



Evolution of Mind: Technology is the direction

TATIANA PODDUBNYKH

EHESS / NORTHWESTERN UNIVERSITY

Overview

- ▶ *Evolutionary theory*
- ▶ *Complexity theory*
- ▶ *Information and Communication Technologies (ICT) development is the catalyst for change*
 - ▶ Notion(s) of identity
 - ▶ Roles of traditional social institutions [potentially even the State]
 - ▶ Perception of reality – Borders, Space, Time
- ▶ *Next stage of human and society development caused by ICT and primarily focused on the evolution of Technology*

Evolutionary Theory

Breakthrough thesis and thinking

- ▶ *Zoonomia* – 1794-1796 by Erasmus Darwin
- ▶ *On the Origin of Species* - November 1859 by Charles Darwin
- ▶ Jean-Baptiste Lamarck published his *soft inheritance theory*

The belief in the inevitable increasing complexity of any system, combined with the influence of Neo-evolutionism (systems' auto-adjustment according to context)

=> Complexity theory

Complexity Theory

- ▶ *Highly distributed systems with dynamic network of interactions*
- ▶ *Symbiotic relationship with the environment*
- ▶ *Collective, emergent and self-organizing behavior*

Complexity

“Today the network of relationships linking the human race to itself and to the rest of the biosphere is so complex that all aspects affect all others to an extraordinary degree. Someone should be studying the whole system, however crudely that has to be done, because no gluing together of partial studies of a complex nonlinear system can give a good idea of the behavior of the whole.”

Murray Gell-Mann

Biology vs. Technology

- ▶ *Technological evolution is occurring faster and has de facto become a – successful - extension of Biological evolution*

cultural evolution

+

Technology-enabled capacity to accumulate, recycle
and transform a virtually infinite pool of
knowledge and data

=

On the short/medium term: little significance of
Biological Evolution for Humanity

Symbiotic Intelligence Project

- ▶ *Norman Lee Johnson - Symbiotic Intelligence Project*
- ▶ Humans are :
 - i. Primary processors of complex information; AND
 - ii. Core problem solvers

The combination of the unique abilities of information systems - such as the internet - and human problem-solving capacities creates a capability greater than the sum of the parts (an emergent behavior)

What about State evolution?

- ▶ **In the Past** : *Nation/State* → “forced” solidarity based on physical proximity, with core purpose to defend against physical aggressions
 - **Physical/geographical**: local, permanent and well-defined
- ▶ **Nowadays** : *New social bonds and social links*, NOT based on geographies but based on same thinking on specific issues
 - **Selected issues**: global, temporary and perpetually changing

“*BORDERS LESS*”?

- ▶ **Mapping the world** : Lines define modern space - the State is just an arbitrary unit, product of quasi-fractal history
- ▶ **Borders are products of our recent history** –
 - *States* have been coming and going
 - *Sovereignty* has been changing all the time
 - but *Physical Space* stayed the same: *People exist beyond the notion of borders.*

“BORDERS LESS”?

- *“You live in the age of interdependence. Borders don't count for much or stop much, good or bad, anymore.”*

Bill Clinton

- *“It isn't important whose [the Earth] is, just that it is.”*

Oleg Atkov, astronaut

- *“Information is the oxygen of the modern age. It seeps through the walls topped by barbed wire, it wafts across the electrified borders.”*

Ronald Reagan

- *“There are no nations! There is only humanity. And if we don't come to understand that right soon, there will be no nations, because there will be no humanity.” —*

Isaac Asimov

SPACE LESS / TIME LESS

- ▶ Our current (physical) notions of **Space and Time** are core social constructs – **a measure of continuity**
- ▶ **Nowadays:**
Accelerating timeline/pace of change + virtual space =
ICT-enabled “networked” society, increasingly decentralized

The combination of the technology-driven evolution and the society’s self-organizing behaviour (via formal and informal social networks, enabled by communication technologies) becomes our new reality.

Identities -> [Space] -> Global Identities

- ▶ *The identification with a State or a Nation weakens – and will continue to weaken - dramatically over generations*
- ▶ “Borders” defined the limits within which identity was defined, the limits of prevalent legal definitions
 - i. allowed for protection of our property, and
 - ii. make a statement: showing “others” who we are, where we belong to, what we stand for, and
 - iii. Defined the “barbarians”

“No two countries that both had McDonald's had fought a war against each other since each got its McDonald's”

Thomas L. Friedman

Evolution of the State

- ▶ The loss of some traditional *identification* prognosis is the core cause of both **harm** and **restoration of government's power**:
 1. it diminishes Government's power by taking away an important source of authority
 2. but it also makes the State a natural safe haven for those who can't bear the *fear of an unknown future*

The State/Society equilibrium is affected by technological development

=>a renegotiation of the Locke's social contract is a plausible outcome

Identities -> [Space] -> Global Identities

- ▶ The new global "identities" battle for power and influence over the Internet that becomes both (i) a tool and (ii) the platform for harmony and chaos, for consensus and dispute.
- ▶ *The Internet has become a political institution in itself, a “monopoly owner of the right to symbolic violence”, but without the monopoly*

Peace is not unity in similarity but unity in diversity, in the comparison and conciliation of differences

Mikhail Gorbachev

Further complexification

- ▶ The **information** set provided by the past grows exponentially as time passes
- ▶ *Time* brings ever *more data*, which helps statistically analyze the past and grow our understanding of the world, but also thus adjust our expectations of the future based on that
- ▶ *The change in expectations is an auto-adjustment* => the system becomes more *complex* and unpredictable => *more data ! etc.*

= constant acceleration of the system's pace of change

Evolution

- (i) changes our notions of identity and our affiliations,
- (ii) diminishes the role of some social institutions, and reinforces other,
- (iii) creates a perpetually growing information loop,
- (iv) changes our core perception of reality – Borders, Space and Time

The evolution has set up its vectors – the system complexification is both accelerated by ICTs and accelerating the development of ICTs, in a self-reinforcing cycle

Thank you

