



Animal Instincts and Human Sentiments - On the Origin and Evolution of Economic Institutions

Ulrich Witt

Max Planck Institute of Economics, Jena, Germany

- I. Evolution of Human Institutions - What's the Issue?
- II. The Evolutionary Origin of Institutions
- III. Cultural Influences on Institutional Evolution
- IV. The Genesis of Formal Institutions



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- there are so different "institutions" ...

(i) ... do they have anything in common?

yes, if, in abstract terms, understood as coordinating interactions --
suggests abstract game theoretic representation of context

generic features of an "institution"

= rules and equilibria of the underlying strategic game

(ii) ... is there anything recurring in how they emerge & change in history?

yes, but only at a very abstract level of formal diffusion dynamics

transitions between "attractors", "critical masses", etc.

(iii) ... does a Darwinian perspective help to understand the genesis
(origin and historical sequence) of human institutions?

topic of this presentation



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- genesis of institutions begins somewhere in evolution
- recall: "institutions" = repeated instances of coordinated interactions
proto-institutions arising from interaction behavior of early hominids
- instinct-based behavior in early hominids is largely innate
proto-institutions subject to natural selection; adapted to environment
- but early interactions (proto-institutions) have left no fossil traces !
... so how do we know about them?

need to reconstruct them by analogy to...

... interactions observable today among higher mammals

- they still live under natural selection pressure & conditions similar to those the early hominids faced
("continuity hypothesis", Witt 2003)



THE EVOLVING ECONOMY



Essays on the Evolutionary Approach to Economics

Ulrich Witt



- hence,
if “institutions“ defined as coordinated behavior in social interactions (as in game theoretic interpretation)...
- ... then proto-institutions have already been in place in higher animal kingdom when humans entered the scene



- joint chasing tactics: conventions
- order of feeding: dominance/subordination rules
- food sharing (%altruism%); overcoming a social dilemma



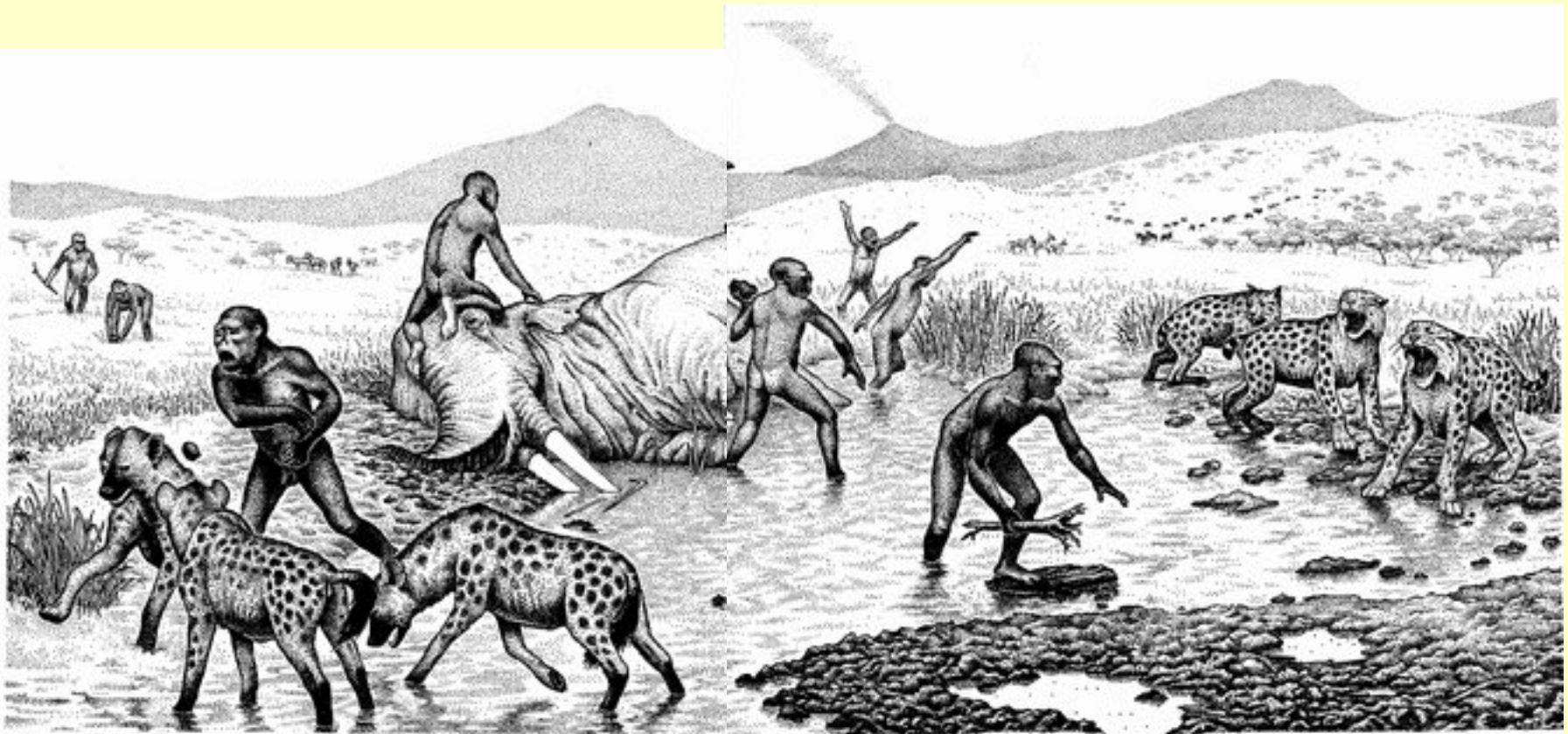
- all these proto-institutions (coordinated behaviors)
 - genetically fixed
 - shaped by natural selection
 - adapted to survival conditions similar to those of early hominids

explains significant features of these proto-institutions:

- extremely slow adaptation of “conventions“
 - advantage of dominating position is dissipated
in the competition for gaining that position
 - scope of cooperation in social dilemmas is
constrained to kinship relations (genetic bonds)
- working hypothesis:
animal "institutions" that are observable today are similar to
the proto-institutions of early humans



- further hominid proto-institutions that overcome social dilemmas:
- cooperation in fighting rivaling species
 - specialization and division of labor in productive activities





- proto-institutions = result of instinctive disposition/constraints that emerged from natural selection
- instinctive dispositions/constraints still part of human genetic endowment, i.e. the basic layer of human behavior
- but note:
 - all instinctive behavior controlled & modified by innate mechanism of instrumental conditioning & conditioning learning (= non-cognitive learning)
- on top of this, emerging human intelligence enables intentional control, insight, observational learning (Bandura 1986) & knowledge transmiss.
 - room for cultural adaptations in interactions/proto-institutions
- important: principles governing cultural change (i.e. principles of cognitive & non-cognitive learning) not those of natural selection in nature
 - indeed, cultural evolutionary conflict : reproduction vs. human desires



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Stylized genesis of human institutions:

origin: genetically-based forms of proto-institutions

↓
emerging human social intelligence

↓
-- eases coordination (when conflict is absent) through recognizing self in others and intentionality of others

-- speeds up evolution of self-enforcing - informal - institutions (e.g. conventions, most importantly: language)

↓
cultural success population growth population density★
need to settle down & make transition to agriculture



- agriculture extended forms of wealth accumulation
 growing incentive for dominators to reduce dissipation of
 their advantages in competition restrain competition!
- impossible in animal kingdom
 can only be achieved by exploiting intelligent learning
- how? by making domination/subordination
 through social-cognitive learning an accepted “social model“



domination/subordination as accepted "social model"



- socially accepted model establishes personal power
the origin of the creation & enforcement of formal institutions



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- **evolution** of formal institutions a genuinely cultural phenomenon
(because it is based on the exercise of personal power)
- but the **origin** is in innate dispositions,
derived from dominance/subordination behavior in interactions
= equilibrium in “hawk-dove game“ (a spontaneously emerging institution)
- insight enables humans who 'naturally' dominate in such games
to recognize benefit of preventing others from contesting domination
(preserving the "domination rent" from competition)
- how can this be accomplished?
 - draconic public punishment of single challenges
(deters potential future challengers pace observational learning)
 - gaining acceptance as "social model" for supremacy of one/a few
(e.g. based on warfare success; or claiming divine status)



- once "supremacy of a few" established as social model
basis for generalization into hierarchical stratification of entire society
- evolution of multi-layered domination-subordination relationships
(e.g. feudal estates, castes ... perpetuated by tradition)
- even if social model of hierarchical domination/subordination is established
- challenges through peers/neighboring dominators (trying to seize rents)

competition among dominators induces a social dilemma
- gene-based strategy for reducing risk of conflict among dominators:
- recourse to kinship relations to overcome social dilemma
(creating genetic bonds between the rulers)

working hypothesis:

for millenia, historical formal institutions exploit & amplify innate dispositions
to sort into inequality preserving interactions (hawk-dove/chicken games)



- **further institutional evolution** driven by
 - culturally achieved improvements of production technology
 - even agriculture encourages accumulation, investment, division of labor

incentives/necessity to protect corresponding investments

- solution based on already established supremacy model:
 - protecting accumulation/investment by divine/supreme authority
 - "hydraulic despotism" (Wittvogel), absolutist cameralism
- rising division of labor in proto-industrialization requires extended exchange
 - find institutional solution for social dilemmas involved in exchange
 - beyond the reach of genetic bonds (i.e. family-based trade)
- feudal interest in tax revenues encourages formal institutions to
 - legally protect & enforce exchange & lending contracts



- traditional, socially accepted model of dominance/subordination itself subject to cultural evolution
- Enlightenment changes social acceptance of model of supremacy of few
invention of social model of "Leviathan" (Locke)
i.e. idea of social contract that legitimizes authority
 - implies constitutional constraints on personal power of ruler
- idea of individual human rights (liberty, equality, justice)
 - a radically new "social model" deviating from inherited dispositions
 - unique, rather young & fragile achievement of human culture
 - presupposes nonetheless formal institutions with coercive power

still not fully solved meta-dilemma: how to constrain legal coercive powers from power abuse for individually usurping domination rents?

- a point where we witness institutional evolution just in the making ...
... now raising the question: **what matters -- ideas or the genes?**



Time Over!

Thanks!