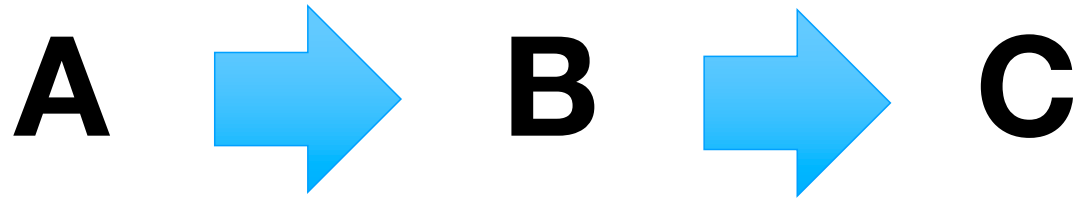


Peace Requires

- **Cooperation**
- **Trust**
- **Justice**
- **Equality**
- **Wealth**
- **Low Fertility**
- **Housing, food, health care**
- **Transportation**
- **Energy**
- **Education**

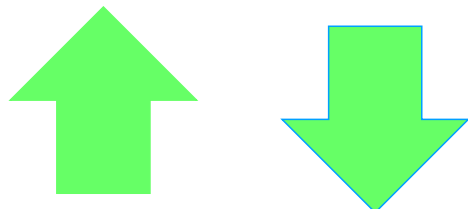
One Way Causality



Mutual Causality

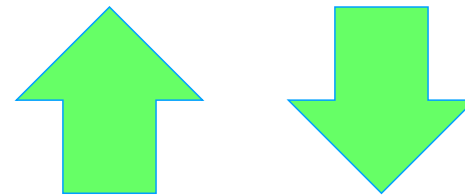
Mutual Inhibitory

Vicious cycle
Competition



**Extrinsic-
Motivation**

Virtuous cycle
Cooperation



**Intrinsic-
Motivation**

What Causes Non-cooperation?

- Ignorance of the **benefits** of cooperation.
- Ignorance of **who** to cooperate with.
- Ignorance of **how** to cooperate.
- **Fear of rejection** of proposal to cooperate.
- **Scarcity of resources** to cooperate:
(time, space, communications...)
- **Short-termism** often favors competition.
- **Fairness**: Will I help someone more than me if I cooperate?
- Lack of **leadership/management**.

Solution: Education about cooperation


**How to prevent
fighting over stuff?**

Have Enough Stuff

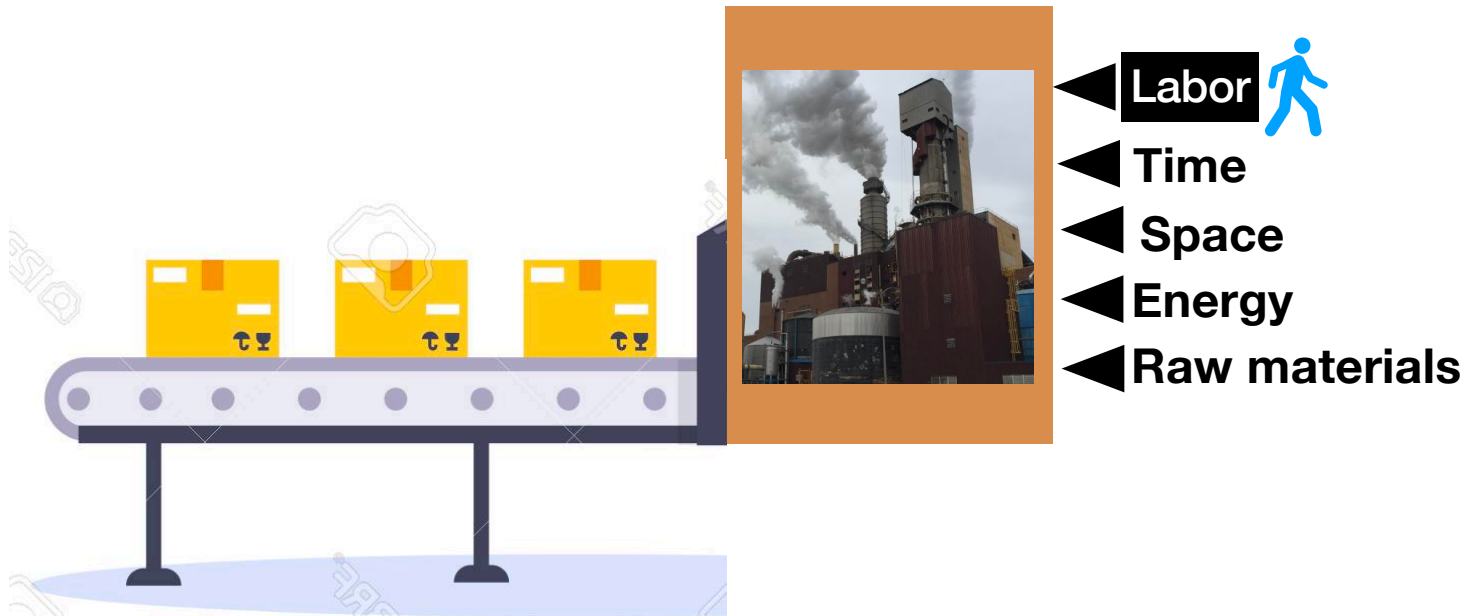
for everyone

Factory Inputs

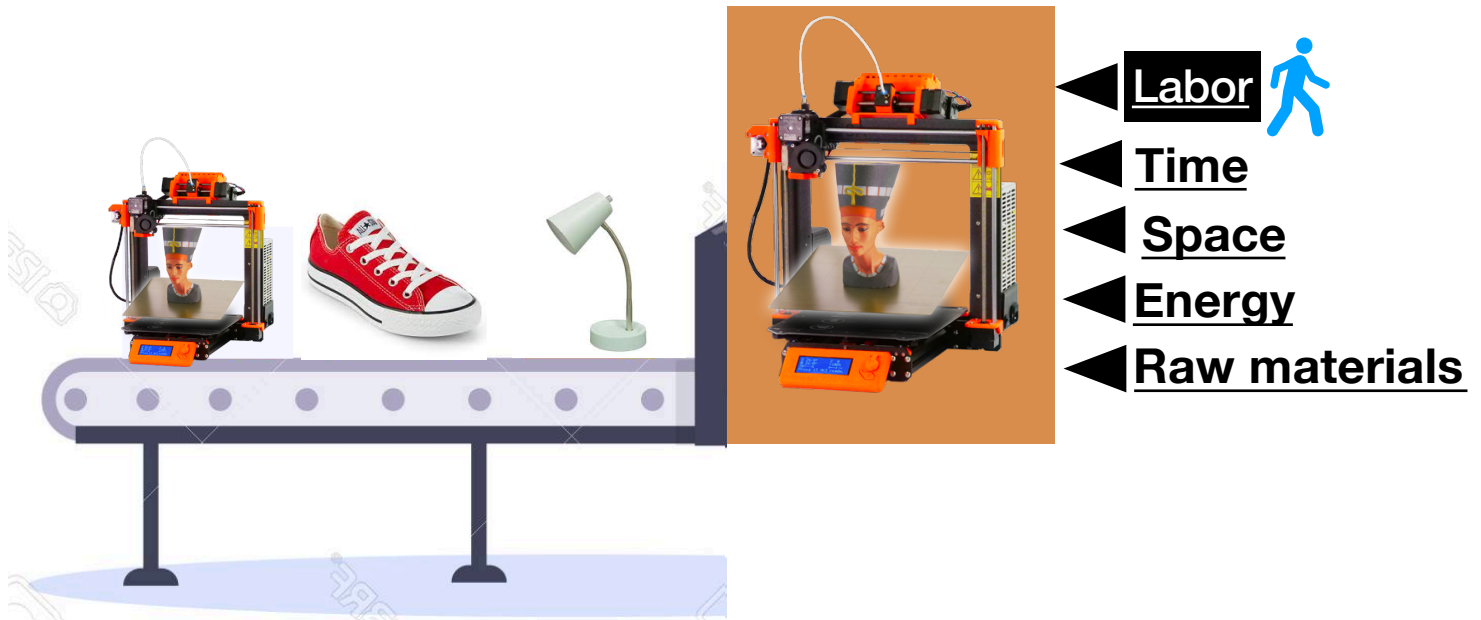


- ◀ Labor 
- ◀ Time
- ◀ Space
- ◀ Energy
- ◀ Raw materials

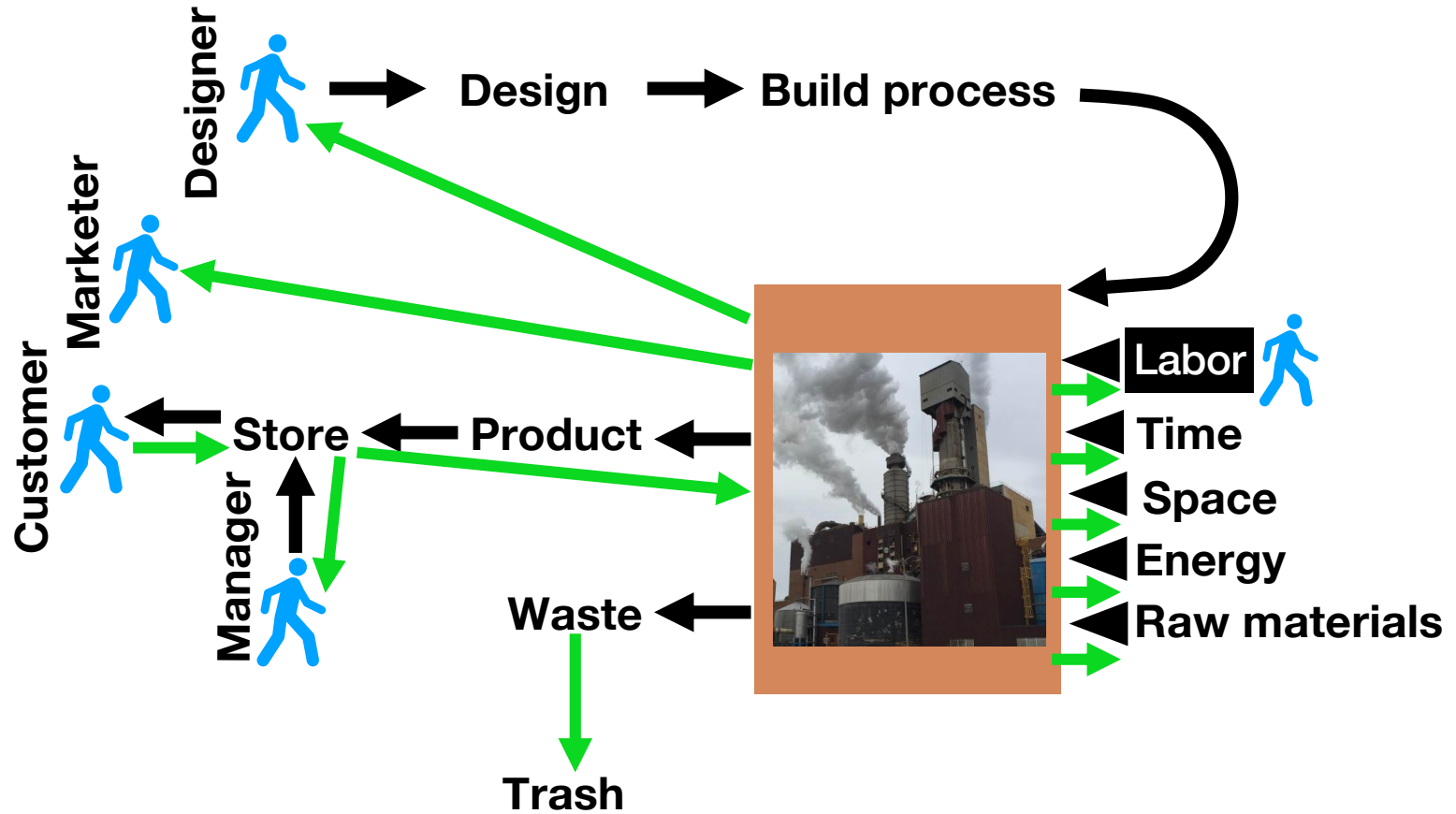
Big Factory Outputs



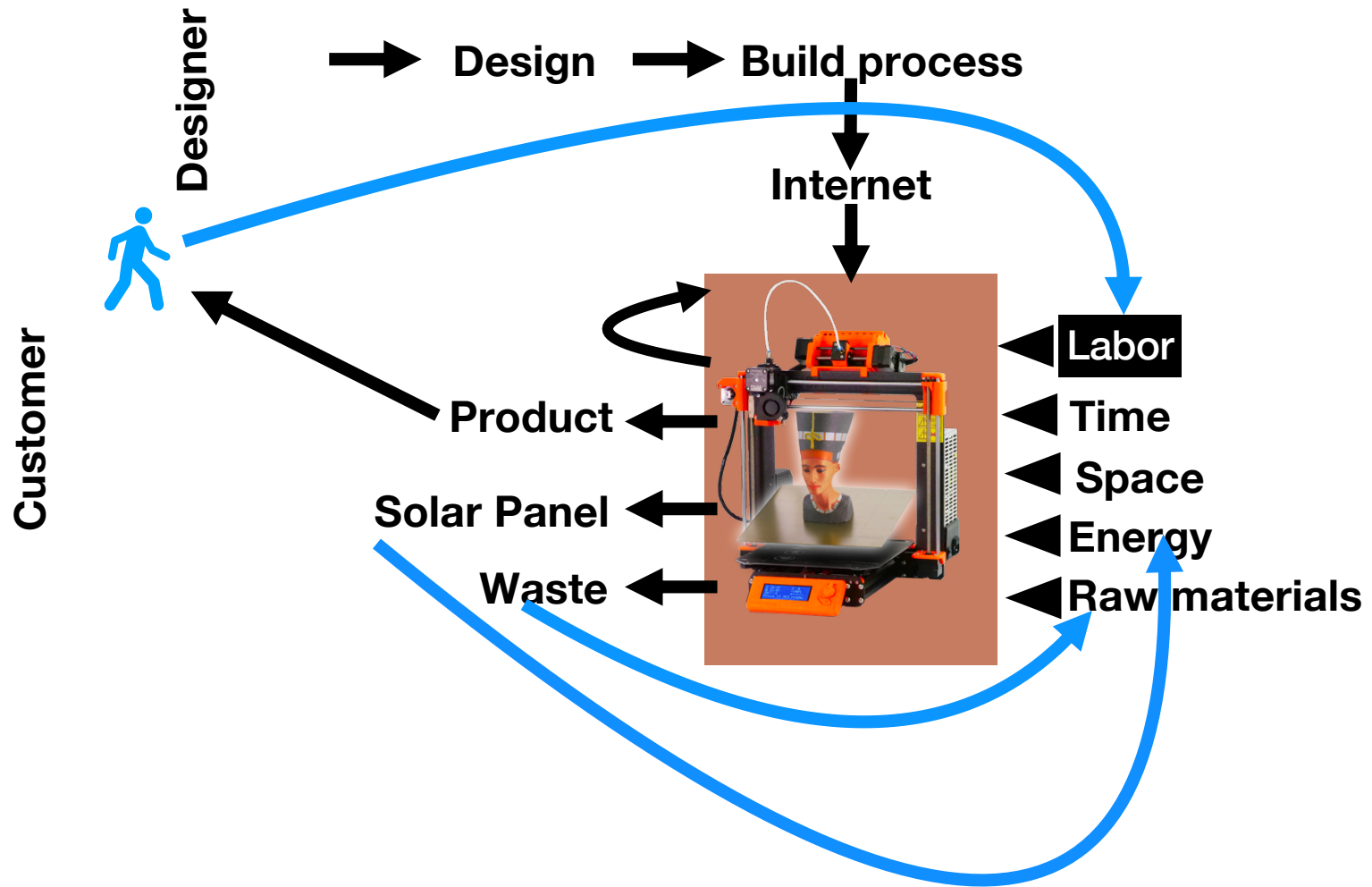
Personal Factory Outputs



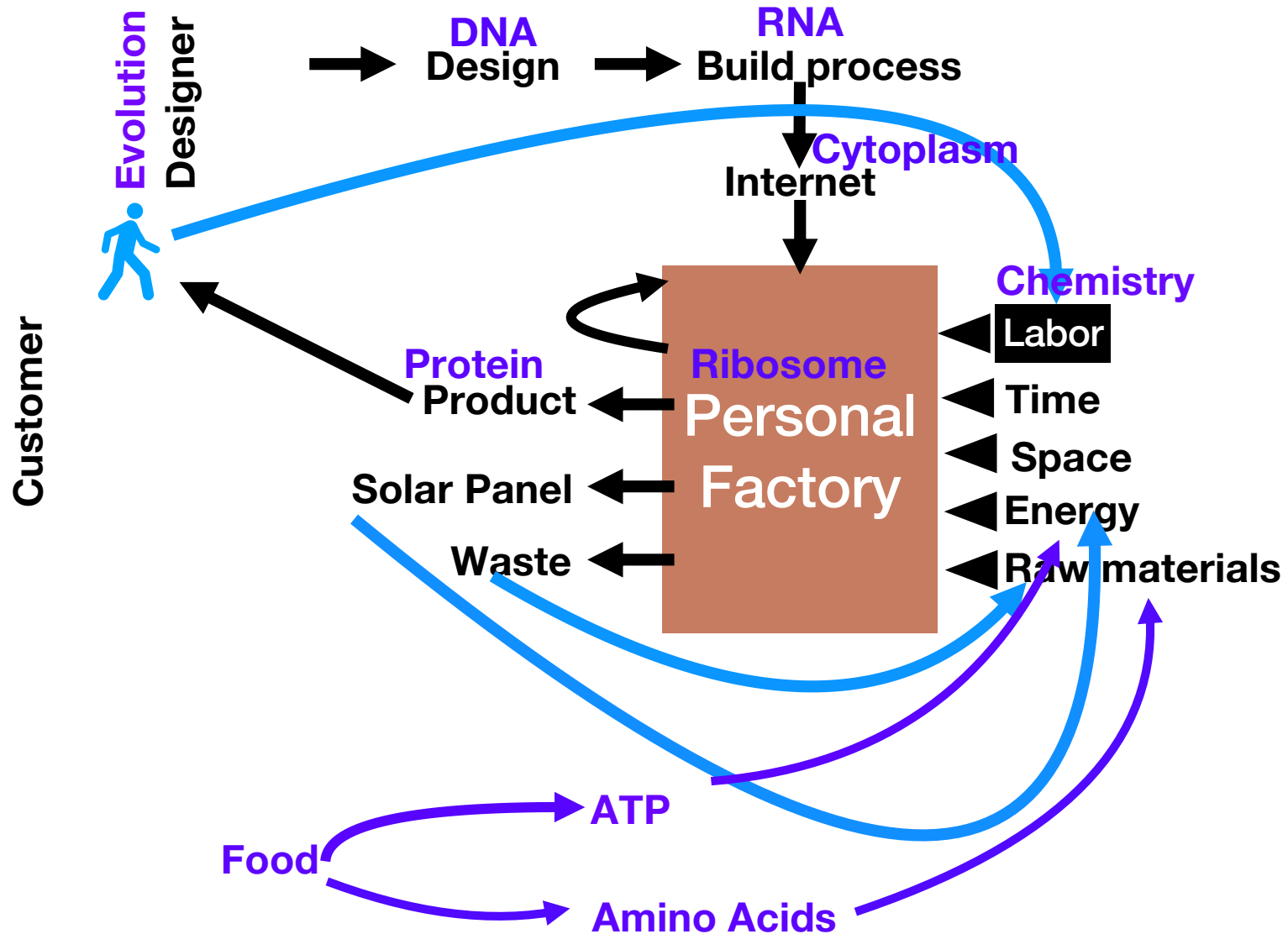
Big Factory Ecology



Personal Factory Ecology



Protein Factory Ecology



Personal Factory

Advanced 3D Printer with more:

Materials

- Plastic
- Metal
- Ceramics, Glass
- Liquid
- Gels/soft material
- Electronics
- Cloth

Processes

- Additive
- Subtractive (drills, laser)
- Folding (origami)
- Casting
- Assembly (pick and place)
- Growing
- Chemistry/Biotech

Dexter Development Environment for programming robots.

Dexter Development Environment 3.6.4

//doesn't load patches, just the system for dealing with them

Editor File Edit Learn JS Insert Series Jobs Test fontsize 17

junk.js --- dde_apps/ JS

```
226
227 new Job({name: "job1",
228 do_list:[
229 Dexter.move_all_joints(10, 20, 30),
230 Dexter.move_all_joints(20, 30, 40),
231 Dexter.move_to([0.2, 0.3, 0.456])
232 ]
233 })
234
235
236
237
238
```

Doc < > search string Find ?

▼ **Simulate Dexter**
The simulate pane shows a graphical simulation of Dexter with joint angles from the last robot status returned.

Use the mouse in the *Simulate* pane to:

- **Rotate table:** mouse-down then drag.

Misc Simulate Dexter

default robot: Dexter.dexter0 Pause Go Demo Expand

simulate real both real-time-sim JS debugger

Simulate Job/Robot: All **Move Dur:** s


X:	Y:	Z:	J1:	J2:	J3:	J4:	J5:	J6:	J7:
----	----	----	-----	-----	-----	-----	-----	-----	-----

Output Eval Step Code Clear JS Type in JS & hit the Enter key to eval

The result of evaluating JS new Job({name: "job1", ... is...

< > Refresh **INSPECTING A Job named: job1**

```
{name: "job1"
class: Job
highest_completed_instruction_id: -1
job_id: 1
orig_args: Object
program_counter: 0
```



Government Types

- 1. False freedom
(chaos, individual freedom, right to bear arms)
- 2. Absolute authoritarianism
- 3. Competitive authoritarianism
(Top 9 most populous countries plus most others have this form of government in 2020)
- 4. Voteocracy
(rare Scandinavia?)
- 5. Rational freedom
(Collective freedom,
one example: Reasonocracy)

Good Government Requirements

- Small group of well motivated people
- Good process by which they make decisions
- But what if: Everybody votes on everything?
 - Not enough time for citizens to understand complex issues
 - Too easily swayed by media sound-bite-ism

Reasonocracy

- Requires Well Motivated People
- Requires Reason, not power-based Decision Making
- Requires Complexity Management
- Requires citizens educated in Cooperation
- Easier if sufficient wealth for all (Makerism)

Reasonocracy Process

- No Voting
- No President
- No Parties
- 30 committees, 10 or so members each
- Justify with facilitator, tech help, expert testimony
- Collect ideas from numerous, smaller, volunteer Reasonocracy clubs

4 Years in the Life of a Reasonocrat

- Randomly Selected
- Campus life: Apartment, easy food, medical, pool, with your family
- First year: Education: Economics, Reasoning, Group collaboration, Cognitive Bias, Justify
- Ongoing Education: Class, lectures
- Member of 3 committees
- Exit with full pension, careful monitoring for undue influence

Justify

- [Justify Intro Video](#)
- [Justify for engineering \(solid reasoning\)](#)
- [Steptorial on Justify](#)

Can Resonocracy Work?

Deliberative Polling

- Random Selection of decision makers
- 4 days in a hotel
- Tough issues: Climate crisis, immigration, pandemic
- 50 page Fact book prepared by agreement between left and right. Excludes who backs what.
- Before-after Interviews: Shift toward: facts, science, empathy, minority support (leftist)

Deliberative Polling

References

- James Fishkin, Stanford University
<https://cdd.stanford.edu/contact-us/>
- Video on 2019 session
<https://cdd.stanford.edu/mm/2015/05/a1r-cnn-zakaria.mp4>
- Oxford lecture (By Michigan professor)
<http://blog.practicaethics.ox.ac.uk/2019/10/prof-elizabeth-andersons-uehiro-lectures-lecture-2-summary-improving-political-discourse-1-re-learning-how-to-talk-about-facts-across-group-identities/>
- Polarization
<https://www.thecrimson.com/article/2018/1/24/gao-identity-politics/>

Adversarial Justice Process

- Apprehend Suspect
- Determine innocence or guilt
- If guilty, imprison
- After sentence, throw them out on the street
- Due to difficulty of ex-cons getting jobs and housing they resort back to crime
- Repeat

Victims of Adversarial Justice

- The Truth
- Society (cost, insecurity)
- The poor
- Victims of crime

Motivation of Adversarial Justice Actors

- Judges: power, prestige, scholarship, influencing the law, win re-election
- Prosecutor: to “win” by convicting, extracting money from client.
- Defense Attorney: to “win” by acquittal, extracting money from client
- Prospective Juror: to not have to be on jury
- Juror: to not spend time on the case. Court rules prohibit taking notes, asking questions, training
- Expert witnesses: money
- Victim: revenge
- Criminal: less jail time, lower fine
- Judicial Industrial Complex: DEA, prison industrial complex, Lawyers.

Reduce the need for Justice

- Meritism: reduces theft, need for power over others
- Reasonocracy: less government corruption
- PRT: no car crime, road rage, accidents
- Non-lethal weapons: less murder, serious violence
- Women's shelters: less domestic violence
- Decriminalize Drugs: less drug use, less drug crime
<https://theintercept.com/2020/11/04/oregon-drugs-decriminalization/>

Cooperative Justice

- Process: no delay, truth-finders, corrective vs. punitive
- Accused: better life
- Truth finders (not money motivated under Makerism)
- Society: reduced crime, lower cost process
- Police: safety, reduced role.
- no transportation duties
- less guns
- decriminalize drugs
- less theft

Restorative Justice

- Presume guilt: not a truth-finding process.
- Emphasize “restoring” the value that the criminal stole from the victim.
- Involve friends and family from the criminal.
- Rope the criminal into empathetic society.
- Victim needs criminal to appreciate the harm done.

Transportation Definition

- The process of moving something from one location to another.

What is Transported?

- People
- Goods
- Manufacturing
supply chain
distribution channels
assembly
- Farming
- Biology
- Information (AKA “communication”)

Transportation Impact

- Cost: USA: \$9K/year per car.
Car crashes cost 3% of GDP in most countries.
- Time: USA: avg. daily commute: 35 min. 152 hours per year.
- Health:
USA 40K deaths per year. World: 1.3M deaths per year.
Millions of injuries
air pollution diseases
Mental agitation
- Climate Crisis
gas, oil, exhaust, tires, disposal
- Land Use: USA cities: 50%. USA: 1B parking spots
- Noise

Transportation Energy

- Watt-hours per vehicle km
- Weight/Acceleration (stop and go) regeneration
- Aerodynamic drag
Frontal Area
Shape (CD)
- Rolling resistance
- Embodied energy: vehicles and road

CAR 140	PRT 14
Heavy	Light
wide	narrow
high	low
high	low

Personal Rapid Transit Example

- <http://www.transitx.com>

Personal Rapid Transit

for inter-village transportation

- Cheaper (often)
- Faster
- Safer
- Smaller
- Lighter
- More Efficient
- Cleaner
- Quieter
- Calmer



Personal Health Care

- Home diagnostic sensors
attachments to Smart Phone/Watch
Camera (wounds), Mic (cough),
Blood: pulse, pressure, oxygen,
Chemistry: blood, urine, feces, hair
EEG
- Diagnosis: On web AI, nurse, expert doctor
- Print Medical Supplies: cast, bandage, 4K
drugs, vitamins

Preventative Health

- PRT: no: car accidents, air pollution, road rage, transmission in crowded transit
- PRT: urgent care pod, drug delivery, ambulance
- Makerism: no poverty, health supplies, decrease sex-trade incentive, decrease domestic violence, drug gangs
- Pure, home-grown food, smart diet
- Decriminalize drugs: Portugal, Oregon
(decrease: aids, addiction, overdose) <https://theintercept.com/2020/11/04/oregon-drugs-decriminalization/>
- Sanitation: toilets: composting and <http://www.change-water.com/problem>
- Non-lethal Weapons (Fulfill protection emotion without death)

Division of Labor

- Everybody can't know everything (i.e. representatives in government)
- Many hands make light work.
- But... Coordination itself is work.
- With transactions between people, other parties (gov, etc) get a cut. Bang for buck can go down.
- Less personal knowledge and control
- You might not have the money (ability to reward others)

Little Infrastructure

- PRT for transportation: no roads, parking, gas or police
- Energy: rooftop solar and/or wind. Battery storage. Passive house, efficient appliances
- Water: rain or air collection. Cistern storage
- Sewage: Composting toilet, recycle or graywater garden
- Communication: Mesh-networked smart phone
- Food: home-grown in aeroponic greenhouse
- Education: The internet. Like during pandemic.
- Misc Stuff: houses and their contents via personal factory
- Healthcare: phone diagnostics, remote experts, print medicine

War's Beneficiaries

- The Citizen: no choice but to pay war taxes
- The President: re-election, politics of fear
- The Secretary of State: doism
- The General: Protect our national self interests
- The Congressman: pork-barrel jobs for re-election
- The Recruit: money
- The Terrorist: self-defense
- The Terrorists brother: revenge, doism
- The Vet: Don't join the military.
Join the Peace Corp to see the world.

Solutions on Every Decision's Table

- The current situation (do nothing) .
Often this is not compared to new ideas.
- Every idea (even unviable ones) because combinations of ideas might be best.
- Innovate (when the other solutions aren't sufficient)
- Best is not as important as sufficient.
- Use competition vs cooperation as a meta-criteria

Innovation

- Definition:
 1. Something that makes a significant, positive impact. Not a band-aid.
 2. Something that's good.
- Myth: Capitalism promotes innovation.
Exhibit A: Toilets
“The hardest thing to do with a good idea is give it away” – Marvin Minsky

Status Quo Bias

- Do nothing is more likely to be chosen than other, better ideas.
- Fear of the unknown is stronger than fear of the known.
- Risky: 1. something bad
2. something uncertain
- Consider down-side of new but not of existing.
- The powerful fear change will decrease their power.
- We are not sustainable, so change is not an option.