On the joint evolution of culture and institutions (and economic growth)

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Endogenous growth theory (congrats!)

- The fundamental questions:
    - What accounts for economic growth?
    - For income heterogeneity across countries?

- Translation in in economic/statistical speak:
    - given the production function $y = Af(k)$, then $\dot{y} \to \dot{A}$;

        so, what moves A?

- Some answers:
    - technological growth, R&D
    - human capital
    - externalities, urban agglomeration

New economics of institutions (and culture)

- The fundamental questions:
  - What accounts for economic growth?
  - For income heterogeneity across countries?
- Translation in in economic/statistical speak:
  - What is the (single univariate) cause of economic prosperity ($\approx$ GDP growth)?
- Some answers:
  - (inclusive) institutions
  - culture, values
  - geography

Causal effects of institutions

- The method - to identify _causal_ effects of institutions:
  - historical natural experiments where institutions are varied in geographical units with common geographical characteristics, culture, and other possible socio-economic determinants of future prosperity (in principle also genetic determinants)
- Some successsful examples:
  - the institutional design of colonial empires, the more extractive the higher settlers' mortality rates (Acemoglu and Robinson, 2001);
  - the spanish colonial policy regarding the forced mining labor system in Peru' (Dell, 2010);
  - the border separating the island of Hispaniola into two distinct political and institutional systems, Haiti and the Dominican Republic (Diamond, 2010).

- Similar arguments for culture as the _cause_ of economic growth:

  - protestant ethic and the spirit of capitalism (Weber, 1904; McCloskey (2006, 2010, 2017);
  - individual values about the scope of application of norms of cooperation/good conduct (Banfield, 1958; Tabellini, 2008);
  - social/civic capital(Putnam, 1993; Guiso, Sapienza, Zingales, 2016)
  - slave trade and trust (Nunn and Wantchekon, 2011).

Culture and institutions

"Era questo un ordine buono, quando i cittadini erano buoni [...] ma diventati i cittadini cattivi, divento' tale ordine pessimo." This was a good institutional order when citizens were good [...] but when citizen became bad, it turned into an horrible order; our translation; Niccolo' Machiavelli, Discorsi, I. 16, 1531

[...] "among a people generally corrupt, liberty cannot long exist." Edmund Burke, Letter to the Sheriffs of Bristol (1777-04-03).

"If there be no virtue among us, no form of government can render us secure. To suppose that any form of government will secure liberty or happiness without any virtue in the people is an illusion." James Madison, 20 June 1788, Papers 11:163

The joint dynamics of culture and institutions

- In this paper we study *the interaction* of different distinct factors inducing growth; specifically, culture and institutions

- with two main objectives/motivations:
    - shifting focus from causation to interaction;
    - from long-run persistence to dynamics/mechanism.

The joint dynamics of culture and institutions - historical motivation

- Bourgeois culture and inclusive institutions for Industrial Revolution in England (McCloskey, 2006, 2010, 2017);

- Inclusive institutions and protestant ethics in the rise of Western Europe after 1500 in countries with access to the Atlantic Ocean - Britain, France, the Netherlands, Portugal, and Spain (Acemoglu, Johnson, and Robinson, 2005); wasting of Portuguese commercial advantage due to discovery of the sea route to Asia (Mueller and Ayello, 2016);

- Inclusive institutions and culture of cooperation (monastic orders) from the 11th Century onwards in Europe (Tabellini, 2008; Guerriero, 2018; Boranbay and Guerriero, 2018);

- Historical determinants of regional (North-South) inequality in Italy - *Questione meridionale*.

The joint dynamics of culture and institutions - model

- Society populated by different groups of agents with distinct cultural traits and technologies;
- Each time period a policy game is played between these private agents and a socio-economic policy maker (the government);
- The government's choice maximizes a social welfare function which encodes the distribution of political power between the societal groups, which in turn is represented by the societal institutions;
- A set of policies and rational agents' actions arise as societal equilibrium outcomes, which depend on the the social welfare function encoding institutions and on the distribution of cultural traits in the population.

- Institutions evolve, changing the distribution of political power, to internalize externalities and other distorsions which result in inefficient social equilibrium outcomes; institutional change is a myopic process, with limited forward-looking ability;

- Culture evolves over time due to evolutionary selective forces, grounded on socialization and cultural transmission processes whose incentives are in turn affected by equilibrium outcomes of the policy game played in society (Bisin and Verdier, 2001, ...).

The joint dynamics of culture and institutions

The dynamics is characterized by the system of difference equations:

$$
\begin{aligned}
\beta_{t+1}^i &= \beta^i \text{ such that } p(\beta^i, q_{t+1}^i) = p^{com}(\beta_t^i, q_{t+1}^i) \\
q_{t+1}^i - q_t^i &= q^i(1 - q_t^i)\left(d^i - d^j\right), \text{ with } d^i = d(q_t^i, \Delta V^i(\beta_{t+1}^i, q_{t+1}^i)).
\end{aligned}
$$

where

> β_t^i is institutions (political power of group i at t); q_t^i is culture (fraction of agents of group/cultural trait i);
>
> $p(\beta^i, q^i)$ is the equilibrium policy choice given culture and institutions; $p^{com}(\beta^i, q^i)$ is the commitment policy choice given culture and institutions;
>
> $\Delta V^i(\beta^i, q^i)$ are socialization gains for group i given culture and institutions.

The joint dynamics of culture and institutions - dynamical system

Let $\beta = \beta(q)$ be the steady state manifold associated with the institution dynamics and $q(\beta)$ the steady state manifold associated with the cultural dynamics.

Institutional and cultural dynamics are complementary when the steady state manifolds $\beta(q)$ and $q(\beta)$ have slopes of the same sign; conversely they are substitutes when the slopes have opposite signs.

The *cultural* (resp. *institutional*) *multiplier*, the ratio of the long run change in institutions (resp. culture) relative to the counterfactual long run change that would have happened had the cultural composition (resp. institutional set-up) of society remained fixed.

The joint dynamics of culture and institutions - some results

Some results on the joint dynamics:

- the dynamical system has at least one stationary state
- the local dynamics show no converging cycles (dampening oscillations) if institutional and cultural dynamics are complementary
- conditions for non-ergodicity (steady state dependence from initial condition)
- conditions for no periodic orbits and limit cycles in the neighborhood of a locally stable interior steady state
- the cultural multiplier is positive (resp. negative) if and only if the institutional and cultural dynamics are complementary (resp. substitute).

Example: Elites, workers, and extractive institutions

- Society is populated by workers and members of the elite, with distinct cultural traits and technologies
- Political institutions determine the groups' relative power in the determination of policy.
- Elites value leisure more than workers and are endowed with initial resources: in equilibrium workers will work to survive, while the elite will generally eschew labor and constitute a leisure class.
- Institutions collect taxes on income to finance public good consumption, which is valued by both groups: institutions are extractive inasmuch as members of the elite extract resources from society, and workers in particular, by means of fiscal policies.

Example: Elites, workers, and extractive institutions; cont.edl

- The institutional dynamics favor the delegation of power to workers, as a commitment device on the part of the elites to restrict the inefficient extractive policies of the government.
- The cultural dynamics reinforce the institutional dynamics.

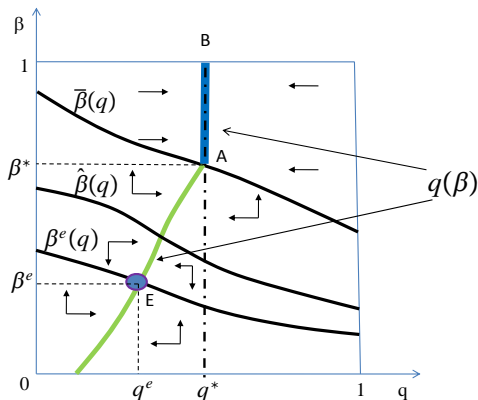# Example: Elites, workers, and extractive institutions; cont.edl

Figure 5: Transition away from extractive institutions
Joint dynamics