Notes on
Abundance
Book Authors: Ezra Klein and Derek Thompson
Notes Author: William Gasarch

0 Introduction: Beyond Scarcity

The book begins with a fantasy (though it could happen) about the future: Technology does a lot for us: clean water, non-polluting energy, good economy. This sequence begins by asking about the past (our present)– a time when we *knew* how to solve a lot of the problems of the world but were unable to do so.

The book mostly ignores those people who deny we have a problem (e.g., global warming) or don't care (the poor-its their own fault) and is mostly a criticism of liberals who claim to want to solve these problems but what they do is counterproductive. The intro gives three examples that will be expanded on later.

1. Liberals want to stop climate change but we close down nuclear power plants (Counter Thought: Biden was pro-nuclear power, see

   `https://www.spglobal.com/commodity-insights/en/news-research/latest-news/electric-power/071024-biden-signs-bill-to-boost-advanced-nucle`

)

2. Liberals want housing for the poor, but zoning and other rules make it hard to build houses.

3. Liberals want better health care but the rules for funding science discourages bold thinking. [Trump and Musk are making this far worse. To bad- they had a chance to fix what was wrong. And RFK Jr's anti-vax attitude is bringing back diseases.]

Some of this mess came from laws that made sense at the time but no longer do.

Some came from ideology: The right wants less government, the left wants (to many) rules to make government either fair ot take on to much.

Take housing. There are two aspects to the problem:

- Allow people to buy housing. For example, give people money to buy housing. This liberals have done. (This is called *Create Demand*.)
- Allow people to build houses. This liberals have been counterproductive by zoning laws and quotas (x percent of the people building it must be black). (This is called *Create Supply*).

The problem of creating demand but not supply permeates the book.

1 Grow (The Housing Crisis)

1.1 Why Cities Matter

While America has a romantic view of farming (*go west young man*) and the rural life, its more typical to find your fortune by moving from rural to cities. Unfortunately, hosing prices in cities are insane making it hard to make this transition (house prices in rural areas are reasonable).

Many people hare house-poor: they spend 30% of their income on their house. They also often have long commutes. [Will teleworking help that? Later in the book they say why working in an office with people, at least some of the days of the week, is a benefit.]

The cities were the new frontier (where to go to make your fortune). The old Frontier closed a long time ago (the closing of the frontier was noted as being a problem by Jackson Turner in 1893, see

`https://en.wikipedia.org/wiki/Frontier_Thesis`

).

The cities, the new frontier, is now also closed.

Cities are important. One would think that with zoom and other technologies, distance between people is no longer an issue but NO- close proximity is needed for collaboration. Note that ZOOM insists employees come in a few days a week.

1.2 The Great Divergence

The book raises the question of (for example) WHY did high-tech happen in Silicon valley and Finance in NY, but not vice-versa. They do not answer this. I'd be curious.

I am also curious if this *proximity is needed* will still be true once people are more used to zoom and other technologies.

Hairdressers, janitors, other jobs like that do well in the cities because there are more people there to serve. So its not just the lawyers and engineers who benefit from the cities, its also the adjacent jobs. BUT- now it's to expensive to move there. Some people are moving AWAY from cities because of the cost.

Lawyers still do well moving TO a city. Hairdressers do well to move AWAY from a city.

About 2/3 of all jobs are local.

1.3 Lawn-sign Liberalism

Lawn-sign liberalism: Liberals who claim they are for a certain good cause (e.g., have a BLM or similar sign on their lawn) but whose actions (NIMBY) betray that.

Zoning laws were originally needed (maybe) because housing was getting to congested, but now limits housing to a crippling degree.

1.4 This is Your State on a Housing Shortage

Myths about whey California has a big homeless problem.

1. *Nice weather.* False: Houston has nice weather but much fewer homeless.
2. *(Not just California) Poverty and Homelessness are correlated* False: Rich cities with low poverty have lots of homeless.
3. *Generous social services.* False:
4. *Liberal drug and policing problem.* False:
5. *Mental Health (I've heard this about the problem of Homelessness in general- when the mentally ill won the right to be let out of institutions they became homeless* No correlation. Hawaii has a low rate of mental illness but high poverty.

So what IS the problem: the biggest factor by far is the availability and cost of housing.

SO that is where to attack the problem.

1.5 What happened in the 1970s

Zoning and other laws made house building slow down.

1.6 America the Ugly

Environmental bills which were needed also lead to restrictions on housing. Here is a quote- I will tell you who said it on the next page, but try to guess first.

Restoring nature to its natural state is a cause beyond party and beyond faction. It has become a common cause of all the people of this country.

Clean air, clean water, open spaces— these should once again be the birthright of all Americans. If we act now they can be.

We still think of air as free. But clean air is not free, and neither is clean water. The price tag on pollution control is high. Through our years of past carelessness we incurred a debt to nature, and now the debt is being called.

Guess who said this, and when, before going to the next page.

That was said by that woke Marxist Richard Nixon in the 1970's. The environment was a bipartisan cause back then.

There were court cases and the need for *environmental impact statements* which just slowed or stopped housing projects.

1.7 The Plague of Growth

More of the same.

2 Build (Climate Change)

Climate change: the right ignores it, and the book ignores them. Its the left who takes it seriously that needs to be examined.

The degrowth movement- Cut down on producing pollution, cut down on growth.

Degrowth is both much more and much less than a solution to the climate crisis.

- Much more: Degrowth is an anti-material, back to nature, approach.
- Much less: When it comes to actual policy the movement backs away from anything radical. For example, eating less meat would be good for the environment, so less subsidies for raising cattle has been suggested, but this is so minor.

Upshot: Trying to solve Climate change by cutting back on energy consumption is not going to work politically or practically.

2.1 We Just Burned It

The title is referring to, in the past, to keep warm you BURNED coal and wood. Now hopefully we don't have to.

The dichotomy: *Climate Action OR Growth* is false. We have the technology to get cheaper energy with less pollution and this is the way to go. Solar and Wind have gotten really good. Nuclear is good.

What can we do to make this happen?

2.2 Electrify Everything

Obstacles:

1. There is a cost to convert to Wind and Solar.
2. Building a nuclear reactor is expensive (this may change some if regulations are repealed, but still expensive).
3. Question: Are they cheaper for the consumer yet?
4. Wind and Solar require lots of land. So some NIMBY problems.
5. Those that don't believe in climate change will fight changes that make sense economically because of their believes. [Extreme case: Rolling coal. From Wikipedia: *The practice of modifying a diesel engine to deliberately emit large amounts of exhaust with soot and incompletely combusted diesel. Rolling coal is a form of anti-environmentalists protest.*] [Bill predicts that within 10 years the left will embrace Nuclear and the Right will turn against it and use the same bad-science arguments (your kids will become mutants!) that the far left used to use.]
6. Biden's inflation-reduction act was the right direction but was still to small. [If it was larger would it have passed?] So government is needed.

2.3 California's No Speed Rail

California has been trying to build a high speed Rail for a long time. Regulations keep getting in the way-some of them are Environmental regulations.

2.4 The Construction Puzzle

One would think that a construction worker is more productive now (because of technology) then they were (say) 50 years ago. No. They are less. Why? Safety regulations, paperwork regulations, environmental regulations.

This surprises me since in manufacturing they are hiring less workers because much it is automated and more efficient. Manufacturing and construction are more different than I thought

2.5 The Organization of Affluence

The AARP is a powerful organization that has fought for Social Security (and fought to maintain it). It is good that a democracies allows this kind of organization.

The book *The Rise and Decline of Nations* applauded this. Societies thrive when the people have a voice.

But the US is now declining? He assumed that those organizing would be for the redistribution of wealth (e.g, AARP, unions). There are corporation and AstroTurf movements (and even some real ones) who are backing causes that are bad for society.

And with so many competing voices, very little can get done.

And its worse: those who do well are NOT the ones who can plan and build wonderful things, but those who can navigate the complexity.

[Similar: if our society rewards people on wall street who move around money but don't produce anything, more than those who produce things, we are giving the wrong incentives for people to help society.]

2.6 Nader's Raiders

Ralph Nader (who was a lawyer) lead a movement to sue the government (more than it sued corporations) to enact laws to protect the public.

I THOUGHT this would be a story of *they first did good, but then did bad*. But its more complicated than that.

- Because of environmental lawsuits and laws many pollutant emissions were reduced by 80%. This is a clear win.
- To achieve this came a new force: democracy by lawsuit. This views government not as a partner in making things better, but an enemy that has to be challenged.
- Environmental laws have been used to shut down clean energy projects.

2.7 Liberalism's Lawyer Problem

Liberals have become process-focused rather than results-focused. [I noticed this with comments like

- Justice Thomas took gifts from wealthy republicans *AND DID NOT DECLARE IT!!!!*
- Donald Trump slept with a porn star and paid her to keep quiet *WHICH IS A CAMPAIGN FINANCE VIOLATION!!!!*
- Elon Musk is destroying our government *AND HE IS NOT AN ELECTED OFFICIAL!!!*

]

Sometimes liberals filed lawsuits instead of trying to win in the legislature. [Sometimes it was their only recourse.]

People who have a law degree make up:

1. 1% of Americans.
2. 33% of all House members.
3. 50% of the Senate.
4. Half of the last 10 presidents. (Trump-NO, Biden-YES, Obama-YES, Bush Jr-NO, B. Clinton-YES, Bush Sr-NO, Reagan-NO, Carter-NO, Ford-YES, Nixon-YES.)
5. over 33% of all Governors and Lt. Govs.
6. 13 of the 15 people who were the Dem prez or VP candidate since 1980.

   The two who were not were Carter and Walz.

   Here are the rest:

   Dem Prez Candidates with law training: Mondale, Dukakis, B. Clinton, Gore, Kerry, Obama, H. Clinton, Biden, Harris. (Note- Gore started law school but quit to run for the House.)

   Dem VP Candidates with law training: Ferraro, Bentson, Gore, Lieberman, Edwards, Biden, Kaine, Harris.
7. 5 of the 13 people who were the Rep prez or VP candidate.

   The 8 that don't have law training: Reagan, Bush Sr, Kemp, Bush Jr. McCain, Palin, Ryan (this surprised me), Trump,

Rep Prez Candidates who have law training: Dole, Romney (joint MBA/JD).

Rep VP Candidates who have law training: Quayle, Pence, JD Vance

Note that this is LESS of a tendency for Republicans.

The problem with lawyers is that they think legitimacy comes from following procedures. This is both hard to do if the procedure is complex, and can also work against what society needs.

2.8 The Green Dilemma

More of the same: The Green New Deal involves BUILDING new solar farms, wind farms, nuclear power plants, but the Old Green Laws stall growth and block building.

3 Govern

There are success stories for private building of housing: private means that some of the regulations that apply to public to not hold. (In some cases some regs were waived.)

More of the same: zoning and other rules make supplying housing hard.

3.1 The Problem with Everything-Bagel Liberalism

Trade off denial

The Biden Chips-act was supposed to revitalize the Chips industry in America. Thats a well defined goal. It also had provisions for the following:

1. Get jobs for the poor, women, minorities, veterans.
2. Lift some barriers for skilled immigrants.
3. Make sure the jobs are union.
4. Be environmentally friendly
5. There may be others

While these goals may be good they mostly have *nothing to do with revitalizing the Chip industry.* The only one that might actually help is lifting barriers fr *skilled immigrants* if that skill has to do with Chips.

These makes it hard to get anything done. This is another Demand-Supply issue: What if there are not enough skilled poor, women, minorities, veterans for the jobs?

[The NSF has the same problem. Every NSF grant has to have a section on diversity. So if I had a grant to improve the performance of some algorithms, I would have to have a section on diversity which has nothing to do with performance of algorithms. The NSF-overhaul COULD HAVE removed this provision. They did nothing of the sort- they just gutted many programs. This is NOT a good-idea-taken-to-far. The NSF-overhaul had NOTHING to do with the issue I discussed.]

3.2 It Should Not Be This Hard Serve the Public

Requirements and specs on gov projects get added to and updated (which might be good) but old requirements are never removed.

Page 120-121. Quote about the California's Employment Development Dept (EDD).

At the EDD, the core technological layer was called the single client database, Which runs on an IBM mainframe from the 80's. Parts of it are written in a programming lang called COBOL, which dates back to the 1959. COBOL is almost never used today, and it is hard to find engineers who know how to program in it. Making matters worse, parts of the single client database were designed to run on those old monochrome displays that showed green text on a black background. Because nobody makes those displays any longer, the staff used visual emulators to access the system–they would run software on new computers that could mimic the constraints of the old computers.

3.3 A Government That Chooses Is a Government that Works

A bridge in Philadelphia collapsed and *really had to be rebuilt quickly.* Gov Shapiro allowed exemptions to lots of (stupid?) Gov rules and it got done quickly. Makes you wonder if some of those rules should be repealed.

Each rule looks reasonable but the red-tape around them and the sheer number of them would have made progress impossible.

1. No-bid contracts. Speed YES, but Corruption might happen.

2. Safety rules. Cut down risk to workers YES, but it slows down the work and the hiring

There are others.

Perhaps we need more balance.

4 Invent (Science funding)

Katalin Kariko had the idea of mRNA a long time ago but could not get it funded. Finally during COVID it had an application and was the key to the vaccine. She shared in the Nobel Prize for Medicine. [Fun Fact; Kariko is married to Bela Francia and they have a daughter, Susan Francia, who is a 2-time Olympic Gold Medalist in rowing.]

Getting a vaccine out there (more on that in the next chapter) did not have the problems we have already discussed. It has different problems.

More generally, the NIH and the NSF only seem to fund SAFE research by WELL ESTABLISHED (old) scientists. They DO NOT fund high-risk high-reward research. They also have a lot of red tape to avoid (imaginary?) issues with funding. [These were NOT the issues dealt with in the recent NIH and NSF clusterfluck.] [George W Bush was told that only 10% of the NSF's work ends up being practical. He said *then lets just fund that 10%.*

4.1 The Politics of Invention

Liberals want (say) Universal Health care and Conservatives want (say) Private Health care. This may be the wrong way to look at the problem. Better SCIENCE might lead to better HEALTH CARE which may also be cheaper and hence the argument can be less heated.

Page 136

If progressives underrate the centrality of invention in their politics, conservatives often underrate the necessity of government in inventions.

They then give examples, including Tesla, of where GOVERNMENT really helped the industry with LOTS of money. Elon Musk (who got LOTS of money from the Gov) and other Silicon Valley Libertarians (who also got LOTS of Gove Money) seem to have forgotten this.

4.2 The Kariko Problem and the Great Science Showdown

Page 145

The government has done things that are COUNTER PRODUCTIVE like making the process by which a brilliant immigrant can become a citizen hard. [Trump promised to deport *all of those dangerous criminal immigrants* of which there are none. Even before Trump it was hard for *brilliant immigrants* of which there are plenty, so become citizens.]

Page 147.

The government over time has done two terrible things to science funding

1. More admin. A typical professor spends 40% of their time on red tape. [I have been on grant panels. ALL of the grants are worth funding and NOBODY is trying to rip off the government- I do not know what the red tape is trying to prevent happening.]

2. NIH insists on proof-of-concept small experiments first which really slows things down.

3. NIH and NSF only fund safe projects. High-risk, High-reward is discouraged partially because the reviewers may not understand or believe the new approach. (e.g., mRNA can't possibly work). This point is not speculative- there have been science experiments ABOUT science that back this up.

Here is an article that shows that science is SLOWING DOWN though they only mention the broken grant process in passing:

`https://www.lesswrong.com/posts/v7c47vjta3mavY3QC/is-science-slowing-down`

Here is another article about science slowing down.

`https://www.lesswrong.com/posts/mRSzaYZ4WcotuA2HA/why-science-is-slowing-dow`

The real question is, is progress slower because all the low hanging fruit has already been plucked [related—you need to learn a lot more to even begin doing science] or is it the grant process being so terrible.

4.3 The Growth of the American Innovation System

Before WW II Government did not fund science research. [If they never did what would have happened? Libertarians would probably say that the private sector would pick up the slack. I doubt this is true.]

Lots of inventions happen by accident. Example: The Gila Lizard has spit that lead to Diabetes medicine.

4.4 The Idea Factory

Two examples of science funding that DID work
1) DARPA. After Sputnik was launched the US government wanted to ramp up science quickly. Quote Page 161

With an annual budget of 4 billion dollars, about 1/10 of NIH- DARPA punches well above it weight. How? One answer is that DARPA empowers domain experts called program managers to pay scientist and technologists to work together on projects of their own design. Independence is the key.

Contrast with this quote from page 163.

Many scientists seeking funding today are dis-empowered to the point of infantilization. Their time is colonized by paperwork, and their ambition is pinched by grantsmanship. The American innovation system would benefit from trusting individuals more and bureaucrats less.

Is DARPA still doing good work- I ask nonrhetorically.

[Grant are only one part of the problem. Needing to get PAPERS out to get TENURE is also a problem. Does not allow for long term thought. In 1986 Carl Smith said that the P vs NP problem will be solved by the child of a party member in the USSR who does not have to worry about grants, tenure, or faculty meetings.]
2) Bell Labs. Similar. They were a gov sanctioned monopoly so could work on high-risk high-reward.

5 Deploy (Science Distribution

5.1 The Eureka Myth

Thomas Edison has a brilliant idea (in the comic books it would be denoted by a light bulb over his head) and WOW- the light bulb is invented!

Thats a myth on many levels:

1. Lots of hard work learning stuff, trying stuff, before the brilliant flash.
2. I doubt there really is a brilliant flash.

3. (This is the one the book talks about) Going from the idea to actually getting a product build and deployed is hard. [In a book I read **Myths of Innovation** they have a great quote: *brilliant ideas are over-rated, hard work and follow through are underrated.*]]

The Eureka myth is bad for science since

1. Funding goes towards getting the idea (and even that is not done well, see last chapter).

2. No funding or encouragement for follow through.

America has more Nobel Prizes in SCIENCE than any other country, but has not done so well at getting the ideas out there.

The Elevator, Solar, Nuclear power were all invented in America but other countries are better at them.

We are stuck between a progressive movement that is scared of growth and a Conservative movement that is allergic to Government intervention.

5.2 Building What We Invent

Most inventions don't work at first and have to be tinkered with and re-worked. This takes time and money. These are called microinventions.

Solar energy had a promising start but Reagan killed it. Funding was cut. Other countries funded it and pulled ahead of us. Germany went from 3% of its energy coming from Solar to 30%. America stagnated.

Wright's law- some things get cheaper as we learn to build more.

America still has the myth that the Gov should stay out of science and technology and deployment. This is false. America subsidizing research (NSF and NIH and others) and even deployment works-its worked in the tech industry. It worked for e-cars (Elon should thank the American tax payer).

Biden's Inflation reduction act DID have subsidies for Solar which should help. But America wasted 40 years not working on Solar.

What should Gov do? Keynes said that Gov should do the things that the private sector can't do. [Basic Research, help a company scale things]

5.3 Progress at Warp Speed

For the COVID vaccine

1. They funded three vaccine platforms, not knowing which one would work (synthetic nRNA, replication-detection live-vector, recombinant-subunit-adjvanted protein).

2. They offered up-front subsidies and promise of future payouts.

3. Accelerate approval and production pipelines.

4. 27 manufacturing facilities were set up.

5. Set things up so that the biggest pharm distributors (McKesson) and the biggest delivery companies (UPS and FEDEX) would distribute and ship the vaccines.

This was all done by private companies with an incentive. No federal worker was involved.

This was all very well thought out. [Did Trump encourage it? Was he involved at all?]

NEITHER party brags about Operation warp speed:

Dems don't want to credit Trump and the Reps. [I always thought that once Biden was elected he should have encouraged people to take the vaccine by showing MAGA clips of Trump praising it, and giving Trump credit.]

Reps have a large anti-vax base. This has gotten worse with RFK Jr as Sec of health.

The lesson here is that Gov CAN help private industry if its thought through and done right.

[This article:

`https://www.politico.com/news/2021/01/17/crash-landing-of-operation-warp-spe`

from Politico says that the distribution of the vaccines DID NOT go well. Is that correct?]

5.4 The Bottleneck Detective

When things are not working we need to find out *why*- what is the *bottleneck*. And how to fix it.

Conservatives always say *get Government out of the way.* Sometimes that is correct but sometimes not. When you see a bottleneck you have to non-ideologically decide what to do.

1. *Push Funding:* Give a company money OR a loan OR a loan guarantee. Key is that you give them the money first.

2. *Pull Funding:* Promise that whoever builds the widget first will get money, so a contest. This allows companies to be in for the long haul— the first iteration which may be to expensive, and the final ones which are priced low enough for the consumer. AMC- Advance Market Commitment- was used for Warp Speed.

The book seems to prefer Pull funding and suggests it could be used on many other projects. For example, clean cement.

AI is the future and it is very energy intensive so we need to get more clean energy soon!

5.5 Focus is a Choice

For Operation Warp Speed they were FOCUSED on a goal.

Often Wars or other disasters FORCE FOCUS, which ends up being good. [So Pandemics and Wars are good?]

Going to the moon was NOT popular- it was the (bipartisan?) politicians who pushed it. The public was not that interested. [Was it actually a good thing? Were the spinoffs worth it? I prior book said NO.]

We could CHOOSE to have a warp speed project for MANY things (heart disease, Cancer, Global Warming). We CHOOSE not to.

6 Conclusion: Towards Abundance

Much of this chapter is repetitive so I will just say what is not.

There are times when the political order converges: both parties agree on what has to be done, or at least the framework, for a while.

1. The New Deal was a fundamentally different view of governing than before: Gov has an obligation to make people's life's better. That FDR originated it. Truman kept it going. Perhaps more surprising,

Eisenhower also accepted its basic principles and got highway built. LBJ extended it (War on poverty). Barry Goldwater began a branch of the Republican party that challenged this framework, though note that he lost badly in 1964. Nixon also accepted the framework. Check his quote about pollution earlier in this document. Also he did Wage and Price controls (that commie!). Ford also accepted the framework.

2. Carter began to break out of the New Deal mode. He distrusted big business and big gov. He began to deregulate the trucking and airline industry. The airlines were very strictly regulated for price and type of flight. Freq Flier miles were because of dereg. Cheaper flights, more people can fly, but the price structure is complicated. He also dereg beer which made the later micro-brewery revolution possible. [When he died some people were saying that the conventional wisdom *failed president, great post-president* is not fair and that he was actually a good president. I tend to agree.]

3. The Reagan revolution really disrupted the framework and ushered in the *gov is your enemy* mentality. Lower taxes, less regulation. Some of this may have been needed but some note. [I am not going to argue the merits, my points is the shift- especially the next note.]

4. Bush was caught in the middle- he knew Reagan had gone to far (the deficit was growing) but had pledged *no new taxes*.

5. Clinton:Eisenhower = Regan Rev:New Deal. That is Clinton was of the opp party of Reagan be continued his policies of dereg. He did it more intelligently and got the deficit under control. If you ask a Republican what they did not like about Clinton they will point to the Monica Affair, but would be hard pressed to point to policy problems.

6. Bush Jr of course continued the Reagan Rev.

7. Even Obama worked in that framework.

8. Trump was the beginning of a new framework though he was to erratic and undisciplined to really have a Philosophy.

The point is that we might NOW be ready for a new framework of what Gov and cannot do which looks at the right questions. The question should not be

What should be the size of government.
Tt should be
What can Gov do well, and what can it do badly.