The important thing is to establish a political climate of opinion which will make it politically profitable for the wrong people to do the right thing."

— Milton Friedman

Bitcoin Prediction

Markets

Amsterdam Bitcoin Meetup

Paul Sztorc

www.BitcoinHivemind.com
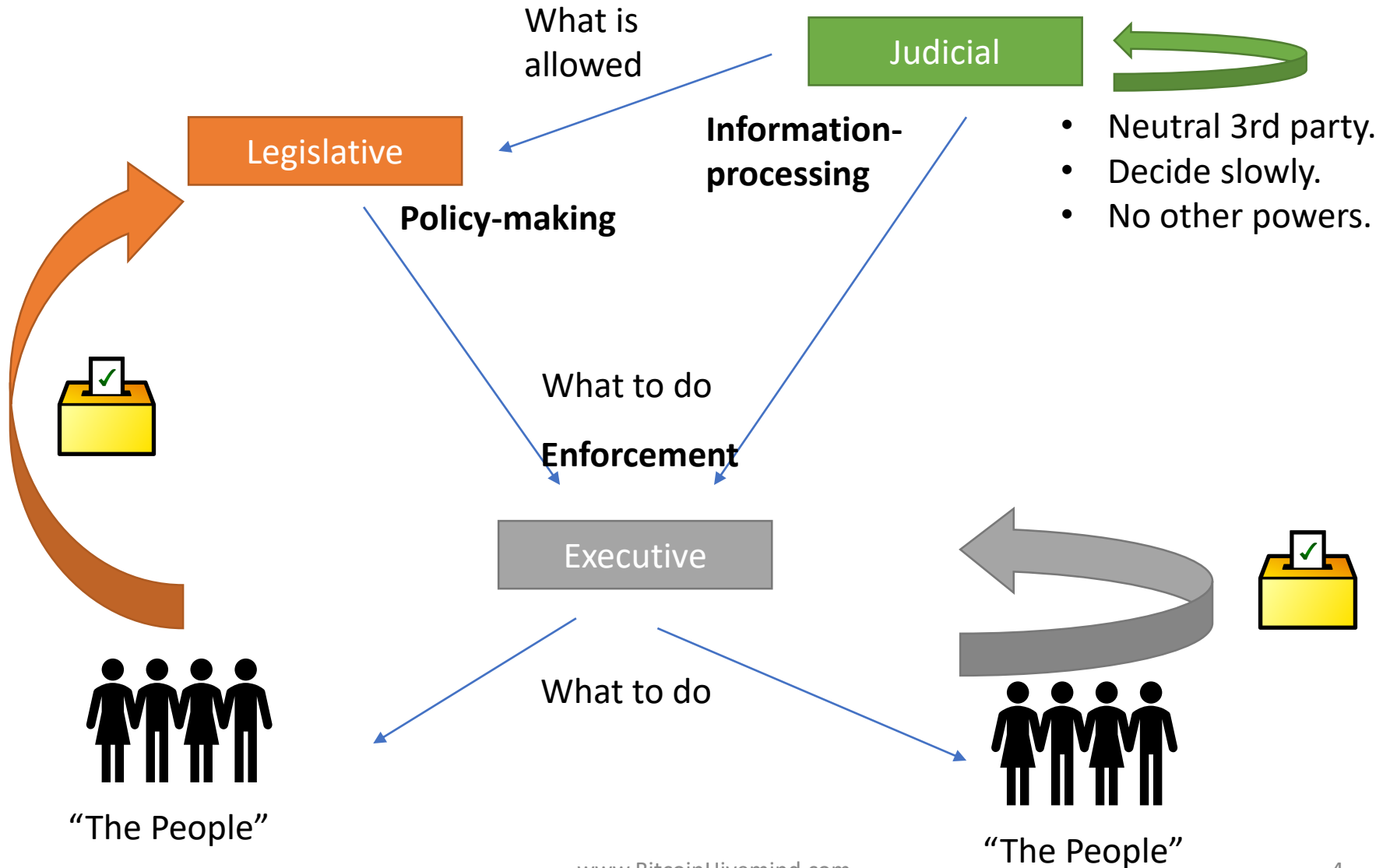
Version 1.3
5 July 2018

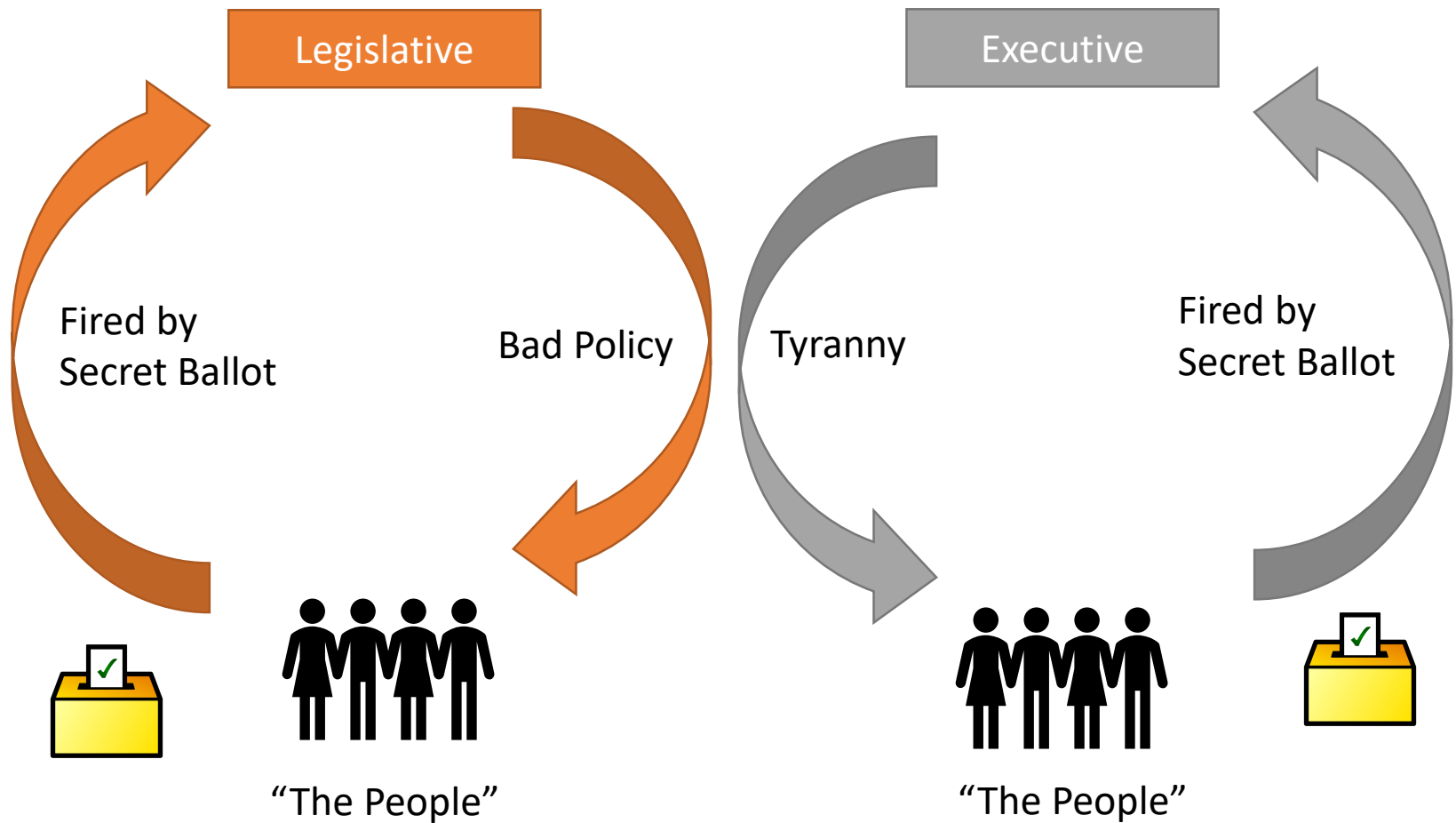Still refining this presentation – please help.

Intro

- Blockchain prediction markets can solve many problems.

- I will present on *the most exciting solution* only.

- This is something that can probably *only* be done with censorship-resistant crypto-financial blockchain technology.

Post-Enlightenment Political Technology

Judicial

What is allowed

Legislative

Information-processing

Policy-making

- Neutral 3rd party.
- Decide slowly.
- No other powers.

What to do

Enforcement

Executive

What to do

"The People"

"The People"

Feedback to Remove Errors

Legislative

Executive

Fired by Secret Ballot

Bad Policy

Tyranny

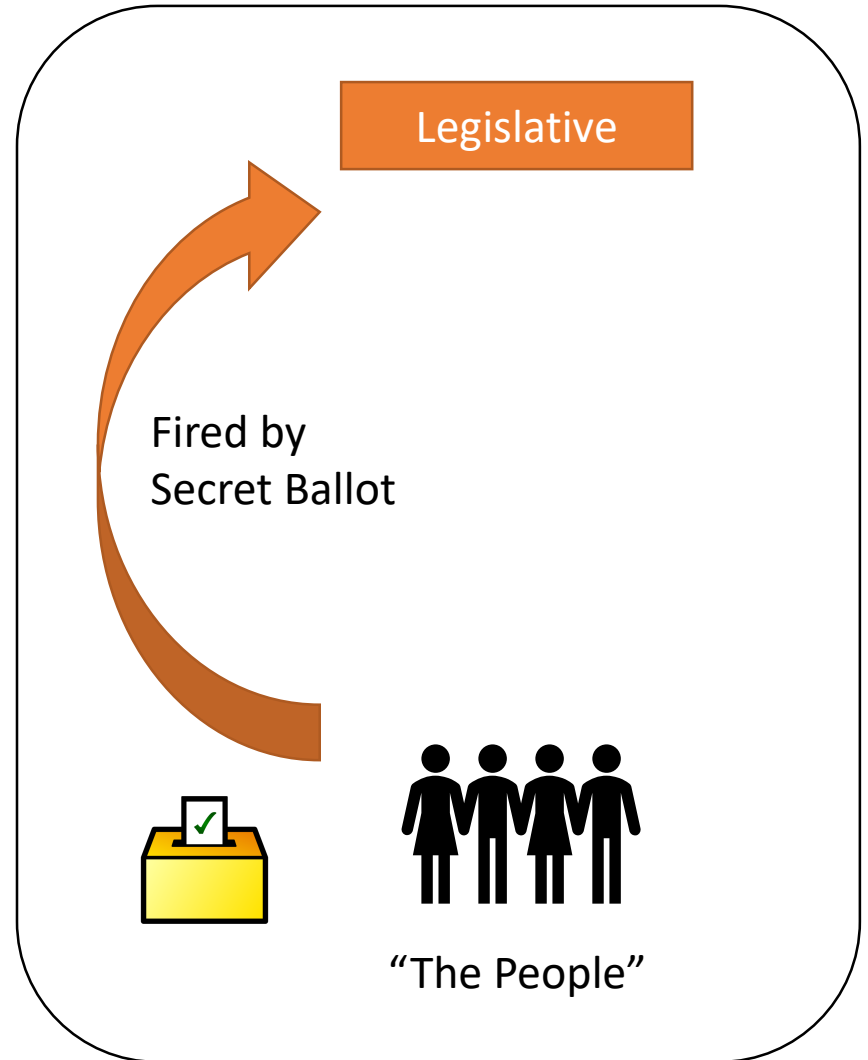Fired by Secret Ballot

"The People"

"The People"

Drawbacks

- Method works…but it does ask the voter to do a ***great deal of counterfactual thinking***, and ***game-theoretic reasoning***.

"Rational ignorance"

"Elect-ability"

Legislative

Fired by Secret Ballot

"The People"

Rational Ignorance

- Much worse over time:
1. Scale → More people = less impact per vote.
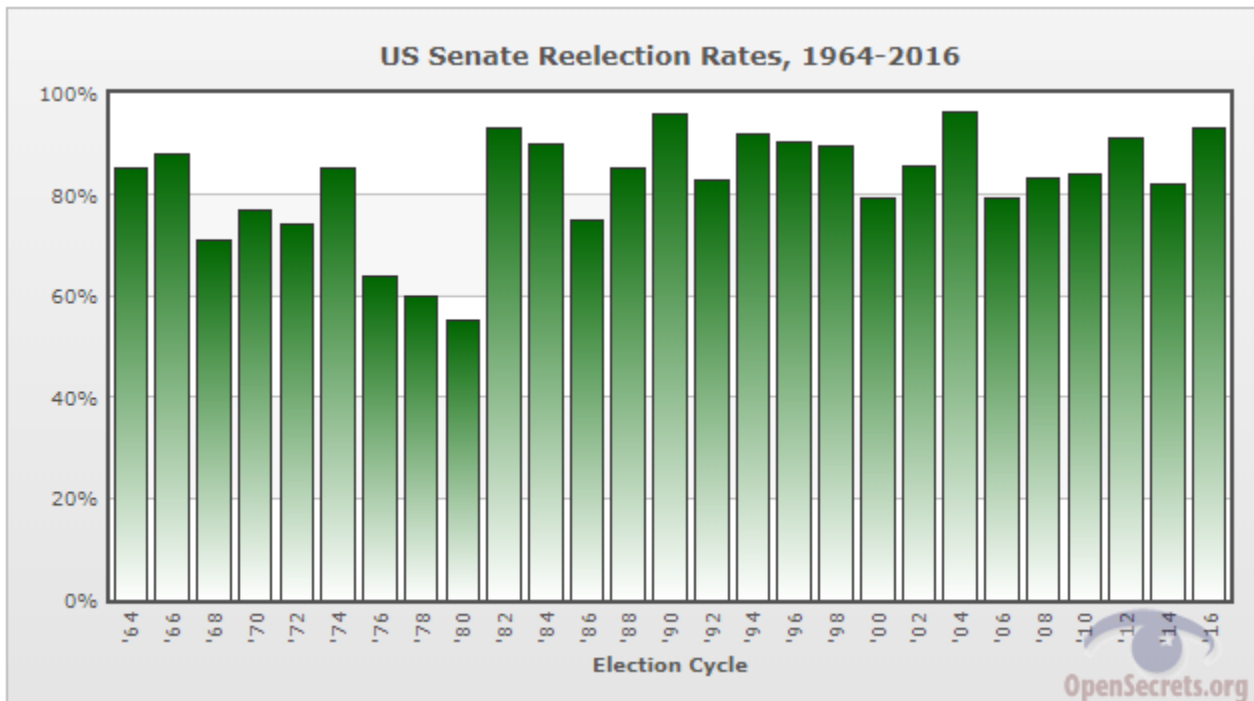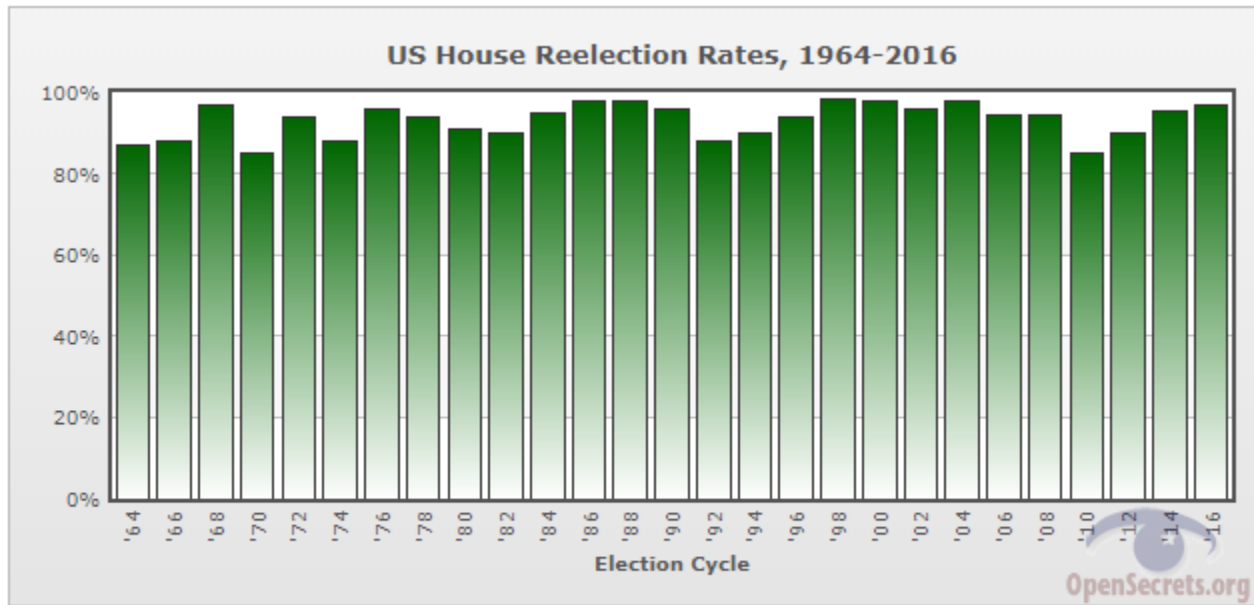2. Media Ecology
3. Greater complexity of society.

Now…I will skip a bunch of slides, to talk more about electability.

Voting – Your Civic Duty

- Knowledge Cost – too high
  - **existing option** , the **challenger**, both **plans**, **likelihood** of follow-through, and **effect** of these plans on you.
- ***Effect*** is a complex topic. For some policies, only ultra-specialists know.
- 71% of Americans can't even name their Congressional Representative (Delli-Carpini and Keeter (1997))**,**
  - let alone the challenger or any proposed policies or voting records (or any State Senators, etc).
- Story: Lobbyists on a Plane
- Re-election Rates (unbelievable)

Voti...

US House Reelection Rates, 1964-2016

- Knowle...
  - **exis**...**od** of follo...
- ***Effect***...ultra-special...
- 71% of...ssional Repres...
  - let al...ds (or any State...
- Story:
- Re-ele...

US Senate Reelection Rates, 1964-2016

OpenSecrets.org

9

Electability

South Park – s08e08 –

   Giant D, and T Sandwich

But, we will be back, to talk about rational ignorance -- both problems can be addressed with the same solution: ***Conditional*** prediction markets.

Governance is Hard. Why?

- If everyone is doing the wrong thing, why can't we just get everyone to stop doing that, and do something else?

- Answer: **Multi-Factor Competition**
  - Negotiation is too Expensive
  - Too many 'other things' to do
  - High cost of miscoordination

Great read: "Inadequate Equilibria" by Yudkowsky

Single-Factor Competition

- You want to spend up to $20 on dinner.
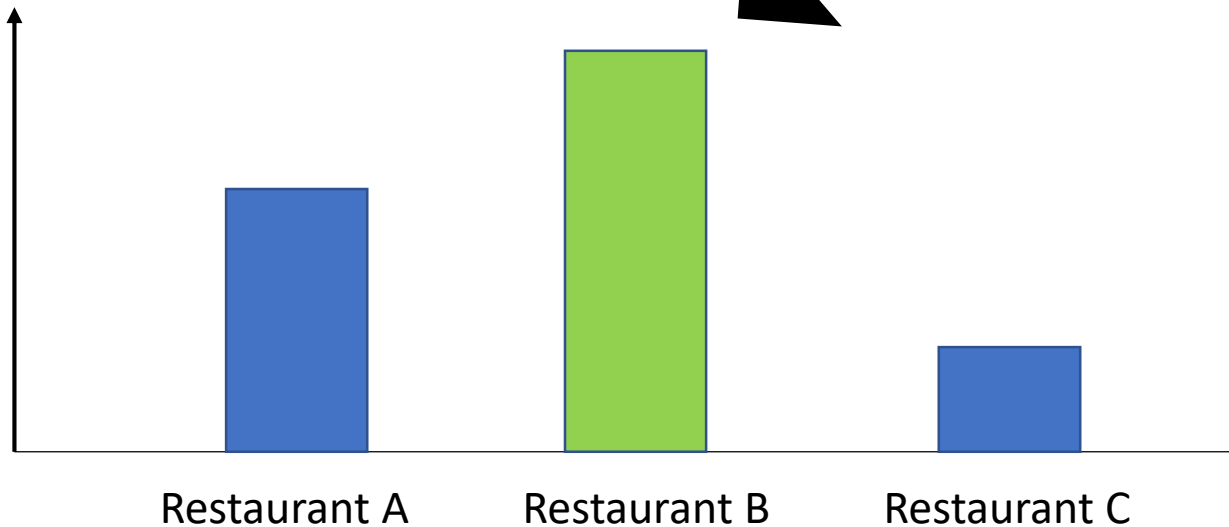
- You are choosing (and dining) alone.

Expected satisfaction by spending <=$20 at the given restaurant

Restaurant A   Restaurant B   Restaurant C

Single-Factor Competition
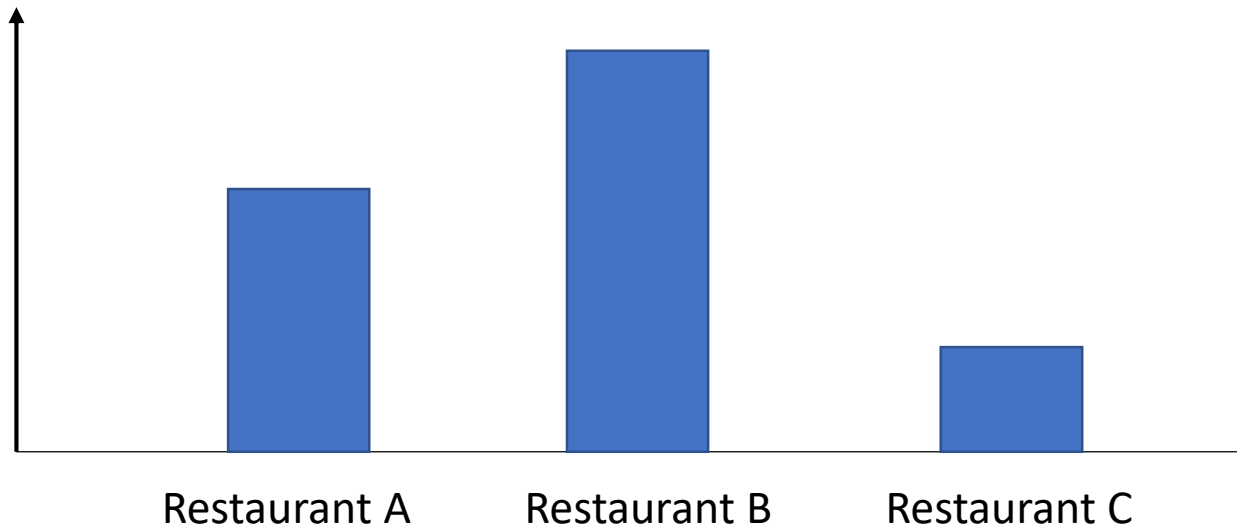
- You want to spend up to $20 on dinner.
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Expected satisfaction by spending <=$20 at the given restaurant
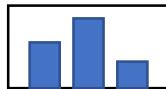
Restaurant A   Restaurant B   Restaurant C

- You get the highest satisfaction possible.
- Restaurants induced to compete on (satisfaction / $).

Multi-Factor Competition

- Many people are choosing a restaurant
- **You all prefer to meet at the same place.**
- Harder!– your decision now depends on:
    1. *What you prefer*,
    2. and *where other people might go*. Which is itself a function of:
        1. ...what *they might prefer*.
        2. …where *they think other people might go.* Which is itself a function of:
            1. Everyone's collective best guess on where most people currently plan on going (ie, the *status quo*), and,
            2. … (since time/attention/communication are not free) how *open to communication / negotiation* everyone is.
- You have four criteria, but you ultimately must make one selection. Forced aggregation.

Multi-Factor Competition

- Many people are choosing a restaurant
- **You all prefer to meet at the same place.**

Self-fulfilling prophecy – Those who believe that "negotiating to pick a better restaurant is a lost cause", will be less open to negotiation. Circular truth.

Negotiation is especially hard when there are [1] many people, and [2] many alternatives. In USA there are ~250 Million adults, and a near-infinite number of potential policies. In these cases the prophecy is likely to self-fulfill (lost cause).

function of:

1. Everyone's collective best guess on where most people currently plan on going (ie, the *status quo*), and,
2. … (since time/attention/communication are not free) how *open to communication / negotiation* everyone is.

- You have four criteria, but you ultimately must make one selection. Forced aggregation.

If people dissent from Bitcoin Core, should they just "fork off"? Can they?

Multi-Factor Competition

- The root cause in the restaurant example, "wanting to stay in sync with others" is a common desire.
    - Coordination reduces ambiguity / conflict.
    - Network effects / economies of scale.
- Competing w/ Facebook or Craigslist …vs   w/ local barber shop.

WHY YOU SHOULD STOP ASKING
"Is Google+ dead?"

16
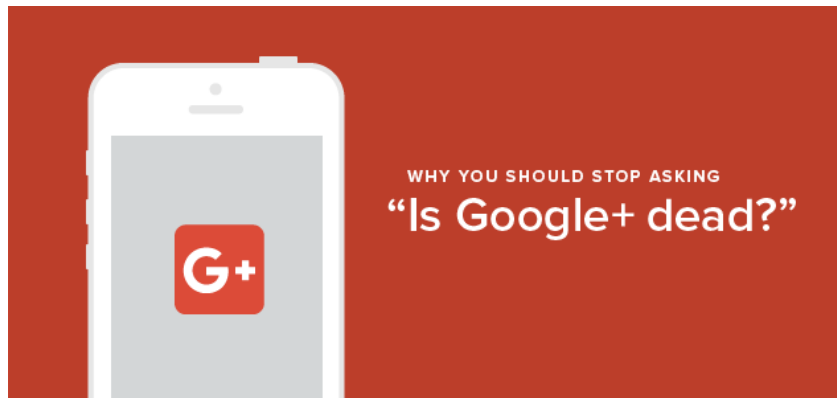
Multi-Factor Competition

The problem is real, and it has nothing to do with "coercion" and can't be explained with moral arguments.

Most people will put up with Facebook, even though FB is "evil". Because the alternatives are :
[1] no Facebook (and social isolation), or
[2] and endless (and ultimately futile) negotiation with unmotivated
friends/family to switch to one particular alternative (among many). They would then need to convince their own friends, who would need to   convince their own friends, and so on and so forth…

In the same way, we put up with governments, even though they are incompetent. The alternatives are:
[1] no government and no property rights (a disaster), or
[2] an uncertain, potentially endless, potentially violent transition period, leading to an ambiguous final outcome.

Voting – Multifactor-ness of "Electability"

- Arrow impossibility result: voting = paradox
  - While you have more than one voter, and a deterministic aggregation process (technicalities), you can only have one of the following two:
    - **Pareto efficiency** – you can't hurt an option when *everyone* ranks it higher
    - **Irrelevant alternatives** really are irrelevant – you can't hurt an option by re-ranking the set of options below or above it. Stalin vs Hitler.

- Arrow's result leads to **strategic voting**
  - If Jeb Bush had run, would have **split the vote**
  - When vote is split, **votes cast for a 'lost cause' do not contribute** at all to *The Battle* that really matters.
  - Electability – knowledge that *other people* believe that this choice is not a lost cause. (Same as the restaurant example.)
  - Hence political parties / media have great influence.

To Solve Governance, We Need:

1. A cheap, **reliable source of information** on who to vote for.

2. A way of **crunching** the multi-factorness, specifically electability, back into a single factor.

3. A way of **preventing capture** of the above processes by lobbyists/cronies.

Bitcoin Hivemind
Sidechain for P2P Prediction Markets

Intrade's Conditional Prediction Markets

By Hal Finney · July 29, 2008 7:14 pm · 💬 Comments (24) · « Prev · Next »

We have often discussed the possible benefits of prediction markets for reducing bias. One key element that could be particularly useful is a conditional prediction market, where betting claims are based on outcomes conditional on some factor we want to evaluate. Robin recently mentioned the possible benefit from market claims on longevity or health conditional on various interventions.

Unfortunately, there are few prediction markets in the world, and fewer conditional ones, so it is hard to know how practical this institution may become. Thanks to an initiative by OB contributor Peter McCluskey, Intrade – the large, real-money prediction market – has added conditional claims

"There are only a few people alive today worth listening to. Robin Hanson is one of them."

– Ralph Merkle, co-inventor of asymmetric (public/private) key cryptography, inventor of cryptographic hashing, and of the Merkle tree.

Agenda

1. Moral Objections to Governance (Speech)
2. How Society Reacts to Problems (An Analogy)
3. Why Governance is Hard (A Diagnosis)
4. What Prediction Markets Are (An Institution)
5. Blockchain *Conditional Prediction Markets* – Solution to Governance
6. Getting Practical

A 'prediction market' is a special kind of derivative.

Below: **event derivative** (InTrade.com) on 2012 global warming

Worth $100 if 2012 is the warmest year on record.
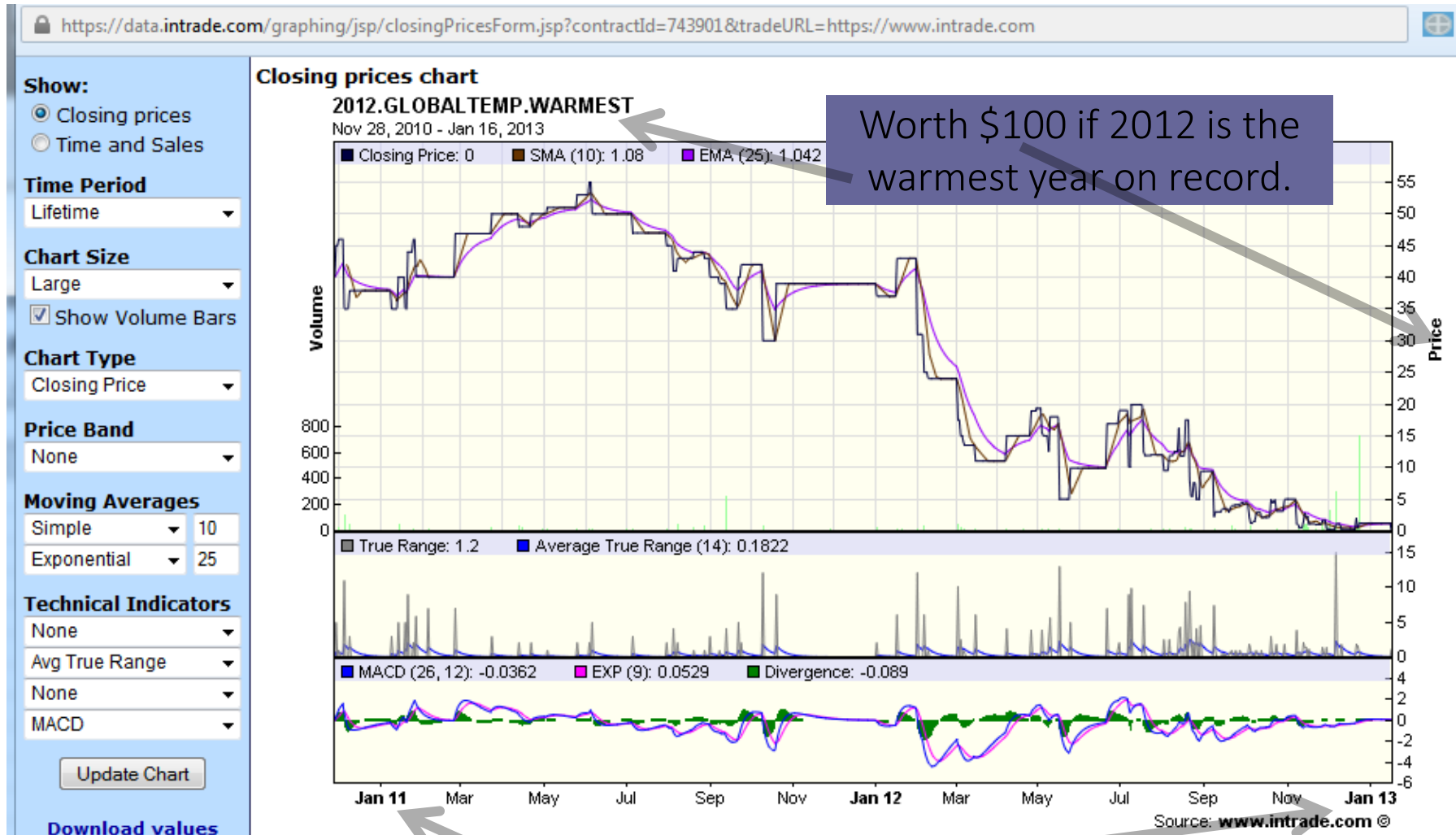
Ran from Jan 2011 to End of 2012

Event Derivatives

| Finance Thing	Interpretation
Bond (Debt)	"I, Paul Sztorc, owe $20 to whoever is holding this bond certificate on 03/02/2015."
Stock (Equity)	"I, the CEO of SztorcCorp, owe 1/100th of SztorcCorp's profits to whoever is holding this stock certificate on 03/02/2015."
Binary Call Option	"I, Paul Sztorc, owe $20 to whoever is holding this Option on 03/02/2015, **only if** the stock price of SztorcCorp is above 40 $/share on that date."
...(others)...	...(others)...
Event Derivative	"I, Paul Sztorc, owe $20 to whoever is holding this derivative on 12/01/2016, **only if** Hillary Clinton is elected US President in 2016. Otherwise I owe $0."
...(others)...	...(others)...

Markets Aggregate Information

- For the Public: **Reliable** and **Common** Information

It's right.

It's broadcast to everyone (and everyone knows that everyone got it).

Does all of the **Research** for us, and the **Persuading**!
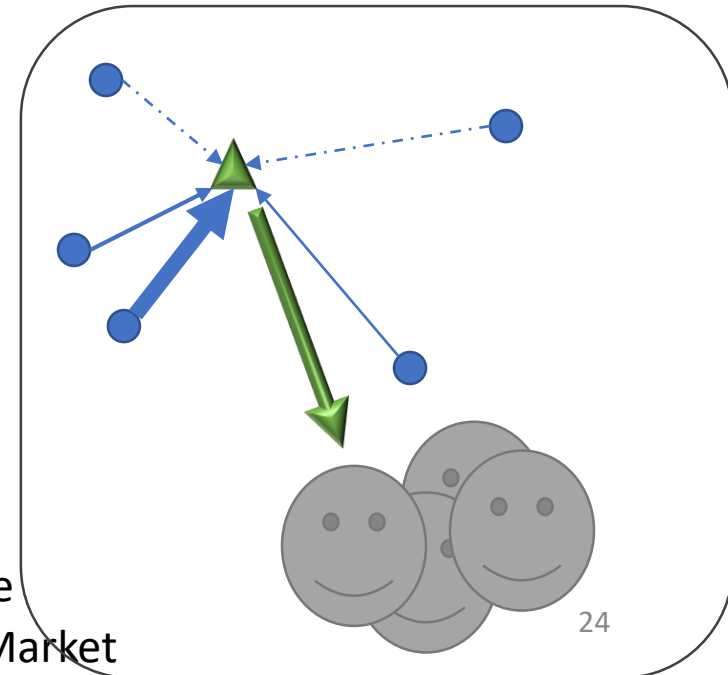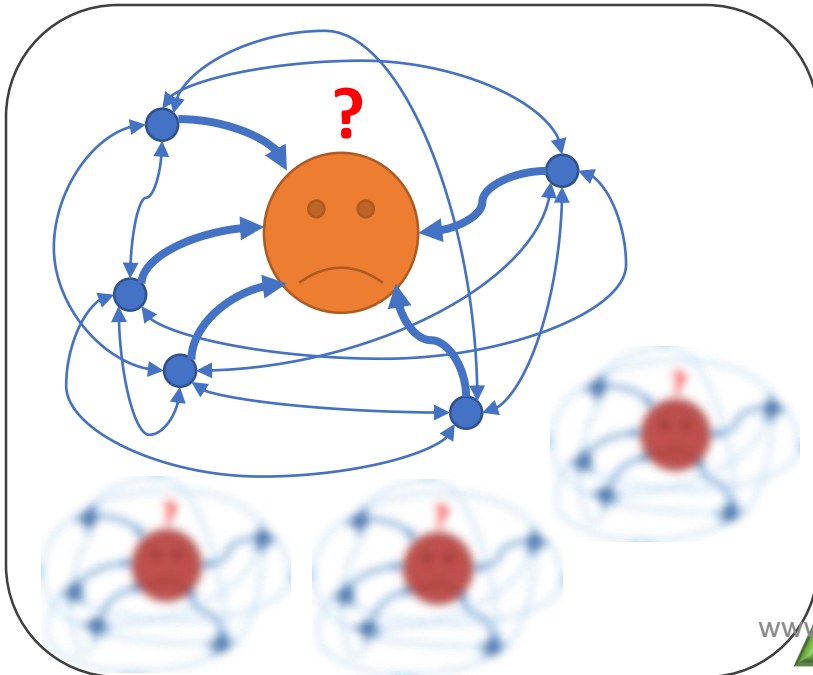
● = Info Source
▲ = Prediction Market

Benefits of PMs (Over Talking)

- Talk: Why even bother becoming informed?
    - Hard to learn this stuff (and I only have so much time)
    - How am I supposed to convince others?
    - Info-processing is difficult (why résumés *must* be short).
    - Minimal-info strategies (join a tribe/"political party").
- PM forces a clear definition.
- Prices are **constantly** and **unanimously** acceptable. <u>At all times</u>, <u>everyone</u> agrees with the price (if not, they can profitably trade).
- Note: Suppose climate change were false. The "reliability" and "broadcast" problems are much worse.
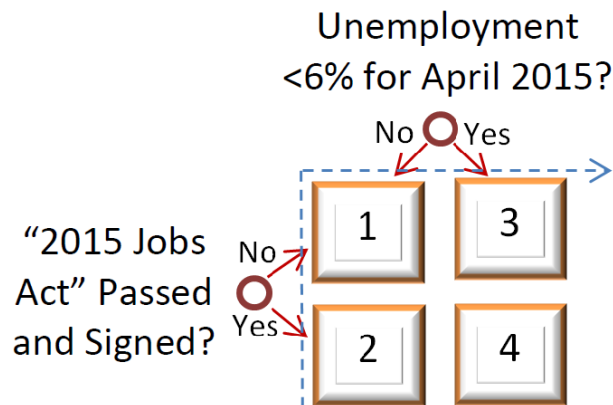
Agenda

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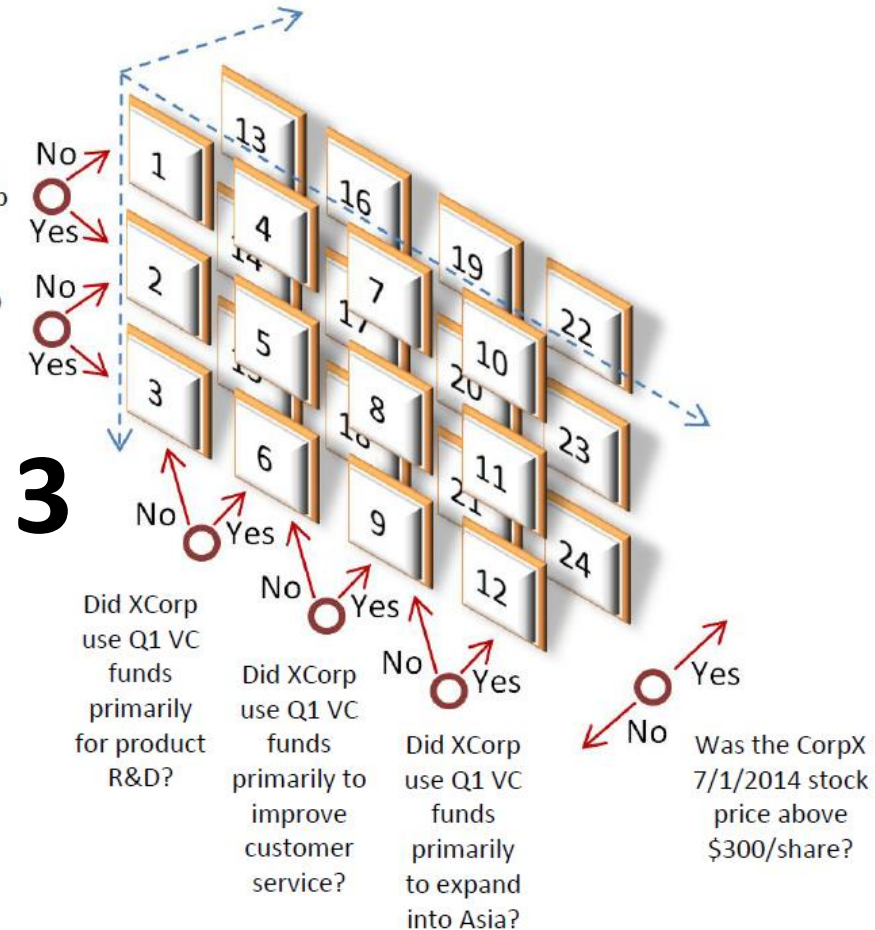
Conditional Forecasts:
More Than One Dimension

Hillary Clinton Elected in 2016?

No ⚪ Yes

| 1 | 2 |

1

Unemployment <6% for April 2015?

No ⚪ Yes

"2015 Jobs Act" Passed and Signed? No / Yes

| 1 | 3 |
| 2 | 4 |

2

Did XCorp replace CEO Adam with Bob during 2014 Q1? No / Yes

Did XCorp replace CEO Adam with Charlie during 2014 Q1? No / Yes

3

1	13	16	19
2	4	7	22
3	5	17	10
6	8	20	23
9		11	24
		12	

No / Yes

No / Yes

No / Yes

No / Yes

Did XCorp use Q1 VC funds primarily for product R&D?

Did XCorp use Q1 VC funds primarily to improve customer service?

Did XCorp use Q1 VC funds primarily to expand into Asia?
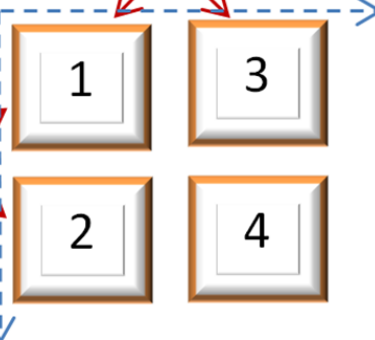
Was the CorpX 7/1/2014 stock price above $300/share?

More Dimensions: More Forecasts, AND More **Relationships**

2016 Warmest Year on Record?

No ⚬ Yes

"2015 Climate Act" Passed and Signed? No →
⚬
Yes →

	1	3
	2	4

Joint, Marginal, and Conditional Probabilities

MSRs
Bayesian Net

	No	Yes	
No	0.35	0.05	0.40
Yes	0.15	0.45	0.60
	0.50	0.50	1.00

	No	Yes	
No	0.15	0.45	0.60
Yes	0.35	0.05	0.40
	0.50	0.50	1.00

	No	Yes	
No	0.25	0.25	0.50
Yes	0.25	0.25	0.50
	0.50	0.50	1.00

The Point: Probabilities are not only: "Will X happen?"…
…they are also: "Would Y influence X?"

Attempt to teach Conditional Probability

	H	T
H	.25	.25
T	.25	.25

Two coins.

	H	T
H	?	?
T	?	?

The same coin (not realistic).

	1	2	3	4	5	6
1	?	?	?	?	?	?
2	?	?	?	?	?	?
3	?	?	?	?	?	?
4	?	?	?	?	?	?
5	?	?	?	?	?	?
6	?	?	?	?	?	?

Two dice.

Attempt to teach Conditional Probability

	H	T
H	.25	.25
T	.25	.25

Two coins.

	H	T
H	.50	0
T	0	.50

The same coin (not realistic).

	1	2	3	4	5	6
1	(1/6)	0	0	0	0	0
2	0	(1/6)	0	0	0	0
3	0	0	(1/6)	0	0	0
4	0	0	0	(1/6)	0	0
5	0	0	0	0	(1/6)	0
6	0	0	0	0	0	(1/6)

Two dice.

Example – Which CEOs aren't pulling their weight?

General Electric / CEO

John L. Flannery

Aug 1, 2017–

John L. Flannery is an American business executive. He is currently the CEO and chairman of General Electric, appointed in August 2017. Wikipedia

How do we tell??
Problem of **Agency Cost**
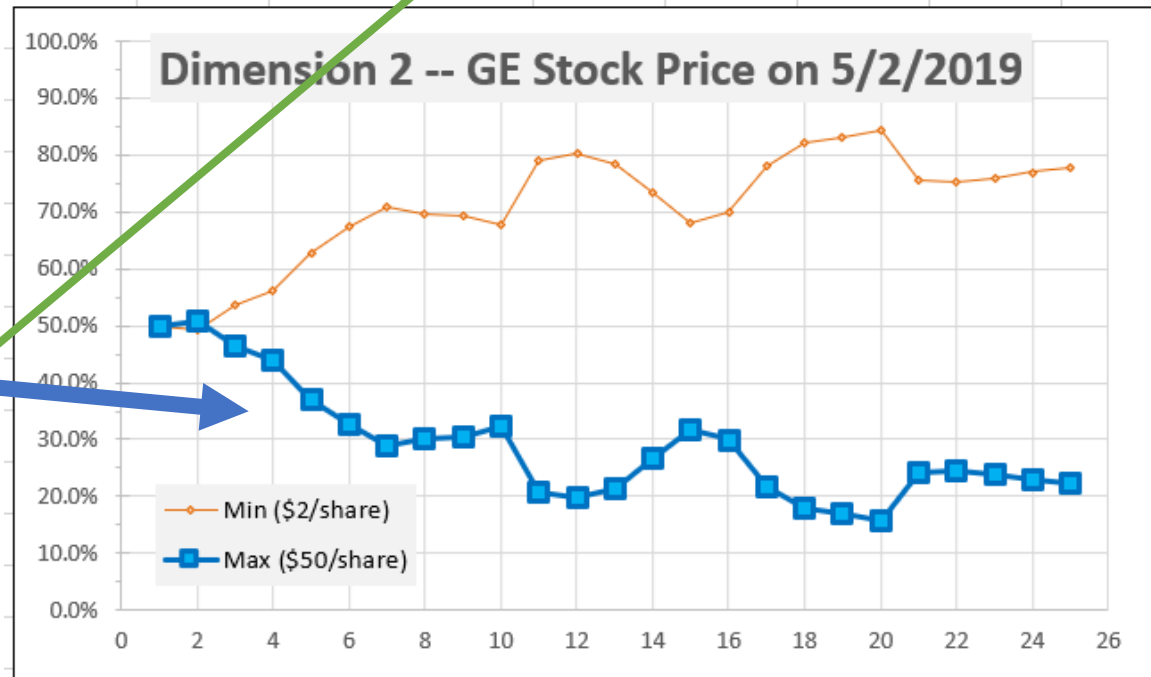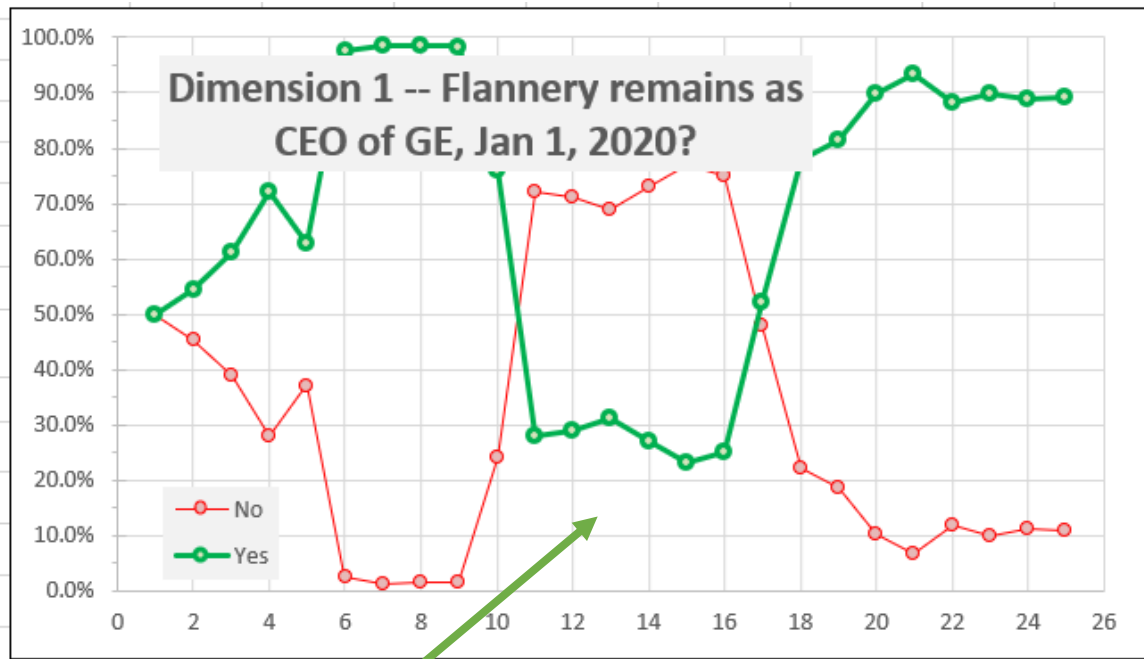
Two Individual Markets…

Mirroring (superfluous data)
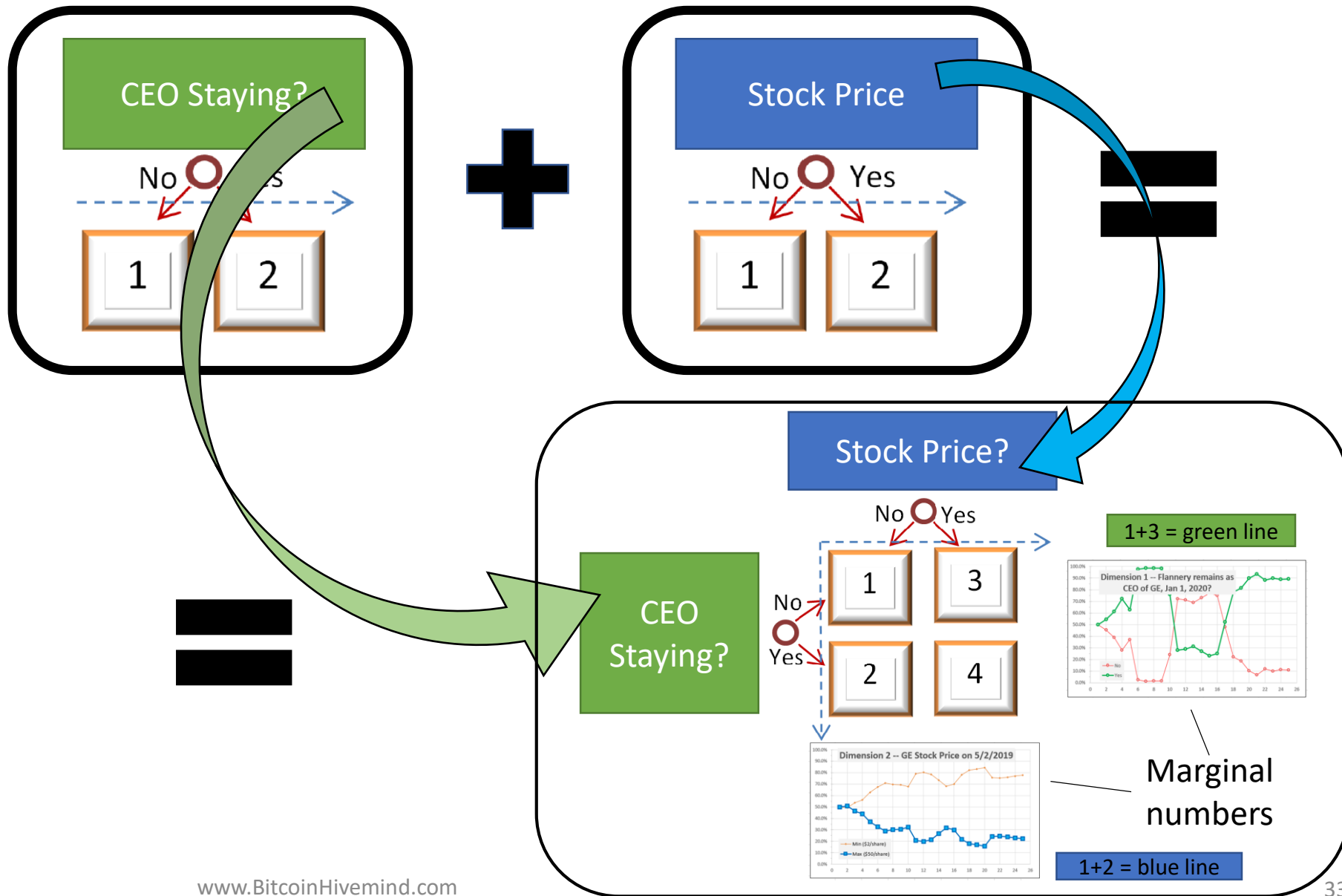
Because Pr(Yes) = 1 – Pr(No)
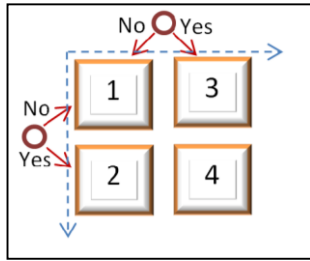
But not for long…

**Binary: Yes vs No
Scaled: Min vs Max**

GE is having a rough year!

Is the CEO departing? Will he be fired? Should he be?

Dimension 1 -- Flannery remains as CEO of GE, Jan 1, 2020?

- No
- Yes

Dimension 2 -- GE Stock Price on 5/2/2019

- Min ($2/share)
- Max ($50/share)

Exact same data...

CEO Staying?

No ○ Yes

| 1 | 2 |

+

Stock Price

No ○ Yes

| 1 | 2 |

=

Stock Price?

No ○ Yes

CEO Staying?

No →
Yes →

| 1 | 3 |
| 2 | 4 |

1+3 = green line

Dimension 1 -- Flannery remains as CEO of GE, Jan 1, 2020?

Dimension 2 -- GE Stock Price on 5/2/2019
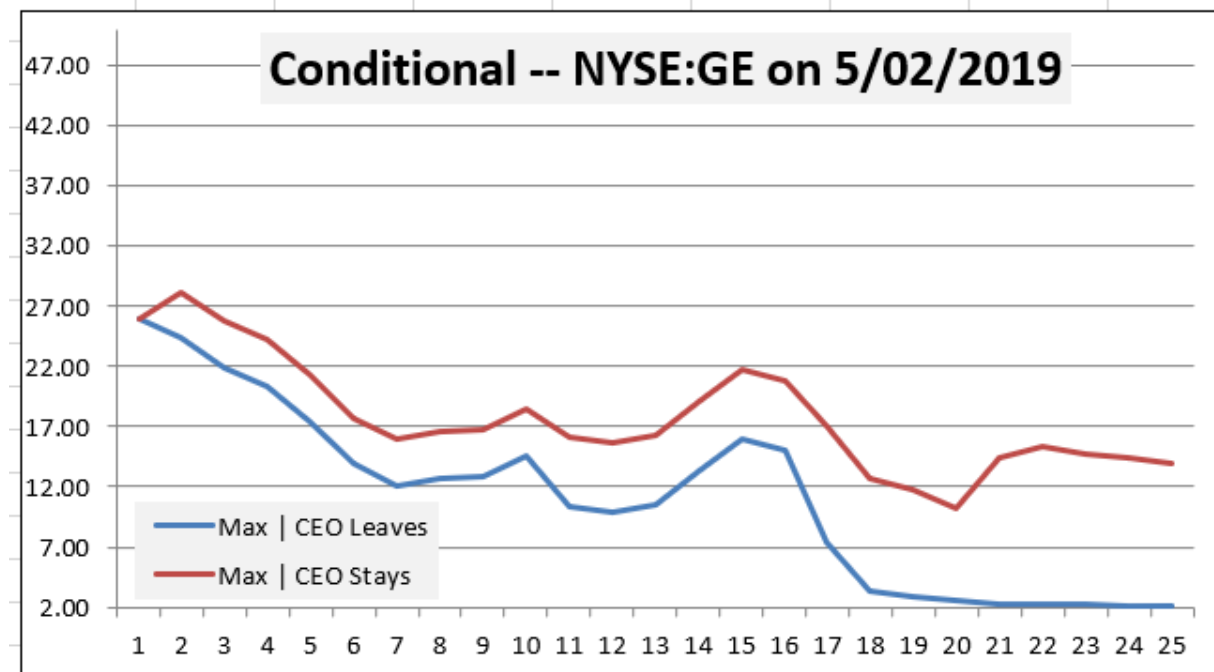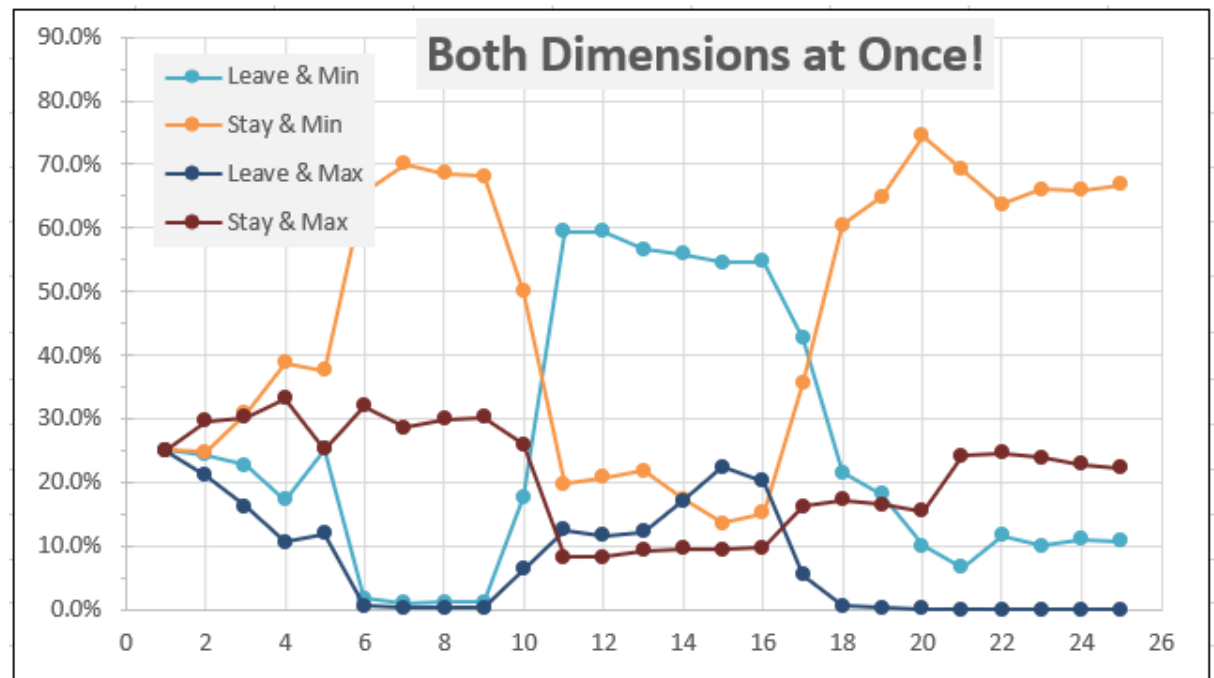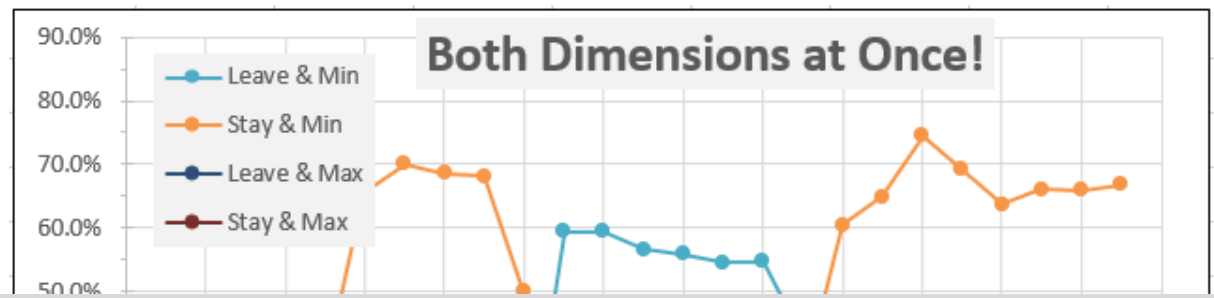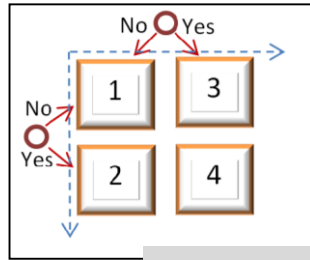
Marginal numbers

1+2 = blue line

Four Dimensions at once, different "mirroring"

Same Data

- Deleted 2 lines (of 4).
- (Stay & Max) / Stay
- (Leave & Max) / Leave
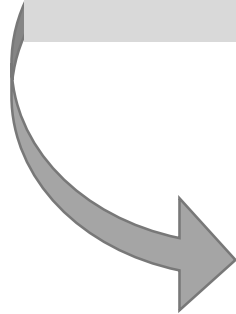- Scaled y-axis to $/share.

Now: only measures GE's Stock Price
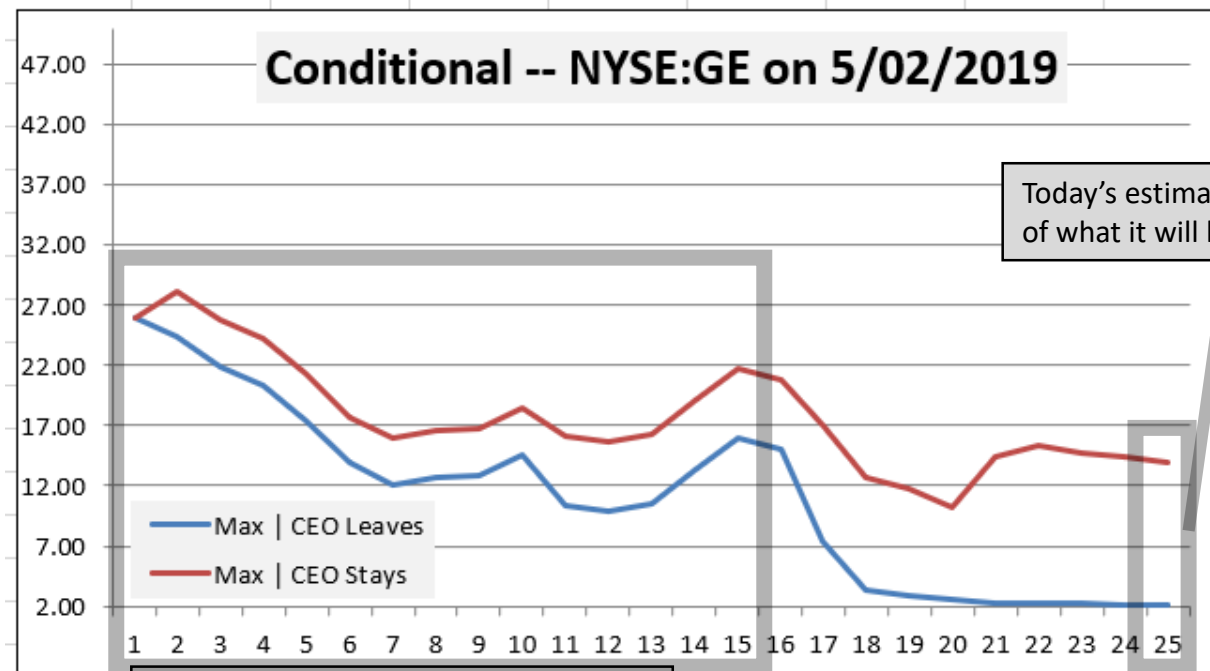
Four Dimension...
different "mirro...

Forecasting the future stock price...

Both Dimensions at Once!

- Leave & Min
- Stay & Min
- Leave & Max
- Stay & Max

Same Data

Conditional -- NYSE:GE on 5/02/2019

Today's estimate of what it will be.

- Deleted 2 lines (of 4).
- (Stay & Max) / Stay
- (Leave & Max) / Leave
- Scaled y-axis to $/share.

- Max | CEO Leaves
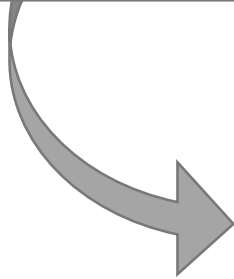- Max | CEO Stays

Now: only measures GE's Stock Price

Past estimates of what it would be.
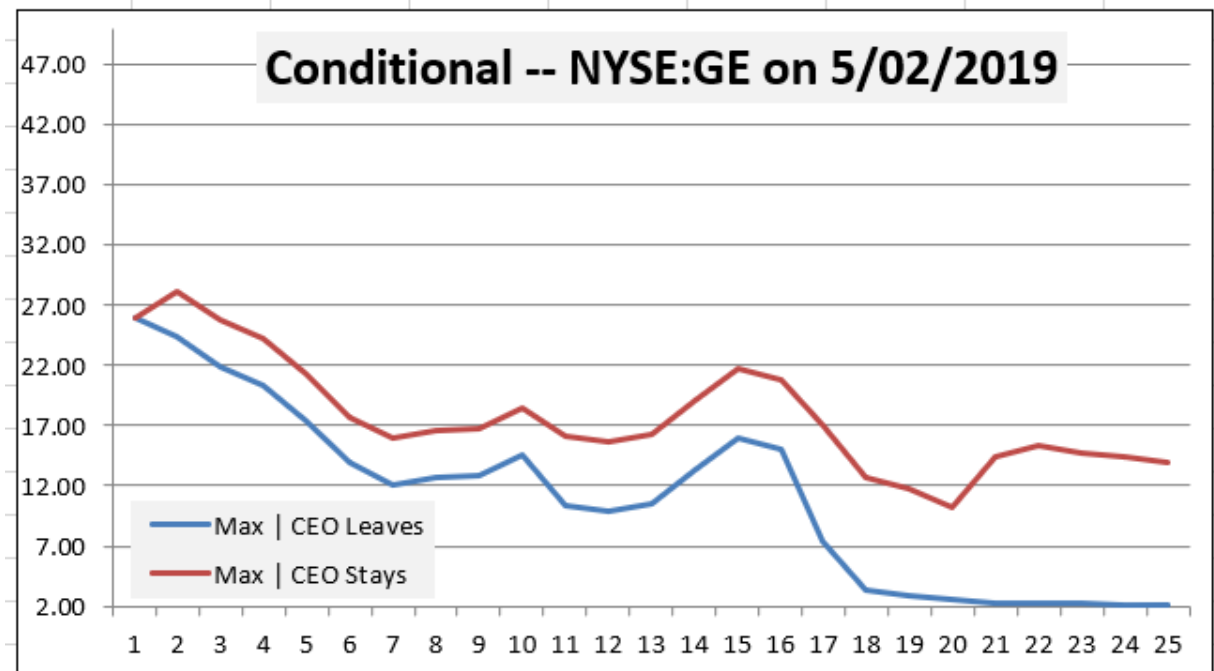
35

Important Questions:

1. Should the CEO be fired, or get a raise?
2. Why are _both_ forecasts of **_"the future stock price"_** going down?
3. [extra credit] If I had instead graphed " CEO Leaves | Max " and "
CEO Stays | Min ", what would those lines represent?

Four
diffe

Same Data

- Deleted 2 lines (of 4).
- (Stay & Max) / Stay
- (Leave & Max) / Leave
- Scaled y-axis to $/share.

Now: only measures
GE's Stock Price

Conditional -- NYSE:GE on 5/02/2019

y-axis	values
47.00	
42.00	
37.00	
32.00	
27.00	
22.00	
17.00	
12.00	
7.00	
2.00	

Max | CEO Leaves
Max | CEO Stays

x-axis: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

PM Governance

- Applications
  - "Which CEO *would most increase* **our stock price**?"
  - "Which President *would most decrease* **unemployment**?"
  - "Which FED Policy *would most increase* **GDP**?"
  - "Which law *would most decrease* **violent crime**?"
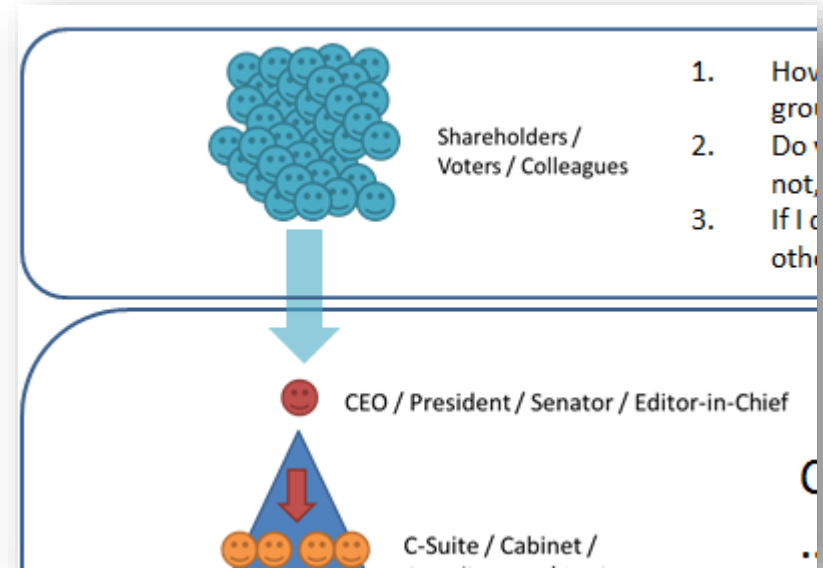
We need

- A cheap, **reliable source of information** on who to vote for.
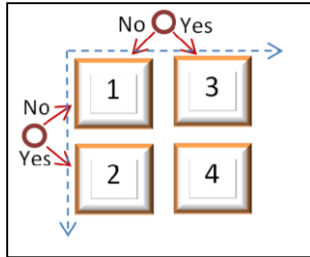
- A way of **crunching** the multi-factorness, specifically electability, back into a single factor.

A way of **preventing capture** of the above processes by lobbyists/cronies.

Multidimensionality can reverse the Multi-factor effects of Electability

"Good Economy" in 2021 (<5% Unemployment)?

	No	Yes	
Someone Else	0.0005	0.0005	0.001
Democrat	.61	.00	.61
Republican	.38	.00	.38
Elon Musk	.00	.009	.009
	.9905	.0095	

Nov 2020 Election Winner

Musk unlikely to win, 0.9%, "Lost Cause"

Multidimensionality can reverse the Multi-factor effects of Electability

"Good Economy" in 2021 (<5% Unemployment)?

Conditional Likelihood of Good Economy

	No	Yes		
Someone Else	0.0005	0.0005	0.001	**50%**
Democrat	.61	.00	.61	**0%**
Republican	.38	.00	.38	**0%**
Elon Musk	.00	.009	.009	**100%**
	.9905	.0095		

Nov 2020 Election Winner

Multidimensionality can reverse the Multi-factor effects of Electability

Election hasn't happened yet…

Nov 2020 Election Winner	Likelihood of Winning	Conditional Likelihood of Good Economy
Someone Else	00.1%	50%
Democrat	61.0%	0%
Republican	38.0%	0%
Elon Musk	00.9%	100%

And everyone knows it…

Multidimensionality can reverse the Multi-factor effects of Electability

Election hasn't happened yet…

Likelihood of Winning

Conditional

Nov 2020 Election Winner		Likelihood of Winning
	Someone Else	00.1%
	Democrat	61.0%
	Republican	38.0%
	Elon Musk	00.9%

WAIT A MINUTE

And everyone knows it…

Voter

Multidimensionality can reverse the Multi-factor effects of Electability

Nov 2020 Election Winner		Likelihood of Winning	Conditional Likelihood of Good Economy
	Immediate, cheap, tacit re-negotiation to elect this guy.		50%
	Democrat	61.0%	0%
	Republican	38.0%	0%
	Elon Musk	00.9%	100%
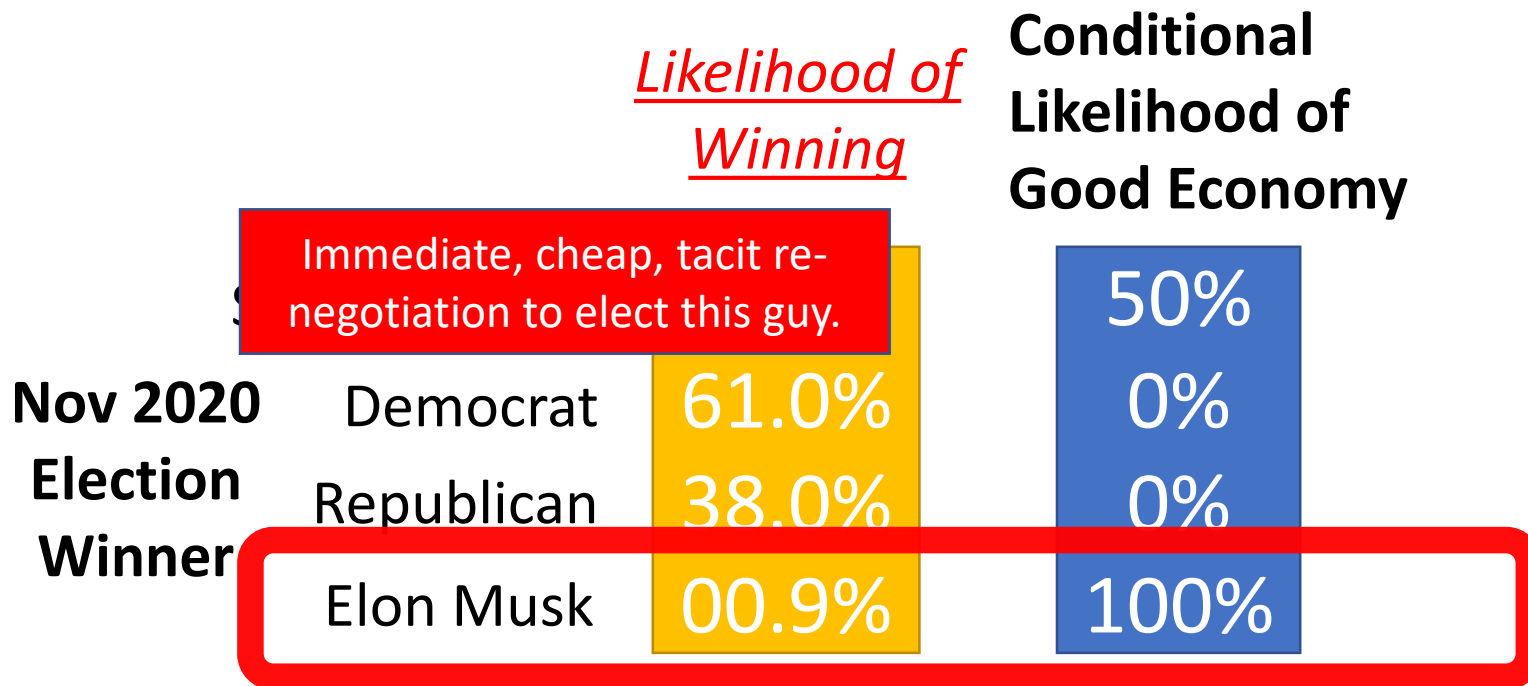
Especially for uninformed or angry voters – the *less* they know, the better. The *more* they are confounded by media/ads, the better!

www.BitcoinHivemind.com

We have returned to Single-Factor Competition!

Conditional Likelihood of Good Economy

Someone Else	50%
Nov 2020 Democrat	0%
Election Republican	0%
Winner Elon Musk	100%

Scales up!!

Conditional Likelihood of Good Economy

Nov 2020 Election Winner

Someone Else	50%
Democrat	0%
Republican	0%
Elon Musk	100%
Peter Thiel	99%
Oprah	52%
Kim Kardashian	14%
...	

Scales up!!

Conditional Likelihood of Good Economy

Nov 2020 Election Winner

Someone Else	50%
Democrat	0%
Republican	0%
Elon Musk	100%
Peter Thiel	99%
Oprah	52%
Kim Kardashian	14%
...	

crucial point

Agenda

1. Moral Objections to Governance (Speech)
2. How Society Reacts to Problems (An Analogy)
3. Why Governance is Hard (A Diagnosis)
4. What Prediction Markets Are (An Institution)
5. Blockchain *Conditional Prediction Markets* – Solution to Governance
6. Getting Practical (2 slides)

How to convince people that the PM information is reliable and interesting?

- Ramp it up over time – Popular Things – Sports (SuperBowl, March Madness), Arts (Oscars, Tonys)

- Accuracy will remain high, and that people gradually become interested.

- The election process is so broken, and distasteful (ie, attack ads), that people will come around eventually.

- Keep up the pressure each election year. Aim especially for Congressional elections where impact is high, voters least informed.

The "Joy Index" – a talk for another time

- ## What do measure?
  - Land Value (ie Georgism)
  - Easily-Reproduceable Metrics – unemployment rate, life expectancy (?).
- ## How to measure it safely, without ***that*** being gamed?
  - Randomness – un-gameable ("Sortition")
  - Non-attribution, secret ballots

Thank You!

Questions?

Overview

- This talk is about **the problem** which Hivemind solves,
- it is **not** about *how Hivemind works* .
- www.BitcoinHivemind.com
- Hivemind is about "Governance", defined as **group decision-making**.

Enforced Group Policy
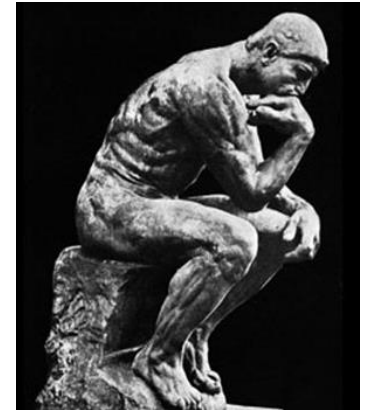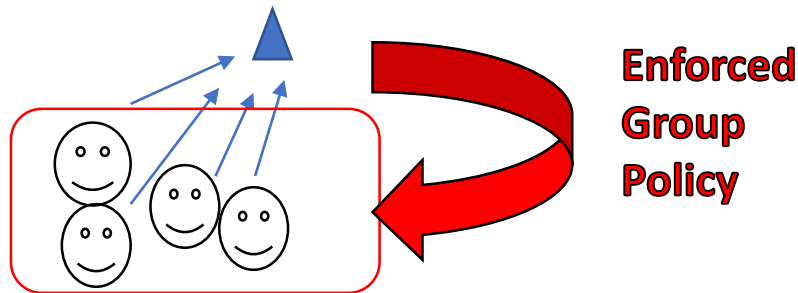
- **Governance** has problems – namely *rational ignorance* and *preference aggregation*, and these problems can be solved with ***conditional prediction markets***.
- This is a passion project of mine, I hope you enjoy!

Agenda

1. Governance is a Real Problem

2. How Society Reacts to Problems (An Analogy)

3. Why Governance is Hard (A Diagnosis)

4. What Prediction Markets Are (An Institution)

5. Blockchain *Conditional Prediction Markets* – Solution to Governance

6. Getting Practical

Governance Is Real – Don't Reject It!

- **Observation**: "Coercion is bad."
  Undesirable to be forced into something.

  ↘ extreme

- **Policy**: Reject all Coercion, by giving blanket veto-power to the individual.

- But I don't agree.
  1. Moral Foundation of _Estimated Consent_
  2. Economic Foundation for Governance

Consent & Governance – Three Key Facts
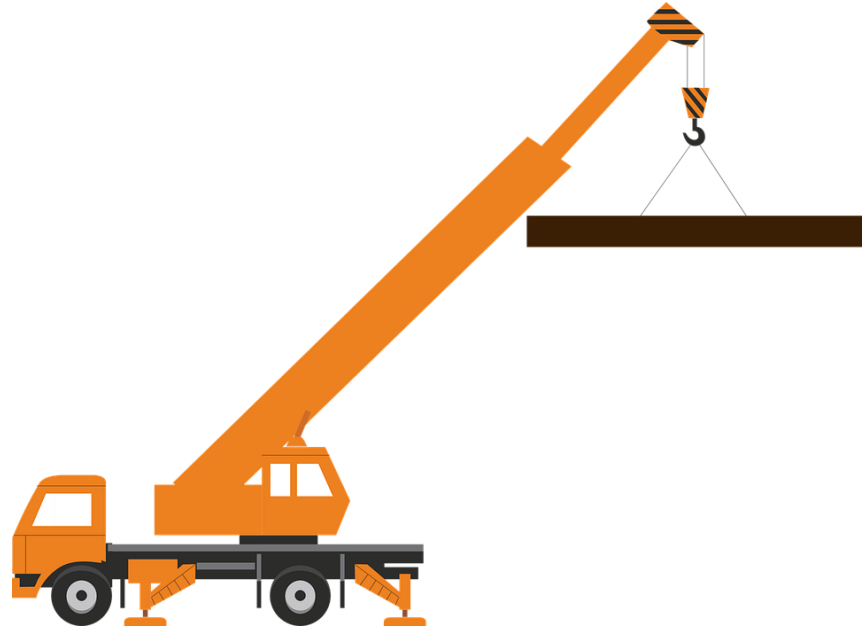
1. Consent is a state of mind; consent is "decided" (and **_not "given"_**).
2. It is always **_guessed_** by the audience*, and these guesses are necessarily imperfect.
    .. story ..
3. Consent-measurement is **_expensive_**, and so there is an efficient "stopping point" for measuring consent. Society has consented to your best guess of consent.

Goal of _governance technology_ should be: make consent **_easier to measure_**!

*The audience is "whoever enforces the rules around here". Could be the state, could be a parent, could be security guard, could be no one.

# Asking Groups What They Want is Expensive

Even when every member of the group is awake, healthy, and talkative….

- O(n^2) Conversations – doesn't scale

- Free Riding – Incentive to lie (and say you never wanted a public good)

- Abusing the Process / Shake Down – Use fake disagreement ; favors whoever can most afford to prolong the negotiations. Expensive: literally consumes GDP, day by day.

- Arrow's Impossibility Result -- mathematically, voters always have an incentive to vote strategically (ie, avoid voting for their preferred choice).

"If Hospers [libertarian party candidate / protégé of Rand]...gets ten votes away from Nixon, which I doubt, it is a moral crime." – Ayn Rand

"the liberum veto was a major cause of the deterioration of... the Commonwealth's eventual destruction...and foreign occupation, dominance and manipulation of Poland for the next 200 years or so.". – Wikipedia

Consent & Governance –
Three Key Facts
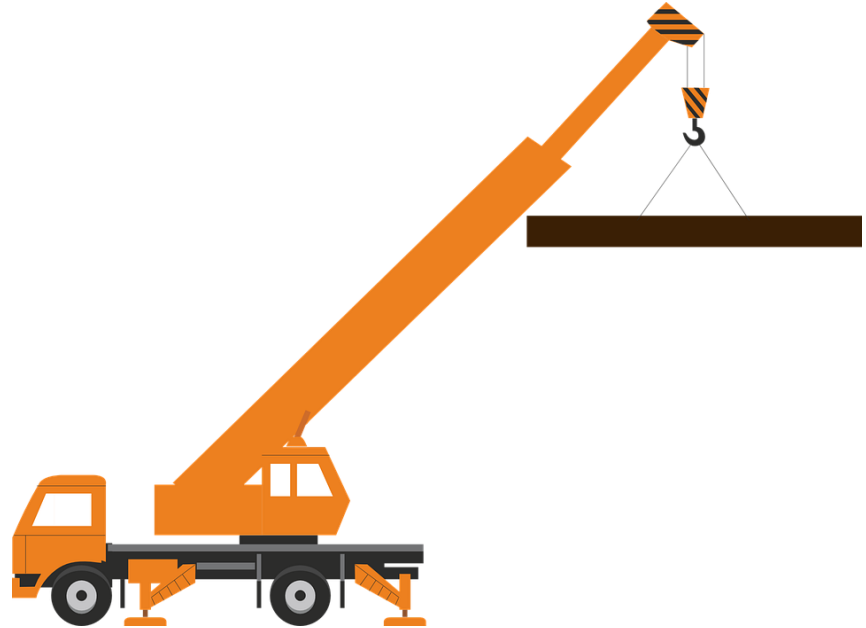
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   Goal of _governance technology_ should be: make consent **_easier to measure_**!

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2 – Economic Foundation of Governance

- Some things are much easier to buy/maintain as a group. Marginal utility of "individualism" rapidly diminishes as we approach "100% individualism".

- **Externalities**
  - "One Person Ruins it for Everyone" (de facto Entangled, "OR" function)
  - Ozone Layer / The Montreal Protocol (no competing Earths)
  - (Hypothetical) Grey Goo – self replicating nanotechnology that kills us all
  - Pollution / Electromagnetic Spectrum management
  - Overfishing / Species Extinction (Harming Future Societies)
  - Extremely 'contagious' spread of fire / disease / looting.

- Efficient "re-use" of goods/services.
  - The roads (infamous) and highways (hard to charge "per use"); National parks
  - Walls/Castles -- (4x vs x^2), strangers vs friends/family, trust issues
  - The Erie Canal, Louisiana Purchase, Interstate Highway System,
  - Basic science research (ie, its hard for Newton to patent "Gravity")

"However attractive anarchy may be as a philosophy, it is not feasible in a world of imperfect men." – Milton Friedman

- Coming Up
  - Ignoring, Tolerating, and Solving Problems – A rain metaphor
  - Governance is hard. Why?
  - What are prediction markets?
  - What are conditional prediction markets?

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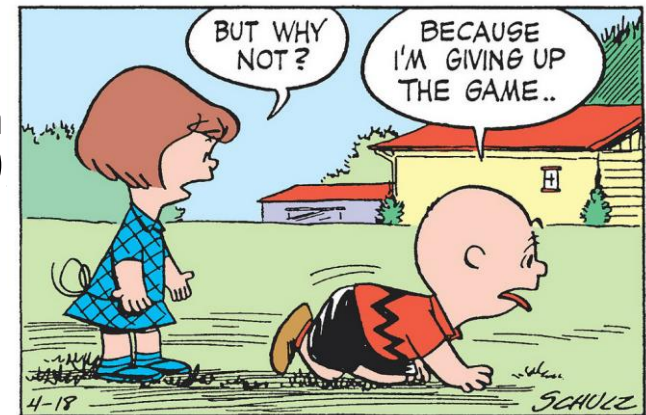6. Getting Practical

Problems – Rejecting, Tolerating, and Solving

- **Rejecting** a Problem
  - Misunderstanding/misrecognizing the problem.
  - Ceremonial use of problem as backdrop, for social reasons.
- **Tolerating** a Problem
  - You know there is a problem, you know there is currently no solution. Problem may seem unsolvable.
  - Problem is accepted an unalterable fact of life.
- **Solving** a Problem
  - You know the problem, and the solution.
  - You will have obtained *more knowledge* and *better technology*, and the problem will depart, never to return.

Ex: No Rain, Bad Harvest

- **Pray more** – [do nothing to get more rain]
  - Try to <u>reject the problem</u>, or <u>erroneously respond</u> – the critical thing is prayer, not water.
  - Use false solution as opportunity for socialization (ie 'signaling' or 'loud complaining done to make friends').
  - Culture may eventually *rely* on these false solutions, for stability.

- **Settle for Failure** – [<u>accept</u> that "rain is unreliable" is unalterably true]
  - Accept reality and make the best of it.
  - Other options: ration more; have fewer children / livestock; ***give up*** on agriculture (hunt instead) plant many more seeds to overcompensate for the eventual loss (work harder).

- Irrigation Technology – [<u>solve</u> the problem]
  - …using *more knowledge*, and *better technology*.

Allen, *Praying for Rain* (1938)

Schulz, *Peanuts* (1954)

Ex: No Rain, Bad Harvest

- **Irrigation Technology** – [<u>solve</u> the problem]
  - …using *more <u>knowledge</u>*, and *better <u>technology</u>*.

Schulz, *Peanuts* (1954)

Problems – Rejecting, Tolerating, and Solving

- **Rejecting** a Problem

  Anarchism / Voluntarism / Voting Ron Paul

  - Misunderstanding/mis
  - Ceremonial use of problem for social reasons.

- **Tolerating** a Problem

  The Cypherpunks / Encryption / Bitcoin

  - Recognizing that a proble   is currently no solution, and   unsolvable.
  - You will grit your teeth and accept this as an unalterable fact of life -- reaching an equilibrium with the problem.

- **Solving** a Problem

  Blockchain Conditional Prediction Markets

  - Understanding the proble   ch.
  - You will have obtained mo   em will depart, never to retur

Pumping up that second factor, with a CRISIS!!

1 FIGURE

Government Revenue as a Percentage of GDP

This figure shows revenue of the federal government and of state and local governments as a percentage of gross domestic product (GDP), which measures total income in the economy. It shows that the government plays a large role in the U.S. economy and that its role has grown over time.

Source: Historical Statistics of the United States; Bureau of Economic Analysis; and author's calculations.

"…while these crises [Great Depression, WW2] were *transitory*, the increase in the scope of government was *permanent*."

Bad policies following crises:

　　　　1929 Crash → Taxes/tariffs, labor cartels
　　　　WW2 → Japanese Internment Camps
　　　　9/11/2001 → Iraq War / PATRIOT Act
　　　　2008 Crash → Bailouts, Retroactive Bonus Financing

Pumping up that second factor, with a CRISIS!!

1 FIGURE

This figure shows revenue of the federal government and of state and local governments as a percentage of gross dome[stic] income in the economy. It sh[ows] economy and that its [...]

Government Revenue as a Percentage of GDP

Source: Histor[...]

Revenue as Percent of 35% GDP
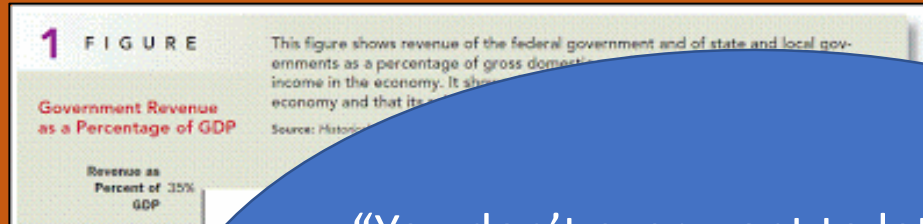
"You don't ever want to let a crisis go to waste: It's an opportunity to do important things you would otherwise avoid."
- Rahm Emanuel (WH Chief of Staff under Barack Obama), speaking in 2008

"…whi[...]t Dep[...] [...]n the scope [...] *permanent*[...]

Bad po[...]es:
1929 Crash → Taxes/tariffs, labor cartels
WW2 → Japanese Internment Camps
9/11/2001 → Iraq War / PATRIOT Act
2008 Crash → Bailouts, Retroactive Bonus Financing

Crisis Logic

In times of crisis:
- Mis-coordination costs RISE !
- Anyone interfering with coordination is dangerous!
- Thus, the *defenses* of the **Status Quo** greatly increase.

people currently plan on going (ie, the *status quo*), and,

2. ... (since time/attention/communication are not free)
    how **open to communication / negotiation** everyone is.

ave four criteria, but you ultimately must make

A Kind of "Future Wikipedia"

	Wikipedia	**Truthcoin**
Focus	Outcomes of **past events**. Consensus on **known facts**.	Outcomes of *future* **events**. *Future* **consensus** on *knowable* facts.
Cost	Free to read **and edit**.	Free to read, <u>easy to understand</u> (check prices), but **edits can cost or earn you money**.

Learn, in Jan 2011, how unlikely it was that 2012 would be warmest.

Price=40 implies 40%

Already happened