An informal discussion of some issues of societal stability

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1. Evolution of institutions: dynamics of power and inequality

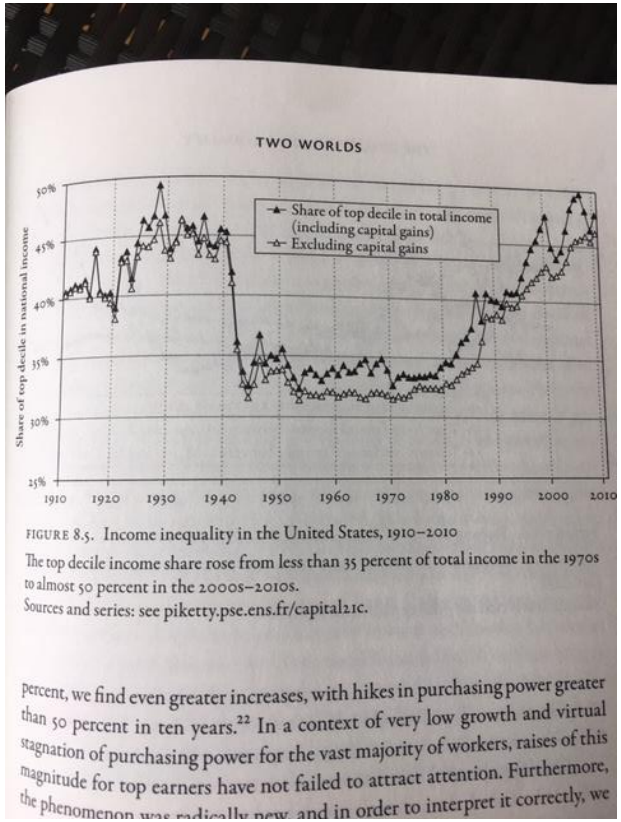


FIGURE 8.5. Income inequality in the United States, 1910–2010

The top decile income share rose from less than 35 percent of total income in the 1970s to almost 50 percent in the 2000s–2010s.
Sources and series: see piketty.pse.ens.fr/capital21c.

percent, we find even greater increases, with hikes in purchasing power greater than 50 percent in ten years.[22] In a context of very low growth and virtual stagnation of purchasing power for the vast majority of workers, raises of this magnitude for top earners have not failed to attract attention. Furthermore, the phenomenon was radically new, and in order to interpret it correctly, we

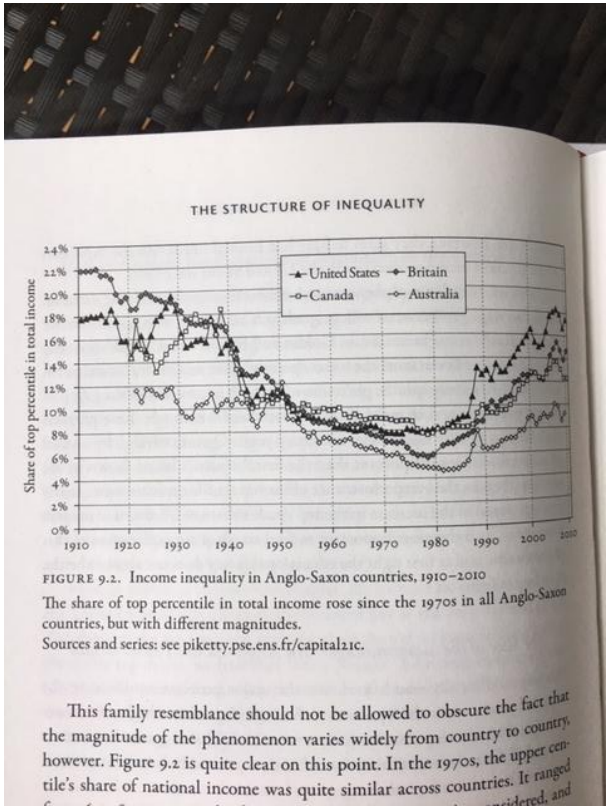


FIGURE 9.2. Income inequality in Anglo-Saxon countries, 1910–2010

The share of top percentile in total income rose since the 1970s in all Anglo-Saxon countries, but with different magnitudes.
Sources and series: see piketty.pse.ens.fr/capital21c.

This family resemblance should not be allowed to obscure the fact that the magnitude of the phenomenon varies widely from country to country, however. Figure 9.2 is quite clear on this point. In the 1970s, the upper centile's share of national income was quite similar across countries. It ranged

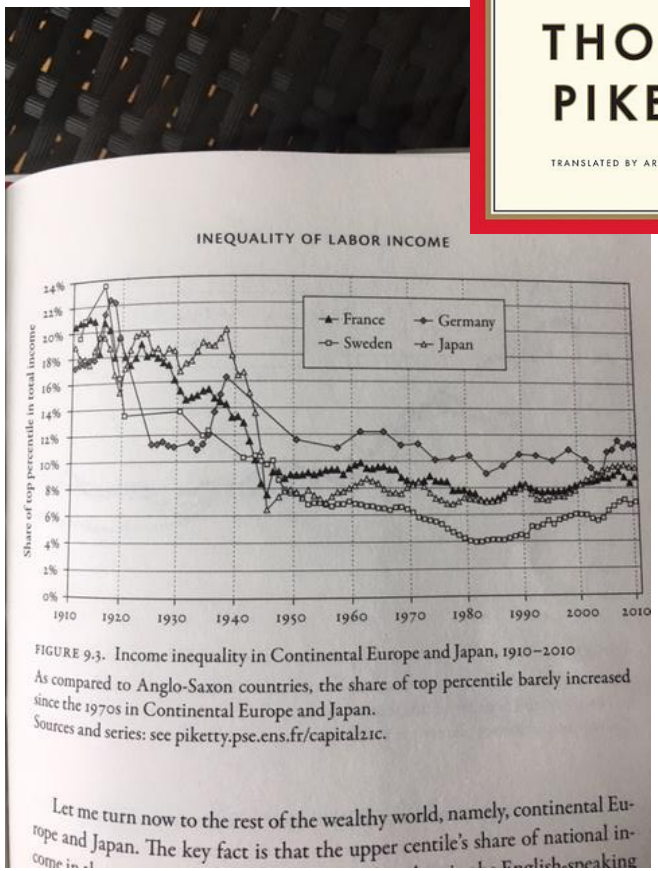
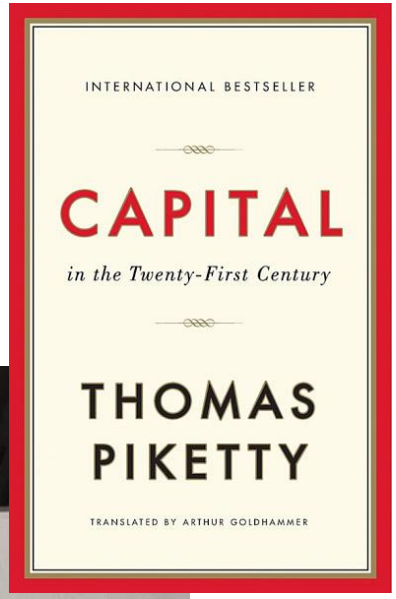


FIGURE 9.3. Income inequality in Continental Europe and Japan, 1910–2010

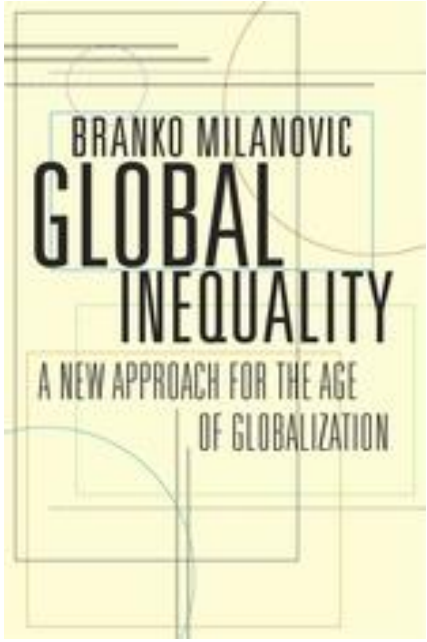
As compared to Anglo-Saxon countries, the share of top percentile barely increased since the 1970s in Continental Europe and Japan.
Sources and series: see piketty.pse.ens.fr/capital21c.

Let me turn now to the rest of the wealthy world, namely, continental Europe and Japan. The key fact is that the upper centile's share of national income in



- If violent shocks were crucial in curtailing and reversing inequality, were they bound to happen?

- Branko Milanovic (2016): “rising inequality sets in motion forces, often of destructive nature, that ultimately lead to its decline but in the process destroy much else, including millions of human lives and huge amounts of wealth. A very high inequality eventually becomes unsustainable, but it does not go down by itself; rather it generates processes, like wars, social strife, and revolutions, that lower it.”



Structural-demographic theory of societies

- Jack Goldstone, Peter Turchin, Andrey Korotaev, and others

Goldstone's theory

- Five general elements that usually have to work together to destabilize a social equilibrium and to create a revolutionary situation

1. national economic or fiscal strain,
2. growing alienation and opposition among the elites,
3. increasingly widespread popular anger at injustice,
4. an ideology that presents a persuasive shared narrative of resistance, and
5. foreign support for the opposition or the withdrawal of support for the ruler.

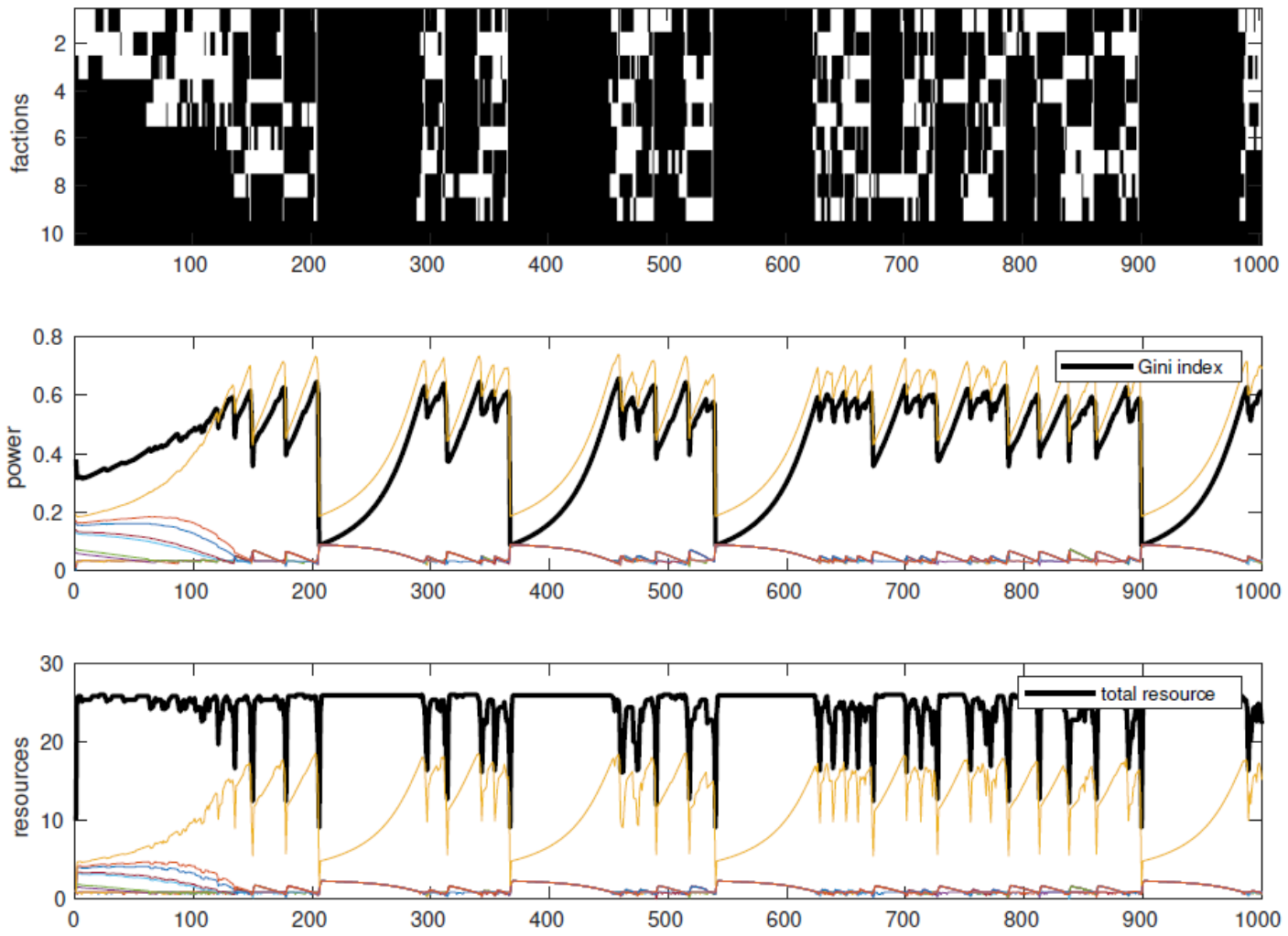
- The most important factor for the resilience of the state is elite loyalty and commitment to supporting the existing regime.

Modeling approaches

- Peter Turchin and coauthors' models: demographic macro processes happening at slow time-scales.
- In contrast, my models here focus on between-faction dynamics at an intermediate, meso-scale.
- [I will also consider some models at a micro-scale describing social behavior of individuals.]
- I build on earlier models of the evolution of social institutions; in particular those describing the contest for power between the elite and commoners (Acemoglu and Robinson, 2006, 2008, Acemoglu and Sonin, 2012, Gorodnichenko and Roland, 2015, Roland and Xie, 2016, Bisin and Verdier, 2018) and the redistribution of a fixed amount of resource (Lawson and Oak, 2014)

Theoretical framework

- The fundamental assumption is that successful economic and political functioning of a whole society requires mutually beneficial cooperation between its different factions.
- Then as inequality grows, cooperation becomes no longer beneficial for all factions and conflict occurs.
- My models include social norms (conformity and support for the state) and a coupling parameter between economic and political power (democratic checks and balances), which are potential mechanisms for state stability in spite of high levels of inequality.
- We test model predictions using multi-level time series analysis of data from 43 nations spanning the entire 20 century.


factions
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10
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800
900
1000
power
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0.2
0
Gini index
resources
30
20
10
total resource

Model parameters and statistics

- We measured:
  - national wealth using *GDP* per capita from the Madison Project (Bolt et al., 2014);
  - economic inequality as the income share of the top one percent *E* using data from the World Inequality Database (Alvaredo et al., 2018) and
  - internal conflict as a composite measure *I* taken from the Cross-National Data Archive (Banks and Wilson, 2013).
- The dependent variable is I_t and the time-lagged independent variables were I_{t-g}, E_{t-g} and GDP_{t-g}.

Conclusions from data

- In line with our model's predictions, future internal conflict *I* increases in response to increasing economic inequality *E*, whereas economic development *GDP* has no effect.
- In line with our model's predictions, democratic institutions *D* and support for the state *S* increase state stability, whereas conformity *C* decreases stability.

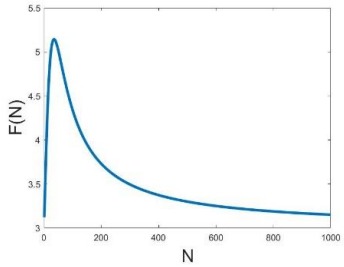
Long transients in physical, ecological, and evolutionary models

- The dynamical system appears to be approaching its stable asymptotical while in fact these dynamics are only transient. The quasi-asymptotical dynamics can persist for a long time before the system experiences a fast transition to its true asymptotics, sometimes distinctly different from the transient regime.
- In non-spatial systems, the main mechanisms resulting in long transients are
  - ghost attractors (e.g. as arising from a saddle-node bifurcation: for parameter values just past their bifurcation value, the system mimics its steady state dynamics prior to the bifurcation),
  - crawl-bys (slow changes near saddle points), and
  - slow-fast dynamics

1D Model

- N(t) is the number of protestors
- F(N) is the recruitment rate
- m(t) is the withdrawal rate
- Differential equation model

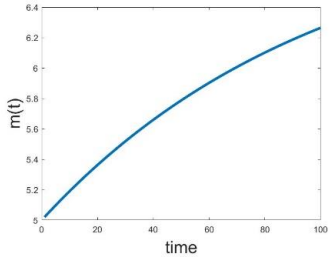
$$\frac{dN}{dt} = f(N)N - m(t)N,$$



where the recruitment rate $f(N) = \epsilon + \frac{aN}{h^2+N^2}$,

and withdrawal rate $m(t)$ increases from m_0 to m_1 asymptotically

$\left(\frac{dm}{dt} = b(m_1 - m), m(0) = m_0\right)$



Take-home message

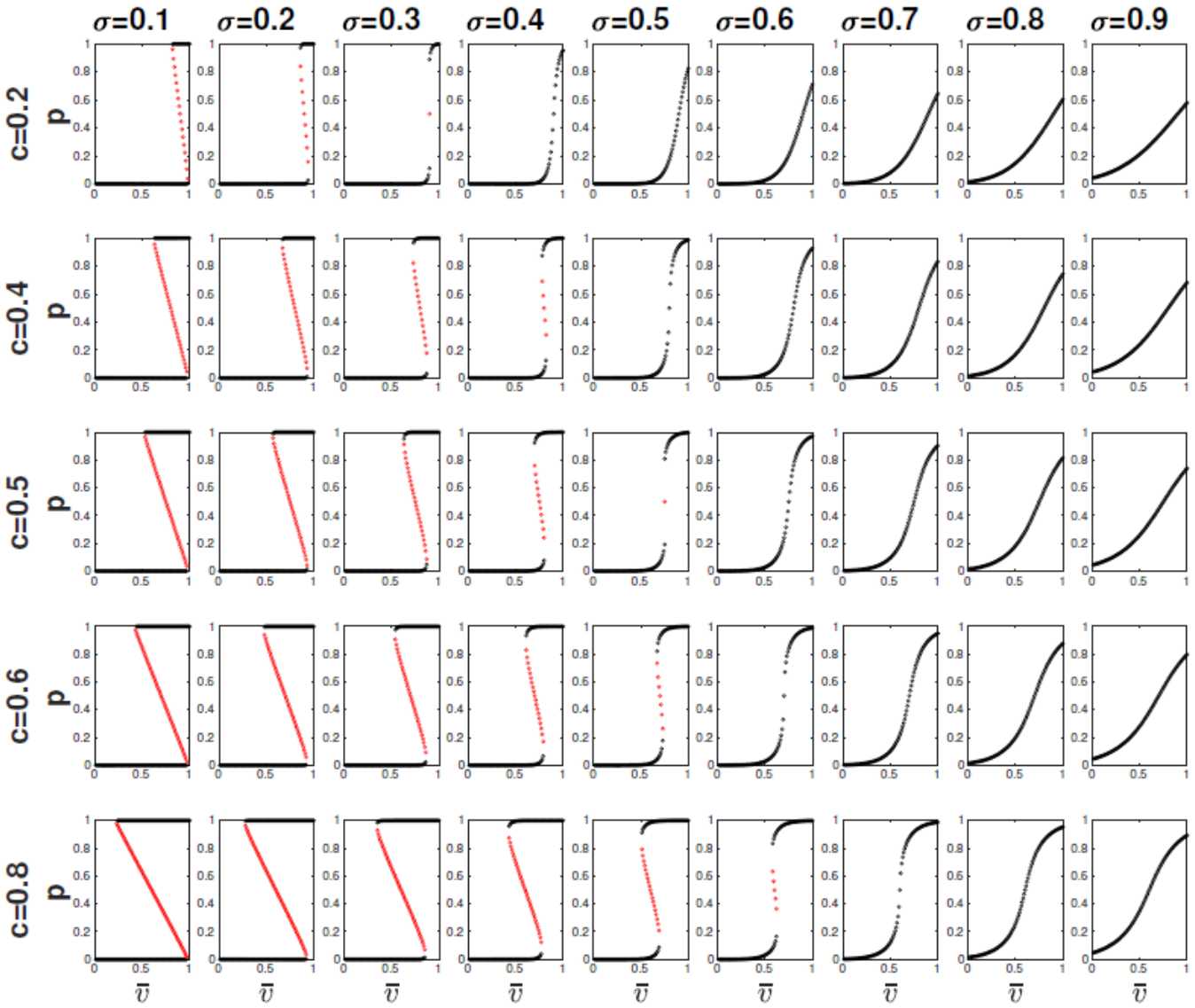
- These models are very simple and ignore a number of other factors and processes that play a crucial role in the dynamics of protests, for example,
  - the heterogeneity of the population in terms of beliefs,
  - material and normative benefits and costs,
  - susceptibility to news, propaganda, and counter-propaganda,
  - social status,
  - social networks,
  - heterogeneity is space,
  - effects of activists and social engineers, etc.
- However, from the general perspective of the dynamical systems theory, we expect more realistic models of social protests to exhibit long-transient dynamics as well.

- Details: SocArchive Papers https://osf.io/preprints/socarxiv/tpyux/

Norm internalization: some facts

- Norm internalization is an elaboration of imitation and imprinting found in various species of birds and mammals (Whiten 1992)
- There is a significant genetic component in the degree to which people respond to norm-violating behavior (Wallace et al. 2007)
- There are also neural correlates of people's emotional reactions to violations of highly valued norms (Mu et al. 2015)
- Some people appear to lack a genetic predisposition for norm internalization (Mealey 1995) while others are more inclined to hold intolerant attitudes and may be more prone to react violently when their values are threatened (Hatemi et al. 2011)

- **Conclusion**: There is a mainly genetic underpinning of the capacity for internalizing norms while the exact content of the norms is mainly determined culturally and socially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