

Geography, Technology and Culture

Clarifying the Puzzle of Development

International Conference on Social Values, Social Well-Being,
Modernization and Migration

Outline

- 1 Puzzle
- 2 Seeking an Answer

Puzzle of Development



Puzzle of Development



The Puzzle of Development

- Why are some societies more developed than others?
- Why are societies that were relatively developed three hundred years ago, still among the most developed societies today?

Recent Work on the Topic

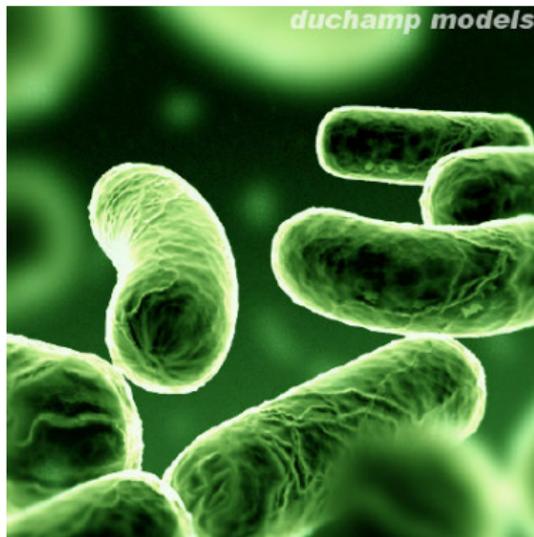
- Gelfand et al. (2011): Nations that encountered severe ecological and historical threats have stronger norms and lower tolerance of deviant behavior
- Inglehart, Norris, Welzel, Baker et al - evolutionary theory of security and modernization

The Three Horsemen Model

- Disease
- Hunger
- War

Disease

- Thornhill, Fincher et al. (2009, 2010)



Hunger

Biblical story of Genesis 47, where Joseph has build large storehouses for the Pharaoh:

- “There was no food, however, in the whole region because the famine was severe; both Egypt and Canaan wasted away because of the famine.”
- “Joseph collected all the money that was to be found in Egypt ... he gave them food in exchange for their horses, their sheep and goats, their cattle and donkeys ... sold their fields, because the famine was too severe for them. The land became Pharaoh's.”

War



War



Culture Measurement

- A measure of self-expressive values (Emancipative Values - C. Welzel)
- The Human Empowerment Syndrome: Technological Innovation, Cultural Openness, Institutional Freedom

Indexing the Horsemen

- War
 - Existential Security – Political Risk from the International Country Risk Guide
 - Hydrological & Post-Mongol Empires
 - Following Pinker (2011) working on an index of casualties per 100,000 per century for each country - not done yet

Indexing the Horsemen

- Disease
 - Parasite load (based on early 1900s cultural atlases, used location of geographic centroid for new nations)

Indexing the Horsemen

- Food Security
 - Rainfall in lowest month
 - Hydrological Empires: state control of food supply
 - Rainfed vs irrigation agriculture

Emancipative Values

TABLE 1. Correlations of Looseness/Tightness and Emancipative Values
with Indicators of Societal Development

	Emancipative Values		Looseness/Tightness
	All Societies	Same Set of Societies as with Looseness-vs.-Tightness	
<i>Correlates (2000):</i>			
Technological Innovation	.81*** (89)	.87*** (32)	.36** (32)
Institutional Freedom	.79*** (88)	.78*** (32)	.35* (32)
GDP/p.c.	.80*** (88)	.79*** (26)	.11 ^{n.s.} (26)
Urbanization	.58*** (88)	.73*** (31)	.45** (31)
Years of Schooling	.76*** (63)	.73*** (31)	.30 ^{n.s.} (31)
Fertility Control	.49*** (85)	.48** (29)	.46** (29)
Infant Mortality	.65*** (87)	.74*** (31)	.40** (31)
Human Development	.72*** (88)	.86*** (31)	.36* (31)
Gender Development	.84*** (69)	.85*** (30)	.21 ^{n.s.} (30)
Rule of Law	.76*** (92)	.83*** (31)	.06 ^{n.s.} (31)
Order and Stability	.72*** (92)	.75*** (31)	.19 ^{n.s.} (31)
Peace and Respect	.66*** (89)	.66*** (31)	.13 ^{n.s.} (31)
Generalized Trust	.71*** (48)	.73*** (19)	.19 ^{n.s.} (19)

Note: Emancipative values are taken from the World Values Surveys. Looseness-vs.-tightness is taken from Gelfand et al. For the various data sources of the other data, see appendix.

Taming the Horsemen

- Disease
 - New Medicine
 - England in the 1600s: Malaria!
- War
 - Decrease in the incidence of war (Pinker 2011)
- Hunger
 - Industrial Revolution
 - Green Revolution

Path Dependency

- Inertia: it will take a long time to escape from the path dependency.
- War and existential insecurity can always make dramatic come-back - see Yugoslavia, USSR collapse.
- Would a great financial crisis set the Emancipation syndrome back.

Current Results

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.807 ^a	.651	.628	.06567

a. Predictors: (Constant), naturefavor9, hydr empire or post-Mong state, politicalrisk, PathogHist

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.482	4	.121	27.957	.000 ^a
	Residual	.259	60	.004		
	Total	.741	64			

a. Predictors: (Constant), naturefavor9, hydr empire or post-Mong state, politicalrisk, PathogHist

b. Dependent Variable: emancipative values

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.377	.058		6.529	.000
	hydr empire or post-Mong state	-.042	.020	-.172	-2.137	.037
	PathogHist	-.109	.050	-.281	-2.195	.032
	politicalrisk	.002	.001	.311	2.574	.013
	naturefavor9	.026	.018	.219	1.448	.153

a. Dependent Variable: emancipative values