Limits to Paradise

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Introduction

For the last half a century, the USA has been the envy of the world. We see imitation as the sincerest form of flattery throughout the globe. That infatuation with America is waning, unfortunately not due to significantly better ideas but simply "we can do it too with our own slight variations".

I'd guess that for every US national election in the last 100 years, at least one politician said "we're at a crossroad that we've never been at before", and that they are right. Here's some signs of our current crossroads: GDP is up, median income is down, "Jobless recovery" is not just a new economic term, it's a new concept. "The Forever War" is a 1974 science fiction novel and a 2014 reality. Congress has a 7% approval rating, or did until ISIS helped it by beheading an American journalist.

But here's the biggest conundrum of all: Science and technology have been zooming ahead in recent decades and yet in many ways (Religious fundamentalism, wars in the Mid-East, and Africa, Corruption pretty much everywhere) we're going backwards. How does this even add up? What are the causes? Can we imagine a better way to organize society? How can we get there?

The New Math

Many things are improving: our understanding of matter and energy: How to make better things cheaper. Our understanding of biology: how to fix broken bodies. Our understanding of human psychology from PTSD to learning are increasingly accurate. So why this foreboding sense of the future where children are worse off than their parents?

A small percentage of us are learning how to game the system. How to extract wealth while not creating any but rather destroying it. For the first time we know of, the American taxpayer is supporting the development and deployment of weapons to destroy the weapons that America built and deployed just a few years ago *in significant quantities*. (In October 2014 the US blows up equipment it gave to the Iraqi government but is now in the hands of ISIS.) With this new strategy, the military industrial complex cannot saturate the world market because it is now paid to blow up the stuff that it makes. But this business model is just one example. Globalism promises economies of scale but delivers unsustainable oil shale, mega drug cartels, student debt, unemployment and Ebola. Suicide in the US kills about 40K people a year with 10 times as many attempts and is on the rise. I wish I could report that the US had the worst suicide rate, but it is only 34th [Wikipedia: suicide]. If improvement minus decline is positive, it is not entirely obvious, even though it should be overwhelming.

Systems

It helps to understand our complex society by segmenting it into systems. There are endless ways to cut this cake, but here we focus on the systems of Government, Justice, and Economy as the three bedrock systems, all "supported" by education, with the roles of individual being both perpetrators and victims, usually simultaneously. We believe the core of our problems are *systemic*. This is not just within one of the above systems but between them. This is in directly opposition to the prevailing view of "a few bad-apple politicians spoil the barrel but we'll vote out next election".

Some examples of systemic diseases are in order:

Divorce
Roughly 50% of marriages in the US end in divorce making it the most common large legal issue that Americans have. Examine how it works: You must get a lawyer. The lawyer convinces you that you have to attack the other party or they will do it first. This ensures a legal war driving up costs which benefit only the lawyers. Lawyer's write the divorce laws full of ambiguity necessitating lawyers to resolve it. State legislatures pass this legislation because they themselves are lawyers. The pretend war is between husband and wife which is amplified by the lawyers to drive up their salaries. The real war is between the lawyers and the citizens where, due to this legal monopoly backed up by the police, the citizens lose.

Drugs
Drugs are made illegal. This benefits the drug cartels as it makes the price they can charge for their product higher. It also benefits law enforcement, giving them an excuse to extract more money from the citizens. The pretend war is between law enforcement and the drug cartels. The real war is between law enforcement and cartels on one side and

citizens on the other. The citizens suffer higher prices for drugs as well as higher taxes for "combatting" them.

Post Office

In 2011, Americans received about 84 billion pieces of junk mail. Here's the process. The Post Office delivers trash to your house. (90 of mail by weight coming to my mailbox is trash) You pay to get rid of it. Congress is lobbied (read paid) by junk mailers, trash haulers and the Post Office to not stop junk mail. The pretend war is between "Freedom of Speech" and "Advertising". The real war is between the trash industrial complex (PO is "the transporter") and the citizens who lose time, money and cleanliness [Times 2012].

Poverty

If we did a thorough analysis of the true costs of poverty, we would come to the conclusion that, in fact, poverty is too expensive to continue maintaining. The apparent cheap labor costs don't take into account all the true costs.

Poverty comes with slums. We have yet to figure out how to separate them. Slums come, unavoidably, with crime. Crime (along with gangs and drugs) requires the expenses of locks, police, insurance, etc. as well as direct losses from the robbery, a rather inefficient way to transfer wealth.. Poor countries and areas of large income disparity are more likely to be participants in wars, adding military expenses in poor and rich countries alike.

Perhaps worst of all, there is the opportunity cost of poverty. If a poor kid grows up in a slum with a broken family, lousy schools, and a high rate of unemployment, society has lost the potential productivity of that person. All in all, it's almost certain that the total cost of poverty far exceeds what it would take to provide a decent level of income for that person. This has been recognized by many across the political spectrum, including Thomas Paine (what he called the Citizen's Dividend) and even conservative economists Friedrich Hayek [Hayek 94] and Milton Friedman [Friedman 62].

Analysis

There are numerous other examples of problems: War, high product costs, elections (if they worked, we wouldn't be writing this article), transportation, etc. That share similar characteristics:

- They are complex because they involve collusion between legal, government, and big-player industry against citizens.

- They have a "pretend war" as their excuse for existence.

- They depend on there not, in fact, being a Justice system but rather a legal system whose incentives are set nearly guaranteeing a lack of Justice.

Attempting to fix any one part of such systems is unproductive because you can only fix one small part at a time, and by the time you get around to fixing another part, the first part is set back in its traditional place by the other systems.

Individual Excuses

If you talk to an individual working for one of the organizations that benefits from the status quo, you'll get a variety of excuses such as: It's not my job, I'm powerless, I don't know how to fix it, It's not broken, why do I have to do all the work? These excuses are not just for the low level postman but can be used at every level including the POTUS. And used with some validity. The systems are set up such that the vast majority of individuals, even within the offending organizations, can't fix it.

The Systems are the Problem

A more insidious problem is that our "education" system has convinced most of us that, bad though our systems are, there are both incremental ways to fix them and, no better systems are possible. Both of these ideas are false. For instance, if "electing a better guy next time" worked, then after 225 years of elections we ought to have an increasingly better government. The "America love it or leave it" crowd has a point that, say the US Legal system may be better than Mexico's. But following that logic means you can never have innovation and furthermore what we've got is good enough. We consider both of those propositions false.

Solutions

To help convince you that the solution space is non-empty, a few principles are in order. First, we have maybe 10% bad actors screwing up the works. No law of physics says we must draw our leaders from this pool. In fact, 90% good actors would indicate better systems are probable. We just need to design systems that don't emphasize special interests. Next, we've got tons of innovations in other areas so why can't we innovate in government, justice and our economy? We can steal two tricks from programmers to help: 1. Out of the box creativity is needed, 2. Debug, debug, debug. Now we're ready to plow ahead some possible solutions keeping in mind:

- Is it expansive enough to solve the core problems?

- How can it be deployed?

Plan 0 Do nothing

This is the wing and a prayer path we're on now. One definitive part: The lack of a US energy policy. To estimate the odds of this working, we'd have to graph which is rising faster, technology or corruption. But I wouldn't bet against: "All that is necessary for the triumph of evil is that good men do nothing" [Porter, 2002]

Plan A Specific Actions

So what specifically might the "good men" do? Here's a list of things the US government could do unilaterally that would save money and help.

- Stop exporting weapons.

- Stop using oil (efficient transportation via Personal Rapid Transit (PRT) and Lit Motorcycles plus passive house design for buildings would do it.)

- Regulate (don't make illegal) drugs . The above 3 would significantly mitigate the biggest problems of the mid-east, Mexico and global warming.

- Don't fund police with confiscated cash (A short term money maker with long term expenses.)

- Prevent speeding tickets: Your car is unable to go over the speed limit.

- Prevent parking tickets Your car tells you the cost of parking somewhere, you get mailed the bill.

- domestic violence can drastically be reduced with less PTSD-causing wars and replacing guns with non-lethal weapons for the paranoid.

- Our huge prison population can be cut in half with a reasonable drug polity then further reduced with education and restorative justice [restorativejustice]. http://www.restorativejustice.org/

- Cut poverty through improved health care and transportation. Perhaps even a Guaranteed Minimum Income or Basic Income would benefit the entire economy.[NYTIMES, 2013]

Unfortunately our in-place systems preclude reasonable solutions so we need to work on the structure of the systems themselves.

Plan B Radical New Government Structure
It would take a detailed analysis of history to verify this point, but it is quite possible that the primary effect of a president is to cause war. Presidents use war with the politics of fear to gain support. We can end that by not having a president. There will still need to be people that can act quickly, but usually quick actions don't need large resources. That would leave us with Congress, which is arguably no better at preventing war with its pork-barrel agenda.

 It seems no one in Congress cares about the entire country, only their own district because that's how they get re-elected. We can solve this problem by not selecting congressmen through elections. One strategy is pick them randomly, somewhat similar to jury duty without all the haggling of the lawyers. Random picking with a large sample size (ie 500) pretty much guarantees a representative congress. Elections guarantee a non-representative congress, you select for people that are good at winning elections and not much else. This leaves us with the fact that congressmen are likely more "intelligent" than the average person but our random selection will give us only average intelligence. We'll take average intelligence any day over the intelligent but ill-motivated existing congressmen.

Our representatives need a process for governing other than trading pork and whatever it takes to get re-elected so we propose using *reason* instead via computer tools such as Justify. [Fry, 2013]. Americans (including congressmen) are not trained in cooperative decision making so we propose a year of "on the job training" for our randomly selected representatives and a limited term of 3 or 4 years, staggered so there's no big one-time change. There may be mechanisms that can do better than random selection but the point is, random is easily doable and very likely to be better than what we have now. Given that one Senate race in 2014 cost more than $100M, random will be much cheaper, saving billions of dollars in campaigning and running polls. We also stand a much better chance at eliminating voting fraud.

This plan is so radical that it is unlikely to be adopted, at least any time soon. Can we do something not quite so drastic that will get us headed in the right direction?

Plan C – Not So Radical New Government Structure
The book "The Cure for Our Broken Political Process: How We Can Get Our Politicians to Stop Fighting and Start Resolving the Issues that Truly Matter" [Erdman, 2008] details a new process for selecting the members of the House of Representatives and their internal process, all without requiring a constitutional amendment, because states are allowed to choose how they select representatives. The number of representatives a state can send to DC is dictated by a census every decade. Rather than having one congressman per district, Erdman proposes fewer districts but more congressmen for each. So for instance a state having 12 congressmen could have 4 districts each selecting 3 congressmen. Voters don't simply vote for their favorite, they ORDER them to their preference. Thus if their top choice is unpopular, their 2nd favorite becomes their new top choice. Candidates are eliminated until three are left. This decreases "strategic voting" wherein you don't vote for Nader because you're afraid Bush will win so you vote for Bush. This winner take all of US elections discourages third parties and ensures nearly half of the voters will have no representation. Susskind estimates his system will likely get a left-winger, a right winger and a middle of the road candidate from each district so each voter will feel represented. Furthermore, when congressmen vote on a bill, they vote with the number of votes they received in the election, so each vote in the general election actually counts, incenting more people to vote and a more accurate representation of those voters in Congress.

Since your vote is much more likely to count regardless of which side of a district border you're on, gerrymandering has greatly reduced effect. Committee membership is chosen with a similar voting mechanism making a fair representation much more likely. Since voters will feel more connected to their congressman and vice versa, Susskind hypothesizes that massive campaign expenditures

will have reduced clout and the actual votes the congressman makes in congress will have more.

Now in congress the committee head calls the shots, usually excluding the minority party. Erdman's meetings would instead be facilitated by a neutral professional which, at the very least, gets all sides heard.

Plan D The Maker Movement
In the 1970's the key transformer of western civilization was the personal computer hobbyists that changed computers from merely big corporate monopolizing tools to information utilities for the rest of us. Today an even larger trend, the Maker Movement, is poised to make an even larger difference. [Reprage] estimated there were about 50K consumer 3d printers in Nov, 2012. Two years later that number has likely doubled. The goal of [Reprap] is to make a printer that can print all of its own parts. The goal has yet to be achieved and will probably need other technologies such as CNC (milling machines) and "pick and place" machines to be realized, but advances on all these fronts and more are happening more rapidly in this sphere than any other.

Once this goal is achieved, it will be used to design even cheaper machines that reproduce themselves from ever cheaper components. Already machines to recycle plastic soda bottles (and previously printed parts) into printable filament are available at low cost, some of whose parts can be printed using the very plastic filament it produces. This cradle to cradle recycling bodes well for sustainability.

Most of the parts of hydroponic and aquaponic gardens for producing food (plants and fish) can be 3D printed. Progress on printing house parts, textiles and personal medical devices (including body parts) is now rapid. Designs are freely shared on [Thingaverse] so distribution of ideas is quick, efficient and free. Since those ideas are immediately realizable into hardware, the movement has more power than open source software can.

We have an existence proof that the status quo was unable to prevent the Internet. If that holds for the Maker Movement, manufacturing of the things you need will be in your basement. That means you make exactly what you want without the need for most of its current costs: design, transportation, warehousing, retail, financial transaction costs, marketing, profit and corruption (typical goods are sold for several times their manufacturing costs). You lose on economy of scale, but when printers can copy themselves and the solar cells needed to power them, that won't matter much.

In one sense this greatly expands domestic manufacturing everywhere. In another it kills manufacturing jobs. But if you can make everything you need, one thing you won't need is a job. This transition won't be smooth, but it doesn't require more coordination or support from the status quo as it has now.

Plan E: Education
Even if the Maker Movement succeeds, there will still be disagreement. We need to have everyone become much better at cooperation. Understanding the Prisoner's Dilemma [Lieberman and Fry 2015] and how to make better decisions [Fry, 2013] are crucial, but are not particularly expensive. Public school education in the US is particularly conservative, but the net will break those barriers as better user interface enables students to learn what their teachers don't know.

Conclusion
Our systems are limiting, especially limiting how the systems themselves change. The status quo has protected itself pretty well. But rising sea levels, income inequality, and especially unemployment will force change from the bottom up. We don't lack solutions as we hope this paper illustrates. We do lack distribution and understanding of those ideas, something the Internet is well suited to remedy.

No one of the plans above is enough to effect the needed positive change, but the right combination of those plans likely can. Deploying those plans is the primary challenge, a challenge amenable to the techniques of debugging. Execution is not a certainty, but we see no fundamental barriers to implementing very different, and beneficial Government, Economic, Justice and Education systems that can get us out of our current messes, and into newer, but hopefully lesser, ones.

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