapse.

That’s where the US is today. When you see news like the Washington Post article quoted on page 2, where “one party” has made it “nearly impossible for the political system to deal constructively with the country’s challenges,” what you’re seeing is a race to the bottom running to excess.

A race to the bottom collapse ends a cycle as old as the first two politicians. A cycle ends when corruption becomes so extreme and obvious that the people rise up, throw the bums out, and become much harder to deceive for awhile. But as good times return, people become lax, and another cycle begins. These cycles never end, because presently there is no mechanism in the human system to keep ability to detect deception permanently high.

The dueling loops structure offers a clear explanation of why progressives, environmentalists, and common good activists of any kind are facing such a hostile political climate. This strong opposition occurs because a dominant race to the bottom causes corrupt politicians to work mostly for the selfish good of degenerate supporters, instead of working for the common good of the people. In other words:

The Race to the Bottom Is Easily Exploited by Special Interests

Exploitation is the use of others to increase your own competitive advantage, at the cost of theirs. Because this so obviously self-destructive to those being exploited, deception is required to pull it off. (We are considering only voluntary exploitation, which excludes slavery.)

The race to the bottom provides the perfect mechanism for political exploitation. Each politician has his or her own loop. There are also hierarchies of loops, since a politician’s supporters can be other politicians. At the top of each hierarchy is the top politician, such as a president, political strategist, or party. Whoever is at the top has tremendous leverage. *Thus the race to the bottom hierarchy greatly amplifies the power of the exploiter.*

In stark contrast, the race to the top cannot be exploited. Unseemly rewards cannot flow to a truth telling politician without everyone knowing about it, because part of telling the truth is keeping no secrets and not committing the “sin of omission,” a type of lie. It also

cannot be exploited by supporters or outsiders with bribes or favoritism, because truth telling politicians would say no and if necessary report them. If they didn't, they would lose supporters because they would now be committing falsehood.

Basically the race to the top is not exploitable because exploitation requires unjustified support, which is what the race to the bottom thrives on. But in the race to the top, all support is justified because it is based on the truth and the equitable distribution of the benefits of social cooperation.

The incentive to exploit occurs when a special interest group has interests that conflict with those of society as a whole. Common examples are religious fundamentalists, the rich, the military, and large corporations. The latter two make up the infamous military industrial complex.

A corrupt politician, by accepting donations (legal bribes) and votes in return for favoritism, becomes beholden to the special interest groups involved. If a special interest is powerful enough it can control and exploit a political system by clever use of the race to the bottom. That's exactly what's happening today. The global political system is by and large being exploited by:

The New Dominant Life Form

Let's define a **life form** as any independent agent that follows the three fundamental requirements of evolution: replication, mutation, and survival of the fittest. Building on our earlier definition of a meme, life forms can be genetic or memetic.

Here's a question: What life form has the ability to replicate instantly with almost no expenditure of energy, can mutate during replication or at any time thereafter, and, when it has failed in the battle of survival of the fittest, sells little pieces of itself to its competitors in order to minimize its own pain of death? These are fantastic powers no human could hope to have. But what if we go further, and ask what life form has the miraculous power of being in many places at the same time, has an infinite life span, and can cleave off chunks of itself and have them instantly come alive? That would make it a formidable competitor indeed, one that could run rings around any other plant or animal. Darwin would be astounded.

But there's more: What life form totally dominates mankind, by controlling most jobs in developed coun-

tries, by determining the path of nearly all of new technology, products, and services, by controlling elections and political decisions more than any other life form, and by defining the very evolution of culture to its advantage through demand advertising, ownership of the media, and new product design? If that is not enough, what life form controls the billions of boxes in our homes that provide us with most of our "news," and most of our new knowledge once we have finished school, while at the same time subconsciously indoctrinating us to be high volume, complacent consumers? To top it off, what life form is spreading exponentially from industrialized countries to the rest of the world, and will soon dominate them all? The answer is obvious. It is large for-profit corporations, which is the **New Dominant Life Form**, also known as *Corporatis profitis*.

Thus the dominant life form on Earth is no longer genetic Homo sapiens. Instead, it is the memetic modern corporation and its allies, notably the rich.

The corporate life form has not only achieved economic and cultural dominance. It has achieved *political* dominance by successful exploitation of the race to the bottom. It can thus endlessly thwart or delay all efforts to significantly change the human system to environmental sustainability, and just as endlessly continue to maximize Gross World Product growth so as to achieve its goal. Globalization is mainly the deliberate spread of the New Dominant Life Form into new economic niches, cloaked in the fallacious but appealing premise that free market/corporate system, driven by profit maximization, is the most efficient and best system possible.

The goal of an agent determines its behavior. The goal of most for-profit corporations is to maximize the net present value (the short term value) of profits. The goal of most groups of people, once past the survival and security stage, is to maximize quality of life for themselves and their descendents.

These goals are mutually exclusive. As a result, as things get better for the New Dominant Life Form they get worse for the previously dominant life form: *Homo sapiens*. For example, as Gross World Product continues to rise, sales and profits soar to unprecedented heights. However, so does pollution and natural resource depletion. While the consequences of these effects are delayed, it is only a matter of time before the quality of life for *Homo sapiens* begins to fall.

Please note this is not an indictment of all corporations and their managers. Most are doing the best they can, and are basically good. Each agent, from its own perspective, is behaving rationally. *It is the life form as a whole that has the emergent property of behaving unsustainably.*

This is the real enemy common good activists are battling. Don't blame the problem on "bad" politicians. These are mere proxies for the real opponent: the modern corporation and its allies. Its allies include top corporate management, stockholders, the rich (the key ally), the military, and politicians, plus various large special interest groups as expediency requires, such as the religious right.

It is a paradox why *Homo sapiens* would create an entity that is more powerful than itself and has a mutually exclusive goal. Such a creation is guaranteed to cause its creator great harm, if not eventual extinction. But it is really not a paradox at all—it is an experiment gone awry. So awry, in fact, that it is time to end the experiment by redesigning that creation....

corporations march to the beat of a different drummer (maximization of profit instead of quality of life), they have been aggressively using these advantages to their own benefit, with only enough regard for their opponent to keep him alive so that he may perform his role of incognizant slave. It's a form of feudalism.

We now have enough pieces of the puzzle to draw an important conclusion.

The analysis at Thwink.org has decomposed the sustainability problem into four subproblems. Each is much smaller and well defined, and hence an order of magnitude easier to solve. Correct problem decomposition can change a problem from insolvable to solvable.

Let's take a look at the results of that analysis.

A Comparison of Competitive Advantage

That creation has steadily pulled ahead of its closest rival. Step by tiny step, it has relentlessly changed the rules of the game to favor itself. This has been done so cleverly and in such small, imperceptible increments that few citizens have noticed. But when you pause to examine the outcome the findings are shocking, as the table reveals.

Only in the first attribute does *Homo sapiens* have the advantage. In the second attribute they are equal. In all the rest the modern corporation has the overwhelming advantage.

Galloping galoshes! Decision by legal decision the modern corporation has built up an astronomical lead over *Homo sapiens*. These are huge, order of magnitude advantages. There is little question who is going to win the battle for niche dominance unless things change. Furthermore, because

The Competitive Advantage of Two Life Forms		
Attribute	The Modern Corporation	<i>Homo sapiens</i>
1. Can physically manipulate its surroundings	No	Yes
2. Is legally considered a person	Yes	Yes
3. Maximum life span	Infinite	About 120 years
4. Can be in many places at the same time	Yes	No
5. Can own slaves like itself	Yes	No
6. Speed of procreation	Hours	Nine months
7. Can cut itself up into little pieces, each of which can become a new life form	Yes	No
8. Can hibernate indefinitely in hard times	Yes	No
9. Body size limit	Unlimited	About 8 feet high
10. Brain size limit	Unlimited	About 1,500 grams
11. Owners have limited liability	Yes	No, since no owners
12. Has international organization with high efficiency of decision making and full power of enforcement of decisions for its life form type	Yes, the World Trade Organization	No, the United Nations
Primary energy input	Money via sales	Food
13. Requires a physical form for its primary energy	No	Yes
14. Can transmit its primary energy instantaneously over great distances	Yes	No
15. Can store its primary energy indefinitely	Yes	No
16. Can store infinite amounts of its primary energy at no cost	Yes	No
17. Financial impact of storing its primary energy	Makes a profit by charging interest	Must pay storage costs

The Root Causes

The Dueling Loops model allows us to analyze two of these subproblems: (A) How to overcome change resistance and (B) How to achieve social proper coupling. Subproblem A must be solved first. The key findings of the analysis are the root causes and high leverage points.

First consider the root cause of subproblem A. ***The main root cause of high change resistance is high political deception effectiveness.*** This is accomplished by clever exploitation of the inherent advantage of the race to the bottom.

Next consider subproblem B. **Proper coupling** occurs when the behavior of one system affects the behavior of one or more other systems in a desirable manner, using the appropriate feedback loops, so the systems work together in harmony in accordance with design objectives. For example, if you never got hungry you would starve to death. You would be improperly coupled to the world around you.

In subproblem B two life forms are improperly coupled. This is obvious. One life form, *Corporatis profitis*, has seized control of the race to the bottom. The other life form, *Homo sapiens*, ever since he adopted Rousseau's concept of social contract as "the best way of ensuring the general welfare while maintaining individual freedom under the rule of law,"¹¹ has attempted to control the race to the top because that optimizes the common good.

This leads to the root cause of subproblem B: ***The main root cause of social improper coupling is mutually exclusive goals between the top two social life forms, Corporatis profitis and Homo sapiens.***

The goal of *Corporatis profitis* is short term maximization of profits. The goal of *Homo sapiens* is long term optimization of quality of life for those living and their descendents. These two goals are so incompatible that according to the Principle of Competitive Exclusion, they cannot be achieved at the same time in the same ecological niche (control of the global social system). One life form will win and one will lose. The loser will be driven to another niche or extinction. In this case *Homo sapiens* has been driven to the niche of compliant corporate serf. The cycle of history, which has seen serfdom before, has repeated itself.

This is a blockbuster of an insight. It cuts through all the other intermediate causes put forth as the under-

ling cause of the world's problems, like corruption, the influence of money in politics, high inequality of wealth, and selfishness. It goes deeper than all of those because it takes us to a single root cause that is clearly understood and can be cleanly resolved.

It's clearly understood because we have a simple and correct model of the problem. The Dueling Loops model shows how root cause B is manifested. It's the very essence of the two opposing loops. Better yet, we can see how root cause B is the source of change resistance. If we could resolve the root cause of successful change resistance, we could work a miracle. We could then resolve root cause B. This is a fair bit of good news.

Here's where we are. Root cause analysis has uncovered the two root causes of most of the stiff, prolonged resistance to adopting a solution to the sustainability problem. Civilization is presently stuck in the dominant race to the bottom part of the Dueling Loops cycle. *Our challenge is to cause this cycle to end as soon as possible by keeping the cycle permanently in the race to the top.* If we can do that civilization will not only enter the Age of Transition to Sustainability. It will also enter an entirely new mode: a permanent race to the top among politicians, along with all that has to offer but has never been achieved.

This may seem even more ambitious than the last great political mode change, which was the rise of democratic forms of government in the 18th century. There is, however, good cause for rational hope, because:

There Is a High Leverage Point that Has Never Yet Been Tried

We have extremely good news. There is a very promising high leverage point in the human system that has not yet been tried. It is general ability to detect political deception, as shown on the revised model on the next page. Pushing there appears to give problem solvers the greatest possible chance of solving the change resistance problem.

Actually the model identifies not one but two high leverage points. Both need their present values raised to solve the problem. But as we will show in another series of simulation runs, it is the key high leverage point of *ability to detect deception* that makes the biggest difference.

The Two High Leverage Points of the Dueling Loops

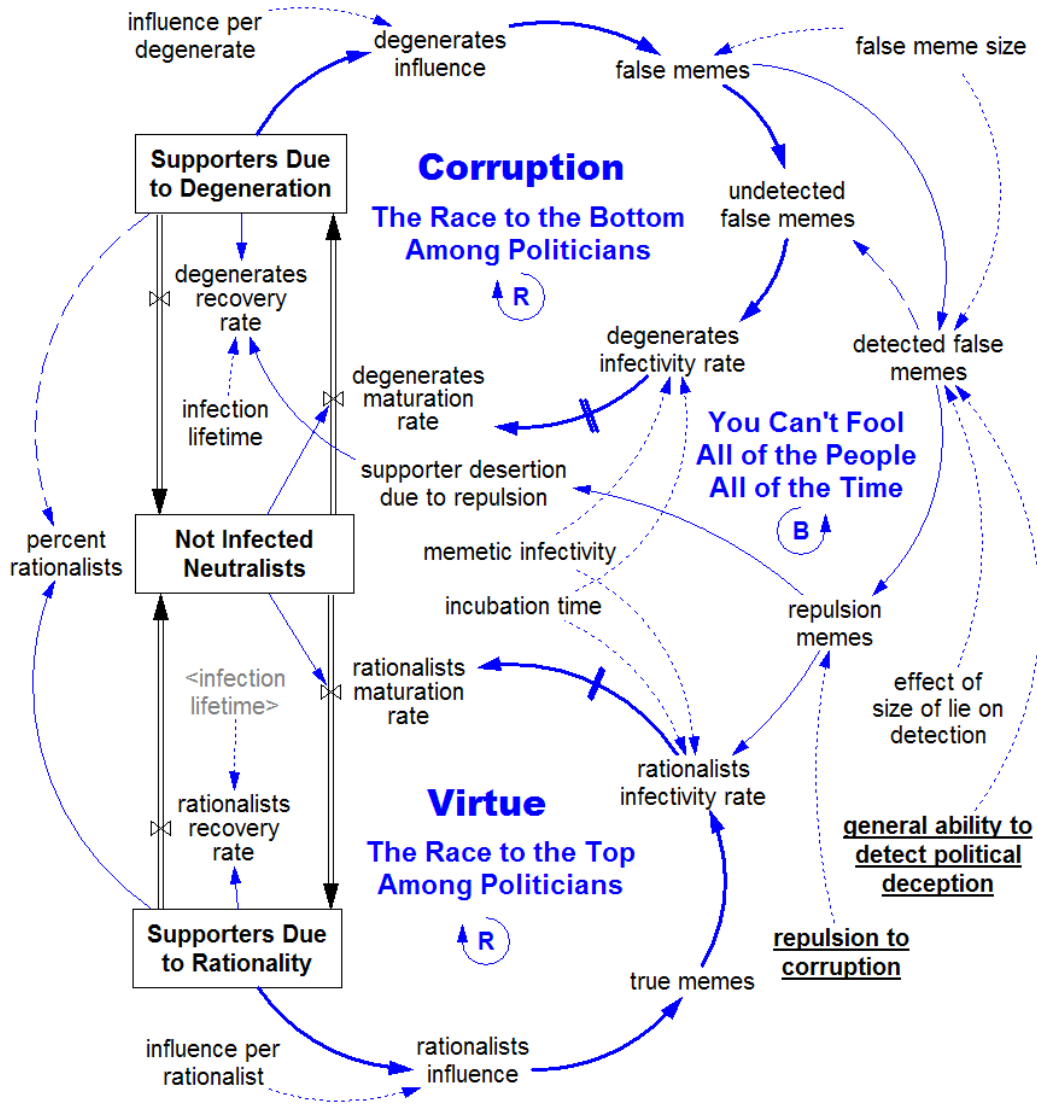


Figure 9. The two high leverage points (HLPs) are underlined. The one making the most difference by far is general ability to detect political deception. If the model is reasonably correct then pushing there can solve the change resistance part of the sustainability problem. Currently nearly all effort is directed toward the more intuitively attractive low leverage point of “more of the truth,” which is the true memes point. Pushing there fails, because activists simply do not have enough force to *directly* overcome the inherent advantage of the race to the bottom. They can only overcome it *indirectly* by pushing elsewhere on high leverage points.

On the model a solid arrow indicates a direct relationship. The two dashed arrows show an inverse relationship. A dotted arrow is a constant or a lookup table function.

Currently general ability to detect political deception is low. The lower it is the lower detected false memes are. The lower that is, the higher undetected false memes are and the lower repulsion memes are. This causes more degenerates and fewer rationalists, which is bad news.

Currently repulsion to corruption is also low. The lower it is, the lower the rationalists infectivity rate and the lower supporter desertion due to repulsion. This is because repulsion to corruption times detected false memes equals repulsion memes. This makes sense, because detected corruption is a good reason to decide to support virtuous politicians and to desert corrupt ones.

For an actual system reaction to deception detection to occur, two steps must take place. The deception

must be detected, which is handled by general ability to detect political deception times false memes equals detected false memes. Then those detected false memes must cause people to be repulsed enough by the corruption to either defect from the degenerates, which is what the supporter desertion due to repulsion variable does, or to become rationalists, which is handled by adding repulsion memes to true memes to calculate the rationalists infectivity rate. In addition to this, false memes minus detected false memes equals undetected false memes, which reduces degenerate infectivity.

Let's summarize how the **You Can't Fool All of the People All of the Time** loop works, focusing on the higher leverage point. Currently the loop is weak, and thus might be more appropriately named **You Can Fool Most of the People Most of the Time**. Low ability to detect deception and the fact that the size of falsehood and corruption can be inflated but the truth cannot combine to cause more supporters to be attracted to the race to the bottom. Thus if ability to detect deception is low, corruption works like a charm, because most false memes flow through the system unimpeded. This causes undetected false memes to be high and detected false memes to be low, which strongly favors the race to the bottom.

But if problem solvers can raise ability to detect deception to a high level, most false memes flow to detected false memes. This greatly decreases undetected false memes, which destroys the power of the race to the bottom. At the same time this increases repulsion memes, which increases the rationalists infectivity rate and increases the degenerates recovery rate due to supporter desertion due to repulsion. The result is corruption doesn't work anymore, which causes the race to the bottom to collapse as most people suddenly see the real truth and flee for their lives to the stock of Supporters Due to Rationality. This is precisely what happens when massive amounts of corruption are suddenly exposed.

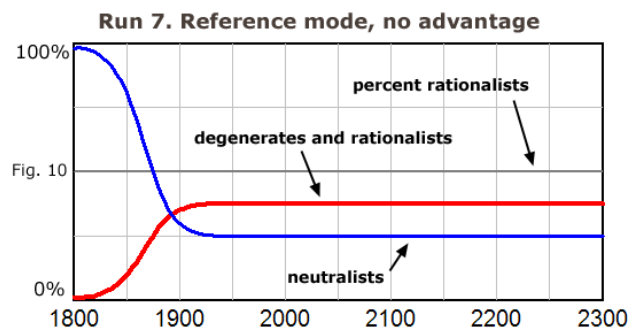
It is the effect of influencing so much so strongly that makes general ability to detect political deception such a potent high leverage point.

By now you should have some tremendous new insights to system behavior. You can see the dueling loops structure is generic. It applies to any problem. *The successful exploitation of the race to the bottom by the modern corporation and its allies is the fundamental reason progressive activists are encountering such strong resistance in achieving their objectives.*

If **progressive philosophy** is defined as promotion of the objective truth for the good of all, then progressives (no matter what party they belong to) are rationalists at heart, and thus eschew falsehood and favoritism in its many forms. Progressives may not realize it, but their central strategy has long been the high road of winning the race to the top.

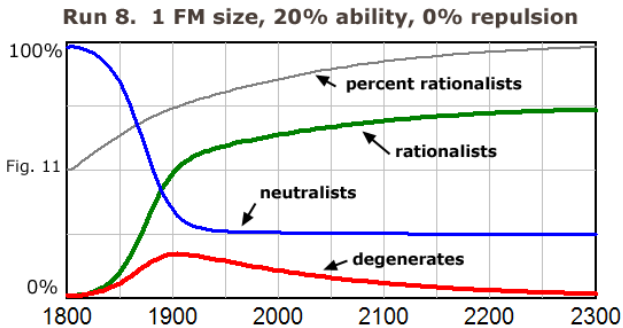
Next let's familiarize ourselves with how pushing on the two high leverage points affects model behavior. The table below lists the simulation runs needed to do this. In all these runs, the number of initial degenerate and rationalist supporters is 1.

Run 7 – This is the same as the reference mode (run 2) presented earlier. The purpose of this run is to test that the revised model has the same foundational behavior. It also serves as a good starting point for further scenarios.



High Leverage Points Model Variables	Simulation Runs							
	7	8	9	10	11	12	13	14
False meme size	1	1	4.8	4.8	2.4	2.4	3.8	4.7
Ability to detect deception	0%	20%	20%	20%	20%	20%	60%	80%
Repulsion to corruption	NA	0%	0%	20%	20%	80%	20%	20%
Percent rationalists	50%	100%	0%	41%	20%	57%	69%	100%

Run 8 – In the United States and many other countries, the general ability to detect political deception is low, somewhere around 20% or 30%. This is obvious because of the large amount of political deception that goes undetected. Let's try raising this high leverage point from 0% to 20% and see what happens.

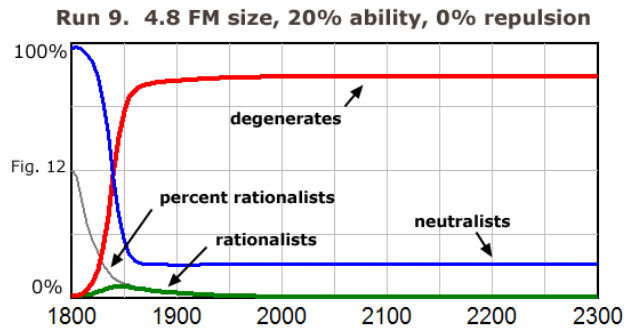


Wow! Great results! Finally it is the bad guys whose graph line is flattened like a pancake. Percent rationalists rises to 75% in 100 years and levels out at 100%. This is a dream scenario. All we've got to do is figure out how to make it happen.

Unfortunately that can't be done, because this scenario is unrealistic. There is no way corrupt politicians are going to sit by and stick to a false meme size of 1, when they know full well, from at least 200,000 years of experience, that corruption works. So let's fix that in the next run.

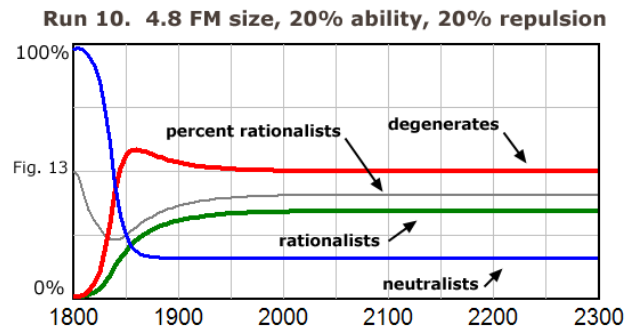
Run 9 – The bad guys may be corrupt, but they are not dumb. They are usually plenty clever enough to adjust the size of lies and favoritism to be close to the right amount: not too big, and not too small. Those corrupt politicians that cannot do this will be selected out by the iron hand of evolution's most merciless law: survival of the fittest.

To reflect the above reasoning, in this run we change false meme size from 1 to 4.8, which is the optimum that effect of size of lie on detection and supporter desertion due to repulsion will let the bad guys get away with.



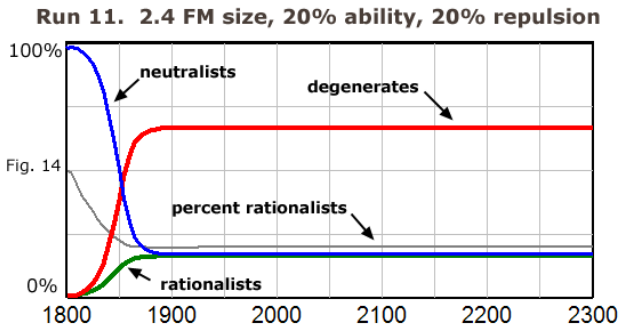
The graph tells the sad story. Now it's the good guys are as flat as a pancake after a *Tyrannosaurus Conser-vatex* stepped on it. In this scenario the rationalists have lost the game so soon and so badly it's as if they had hardly any influence at all on the political system. But once again, is this a realistic simulation run? Not quite, because repulsion is still 0%, which is unrealistically low. Let's fix that on the next run and see what happens.

Run 10 – Now we push on the second high leverage point, repulsion to corruption, raising it from 0% to 20%. Because both high leverage points are now being pushed, things should start looking more favorable. If they don't, our understanding of the model is faulty.



The results do look better, but they are still not good enough. Percent rationalists tops out at 41%, which is well below what is needed for a political system to run itself well. We've got to do better.

Run 11 – The smarter the agent, the faster and better it adapts to changing circumstances. We can only assume that corrupt politicians will adapt their strategy to the new circumstances of run 10. Experimentation with the model shows that the optimum false meme size for a 20% ability to detect deception and a 20% repulsion factor is 2.4. So in run 11 let's change false meme size from 4.8 to 2.4.

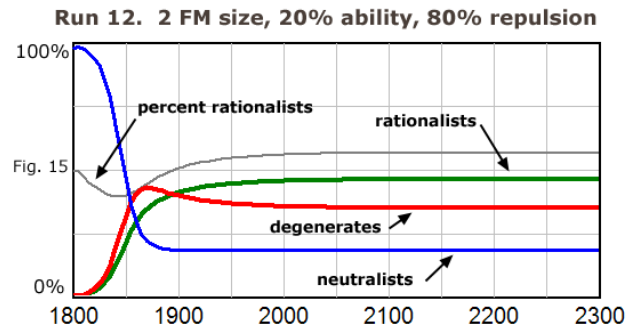


As the graph shows, this strategy has a substantially better outcome. Percent rationalists levels off at 20% instead of the 41% of run 10. In other words, the degenerates have increased their percentage from 59% to 80%. Not bad for such a simple change. What's interesting is they did it by *decreasing* the size of lies and favoritism, which means *less* corruption got them *more* supporters.

The point is that false meme size is not fixed. It is fluid and, like so many agent strategies in complex social systems, changes as the situation demands.

Run 12 – Next let's see which of the two high leverage points gives problem solvers the most leverage. First let's raise repulsion to corruption from low to high, which is from 20% to 80%. Then we experiment with the running model to determine the optimum false meme size is for this competitive situation. It turns out to be 2. Will the result be good enough for the good guys to win or not?

Actually the model is now so complex I found it hard to reliably predict the outcome of this run. But that's one of the many benefits of simulation modeling: Once you have expressed your analysis as a dynamic structure, the software takes it from there and tells you how that structure will behave in any situation. And unlike my poor overworked cranial lobes, simulation software never makes a mistake.



The results show that even 80% is still not good enough. The forces of good and evil are still so evenly matched that they would be totally unable to deal cooperatively and proactively with difficult problems like the global environmental sustainability problem, because they would be too busy battling each other. The degenerates would also be engaging in promoting too many wrong priorities for the right priority of environmental sustainability to emerge as a top priority.

Time for a sanity check. Does this result make sense? Yes, because ability to detect deception is still low, at 20%. So let's roll back repulsion to a more realistic value and then see what would happen if we raised ability to detect deception.

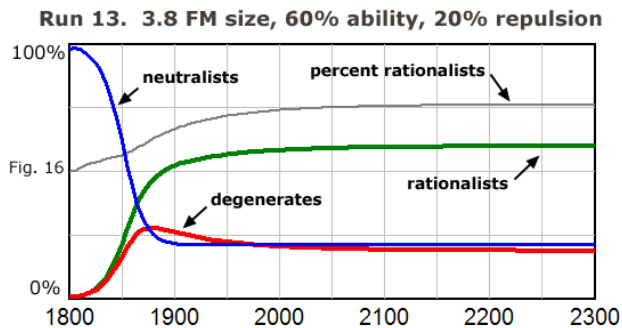
Run 13 – First we must estimate a reasonable value for repulsion to corruption. Later we hope to measure it in the field, but for now we must rely on an estimate.

There are five ballpark values repulsion to corruption could be: zero, low, medium, high, and 100%. Zero and 100% are so extreme as to be unrealistic, so we will rule them out.

I feel that presently repulsion to corruption is low. When the average citizen hears about detected corruption they do very little. They do not take action. Instead, the incident is written off as "politics as usual." Only if corruption is extreme and prolonged do they take effective action. Even when Election Day comes, it is not corruption that voters consider the most. It is numerous other factors, like looks, charisma, sound bites that stick in the mind, and most importantly, where the candidate stands on issues that are important to each voter. These issues rarely center on corruption, unless corruption has been prolonged and extreme.

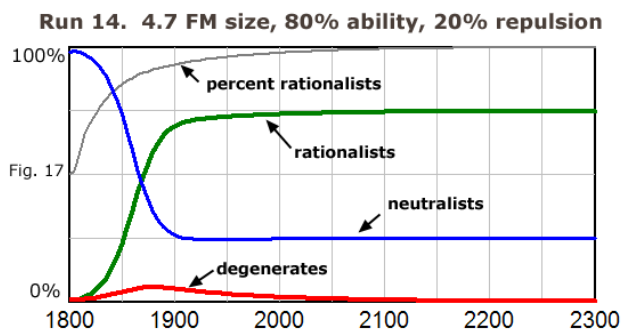
Let's not go too low, like 10%. A value of 20% seems reasonable. Much higher would start to get into a medium level (40% to 60%), which does not make sense. People do not act on half the corruption they hear about. It is much less.

Also let's start to raise ability to detect deception. In runs 8 to 12 it was 20%. Let's raise it to 60%. Let's continue to assume corrupt politicians will adapt to the new situation and change to the optimum strategy of 3.8 for false meme size. The results are shown.



This run shows that to adequately counter a false meme size of 3.8, ability to detect deception must be at least 60% and repulsion at least 20%. Percent rationalists is now up to 69%, which is probably about the bare minimum for a government to begin to put aside political squabbling and begin to work on its backlog of problems. But 69% is still not high enough for nations to focus efficiently on highly demanding problems, because solving these types of problems requires a nation's full attention and its complete cooperation with other nations.

Run 14 – To see if we can achieve a high enough percent rationalists to solve the problem, let's raise ability to detect deception from 60% to 80%. Again we assume adaptation and change false memes size to 4.7.



The results show that at last we have the behavior in the model we would like to see in the real world, because percent rationalists has risen to a blissful 100%. The opposition is eliminated and virtuous politicians can now focus on society's proper priorities, at last. *If the model is correct*, then raising the general ability to detect political deception from low to high is

all it takes to make the race to the top go dominant and thus solve the social side of the problem.

Notice how this run was able to raise percent rationalists from 41% to 100% (a 59% rise) by raising ability to detect deception from 20% to 80%, while run 12 only raised percent rationalists from 41% to 57% (a 16% rise) by raising repulsion from 20% to 80%. Calculating the leverage, $59\% / 16\% = 3.7$. Thus in these fairly realistic scenarios ability to detect deception has 370% more leverage than repulsion to corruption has.

What about leaving ability to detect deception at 60% and raising repulsion to corruption? Would that solve the problem? No. Experimentation with the model shows that increasing repulsion to 80% increases percent rationalists to 94%, and increasing it to 100% only increases percent rationalists to 95%. It seems that increasing repulsion cannot eliminate the last few degenerates. However it does appear that the best overall solution is to raise both high leverage points some: repulsion a little bit, and ability to detect deception a lot.

Now for the important question: *Is the model correct?* No one knows, because it has not yet been subjected to the rigors of experimental proof and field calibration. But I do believe that it contains the fundamental brushstrokes explaining why solution adoption resistance is so high. At the very least the model should be able to serve as the starting point for a larger project that would go much further than I have been able to go by myself.

Next we need to take up the notion the dueling loops are cyclic. However, let's first pause for:

A Word of Caution

At Thwink.org, as well as in this paper, we think like scientists. Every assertion we make is a hypothesis that could be overturned tomorrow. The pages you are reading contain many novel hypotheses. While these seem to have withstood the test of logical proof, using a number of analytical tools, few have undergone the acid test of real world experimentation. No one knows how many will survive. But rather than couch every assertion with a "maybe," a "this suggests," or a "probably," and so on, we have elected to only occasionally stress that all the conclusions in the paper are merely examples and pointers to a new way of thwinking. None should be interpreted as *the analysis* or *the solution*.

The Cyclic Behavior of the Dueling Loops

Up until now the model has ignored consideration of what it is that causes a society to want to raise its general ability to detect political deception and/or repulsion to corruption. To raise the values for these two variables in our simulation runs, all we had to do was reach into the model and change them. That is not how it happens in the real world. How then do societies adjust these values?

My hypothesis is that societies reactively change these values when they see the clear and present need to change them. This need appears when a prolonged excess of corruption occurs. Because there is no formal reliable mechanism to keep the values of these two variables permanently high, they tend to fluctuate as the decades pass. Another way to say this is societies have a short organizational memory on what the values of these two variables should be.

Reactively changing these values causes an endless cycle. This cycle was briefly described earlier as: A cycle ends when corruption becomes so extreme and obvious that the people rise up, throw the bums out, and become much harder to deceive for awhile. But as good times return, people become lax, and another cycle begins. These cycles never end, because presently there is no mechanism in the human system to keep ability to detect deception permanently high.

The minimum conditions required for the dueling loops to be cyclic appear to be:

1. The natural tendency for general ability to detect political deception and repulsion to corruption to be low.
2. The existence of critical points that are automatically activated when corruption gets bad enough. Once a critical point is activated, society invests in raising general ability to detect political deception and/or repulsion to corruption.
3. The critical point is deactivated once corruption falls low enough. This is because there is no permanent mechanism to keep these variables high enough to prevent corruption. (Maxims like “The price of democracy is eternal vigilance” intuitively recognize the need for a permanent mechanism, but even 1,000 such maxims are not enough. Something more is needed.)
4. The presence of delays in raising and lowering the two variables, and in changing supporters of one type into the other.

For the remaining runs the previous model has been revised to incorporate these minimum conditions, by renaming the key high leverage point to be Ability to Detect Deception and making it a stock instead of a variable. (It is traditional to capitalize the names of stocks, due to their central importance in stock and flow models.) The subsystem shown was then built around this stock to give it a realistic critical point and change delay.

The critical point reaction occurs when corruption, as measured by percent rationalists, falls below a certain arbitrary cultural corruption critical point.

Here's how a corruption cycle works: Once the critical point is reached a very common complex social system reaction occurs. The reaction to excessive corruption activated variable goes from false to true, after a reaction delay of 5 years. This causes additional investment to be added to the normal cultural investment rate, which increases a society's investment in raising Ability to Detect Deception, such as by launching investigations, publishing information on who is corrupt, prosecuting corrupt officials, and changing the processes of its governmental institutions to be more corruption proof. This takes time, as represented by the investment delay of 5 years and by the way it takes many years to fill the stock up to the high level needed to detect most corruption.

As the stock of Ability to Detect Deception investments accumulates, more and more false memes are detected. Once the stock rises high enough, so much falsehood and favoritism is detected that percent rationalists rises so high that the corruption critical point is no longer exceeded. This causes reaction to excessive corruption activated to change back to false, which

The Critical Point Reaction Subsystem

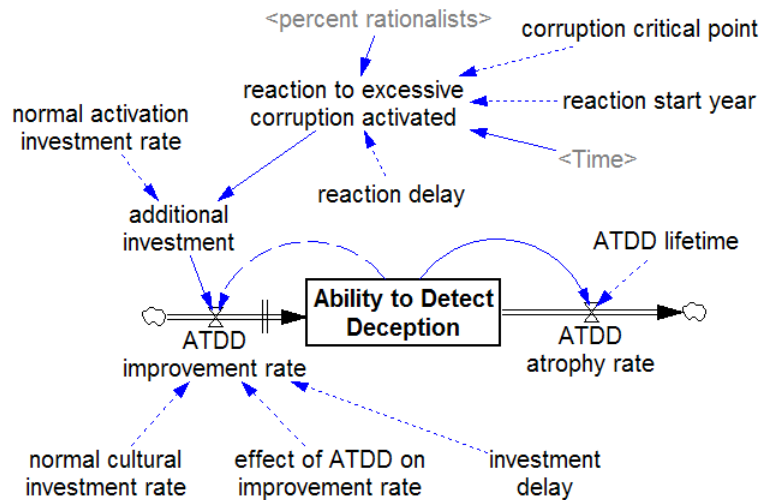


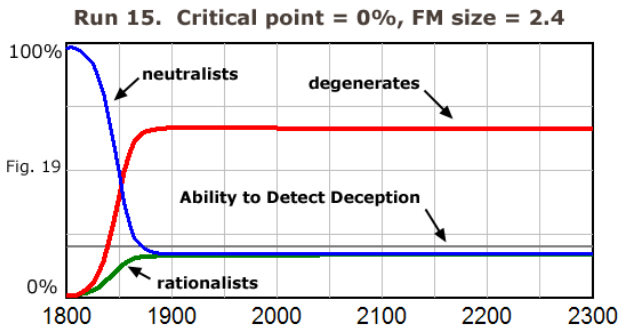
Figure 18. This simple subsystem imitates how society reacts when corruption rises above an unwritten, culturally defined critical point. This reaction is part of a cycle that never ends, because presently there is no formal, enduring mechanism in governments to keep Ability to Detect Deception permanently high.

causes additional investment to change back to zero, which causes the stock of Ability to Detect Deception to start falling. It continues to fall until it goes so low that another critical point reaction is triggered, and the cycle starts over again.

Below is the table of simulation runs needed to illustrate the dynamic behavior of the critical point model. In all runs repulsion to corruption is 20%. In a real solution it probably needs to be increased a bit, but here we leave it alone for simplicity.

Critical Point Model Variables	Simulation Runs							
	15	16	17	18	19	20	21	22
Corruption critical point	0%	35%	35%	50%	50%	70%	95%	100%
False meme size	2.4	2.4	4.7	4.7	5.6	4	4	4.7
Percent rationalists	20%	Very cyclic	40%	Less cyclic	55%	A little cyclic	Barely cyclic	100%

Run 15 – This run has no critical point reaction since the corruption critical point equals 0%. Thus this run's behavior is identical to run 11 because additional investment has not yet been triggered.



The subsystem has a normal cultural investment rate that keeps Ability to Detect Deception at 20% when additional investment is zero. Run 15 is the reference mode for the critical point model. In the graph percent rationalists has been replaced by Ability to Detect Deception, which in this run is a constant 20%.

It takes this run only a hundred years to reach steady state equilibrium. To show the cyclic nature of the dueling loops in later runs, the reaction start year is set to 1900. Starting the reaction then instead of in 2000 (which would be about now, and make the modeling experience a little more true to life) gives us more cyclic activity to look at, so that we can more clearly understand the model and its implications.

Run 16 – In this run the critical point is changed from 0% to 35%, which means the critical point reaction will take place whenever percent rationalists dips below 35%. Since in the reaction start year of 1900 percent rationalists equals 20%, the critical point reaction starts then.

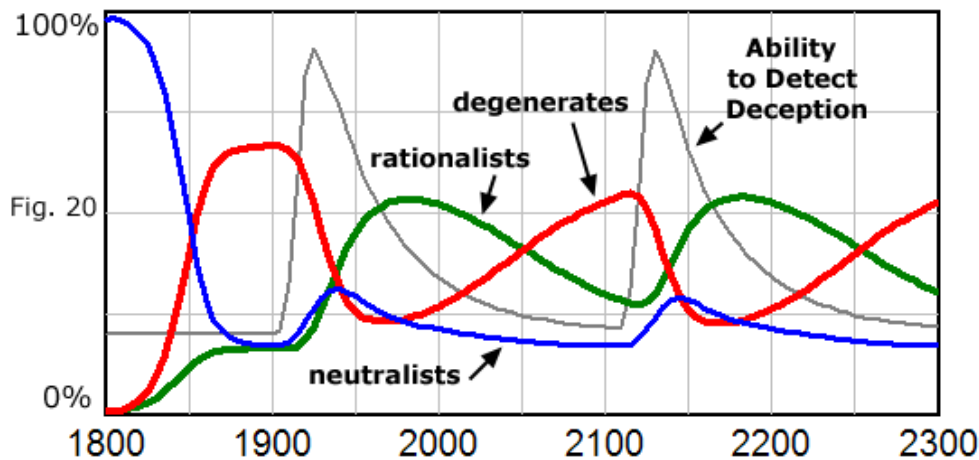
The simulation results show such insightful social system behavior that we have enlarged the graph for this run so that the details may be more easily seen.

The graph shows the cycles are about 200 years long. This is much longer than the corruption cycles (really exploitation cycles) we see today. Thus it is more representative of the deeper cycles that occur, such as those due to changes in styles of government, which are a reaction to very deep social system drivers like class oppression by a landed aristocracy or a hereditary line of rulers. If the four delays in the model are reduced to low levels, cycle length falls to about 75 years, which is closer to what we see in cyclic political party dominance or exploitation by life forms or special interest groups like the modern corporation, due to corruption and other related factors that tend to obscure the fact that exploitation of the race to the bottom is the central driver of these cycles. (75 years requires investment delay = 1 year instead of 5, reaction delay = 1 year instead of 5, incubation time = 1 year instead of 10, and infection lifetime = 5 years instead of 20.)

For example, the last time the modern corporation was ruthlessly dominant in the US was in the late 19th century. The cycle was ended with a backlash against the oppressive power of corporations that led to passage of legislation like the Sherman Anti-Trust Act of 1890. But now corporations are overly dominant again, due to successful exploitation of the race to the bottom.

The important thing to realize is that the natural tendency of the dueling loops is to be cyclic. The length of the cycles varies greatly, depending on a host of factors, only a few of which are incorporated in the model. Because there are many corrupt politicians and special interest groups trying to exploit the race to the bottom, there are many cycles underway at the same time. A

Run 16. Critical point = 35%, FM size = 2.4



political system will be most dominated by whichever cycle(s) are currently dominant and by how strong and clever the various exploiters are.

Let's walk through a cycle and explain what's happening, both in the model and the real world it attempts to represent.

A cycle begins when percent rationalists falls below the corruption critical point. Then, after a reaction delay of 5 years we see that Ability to Detect Deception suddenly spikes upward. These spikes are mass panic reactions to flagrant amounts of corruption. When a spike is underway a society will be wildly investing in all sorts of things to increase the public's ability to spot political deception, like editorials and articles explaining how certain politicians are using lies and favoritism to achieve their nefarious goals, investigations to get to the bottom of various scandals and root out corrupt politicians, speeches extolling the importance of virtue and the ravaging effects of corruption, and so forth. Mechanisms to detect falsehood will start spontaneously appearing, such as the way factcheck.org appeared in the 2004 election in the US.

The incubation time of 10 years and other delays causes the percentage of degenerates to not fall as fast or as soon as Ability to Detect Deception spikes upward. Instead, there is a noticeable lag. While it takes only about 25 years for Ability to Detect Deception to reach its peak, it takes about 70 and 80 years for the percentage of degenerates to fall to its lowest level and for the rationalists to reach their peak. These excruciatingly long delays do occur, because it normally takes generations for fundamental cultural norms, like ideology allegiance or addiction to consumptive extravagance, to shift radically.

Once a critical point reaction occurs, eventually the bad guys and the good guys switch places and a society enters good times. Those times are so good, and what is allowing them is so well hidden, that without realizing it society "forgets" that it should be investing in keeping the Ability to Detect Deception high. The result of this oversight is that very early in the cycle the level of detection ability starts to fall. In this run it starts to fall after only about 25 years, which is 1/8 of the cycle's length. It continues to fall, though the rate of fall slows down as it approaches its normal level of 20%.

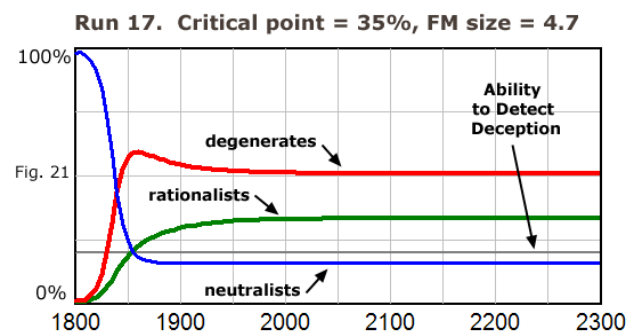
In the graph the good times begin when supporter type crossover occurs after about 35 years. After this the good guys are dominant. This lasts for about half

the cycle's length, and then crossover occurs again as the bad guys become dominant. As the percentage of degenerates continues to increase, it eventually triggers another critical point reaction and the cycle starts all over again.

Notice that after 1900 the percentage of neutralists stays within a range of 17% to 29%. This corresponds to the roughly 10% to 30% of the population who are the so called "swing voters." These voters are not strongly committed to either side. If the percentage of rationalists is close to the percentage of degenerates in a political system, as it so often is, then it is the neutralists who determine election outcomes. This fact has not escaped the attention of election strategists.

Run 17 – In the first draft of this paper I completely missed the fact there is a very successful strategy the bad guys can employ to totally overcome what the good guys did in run 16. It was only due to correcting a modeling error, which took two days, that I noticed that the bad guys have an ace up their sleeve.

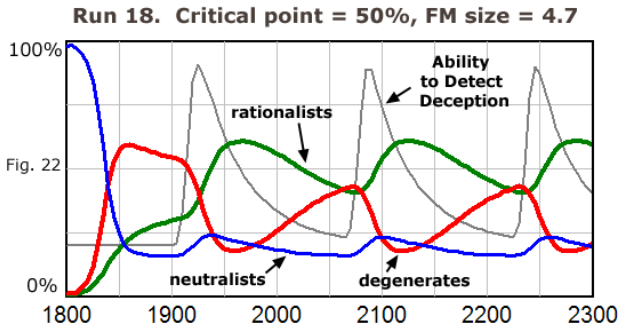
Once the cyclic behavior of run 16 begins, the bad guys are dominant a little less than half the time. Thus they are losing. But as the graph below shows, they can win by "losing" even more! This is done by increasing false meme size from 2.4 to 4.7 so as to get caught red handed even more. This causes the pre 1900 portion of the run to level out at 40% instead of the 20% percent rationalists that we saw in run 15. The amazing result is the critical point of 35% percent rationalists is never triggered, the cyclic behavior never happens, and the bad guys, instead of being dominant less than half the time as in run 16, now stay at 60% dominance! How's that for craftiness?



In other words, at a 35% critical point corrupt politicians can win big by telling whoppers they know are going to be detected and cause them to lose more supporters. This corresponds to the flagrant, braggadocio style of lie spinning and cash for favors we sometimes

see corrupt politicians or political parties engaging in. There seems to be no logical reason they would try to get caught. But from the viewpoint of the model, there is a perfectly sane reason for such insane behavior: it is the winning strategy. *Figuring out why baffling social behaviors like this occur is impossible without building models like this one.*

Run 18 – It looks like our friends, the virtuous politicians, have no choice but to try a higher critical point. Let's hold false meme size at 4.7 and raise the critical point to 50%.



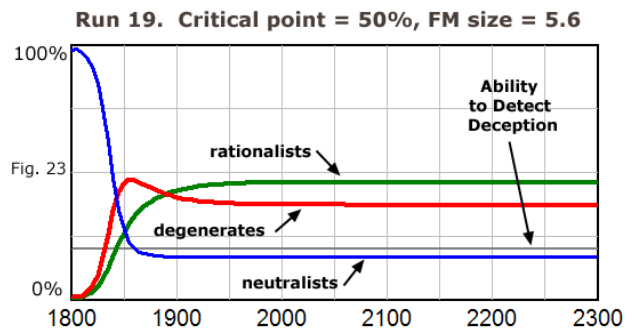
Once again we have cyclic behavior, though it is a little less so than in run 16. This time the bad guys are dominant only about 10% of the time.

This run begs the intuitive question, if Ability to Detect Deception is 50%, then why aren't the rationalists and degenerates each dominant about 50% of the time?

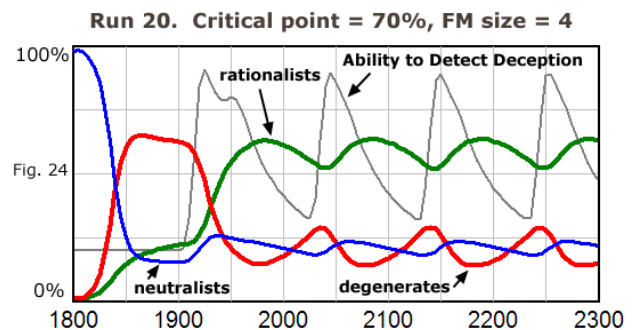
The answer is they would be, if repulsion to corruption was 0% instead of 20%. But 0% is unrealistic, because some people *do* take effective action when they detect corruption, so we have used the value of 20%.

We must not forget for a moment the cleverness of those who believe the end justifies the means. Is there a winning strategy the bad guys can use to counter a critical point of 50%?

Run 19 – Yes there is. Telling even bigger whoppers works like a charm once again. A false meme size of 5.6 allows the bad guys to do much better than being dominant 10% of the time, as in run 18. The results show they don't do quite as well as run 18, because now they are in the minority. But they have achieved a dominance of 45%, which is definitely enough to achieve many of their goals, not to mention the sizable impact such a large minority would have on political decision making.



Run 20 –The rationalists need to do much better. Let's get serious and increase the critical point to 70%. Surely this will do the job. At least I hope it does, because raising Ability to Detect Deception that high is not going to be easy.



The results of this experiment are much better, as expected. For the first time the rationalists are safely in control of the political system all the time, by a very comfortable margin. There is still a little cyclic behavior, but now the forces of reason are never seriously challenged. The rationalists average about 60% of the population and the degenerates average about 20%.

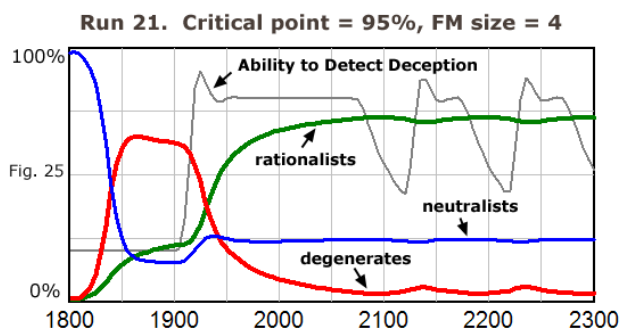
Once again, is there a strategy the bad guys can use to do better? No. At least not the way this model is constructed. A false meme size of 6.7 does avoid triggering the critical point reaction, but the bad guys average only the same percent dominance. That strategy does not give a better outcome. In this run their best strategy is to maximize their cyclic dominance and use the chaos that causes to try for a lucky victory, which requires adapting to an optimal false meme size of about 4. Thus an important conclusion we can draw from this model is that a high level of Ability to Detect Deception is required to successfully counter the extraordinary power of the race to the bottom.

But we're not done yet. Looking at the graph closely, this run is still not good enough because even a 20% minority, with occasional swings to over 25%, can

still upset the applectart. In modern democracies, every sizable minority still has a voice that must be listened to and frequently accommodated. Thus if a society was trying to deal with a problem so large and difficult that it required all of that society's or a planet's attention to solve it, a 20% minority would prevent that.

So how high does the critical point have to go to solve the problem? That is, how strong does a society's organizational memory have to be for it to always remember how to prevent excess corruption? Let's continue experimenting to find out, by raising the critical point again, this time to 95%. The optimal false meme size of 4 remains the same.

Run 21 – The results below show that the cyclic behavior is now almost completely gone. But some still exists and there are still a few degenerates to be reckoned with. Is a critical point of 95% good enough to solve problems as intractable as the global environmental sustainability problem?



I think not, for several reasons. One is that as long as some cyclic spikes exist in a social system, it is too easy for those signals to obscure other signals and thus add to the complexity of any problems a society may be trying to solve. Ability to Detect Deception spikes are not just another signal—they lay at the very heart of human systems, because they are attempts to adjust the perceptual acuity of self-governance. That acuity needs to be at least 20/20 to be able to see the true facts of the many complex, difficult problems governments are responsible for solving. Thus spike signals due to rising degeneration must be responded to in a serious manner, because they may indicate problems of great importance. In addition to the signal confusion problem, spikes in Ability to Detect Deception investment siphon investment away from other endeavors.

There is, however, an even greater reason that a corruption critical point of 95% is not good enough. I

believe you can see for yourself what that reason is, from this article that appeared just yesterday as I was writing this. Only the first half of the article is quoted. The rest adds very little to the article's basic argument. (Italics added)

On Climate Change, a Change of Thinking, by Andrew C. Revkin, The New York Times, December 4, 2005.

In December 1997, representatives of most of the world's nations met in Kyoto, Japan, to negotiate a binding agreement to cut emissions of greenhouse gases.

They succeeded. The Kyoto Protocol was ultimately ratified by 156 countries. It was the first agreement of its kind. But it may also prove to be the last.

Today, in the middle of new global warming talks in Montreal, there is a sense that the whole idea of global agreements to cut greenhouse gases won't work. A major reason the optimism over Kyoto has eroded so rapidly is that its major requirement - that 38 participating industrialized countries cut their greenhouse emissions below 1990 levels by the year 2012 - was seen as just a first step toward increasingly aggressive cuts.

But in the years after the protocol was announced, developing countries, including the fast-growing giants China and India, have held firm on their insistence that they would accept no emissions cuts, even though they are likely to be the world's dominant source of greenhouse gases in coming years. Their refusal helped fuel strong opposition to the treaty in the United States Senate and its eventual rejection by President Bush.

But *the current stalemate* is not just because of the inadequacies of the protocol. It is also a response to the world's ballooning energy appetite, which, largely because of economic growth in China, has exceeded almost everyone's expectations. And there are still no viable alternatives to fossil fuels, the main source of greenhouse gases.

Then, too, there is a growing recognition of the economic costs incurred by signing on to the Kyoto Protocol. As Prime Minister Tony Blair of Britain, a proponent of emissions tar-

gets, said in a statement on Nov. 1: *'The blunt truth about the politics of climate change is that no country will want to sacrifice its economy in order to meet this challenge.'*”

What we can learn from this article about climate change applies to all sustainability problems.

The message I glean from this article is that change resistance has grown so high it's no longer just difficult to solve the climate change problem—it may now be impossible to solve in time. This is because, as shown in Tony Blair's statement, most of the world is trapped in an **Economic Race to the Bottom among Nations** and doesn't know how to get out. But guess what life form benefits most from that particular downward spiral and therefore has caused it to happen? And guess what high leverage point must be pushed extraordinarily well to stop that downward spiral in its tracks?

The climate change problem and other big problems are now so close to the threshold of insolvability (or past it, we really don't know) that society no longer has the luxury of tolerating *any* corruption, because any corruption hinders solving the problem and could tip it over the threshold.

Considering just the climate change problem, one solution alternative is to wait until the first wake up call environmental catastrophes start to occur, and then use the belated global realization that humanity *must* solve the problem to move forward to a solution. But if we wait that long, Humpty Dumpty will have already fallen off the wall, and it will not be possible to put all of the pieces back together again.

The case can even be made that as percent degenerates approaches zero, a multiplier effect is at work. These last few percent are the desperate, hard core degenerates, which includes the smartest of the lot. As percent degenerates goes low, every special interest degenerate ties up two or more for-the-good-of-all rationalists, because (under present conditions) that's how many people it takes to handle damage control and counter the insidious, endlessly disruptive stream of falsehood and favoritism.

Therefore a rule of zero tolerance to political corruption must be adopted, so that *Homo sapiens* is not distracted while it attempts to save itself from ecocide. Anything less is just asking for trouble when it comes to figuring out how to get the US, China, India, and the entire world on board a rapid and radical solution to the climate change problem, as well as to other global environmental problems such as topsoil loss, deforestation, and groundwater depletion.

Let's take a look at what would happen if we tried to do that in the final simulation run, which uses a critical point of 100%.

Why the International Stalemate Exists

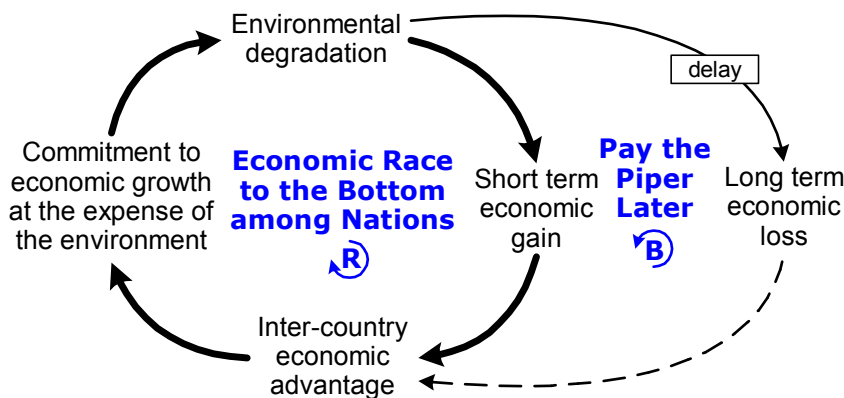
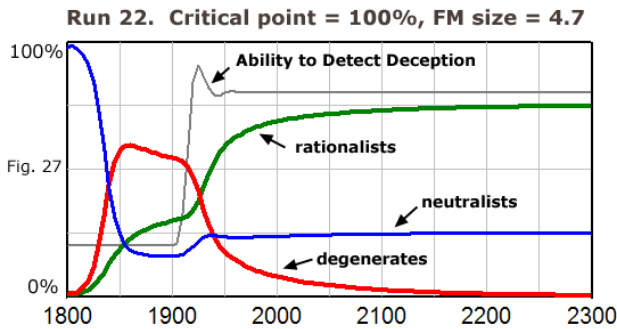


Figure 26. What Tony Blair was really saying is no country can afford to “sacrifice its economy” to get out of the above race to the bottom. This is because the New Dominant Life Form has structured the international commerce game so that nations see the main loop before the side loop. The way out is to raise ability to detect deception at the level of nations, so that they can break free of the illusion that they are trapped in the main loop, and can see the truth: that the **Pay the Piper Later** side loop is the more important loop to their citizens.

Run 22 – As expected, zero tolerance to corruption completely ends the cyclic behavior of the dueling loops. Once the rationalists rise to dominance they stay there. Degenerates do not just drop to a low level—they are reduced to 0%. Their best strategy is to hold out as long as possible, by using a false meme size of 4.7. After about 50 years, society’s Ability to Detect Deception holds steady at 80%. A successful transition to solving the solution adoption resistance part of the problem has occurred.



But this transition takes a long time. It takes about 25 years for rationalists to begin to outnumber degenerates, and 40 years for percent rationalists to rise to 69% (barely over a 2 to 1 majority), which was mentioned in run 13 as probably the bare minimum it will take to make a serious start on solving the problem, though it is still too low to be enough. As we argued in run 21, it will take somewhere near 100% to be enough.

Because the model is not calibrated (the numbers used in it are estimated, not measured), it cannot make accurate predictions. Nevertheless, it does look as if solving the change resistance part of the problem will take a long time. Will it take too long? That’s one of the great questions facing problem solvers and civilization.

* * *

This completes presentation of the dueling loops simulation model. This model is a simplified version of a larger one explaining more of the problem. The model presented here contains 4 stocks and 43 variables. The larger one has 11 stocks and 123 variables. This allows the larger model to more completely show how the New Dominant Life Form is exploiting the race to the bottom by the use of a subsystem that pits corporate proxies against humanists in a life or death battle for niche dominance. The larger model also goes into more detail on the high leverage points and even includes a third one: *quality of political decision making*. It is this third high leverage point that must be pushed if humanity is

to correctly couple the human system to the environment system, in such a manner that the problem is solved as fast as possible and never occurs again. If you are interested in examining the simulation models presented here, the larger model, or the manuscript in progress this paper is a partial summary of, please see Thwink.org.

If progressives can successfully overcome change resistance, they have solved subproblem A. They can then move on the solving subproblem B. Once the race to the top is dominant and there’s little change resistance, it will be child’s play for The People to walk up to *Corporatis profitis* and change his goal to one that aligns with that of *Homo sapiens*. After that *Corporatis publicus*, the New Trusted Super Servant, will work as hard to solve the sustainability problem as he’s now working to not solve it.

Won’t that be a wonderful day!

The high leverage point for resolving the root cause of subproblem B is thus correctness of goals for artificial life forms. Everything else is a low leverage point, like campaign finance reform, better regulations, and revoking corporate personhood. None of those actually change the goal of *Corporatis profitis*, so they tend to have little effect.

To summarize, the first push resolves subproblem A: How to overcome change resistance. Once that problem’s solved, the second push becomes possible and easy. The second push resolves subproblem B: How to achieve social proper coupling. Accordingly, the rest of this paper focuses on the first push.

Six Sample Solutions

It’s one thing to point out *where* to push to solve a complex system problem and quite another to say *how* to push. In addition, the high leverage points covered in this paper are unconventional. It may not be obvious how to push on them to begin to implementing the concepts in this paper. In addition, a little fresh thinking is needed. For these reasons here are six sample solution elements to illustrate how the high leverage point of general ability to detect political deception could be adequately pushed on. The first is the foundation for all the rest. It is:

Solution Element 1 – Freedom from Falsehood

Hindsight sharpens the vision. Most difficult social problems have, in retrospect, what appears to be a surprisingly simple solution. Looking back at history, it almost seems the bigger the problem the simpler the solution. For example, the Magna Carta of 1215 introduced the idea that a ruler's subjects have rights that must be respected by law. The invention of democracy gave a population the right to choose its own leaders, who must respect the population's lawful rights. The ending of serfdom and slavery gave serfs and slaves the right to freedom from control by their former masters. Each of these solutions solved an age old, seemingly intractable problem with a solution so simple that we can now describe it in a single sentence.¹²

Civilization remains saddled with a problem every bit as debilitating and exploitive as any problem the solutions above solved. Ever since politics began, corruption has been the norm. Corruption is so rampant that a “good” politician is not the one Diogenes could hold a lamp up to and say, “This is an honest man.” Instead, a good politician is one who is the least corrupt. That we are forced to choose from the lesser of the evils is pathetic and perverse.

But this need not be so. Diogenes would find an honest politician every time he held up his lamp if people had the right to Freedom from Falsehood.

Freedom from Falsehood gives people the right to freedom from falsehood from sources they must be able to trust. This includes all “servants” of the people, such as politicians, public employees, and corporations. A **servant** is an agent created or employed by *Homo sapiens* to do something useful for humanity. All servants must remain subservient to *Homo sapiens* and keep the interests of humans above their own.

What is not prohibited by law is permitted by implication. Therefore if people do not have the legal right to freedom from falsehood, then by implication it's okay for those in positions of power to manipulate citizens by the use of lies, fallacies, the sin of omission, and all the forms of deception, propaganda, and thought control available.

Corruption relies on the use of falsehood to hide or rationalize favoritism. Eliminate falsehood and you have eliminated favoritism. This is because once falsehood is banished, politicians will be forced to compete for supporters on the basis of the objective truth. The

truth includes the long term optimization of the general welfare of all members of *Homo sapiens*. Favoritism conflicts with this goal because it gives someone more than his or her fair share, and hence someone else less. This promotes the welfare of an elite few, rather than that of the many, so it is not the optimal allocation of a society's resources.

If “we the people” do not have freedom from falsehood, then falsehood in all its Machiavellian and Orwellian forms will continue to appear again and again, because it is the surest way to *rise to power, increase power, and stay in power.*

Public interest activists are intuitively coming to the conclusion that Freedom from Falsehood is essential. As one example, in a 2007 article Julian Burnside, a prominent Australian barrister, advocated almost exactly that. Here's the beginning of the article: (Italics added)¹³

The Future Summit, being held in Melbourne this week, is a hotbed of ideas, solutions and attempts to imagine a better world.

Global warming, reliance on fossil fuels, the growing gap between rich and poor, all have been debated by academics, captains of industry, religious, community and political leaders.

But one solution — put forward yesterday by the top silk Julian Burnside, QC — met with more acclaim than any other, and received rapturous applause.

“If we really want to make things better, I suggest we introduce a law that makes it an offence for politicians to lie,” he told the conference.

Julian Burnside has intuitively sensed what the Dueling Loops model analytically shows: that political deception is so damaging to democracy it should be illegal. The way to make that happen is to recognize that as long as the democratic model lacks the fundamental right to Freedom from Falsehood, it is an incomplete and too easily compromised model.

However *the right* to Freedom from Falsehood will do little good unless falsehood can be detected. That's why we need:

Solution Element 2 – The Truth Test Solution Element

The Truth Test is a personal skill, much like other skills such as frugality, language, and mathematics. It is designed to handle nearly all arguments the average person receives in seconds or minutes. The rest take longer or an expert.

The objective of the Truth Test is to reduce deception success at the individual level to a very low, acceptable amount. It consists of four simple questions:

1. What is the argument?
2. Are any common fallacies present?
3. Are the premises true, complete, and relevant?
4. Does each conclusion follow from its premises?

The Truth Test allows people to test the soundness of the political arguments they encounter, such as in speeches, advertisements, and articles. Once citizens can no longer be fooled by unsound arguments, they will elect better leaders and support better positions.

We certainly don't expect the general population to master the Truth Test any time soon. But we do expect those performing truth ratings (described below) to do so, as well as those who are trying for high Truth Ratings.

As the general population sees the published Truth Ratings and occasionally reads the details behind a rating they are interested in, they will get a long, gradual exposure to how the Truth Test works. This and more direct educational efforts will gradually lead to **truth literacy**, which is the ability to tell truth from falsehood.

Universal truth literacy is just as vital to society as reading literacy, because if people cannot "read" the truth they are blind to what the truth really is.

The average person is never taught anything like the Truth Test at home, in school, or in the workplace. *Thus their immunity to deception is largely a matter of cultural chance.* For truth literacy to become a cultural norm and achieve its full potential, it must become as essential to a person's education as reading and writing.

History has shown again and again that those who are not truth literate become the unknowing slaves of the masters of falsehood, as the cyclic nature of the race to the bottom versus the race to the top plays itself out over and over. *The appalling effects of this cycle, dur-*

ing which corrupt politicians and special interests are dominant most of the time, is historic proof that truth literacy is every bit as important to society as reading literacy. This applies even more so today because if the truth about environmental sustainability is not seen and practiced in time, "The most probable result will be a sudden and uncontrollable decline in both population and industrial capacity."¹⁴

How the Truth Test Works Dynamically

Implemented properly, the Truth Test is true structural change. It works by introducing the reinforcing feedback loop shown below.

Once a person completes initial study of the Truth Test the cycle of Lifting the Blanket of Deception can begin. Use of the Truth Test increases the amount of falsehood spotted on everyday arguments. This increases quality of decisions. Once a person perceives this has happened, an increase in knowing you benefited from better decisions occurs. This causes that person to use the Truth Test even more, and the main loop starts over.

Let's examine the side loop. Knowing you benefited from better decisions will increase study of the Truth Test. This occurs when people realize that if they study more, they can successfully handle a broader range of arguments. Or there may be a particular type of argument they would like to handle better. After the *delay* of learning, there will be a tendency to use the test more, because now it can offer even greater benefits.

The Dynamic Structure of the Truth Test

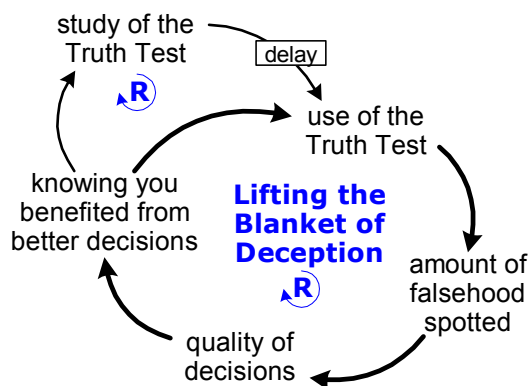


Figure 25. The Truth Test lifts the blanket of deception higher and higher by the more you use the Truth Test, the more you benefit, and so the more you want to use it.

As just one example of how the Truth Test might affect society, imagine what a talk show might be like if the host was trained in the Truth Test and was familiar with Truth Ratings. After a particularly fallacious string of comments from a guest, such as one from a biased think tank, the host might reply with “By the way, while you and I have been talking, my assistant was jotting down how many fallacies and truths you uttered, and what kind. Did you realize that since you began ten minutes ago, out of a total of 24 propositions, 6 were *ad hominem* attacks, 4 were based on biased samples, and 8 were false enemies or pushing the fear hot button without any justification? This leaves only 6 reasonably true propositions. In other words, in my opinion your sequacious punditry is false 75% of the time. THAT is the real news here. And..., let me see, my assistant reminds me that it was about the same last time you were on. What do you say to that?”

The silence that followed might be the sound of the beginning of the race to the top.

The Truth Test provides a way for citizens of all kinds, including talk show hosts, to spot the truth. But it is a bit of a stretch to expect that truth literacy will sweep the world soon. The Truth Test also provides no direct incentive whatsoever for corrupt politicians to start telling the truth. For that we need:

Solution Element 3 – Politician Truth Ratings

Politician Truth Ratings would provide an accurate measure of the truth of what key politicians are saying and writing. If this objective can be achieved, then construction of a new reinforcing loop causing virtue to triumph over corruption in the political arena becomes possible. *Once this new loop is established, it becomes increasingly difficult for political deception to succeed.*

Truth ratings work by rating the truth of important statements made by important politicians. They are similar to other types of ratings that have been around for a long time.

Credit ratings quantify the creditworthiness of a person, organization, or government. Product ratings, such as those in Consumer Reports magazine, quantify the worthiness of products. Both are widely used. Truth ratings would quantify the truthfulness of a politician's important arguments in speeches, articles, and so on.

A **truth rating** is the probability an argument is true. For example a few days after a presidential debate, its truth ratings would come out. They might say that candidate A averaged 45% true, while candidate B averaged 70%. Guess which candidate would probably win the debate in the public's mind?

If the organization doing the rating was credible and the public trusted the truth ratings, a race to the top would begin. Politicians would compete to see who could be the most truthful in the fullest sense of the word, and therefore the most helpful. Campaigns would become based on reason and truth rather than rhetoric. Due to a trickle down effect from the successful use of Truth Ratings, a race to the top would also begin in many other areas of society where less than the truth has long prevailed, such as advertising, the appeals of special interest groups, editorials, and to a growing degree, the news.

No one person can become an expert on the many critical issues of our day and spend hundreds and sometimes thousands of hours analyzing each important political argument they encounter. Therefore the public has no choice but something like Truth Ratings.

Instead of individuals continuing the impossible task of deciding the truth of each important argument, rating organizations would do that. Certified rating organizations would *quantify* the truthfulness of important arguments by applying the Truth Test and providing a written rationale for each rating, so that the public could make its own final judgment. As they read more about the logic behind ratings of interest, the public would gradually become educated in how to apply the Truth Test.

Efforts to provide the beginnings of Truth Ratings are springing up spontaneously, like FactCheck.org and PolitiFact.com. In 2006 Eric Schmidt, chairman and CEO of Google predicted:

...that, within five years, ‘truth predictor’ software would ‘hold politicians to account.’ Voters would be able to check the probability that apparently factual statements by politicians were actually correct, using programs that automatically compared claims with historic data. ¹⁵

Politicians are not the only social agent needing Truth Ratings. Another is the news media, where fiction is too often presented as fact. That it was “in the news” makes whatever is presented all the more believable.

That the news must be allowed to flow freely is why the inventors of modern democracy, both in France and America, made a special point of protecting the freedom of the press. For example, France felt that: (Italics added)

The free communication of thoughts and opinions is one of the most precious human rights: hence every citizen may speak, write, print with freedom, but shall be responsible for such abuses of this freedom as shall be determined by Law.

Freedom of speech, thus defined by Article 11 [above] of the 1789 Declaration of the Rights of Man and of the Citizen, has achieved universal scope worldwide. The article inspired the Universal Declaration of Human Rights adopted by the United Nations on 10 December 1948 (Article 19) and the European Convention on Human Rights adopted on 4 November 1950 (Article 10).¹⁶

Information, including that which is untrue, must be allowed to flow unfettered. Thus we are not saying that falsehood in the news media should be made illegal—only that **Media Truth Ratings** should be available to concerned citizens, so they know which sources they can trust.

This need not require evaluation of 100% of the news, which would be prohibitively expensive. A small random sample can accurately measure the level of truth within a small range, like plus or minus 3%, just as polls can measure how a population feels about an issue.

Once a workable approach to Media Truth Ratings is introduced, a race to the top in the news industry will begin.

Let's return to the main strategy for this solution element: Politician Truth Ratings. The truth of politician's arguments is not the only behavior that needs to be rated in order to establish the correct feedback loops. The overall corruption of politicians must also be rated. This is done with:

Solution Element 4 – Politician Corruption Ratings

A **corruption rating** is an overall measure of how corrupt a politician is. Corruption includes falsehood, favoritism, coercion, abuse, criminal activity, the giving or accepting of bribes, knowledge that corruption is going on, and so on.

A major component of a politician's Corruption Ratings is past Truth Ratings. This would account for 40% or so of the rating. As a politician's Truth Ratings go up, his or her Corruption Rating would go down.

Corruption Ratings would need to be done regularly, perhaps every two years. The running average of the last ten years or so would be a politician's rating. Corruption Ratings would become as routine and cost about as much as a high level security check.

Politician Ratings and the analogy of credit ratings

Politician Truth Ratings and Corruption Ratings are examples of **Politician Ratings**. They would be calculated in a similar manner by certified independent organizations. Both could cause the race to the top to become dominant. Because it measures total corruption, Corruption Ratings would play the stronger role. However Truth Ratings are easier and cheaper to perform, and thus would probably make a difference first.

Politician Ratings need not affect all voters to make the critical difference—only the swing voters, who are normally just 10% to 30%. Fortunately it is this group who is most likely to be receptive to a tangible, sound reason to choose one politician over another.

Politician Ratings are analogous to credit ratings. To demonstrate how important credit ratings have become in just one area, the corporate bond market, here is an excerpt from testimony presented to the US Senate on March 20, 2002, to the Committee on Governmental Affairs, chaired by Senator Joe Lieberman: (Italics added)¹⁷

Simply put, a credit rating is an assessment of a company's credit worthiness or its likelihood of repaying its debt.

John Moody, the founder of what is now Moody's Investors Service, is recognized for devising credit ratings in 1908 for public debt issues, mostly railroad bond issues. Moody's credit ratings, first published in 1909, met a need for *accurate, impartial, and independent information*.

Now, almost a century later, an ‘investment grade’ credit rating has become an absolute necessity for any company that wants to tap the resources of the capital markets. The credit raters hold the key to capital and liquidity, the lifeblood of corporate America and of our capitalist economy. The rating affects a company’s ability to borrow money; it affects whether a pension fund or a money market fund can invest in a company’s bonds; and it affects stock price. *The difference between a good rating and a poor rating can be the difference between success and failure, prosperity and bad fortune.*

In a similar manner, the difference between a good politician rating and a poor one would be the difference between success and failure for politicians, and prosperity and bad fortune for the public.

But even more interesting is the testimony went on to say:

The government—through hundreds of laws and regulations—*requires corporate bonds to be rated* if they’re to be considered appropriate investments for many institutional investors.

So too would the government require politicians to be rated if they were to be considered appropriate choices for many citizens. Credit ratings greatly lower the risk of financial loss. Politician Ratings would greatly lower the risk of corruption. If they proved as successful as credit ratings, they would lower it by somewhere around 99%, which would make sizeable cases of corruption about as frequent as Halley’s Comet.

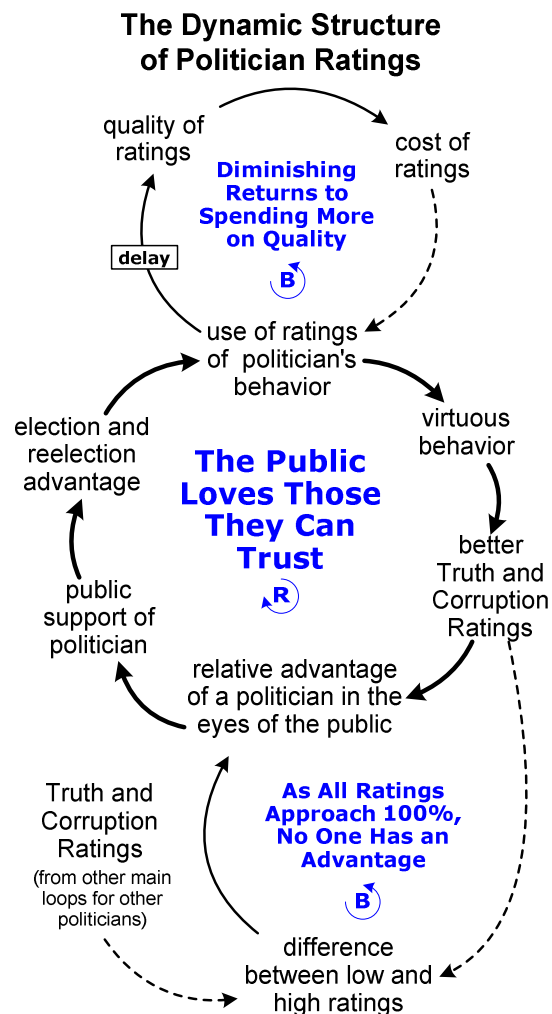
Presently Politician Ratings are not required but corporate bond ratings are. This is one more example of how, over the centuries, the New Dominant Life Form has silently and relentlessly defined the rules of the game to be in its favor.

How Politician Ratings work dynamically

Like all deep structural change, politician ratings would cause important new feedback loops to become dominant. A diagram of these is shown on the next page. The main loop is **The Public Loves Those They Can Trust**. *This is probably the most important feedback loop in the entire solution, because if it works, the whole solution will probably work.*

Let’s start at the top of the main loop, on the use of ratings of politician’s behavior node. Suppose that node is activated because ratings have been implemented and are being regularly published for a few politicians. The ratings would at first be embarrassingly bad.

This would cause a rated politician to want to improve the quality of his or her behavior in order to get better ratings. This causes an increase in virtuous behavior, which would lead to better Truth and Corruption Ratings. This would increase the relative advantage of a politician in the eyes of the public, because the public can now reliably tell whose arguments are more truthful and whose overall behavior is less corrupt, and thus who is a more trustworthy representative and more likely to get better results. This would increase public support of the politician, which would, in turn,



The three main loops of the politician ratings solution elements. This is deep, long overdue structural change to the human system. Like so many other fundamental feedback loop changes, such as voting and universal education, this change will automatically drive the system towards providing more for the greatest good of all.

increase their election and reelection advantage. The politician would know this happened. They would also know this benefited the people, so he or she would promote the use of ratings of politician's behavior so as to gain an even larger advantage and more benefits for the people. The loop then starts over.

Because politicians would now be competing to get better and better in the quality of their behavior, a race to the top among politicians would begin. This would cause the race to the bottom to collapse, because its supporters would switch to the race to the top.

The effect of ratings on the behavior of *Homo politico* would be astounding. That sub species would be singing “The public loves those they can trust, those they can trust,” and other little ditties all the way to election day, and after that, to the next election day. *Homo citizenicos* everywhere would applaud, and join the chorus.

It is essential to understand the balancing loops that accompany the main loop. If problem solvers don't comprehend how the balancing loops work, they may be unable to design the most effective solution aspects, or they may have difficulty figuring out what went wrong if things go awry in implementation. *They may fail to understand what is limiting how far the race to the top can go, so they may be unable to make it go far enough.*

Returning to our discussion, what if there is no way for truth and corruption raters to get the facts they need, because they are hidden behind a wall of secrecy? This is why we need:

Solution Element 5 – No Competitive Servant Secrets

The objective of No Competitive Servant Secrets is to prevent servants, particularly politicians and corporations, from using secrecy to their own advantage.

This is accomplished by complete openness in all that a servant does. *No servant may keep competitive secrets of any type, either from their masters or other servants.* After all, if a servant is an entity created or employed by humanity to provide people with goods and services, why should a servant need to keep any form of competitive advantage secret, except to gain advantage over its master or other servants?

Competitive secrets are a form of non-sharing and hence a form of non-cooperation. When combined with the mutually exclusive goals that servants have of each

maximizing something, such as profits, this leads to a *destructive competition* mindset. But what we want is *constructive competition*, where agents compete in a friendly, let's help each other manner. It appears that removing competitive secrets takes independent agents one step closer to cooperation. Therefore full and complete cooperation between servants and their masters, as well as between servants, requires no competitive secrets.

No Competitive Servant Secrets covers many areas. Some could be tackled soon. Others would take time. A few are counterintuitive and controversial, though less so as the analysis and solution strategy is more fully absorbed. Ultimately all would be dealt with, because a servant that keeps competitive secrets from its master has time and time again proven to be a danger to its master. The transition would probably take several generations.

No Servant Competitive Secrets supports the Corporation 2.0 solution element (presented later). This reengineers the modern corporation to where its interests no longer conflict with those of *Homo sapiens*.

No Competitive Servant Secrets is already spontaneously appearing in the form of freedom of information acts, sunshine laws, and so forth. But these are a haphazard collection of ways to reduce servant secrecy. Competitive secrecy needs to be reduced to zero in a comprehensive manner, which No Competitive Servant Secrets finally does.

One type of servant secret is government secrecy. A standard objection to eliminating government secrecy is the need for “national security.” However this objection is really designed to benefit one country (and its military industrial complex) at the expense of others. Military secrecy is a form of competitive advantage. If countries truly want to cooperate instead of compete, then there is no need for military secrecy.

The standard rebuttal to this argument is that if I can't keep secrets and my competitor can, then they will gain an advantage over me. Rubbish. The same logic can be used to argue if I can't steal and my competitor can, they will gain an advantage. We have all seen that it is to society's benefit as a whole to outlaw theft. The same is true for secrecy. A country insisting on military secrecy is a country refusing to cooperate for the common good of all.

Because national security secrets increase the destructive competition mindset, they increase interna-

tional conflict and/or preparation for it, which in turn increases the sales and profits of military goods and services. This benefits the military industrial complex, and hence the New Dominant Life Form. But it does not benefit Homo sapiens. In fact, international conflict or the diversion of national output to military purchases (the guns or butter choice) does just the opposite.

Servants include corporations. No Competitive Servant Secrets would mean the end of all competitive corporate secrecy. No longer could corporations ply politicians with secret favors and donations, or secretly influence political decision making. No longer could they secretly receive political favors. Because all this would now be out in the open, it would stop, because corporations are loathe to draw criticism from the people or the press.

Corporate secrecy includes trade secrets, which would no longer be allowed. The standard defense of trade secrets is they are necessary to provide an incentive for invention. Without trade secrets, a corporation could not make enough profit to pay for innovation.

This argument is fallacious. If corporations are servants and are truly working for the good of their masters, then the incentive to innovate should come from the desire to serve their masters the best they can, rather than to serve themselves as best they can. Trade secrets are really a form of selfishness.

Trade secrets are not necessary for scientists to innovate. Nor were they necessary for the long history of innovations that occurred up to modern times.

The real reason corporations want trade secrets is they are a form of competitive advantage. This increases profits. But why should humans allow their servants to have any form of competitive advantage over other agents, which includes humans? There is no good rebuttal to that or the points raised above. Therefore trade secrets are not necessary and, because they are a form of secrecy that can be abused, they would not be permitted.

If any type of competitive advantage servant secrecy is allowed, then servants can use that as an excuse to hide all sorts of corruption from their masters. Thus No Competitive Servant Secrets means exactly that: No Competitive Servant Secrets of any kind.

Certain forms of non-competitive advantage servant secrecy would be allowed, such as passwords. This is because passwords serve as identification and owner-

ship identifiers, rather than as a form of competitive advantage. Other allowed types involve personal information, law enforcement, jury deliberations, and so on.

A special note: Several careful readers have suggested that this solution element should be removed because it makes it too easy for the opposition to find a spot to attack successfully. But without No Competitive Servant Secrets, there is no way to fully and accurately implement Truth and Corruption Ratings. If servant secrets continue to be allowed, so much of the data needed for ratings will remain hidden behind a wall of secrecy that ratings will probably fail. Thus No Competitive Servant Secrets is a required prerequisite for creating the key new feedback loops necessary to eliminate the current dominance of the race to the bottom.

* * *

Let's assume that we have implemented the first five solution elements: Freedom from Falsehood, the Truth Test, Truth Ratings, Corruption Ratings, and No Competitive Servant Secrets. Would this be enough to raise ability to detect political deception to a high enough level to solve the sustainability problem?

Not quite, because it lacks a measure of problem solving success. Lack of this has allowed many politicians (really corporate proxies) to more easily deceive the public with false priorities, and has dissipated problem solving effort. The measure would be:

Solution Element 6 – The Sustainability Index

The top problem facing humanity today is the global environmental sustainability problem, because due to large social and ecological delays, it must be resolved proactively *now* to avoid catastrophe later. To trick the public and politicians into not solving this problem now, there is a tremendous fear, uncertainty, and doubt (FUD) campaign underway. This campaign has been so successful that millions of citizens, corporate managers, and politicians have been hoodwinked into thinking that the problem does not even exist, is not that bad, is too expensive to solve, lies too far in the future to worry about, or is so full of uncertainty solution is not required. Environmental sustainability has become such a low priority that it is rarely a significant factor in elections or the national agendas. The corporate FUD campaign has worked all too well.

Such fear, uncertainty, and doubt campaigns could be stopped in their tracks if citizens and politicians could look up and see, every day, a number that told them point blank how bad the problem really is and a graph showing where the trend is going. The Sustainability Index would provide exactly that. It would be an accurate, universally understandable measure of how well society is doing on solving the global environmental sustainability problem.

Instead of *fear* about the problem being too expensive to solve, there would now be fear about the cost of *not* solving the problem.

This would really be concern, not fear, because now citizens would be facing a known, measured problem.

Instead of *uncertainty* about the status or magnitude of the problem, there would now be easily understandable numbers measuring how sustainable the planet is.

Finally, instead of *doubt* about the accuracy of data, there would now

be a strong sense of trust that the Sustainability Index was as correct as is humanly possible. And, instead of *doubt* the problem needs solving now, there would be just the opposite: a strong national or global desire to solve the problem as soon as possible.

While no single measure of environmental sustainability is perfect, it is possible for a single number to accurately summarize how sustainable society is on a global basis. This single measure is called the Sustainability Index. It measures how much of the earth's carrying capacity is being used. If the index is over 100%, then it is unsustainable. Currently it is about 150%, as shown on the next page. Note this is a rough approximation.¹⁸

We've chosen the Ecological Footprint for the index, though any suitable index would do. The carrying capacity of the earth is approximated by the 1.0 horizontal line. This was crossed in the 1970s. It is not hard to visualize that if the footprint is extrapolated a few decades ahead, it will grow to such a high level of overshoot that catastrophic collapse is inevitable.

The index would include projected results (not shown). If society is doing nothing or too little to solve the problem, then people can immediately see that the projected Sustainability Index is still not good enough.

The Sustainability Index would be as widely published as stock market indexes. Eventually, once a suitable data collection system was in place, it would be updated just as frequently, in real time. Local, regional, and national indexes would also be published and compared. Together these would serve as a constant reminder of the true state of affairs, a sort of giant thermometer of the environmental health of civilization.

The local index is estimated. The other two are actual data. Using 2007 data the USA is actually using about 2.05 planets to live on. It needs to reduce that to below 1.0 planets as soon as possible, as does the entire world.¹⁹

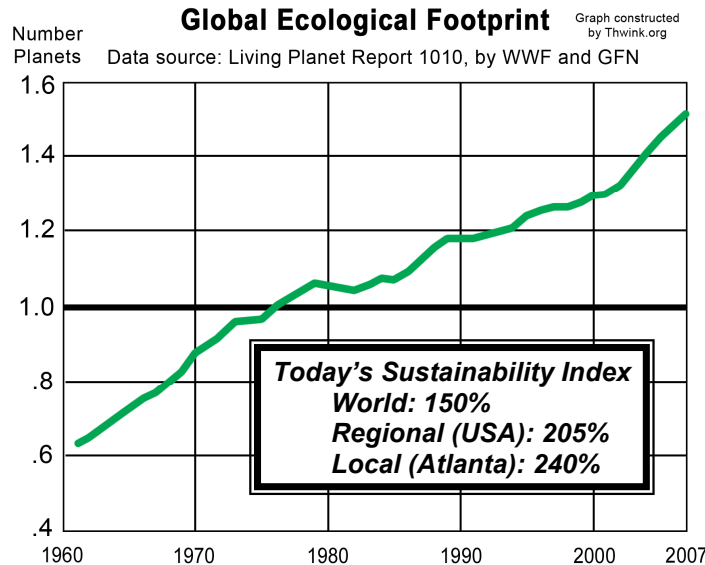
As soon as the environmental sustainability problem moves far along

the road to solution, the Sustainability Index can be expanded to include social and environmental sustainability. Sub indexes can measure the three pillars, while the top index measures them all. *Only if the top index, the Sustainability Index, is well under 100% can we at last relax, because we've solved the biggest problem in the world.* It needs to be well below 100% to allow for a safety buffer.

Note you can also put a Sustainability Index on the label of a product. That's a smaller and easier way to start. Once one product has a Sustainability Index it will sell a little better than competing products. That will, in some cases, cause other products to add a Sustainability Index. Then those products are competing on how high their indexes are, which will cause all the indexes to rise. It's another type of a race to the top.

* * *

This completes the sample solution elements. Perhaps they will give you a few ideas of your own.



Summary and Implications

One way to summarize this paper is that democracy doesn't work if citizens can't tell the difference between manipulative lies and the truth.

Simplifying enormously, most conventional wisdom says all we need to do to solve the sustainability problem is to find the proper practices needed to live sustainably and then aggressively promote those practices until they're adopted. This holds for all three pillars of sustainability: social, environmental, and economic.

This approach has tremendous logical appeal. The inner talk runs about like this: "Solving this or that problem is basically a matter of finding out what's best for the good of all, and then spreading that knowledge. Once people and governments see what's in their own best interests, they will start doing things the right way, because people are rational." In other words once you find the truth and tell people the truth, they will adopt the truth because it's in their own best interests. It's impeccable logic, so much so it's the core of modern activism.

There is, however, a slight drawback to this approach. It doesn't work.

That's because it completely misses the change resistance part of the problem and fails to see the hidden social structure containing the root causes of generations of solution failure. If problem solvers would focus their efforts on why so much change resistance is occurring and where the root causes lie, they might find, as this analysis has, that all they've been doing is engaging in "more of the truth." This is a low leverage point. *Pushing on this point fails because it is no more than a heavy handed, naive attempt to make the race to the top dominant through the application of brute force.* It does not consider that the race to the bottom is inherently stronger and has a more powerful special interest group behind it. Thus conventional approaches have no hope of succeeding unless the laws of physics change.

Fortunately there's at least one way out. It's the high leverage point of *general ability to detect political deception*. Currently this is low. If problem solvers can unite and raise it to a high level the race to the bottom will collapse, leaving the race to the top dominant. Politicians will then respond correctly to the truth about problems *and their root causes* because it will now be in their best interests.

One of the first things they will do is defang *Corporatis profitis* and turn him into *Corporatis publicus* by changing his goal to one that's sustainable and aligns with the goal of *Homo sapiens*. The wheels of commerce, culture, and community will then be turning to the beat of the right drummer.

After that the world's virtuous politicians can work undistracted. They will have the eight million pound gorilla in the room, large corporations, on their side as their closest and strongest ally. At that point it becomes child's play to solve the *complete* sustainability problem and the Sustainability Revolution will begin.

Unlike the Industrial Revolution, the Sustainability Revolution will not be flawed. The Industrial Revolution strengthened only one of the three pillars of sustainability: the economic pillar. Furthermore, the Industrial Revolution did not make the economic pillar sustainable, as numerous large recessions, depressions, and revolutions due to excessive income inequality have demonstrated.

By extreme contrast the Sustainability Revolution will strengthen all three pillars *and* make them sustainable, because the root causes of the problem have been resolved.

Endnotes

¹ Quote from *Limits to Growth: The 30-Year Update*, by Donella Meadows, Dennis Meadows, and Jorgen Randers, 2004. The preface states: "It is a sad fact that *humanity has largely squandered the past 30 years* in futile debates and well-intentioned, but halfhearted, responses to the global ecological challenge. We do not have another 30 years to dither. Much will have to change if the ongoing overshoot is not to be followed by collapse during the twenty-first century."

² Quote from *Let's just say it: The Republicans are the problem*, by Thomas E. Mann and Norman J. Ornstein, Washington Post, April 27, 2010.

³ Quote about Gingrich from *It's Even Worse That It Looks: How the American Constitutional System Collided with the New Politics of Extremism*, by Mann and Ornstein, 2012, page 43.

⁴ Quote from The Union of Concerned Scientists, 2003 Annual Report, www.ucsusa.org/assets/documents/ucs/Annual_Report_2003_1.pdf, October 27, 2005. The report says "We are confident he [Kevin Knobloch, their new President] is the person best able to lead the organization in what is, without question, *the most hostile environment in which we have ever struggled to advance our goals.*"

⁵ The Václav Havel quote is from cestazmeny.net/veracity-in-politics.html. “Havel was famous for his essays, most particularly for his brilliant articulation of ‘Post-Totalitarianism,’ a term used to describe the modern social and political order that enabled people to ‘live within a lie’.” (This sentence is from the Wikipedia entry on Václav Havel.)

⁶ The quote on fear is by George Gerbner, past dean emeritus of the University of Pennsylvania’s Annenberg School for Communications, from an obituary in the Washington Post on January 2, 2006, at www.washingtonpost.com/wp-dyn/content/article/2006/01/02/AR2006010200577.html.

⁷ The Frank Rich book review is from www.nytimes.com/2006/09/22/books/22book.html.

⁸ Why exactly do virtuous politicians feel they cannot tell lies? The goal of virtuous politicians is to optimize the common good for all, which includes those who will follow us. The common good includes *the rule of telling the truth*, because the more you can assume a person is telling the truth, the more effectively you can cooperate. Effective cooperation is the foundation upon which all social contract societies are built. Because virtuous politicians feel compelled to tell the truth, they avoid lying. They are **rationalists**, who base their arguments on the truth about what will benefit the common good the most, as opposed to **degenerates**, who base their arguments on what will benefit special interests the most. Since that will not win a majority of voters, degenerates are forced to use deception to convince enough voters to support them. They have degenerated from the norm of trustworthy, truthful behavior.

Rationalists know that if they start telling lies their society will begin to crumble. Eventually it will degrade to life in mankind’s natural state (before that of a central government based on cooperation) where, as Thomas Hobbes put it, “the life of man” was “solitary, poor, nasty, brutish, and short.”

But degenerates feel no such constraint. Their goal is the uncommon good: the good of special interests. Instead of the rule of telling the truth, corrupt politicians follow *the rule of expediency*: do whatever it takes to maximize the good of the special interests supporting you. *The end justifies the means*. If a situation is best exploited by telling the truth, tell it. If it’s best exploited by a combination of truth and lies, then do that. This makes it impossible to trust corrupt politicians. But that doesn’t matter because if their deception is successful the public has no idea they are being exploited.

⁹ Quote from *Let’s just say it: The Republicans are the problem*, by Thomas E. Mann and Norman J. Ornstein, Washington Post, April 27, 2010.

¹⁰ Lord Acton, 1887, in a letter to Mandell Creighton. en.wikiquote.org/wiki/Lord_Acton. October 27, 2005. The actual quote is “All power tends to corrupt and absolute power corrupts absolutely.”

¹¹ The quote about social contract is from the Wikipedia entry on social contract.

¹² However simple these solutions may appear today, they were actually complex solutions to complex problems. The reason these solutions appear simple today is the components involved are now taken for granted. For example, we may see democracy as very simple—you just let people elect their leaders. But that requires an independent judiciary to enforce the laws required to do that, various checks and balances so that no one elected body or official can abuse their power, and so on. A democracy cannot be defined in less than the length of a constitution. Thus the concept of democracy is simple, but the actual solution is not.

¹³ The article about Julian Burnside is from *The Age*, an Australian newspaper, at: www.theage.com.au/news/national/pollie-graph-idea-to-stamp-out-porkies/2007/05/14/1178995076746.html.

¹⁴ Quote from *The Limits to Growth*, by Donella Meadows and others, 1972. The quote on “The most probable result...” is part of Conclusion One on page 23, which occurs “If the present growth trends...continue unchanged.” They have continued unchanged, so the original prediction still holds.

¹⁵ The article with the quote on “truth predictor software” is from Eaglesham, Jean. 2006. *Politicians yet to realize impact of internet, warns Google chief*. Financial Times, October 4, 2006. See www.ft.com/cms/s/06adcbce-5345-11db-99c5-0000779e2340.html.

¹⁶ The quote on “free communication of thoughts and ideas” is from: www.ambafrance-uk.org/Freedom-of-speech-in-the-French.html.

¹⁷ Source of testimony on corporate bond ratings: hsgac.senate.gov/032002lieberman.htm.

¹⁸ Ecological footprint graph created by Thwink.org from a graph in www.rprogress.org/publications/2007/GPI2006.pdf. An earlier version of the graph is in the third edition of *Limits to Growth*, 2004, which is where I first encountered it.

¹⁹ The World and USA data is from the *Ecological Footprint and Biocapacity, 2007* Excel spreadsheet from www.footprintnetwork.org/en/index.php/GFN/page/ecological_footprint_atlas_2008. This lists footprints per nation and the world in terms of global hectares per capita. The world’s footprint is 2.7 and its total biocapacity is 1.8. Thus its number of planets used ratio is $2.7 / 1.8 = 1.50$. The United States footprint is 8.0 and its total biocapacity is 3.9. Thus its number of planets used ratio is $8.0 / 3.9 = 2.05$.

The World and USA data is from *Ecological Footprint of Nations 2005 Update*, at www.ecologicalfootprint.org/pdf/Footprint%20of%20Nation%202005.pdf on June 9, 2007. For the world, $21.91 / 15.71 = 139\%$. For the USA $108.95 / 20.37 = 535\%$.