

Living Systems Evolution

WIN-WIN not a solution What next?

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The win-win deal is supposed to be a situation which is advantageous for everyone, in which the outcome benefits each party. In dynamic studies win-win games are called games without losers. If we look at Human actions within ecosystems, or at living and banking systems comparison, the win-win solution is never a solution but always a problem. Ecosystems are not win-win associations: whatever the actors in a network there are never advantages for some ones without disadvantages for other ones. The win-win approach is not a systemic one: nobody must be a permanent winner. No couple of actors can be isolated from the global network of actors in which they are sharing advantages and disadvantages. Whatever the system and its level of organisation, it is structured with an endophytotype that is hosted by an ecototype of survival. The space-times are modular, by embedment and juxtaposition of systems of systems. Whatever the level of organisation the local modules are in interaction at different scales, within and between levels of organisation, but governed by the same fractal power law. The modularity of the actors and their interactions, causes of advantages or disadvantages, are at the origin of exaptation processes. Sooner or later winner-loser interactions like will give rise to an Association for the Reciprocal and Mutual Sharing of Advantages and Disadvantages (ARMSADA), in which, for one to survive, all the others must survive first, in which everyone is both a winner and loser.

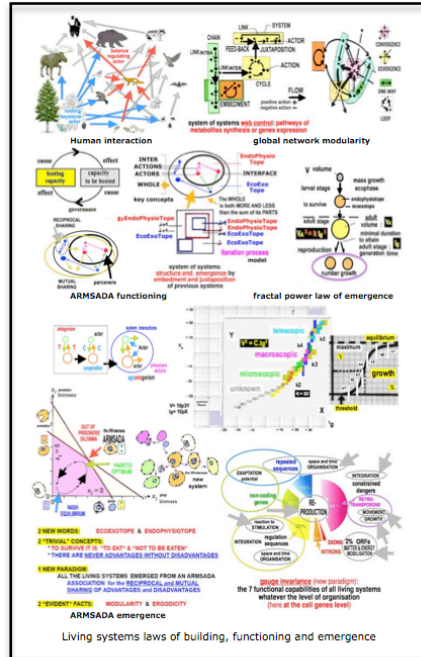
Taking into account all actors that are in interactions and share the hosting capacity of the same ecototype, at the system level you cannot always be a winner: sooner or later you will be a loser. Your capacity to be hosted must be in-between. And you must be lucky!

There are never advantages without disadvantages. Greater the advantages for man, greater the disadvantages: a more and more degraded ecototype of survival and the emergence of new risks. Species frequencies changes are indicators of ecototype changes. Some species are winning whereas others are losing. Balance is changing and the current changes create more losers than winners. It is a "who wins will be a loser" game. Sooner or later winners become losers and losers become winners.

Mankind must take into account the lessons of Nature. ARMSADA is the only long lasting resilient solution between Man and Nature. We need to change our mind with education for a holistic way and at all levels.

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good morning

buenos días

γεια σου

Guten Tag

Добрый день!

bonjour

buongiorno

bom dia

早安

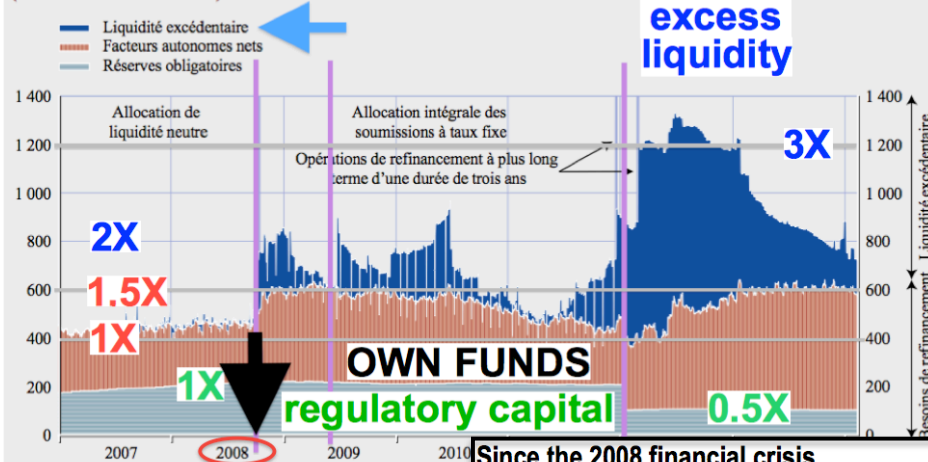
صباح الخير



billions euros

Graphique C Besoins de refinancement et liquidité excédentaire depuis 2007

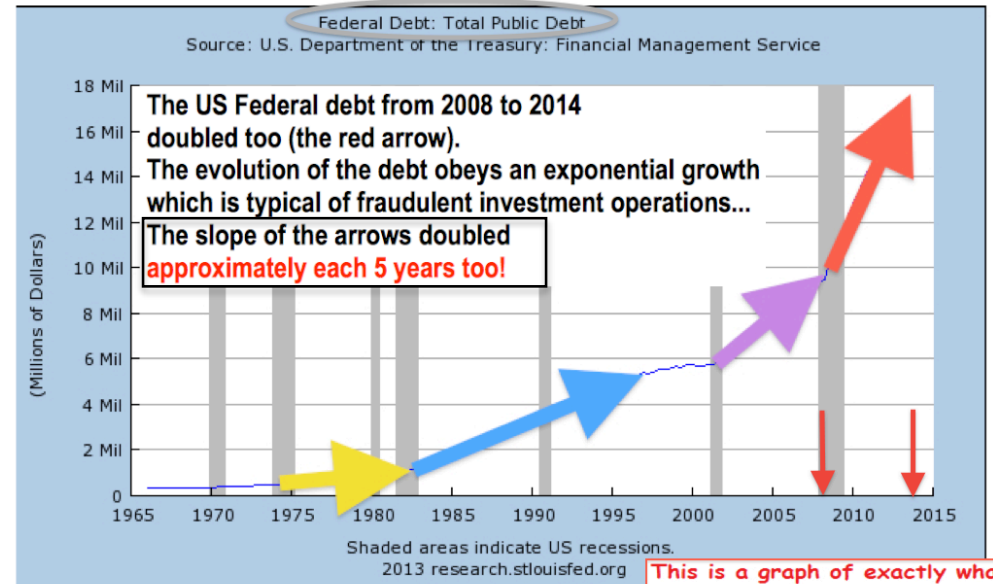
(montants en milliards d'euros)



Source : BCE
Note : Données jusqu'au 14 février 2014

European Central Bank

Since the 2008 financial crisis
the European Central Bank own funds doubled
and the total money amount tripled.
But the regulatory capital was divided by two.
In less than 5 years!

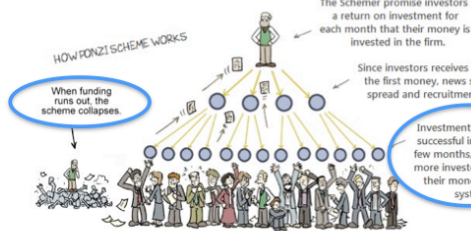


Shaded areas indicate US recessions.
2013 research.stlouisfed.org

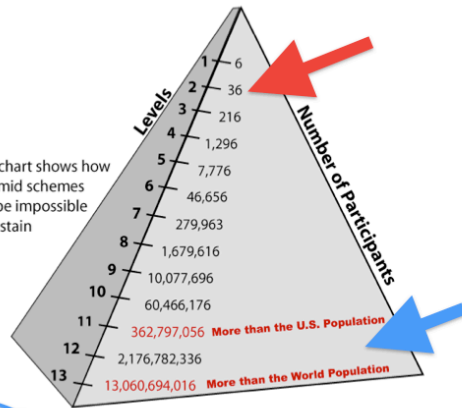
This is a graph of exactly what
a Ponzi scheme looks like
visually



Beware PONZI SCHEME! DON'T GET SCAMMED!



This chart shows how pyramid schemes can be impossible to sustain



"SIMPLIFIED BALANCE SHEET" OF GREEK BAILOUT

WINNERS	LOSERS
- Bank Shareholders	- Tax Payers
- Bank Debt holders	
- Bank Executives	

The PONZI pyramid is a very common way of organization in selling management. Investment is successful for the previous "investors" as long as more others are convinced to join and place their money (or can sell goods). The higher in the pyramid you are the more money you can get. The lower you are more money you can lose.

Business culture and dishonesty in the banking industry

Alain Cohn, Ernst Fehr & Michel André Maréchal

Nature (2014) | doi:10.1038/nature13977

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Recent research investigations have just shown that - bankers have lower and lower honesty credit and 33% of US people agree they have no ethical standards (the grey arrows).

Behavioural economics: Professional identity can increase dishonesty

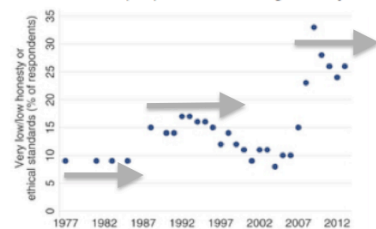
Marie Claire Villeval

Nature (2014) | doi:10.1038/nature14068 | Published online 19 November 2014

- dishonesty is increasing in banking employees compared to the behaviour of other professional identities. (the red distribution compared to blue one)

WHY?

Gallup survey of honesty standards of people in the banking industry.

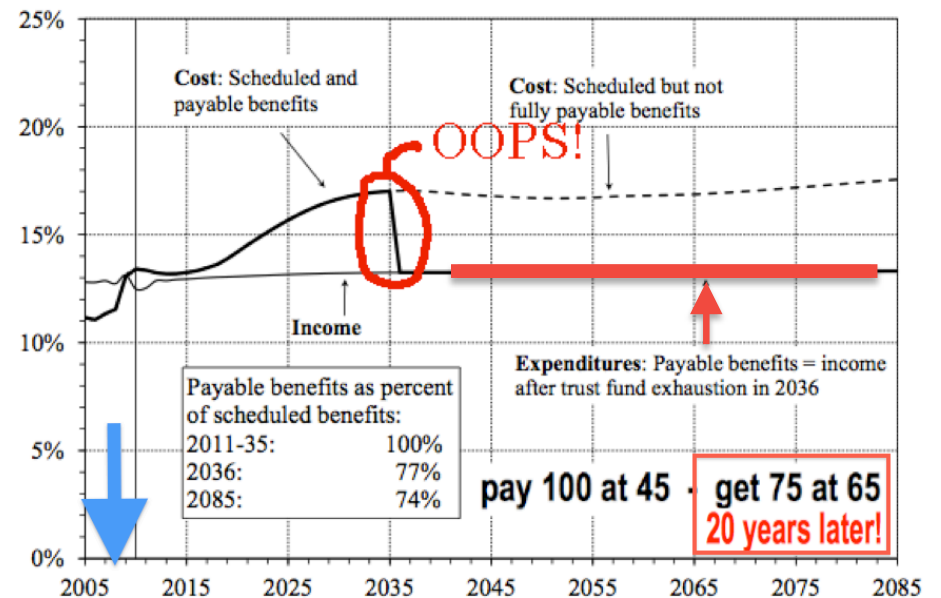


Fraction of US citizens thinking that bankers have very low or low honesty or ethical standards

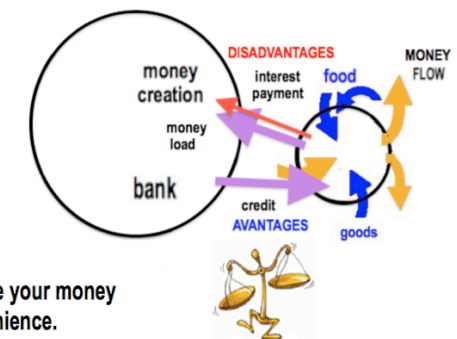
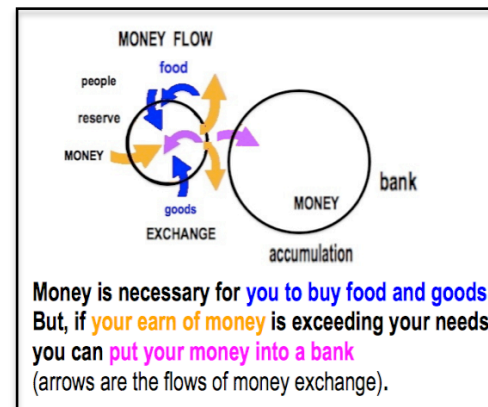
Distribution of earnings in the coin tossing task claimed by the bank employees.



Each successful coin toss yielded approximately \$20.

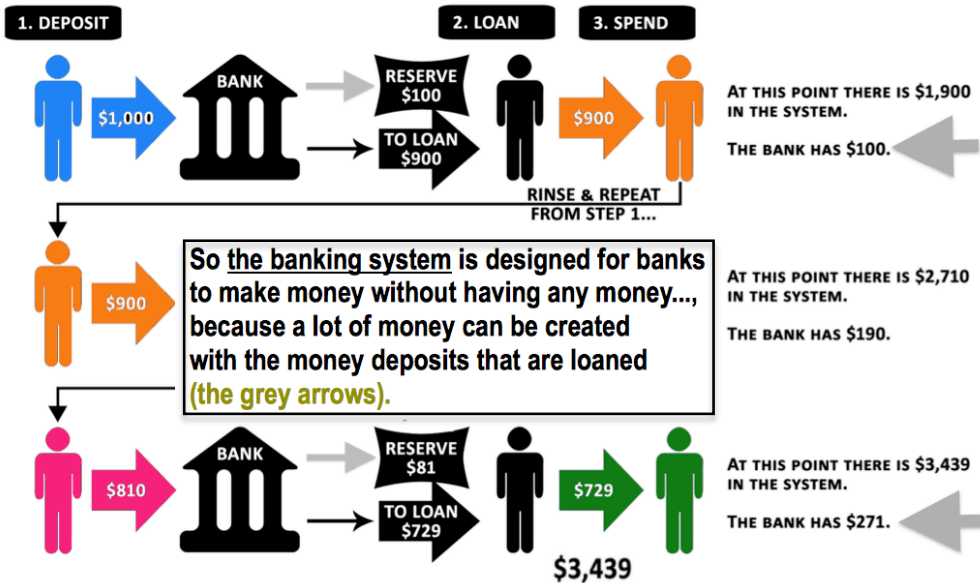


If you are 55 today, current law will pay you 75 cents on the dollar!



Initially banks were created to secure your money and to get it back free at your convenience. Of course there is an advantage for the bank. Your money can be loaned by the bank (the violet arrow) to other people who will have to give the money back and to pay an interest for the bank (the red arrow). So the bank can make money with your money.

THE BASIC FRACTIONAL RESERVE BANKING CYCLE



Evolutionary systems, theories of living systems and theories of social systems

Prisoner's dilemma: A study in conflict and cooperation - Rapoport - Cité 2136 fois
Finite automata play the repeated prisoner's dilemma - Rubinstein - Cité 567 fois
End behavior in sequences of finite Prisoner's Dilemma ... - Selten - Cité 631 fois

Visualizing the Topology of 2X2 Games: From Prisoner's Dilemma to Win-win

International Conference on Game Theory, Stony Brook, NY, July 11 - 15, 2011

As a tool for institutional analysis and design, this paper presents additional visualizations of Robinson and Goforth's topology of ordinal 2x2 games linked by swaps in adjoining payoffs, in a modified, more accessible version of their

The prisoners' dilemma "game" is a tool to study conflicts and cooperation; it is mentioned thousands of times in the literature and with a lot of authors.

understanding of relationships among 2x2 games. For the design of institutional mechanisms, visualization of the topology can help to understand re-alignments of incentive structures that might be reached through negotiation, side payments, or changes in information, technology, preferences, or rules; mapping potential transformations into the adjacent possible.



Prisoners' Dilemma

Prisoner B	Prisoner A	
	Cooperation	Defect
Cooperation	win win	LOSE WIN
Defect	WIN LOSE	lose lose

From a prisoners' dilemma "game" point of view, after the Greek bailout in Europe and the US subprimes crisis, that affected the economy all around the world..., we know

Parliament

Balanced Budget

Deficit

Reserve Bank sets interest rates High Low

	Reserve Bank sets interest rates	
	High	Low
Parliament	win win	LOSE WIN
Balanced Budget	WIN LOSE	lose lose

"SIMPLIFIED BALANCE SHEET" OF GREEK BAILOUT

WINNERS LOSERS

- Bank Shareholders
- Bank Debt holders
- Bank Executives
- Tax Payers

MORE THAN 15,000 EUROPEAN BANKERS DOUBLED THE AMOUNT OF THEIR BONUS!

- a lot of countries with budget deficit are in a loser situation, and that
- finally tax payers are the losers.

WHY?

Evolutionary systems, theories of living systems and theories of social systems



"WIN-WIN"
is not the solution but the problem!
What next?



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The European Meeting on Cybernetics and Systems Research,
 Wien, Österreich, March 30th - April 1st, 2016

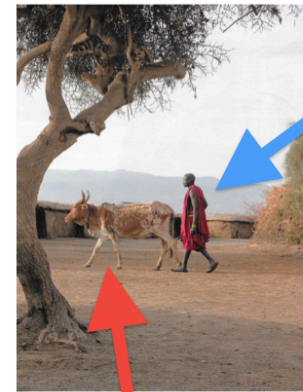


Too much phenomena are reported
to be a WIN-WIN situation
and are not,
particularly in biological and sociological domains
(for example symbiosis is NOT a win-win situation,
NOT an association for mutual benefits!).

And more...,
sooner or later,
win-win situations are at the origin
of LOSE-LOSE ones!

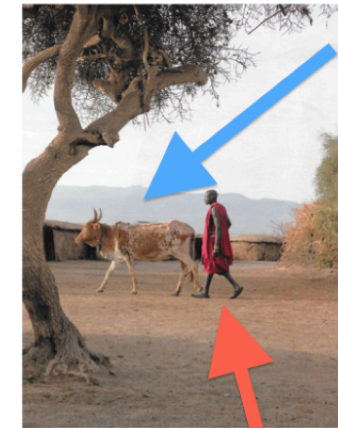


TO SURVIVE
that is first TO EAT.



THE OTHER
MUST SURVIVE FIRST

FOR THE ONE TO SURVIVE

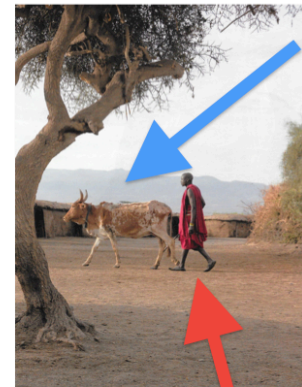


THE OTHER
MUST SURVIVE FIRST

FOR THE ONE TO SURVIVE

Let's see biological systems.
For the one to survive (man),
the other one (the cow)
must survive first,
and reciprocally.

African herders
will never kill their cows
to eat their flesh.
They will drink their milk
and drink (or eat) their blood
but never the flesh.
Only after the animal death
they eat it.



THE OTHER
MUST SURVIVE FIRST

FOR THE ONE TO SURVIVE

FOR THE ONES TO SURVIVE



THE OTHER MUST SURVIVE FIRST

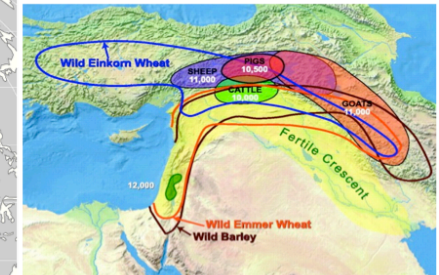
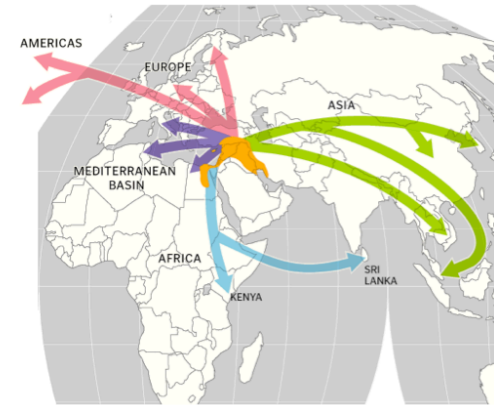
Sooner or later, domestic plants and animals
are eaten by man, but man has to protect them,
to help them to eat and grow,
during a lot of time before.



More than ten thousand years ago “A DEAL” was fixed between man species and some other animal species. And it was engraved in stones and painted on stones.

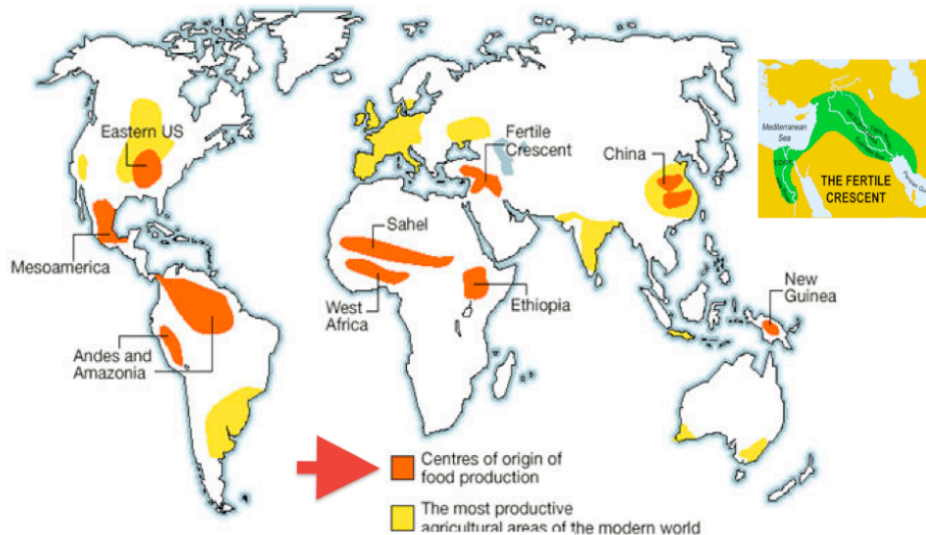


animal domestication



This DEAL was a great success: herders with domestic animals and farmers with domestic plants invaded the whole Earth biosphere.

AFSCET UES-EUS IASCYS Pierre BRICAGE SCU UPPA
Evolutionary systems, theories of living systems and theories of social systems



This DEAL was ubiquitous: at nearly the same time and everywhere, different kinds of this deal were sealed.



THE OTHER MUST SURVIVE FIRST

THE OTHERS MUST SURVIVE FIRST

FOR THE ONE TO SURVIVE

FOR THE ONE TO SURVIVE



The rice version of the DEAL, “the rice food web” was maintained and extended from generation to generation of farmers and fishers.

And that is true for every ecosystems: domestic (anthropic) and wilds ones.

Look at the functioning of the arctic food web.
How to survive in **the extremely cold Arctic?**



For **man** to survive,
dog and **the tundra deer** must survive first.

But for **the tundra deer** to survive,
dogs and **man** must survive first.



No one can survive outside the dependence of all the other ones.

Look at Emperor penguins that survive in the extremely cold Antarctic.
They have no reason to walk fast. And they can't!



On the ice bank there is no danger, no predator!
That is a great advantage for their survival.
And they lay their eggs there, they cannot be eaten.
But there is also nothing to eat for penguins.
And that is a great disadvantage.

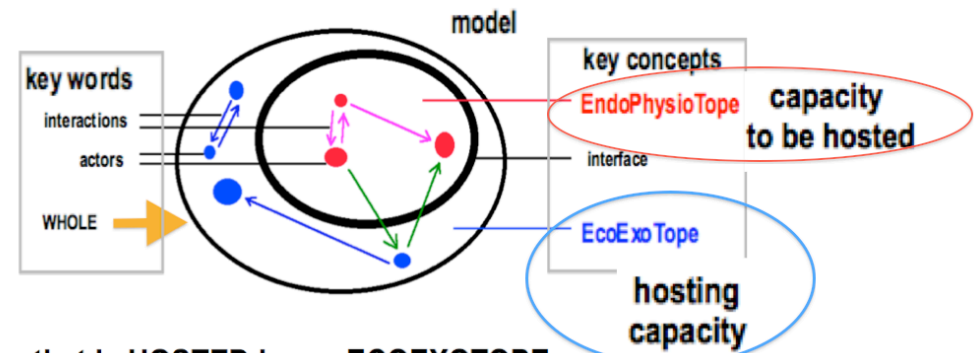
an ecoexotope with
an extremely low hosting capacity
an extremely high capacity to be hosted

There are never advantages without disadvantages.
And greater the advantages, greater the disadvantages.

But Penguins have 2 reasons to swim fast, very fast.
And they can.

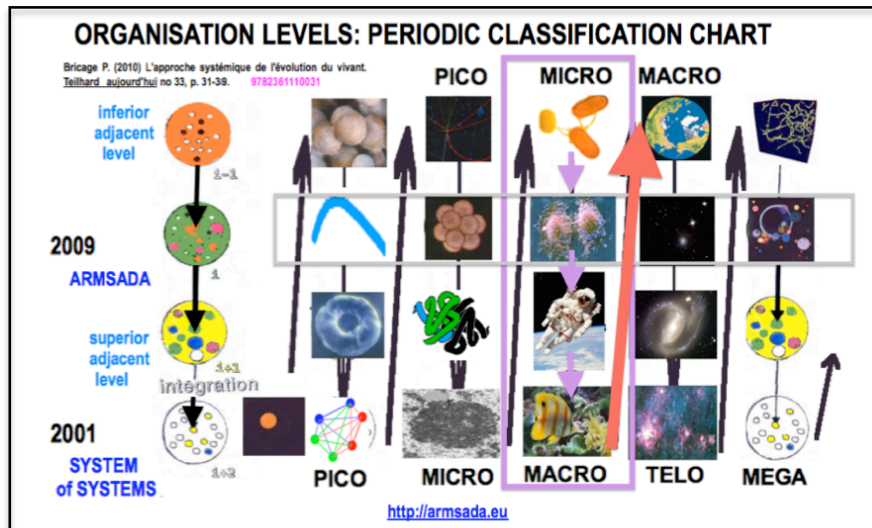
May I introduce some key words and concepts.

Every living system is A WHOLE with ACTORS and IN INTERACTIONS.
The WHOLE is composed of an ENDOPHYSIOTOPE
(from Greek, endo: internal, tope: space-time, physio: of functioning)



that is HOSTED by an ECOEXOTOPE
(exo: external, tope: space-time, eco: of inhabitation)
that is SHARED with other living systems.

The EcoExoTope is furnishing a HOSTING CAPACITY
and the EndoPhysioTope will survive only if it owns
a suitable capability, a CAPACITY TO BE HOSTED.



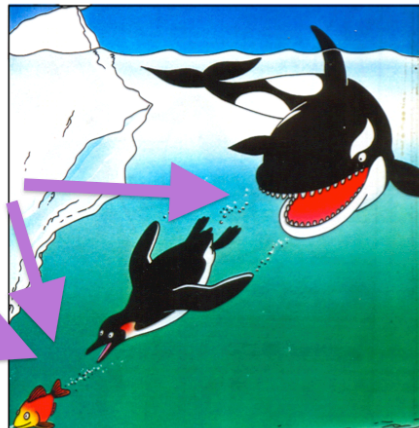
**That is true for every living system
 whatever the scale and the level of organisation.**

**NO danger, no predator, but NO prey, NOTHING TO EAT,
 for the survival, THE HOSTING CAPACITY of the ECOEXOTOPE
 of the ice bank is very low. The Penguins ENDOPHYSIOTOPE
 owns a very high CAPACITY TO BE HOSTED.**

**preys but predators too !
 a food chain**

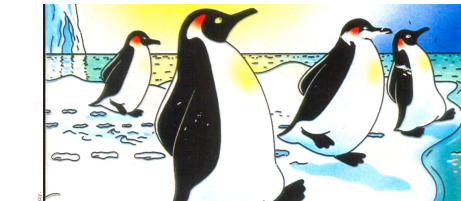
**to survive it is "to eat" and " not to be eaten "
 sooner or later it is impossible not to be eaten
 "comer" y " no ser comido "
 tarde o temprano es imposible no ser comido**

**an ecoexotope with a
 high hosting capacity**



**In the sea water Penguins have at least 2 reasons for swim
 very fast: TO EAT AND NOT TO BE EATEN.
 This part of the ecoexotope has a very high hosting capacity.
 But there are a lot of predators, like killer whales.
 THERE ARE NEVER ADVANTAGES WITHOUT DISADVANTAGES.**

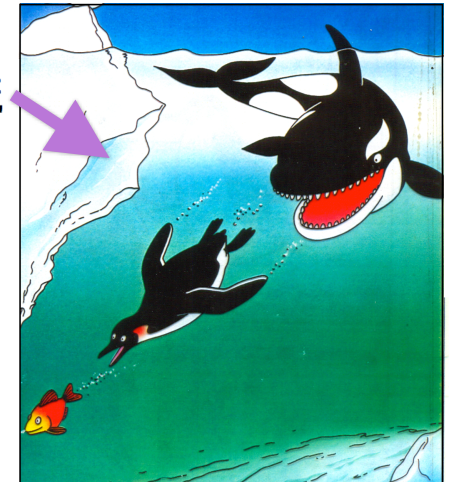
**no reason for walking fast
 but at least 2 reasons for swimming very fast
 to survive it is "to eat" and " not to be eaten "**



**no razón para marchar rápidamente
 pero 2 razones para nadar muy rápidamente
 "comer" y " no ser comido "**



Les manchots n'ont aucune raison de marcher vite.



Mais au moins deux raisons de nager vite.

Greater the advantages and greater the disadvantages.

There are never advantages without disadvantages !

To survive that is

**to avoid advantages turn to disadvantages and
 to transform disadvantages into advantages.**

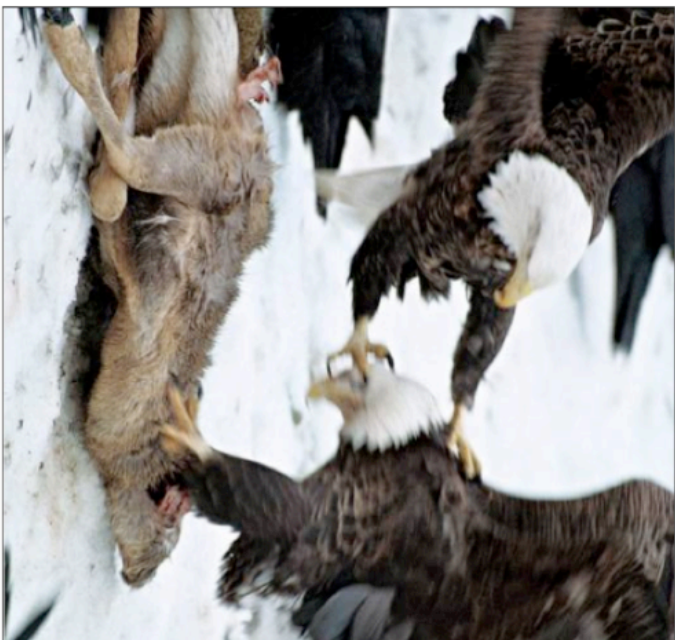
To survive that is

**to eat and not to be eaten
 'to be lucky !' :**

**'to be at the right place at the right time'
 and not to be at the wrong place at the wrong time' !**

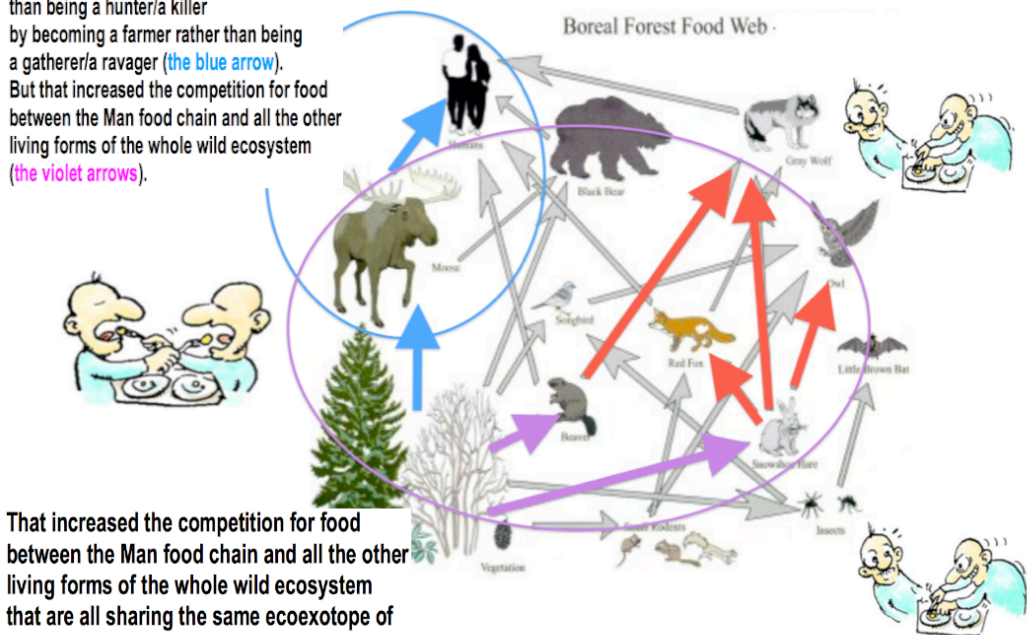
Sooner or later it is impossible not to be eaten!

The struggle for life is
first A COMPETITION for food,
and between the members
of the same species first.



(within species first...
but between species too!)

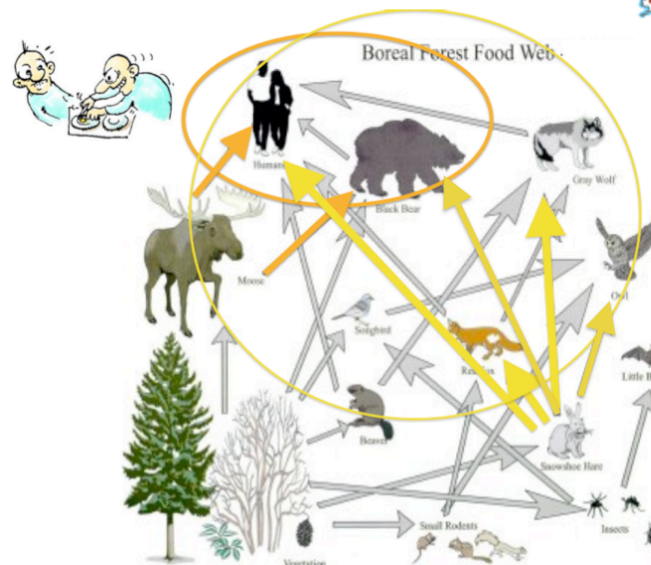
How is Man winning the competition?:
by becoming a herder/a breeder rather
than being a hunter/a killer
by becoming a farmer rather than being
a gatherer/a ravager (the blue arrow).
But that increased the competition for food
between the Man food chain and all the other
living forms of the whole wild ecosystem
(the violet arrows).



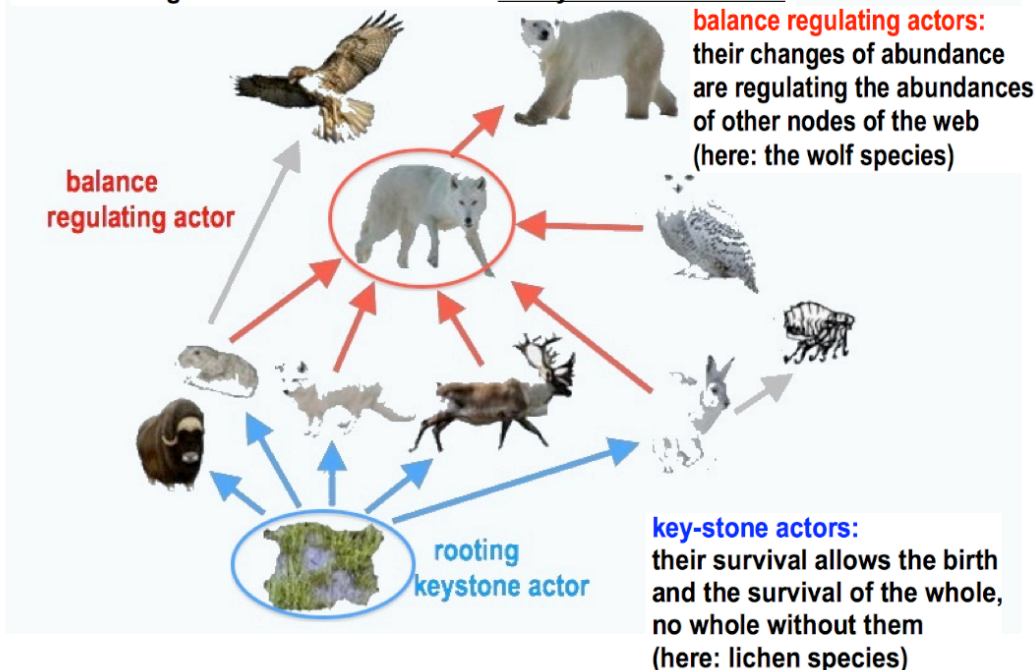
That increased the competition for food
between the Man food chain and all the other
living forms of the whole wild ecosystem
that are all sharing the same ecoexotope of
survival, and at all levels of interactions.

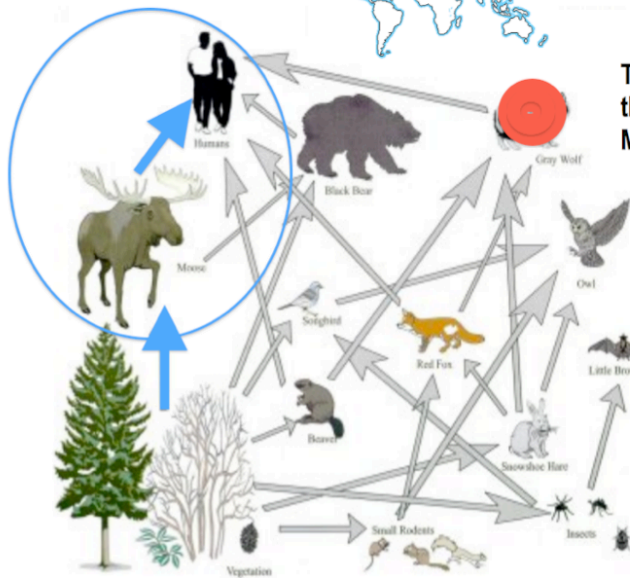


Look again at the boreal forest food web.
Man is in competition with Wolf and Bear
to eat the Reindeer (the orange arrows).
He is also in competition with a lot of other
animals for sharing the same ecoexotope
of survival (the yellow arrows).



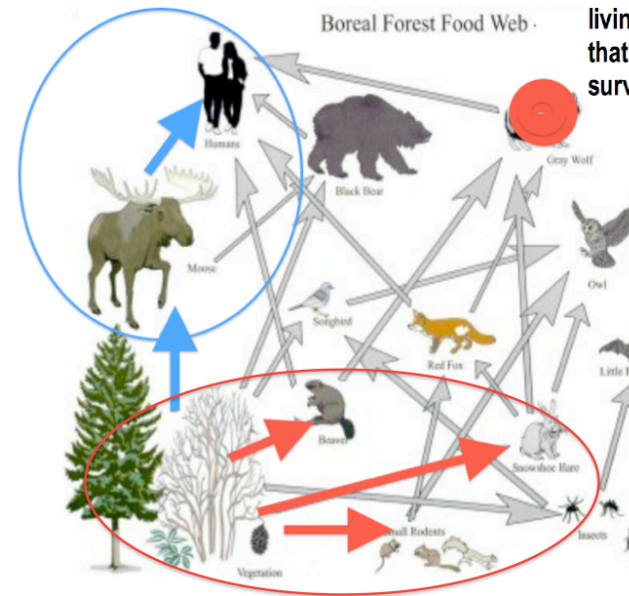
In all food webs there are special actors that by their interactions
are at the origin and the maintenance of the system as a WHOLE.





To increase the abundance of the anthropic domestic food chain Man is destroying Wolf.

The result is...
You know it if you have seen the movie "Wolf Totem" or read the book of the great Chinese writer LÜ Jiamin



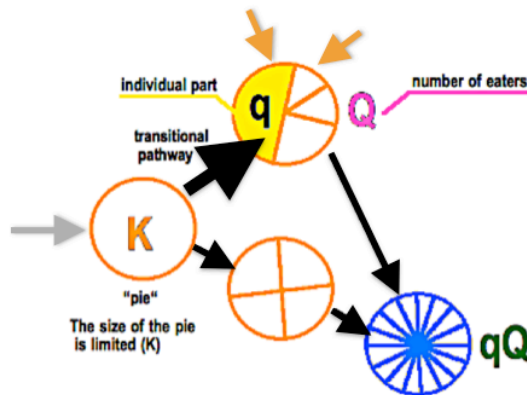
That increased the competition for food between the Man food chain and all the other living forms of the whole wild ecosystem that are all sharing the same ecoexotope of survival, and at all levels of interactions.

Man and Deer win the competition against Wolf but lose it against the wild ecosystem as a whole.

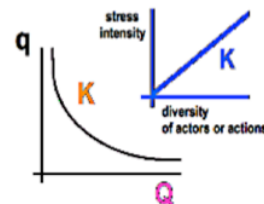
It is a "who wins will lose" game!

Having increased the hosting capacity of the shared ecoexotope for itself only is the best way to decrease the capacity to be hosted of its own endophysiotope!

Killing the balance regulating actor increases the growth of the usual preys of the Wolf species and the eating of the plants that are usually eaten by domestic animals.



ALL THAT IS AN ADVANTAGE FOR A PARTNER IS A DISADVANTAGE FOR THE OTHER ONE AND RECIPROCALLY.



Variety/diversity and capital.

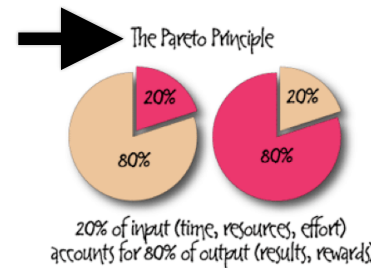
K global "capital", q local capital, Q number of actors
K "capital", q consumption at a time, Q number of available consumptions
K global consumable food/good, q quality, Q quantity

The sharing of a limited hosting capacity.

The Earth is limited: "all the water on the Earth is only a drop on a pebble", and it is mainly salt water.

hosting capacity is preferred to carrying capacity in the sense of interaction and balance with *capacity to be hosted*

Evolutionary systems, theories of living systems and theories of social systems



By definition, an outcome is *Pareto optimal* if any other outcome gives a worse outcome for at least one of the players.

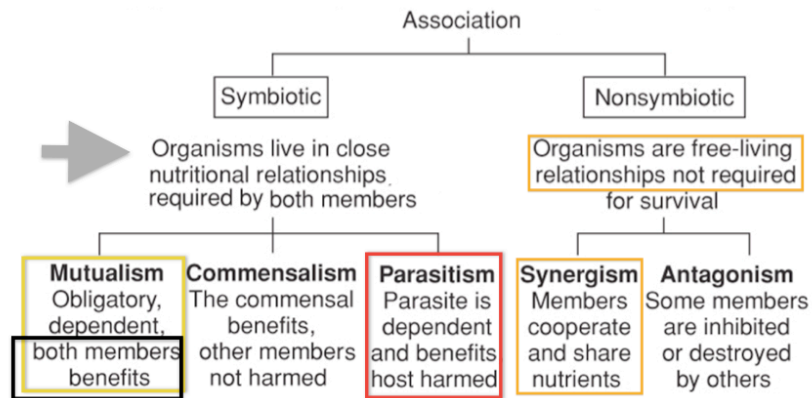
		Prisoner A		
		Cooperation	Defect	
Prisoner B	Cooperation	win win	WIN LOSE	<div> <div>Pareto optimum</div> <div>Cooperate</div> <div>Cooperate</div> <div>2, 2</div> <div>0 3</div> <div>3 0</div> <div>1, 1</div> <div>Nash equilibrium</div> </div>
	Defect	LOSE WIN	lose lose	

the prisoners' dilemma

the prisoners' dilemma

By definition, a strategy pair is *Nash equilibrium solution* if each player's strategy is the best response to the other player's strategy.

**symbiosis is usually described as a win-win situation,
as an association for the benefits of both members**

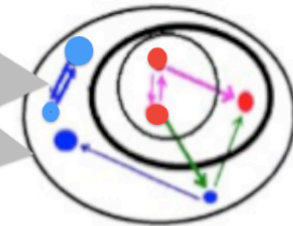


But really it is NOT an association for mutual benefits!

**symbiosis is usually described as a win-win situation,
as an association for the benefits of both members
But really it is NOT an association for mutual benefits!**

but an **ARMSADA**

**ASSOCIATION for the
RECIPROCAL and
MUTUAL
SHARING of
ADVANTAGES and
DISADVANTAGES**



**... sooner or later,
WIN-WIN situations are
at the origin
of LOSE-LOSE ones!**

**in an ARMSADA there are no benefits for the partners
but only for the WHOLE, indeed there are no partners
but actors, and interactions, WITHIN a WHOLENESS**

Look at HOW a Lichen is functioning.

A lichen is an **ASSOCIATION** between a **fungus partner** (in yellow colour) and an **algal partner** (in green).

The fungal part of the **WHOLE** is building "a home", to allow the survival of the Alga, and "within the box", a better survival than when the Alga species was free: protection against bacterial and viral dangers (viruses have now to break the fungal barrier!) and availability of water and mineral salts.

That is a great **ADVANTAGE** for the algal part of the Whole.

But the advantage for the algal part is a disadvantage for the Fungus which has to take a great amount of its matter and energy to favour the growth and "breeding" of the algal part.

All that is an advantage for the algal actor is a disadvantage for the fungal actor.

But, sooner or later, fungal filaments are catching algal cells and they eat the cells.

Now that is a great advantage for the fungal actor and a great disadvantage for the algal one.

But the Whole is growing. Benefits are only for the Lichen!

ALL THAT IS AN ADVANTAGE FOR A PARTNER IS A DISADVANTAGE FOR THE OTHER ONE AND RECIPROCALLY.

The two actors cannot survive outside of their Whole, the Lichen, they **MUTUALLY** allow the survival of their Whole, and the Whole allows their survivals **RECIPROCALLY**.

The WHOLENESS expresses new emergent properties (production of lichen acids).

The same for a cell.

A cell is an **ARMSADA** that emerged from bacterial and archeal partners, that were initially free, with "the help" of viruses (Bricage, 2005, Paris).

For the **WHOLE**, the cell to survive and reproduce, the cell organelles **must survive and reproduce first**. The death of the mitochondria leads to the cell death.

The cell is the ecoexotope of survival of the endophysiotope of each organelle.

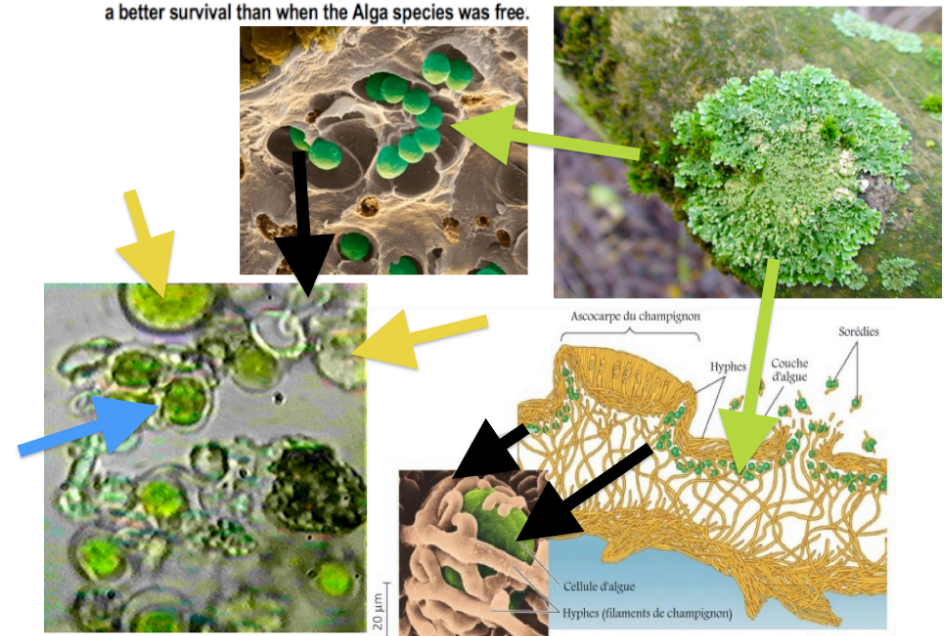
A cell is an **ARMSADA**, an organism, that is an **ecosystem of ecosystems**.

Its survival depends on recycling of waste products and exchange of foods: all products are food for other parts. It is a "TAKE-MAKE-WASTE-but RECYCLE" SYSTEM-of-SYSTEMS.

It is an ecosystem in which we can see the flows of matter and energy and identify keystone and balancing regulatory actors, like in the arctic forest.

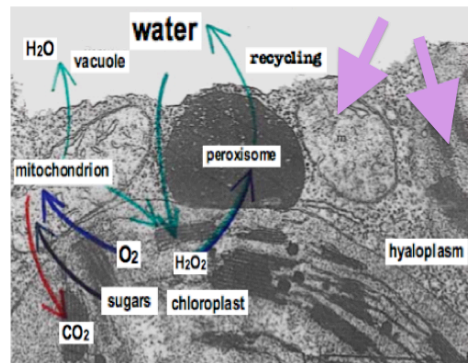
The same process/principles of functioning are evidenced independently of the scale.

The fungal part of the **WHOLE** is building "a home", to allow the survival of the Alga, and "within the box", a better survival than when the Alga species was free.



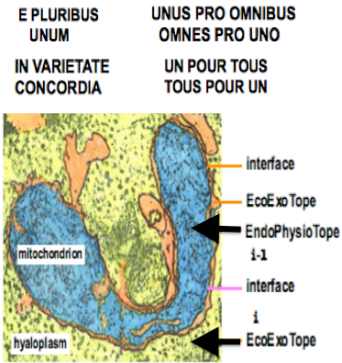
All that is an advantage for the algal actor is a disadvantage for the fungal actor.

A CELL IS AN ENDOSYNCENOSIS, AN ECOSYSTEM of ORGANISMS



Bricage P. (1988) Isoperoxidases, markers of surrounding and physiological changes, in situ in leaves and in vitro in calli of *Pedicularis litymaloides* L. variegatus: cell compartmentation and polyfunctionality, control of activity by phenols, specific roles. p. 261-265. *Molecular & Physiological Aspects of Plant Peroxidases*. Univ. Genève, (ISBN 2-88164-001-X)

ISSS July 16-23, 2010, Wilfrid Laurier University, Waterloo, ON, Canada. Balancing Individualism and Collectivism: ARMSADA



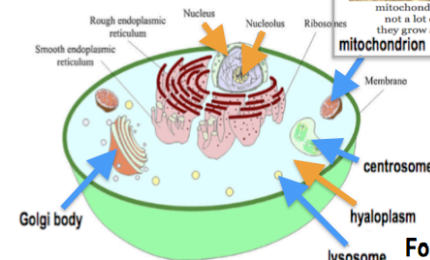
FOR THE ONE TO SURVIVE
THE OTHER ONE MUST SURVIVE FIRST
AND RECIPROCALLY 2000

pierre.bricage@univ-pau.fr

Symposium 2 : Human Interaction with EcoSystems.

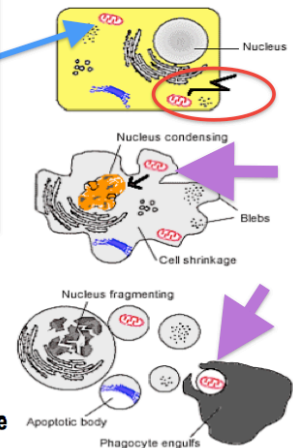
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An ARMSADA
may emerge only
when all actors
lose simultaneously
the ability to kill
the other ones.



K. Khoshdel et al. / Computational Biology and Chemistry 32 (2008) 315-321
The configuration of different human cell organelles.

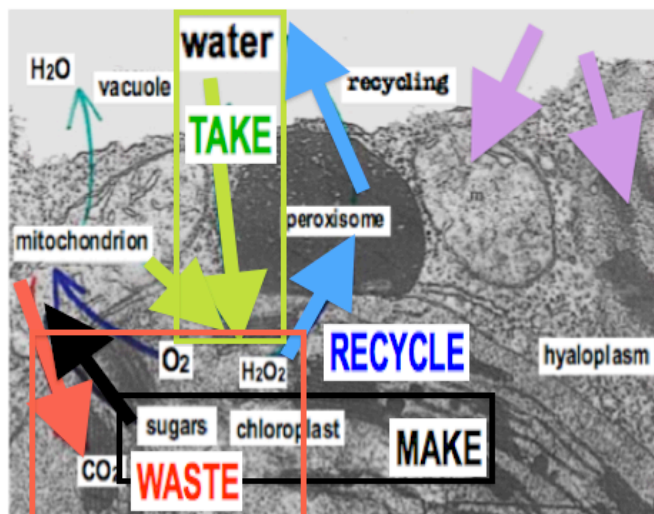
For the one to survive
all the other ones
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pierre.bricage@univ-pau.fr

Symposium 2 : Human Interaction with EcoSystems.

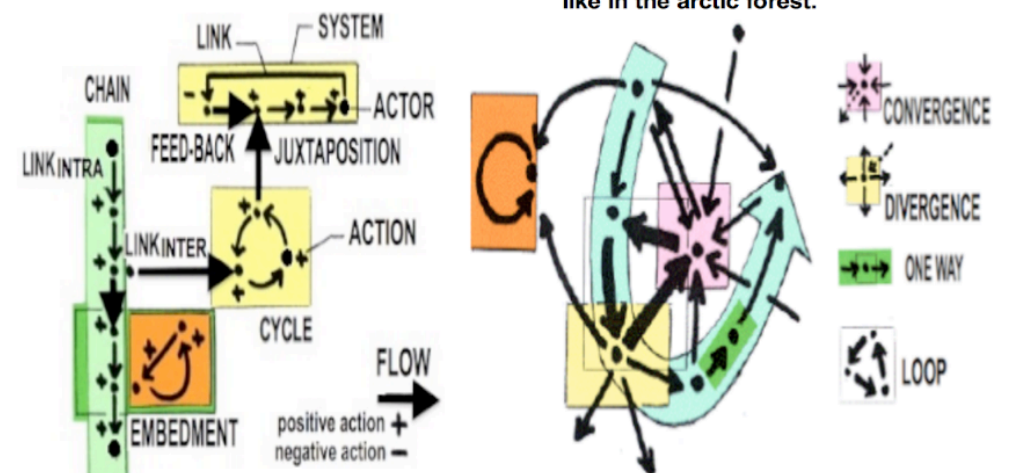
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E PLURIBUS
UNUM
IN VARIETATE
CONCORDIA

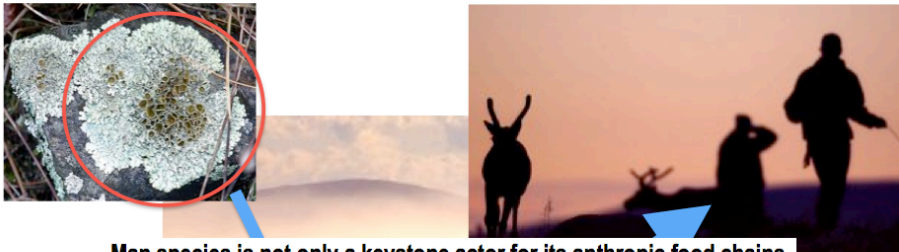
AN ECOSYSTEM of ORGANISMS

UNUS PRO OMNIBUS
OMNES PRO UNO
UN POUR TOUS
TOUS POUR UN



system of systems **web control**:
pathways of metabolites synthesis or genes expression

The same process/principles of functioning
are evidenced independently of the scale.



Man species is not only a keystone actor for its anthropic food chains,



AFSCET UES-EUS IASCYS Pierre BRICAGE SCU UPPA
Evolutionary systems, theories of living systems and theories of social systems

Dog has helped Man since prehistory.



Dog was domesticated from Wolf,

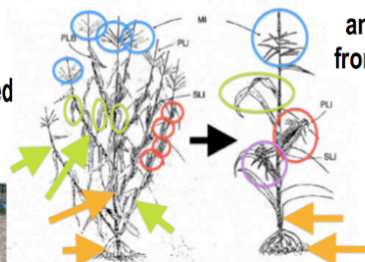


Pig was domesticated from wild boar,

The "Domestication Syndrome" in Mammals
A Unified Explanation Based on
Neural Crest Cell Behavior and Genetics

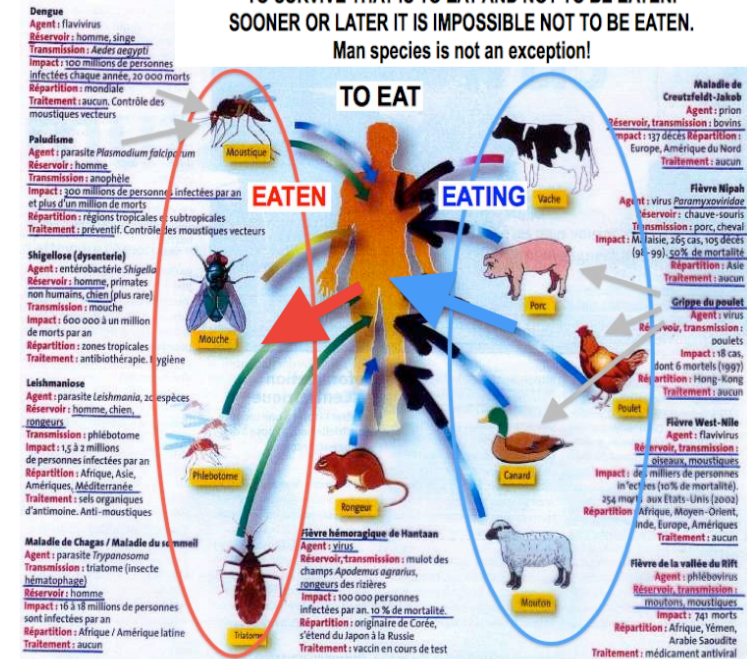
But all domesticated living forms paid a heavy genetic load to become Man dependent!

and maize from teosinte



That was a great advantage to be protected by Man for "to grow and multiply over" the wild species, but only a very few plant and animal species had this capacity to be hosted, to become a suitable domestic form from a lot of unsuitable wild forms. **WHY?**

it is also a predator (eating) and a prey (being eaten) in other food webs.
TO SURVIVE THAT IS TO EAT AND NOT TO BE EATEN.
SOONER OR LATER IT IS IMPOSSIBLE NOT TO BE EATEN.
Man species is not an exception!



WHAT genetic load to pay?

Look at bacteria-viruses interactions.

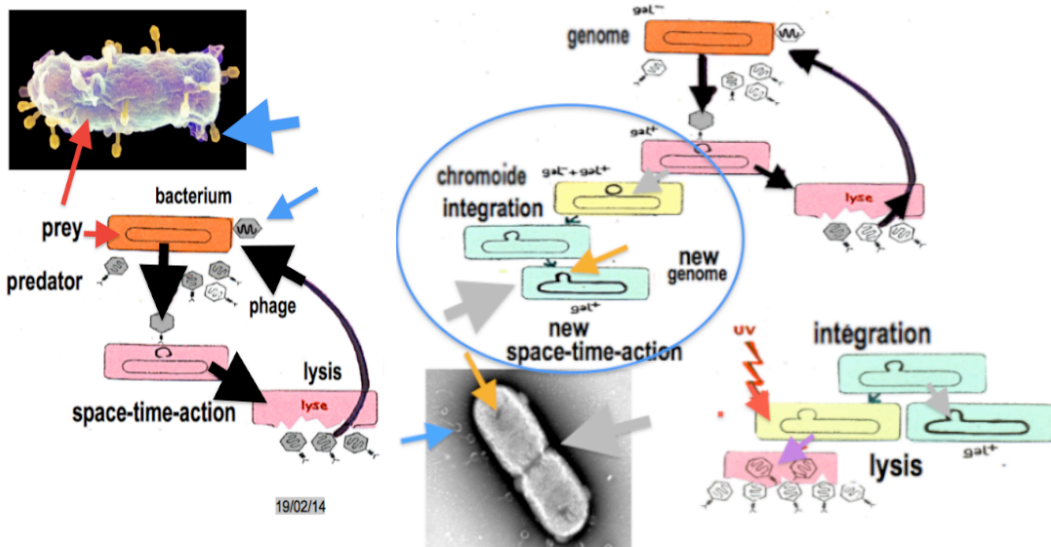
Usually a bacterium is a prey for a virus, a bacteriophage (from Greek **phago**: to eat), entering and lysing a bacterium allows the phage to have a progeny. Sometimes, but **rarely**, a phage has not the ability to eat a bacterium, it invades it but does not multiply its self and does not kill the bacterium. The genome of the **disabled mutant phage** is integrated into the bacterial genome.

Now, **the WHOLE** which is neither a bacterium nor a virus, but both a bacterium and a virus, **owns new emergent properties**, which allow to resist to previous viral infections and to invade new hosts. (It is a way for emergence of new bacterial diseases -like the plague did-.)

But for the one to survive, the other one must survive first.

If radiations are damaging the hyaloplasm or the genome of the bacterium, the virus takes its freedom back, making its self free, it produces a progeny. That is a great advantage for the virus (and the bacterium) to be hosted by the bacterium, but as long as the virus and the bacteria, **both, can sustained the survival**, the growth and reproduction of their common whole.

PREDATOR-PREY INTERACTION: BACTERIOPHAGES AND BACTERIA



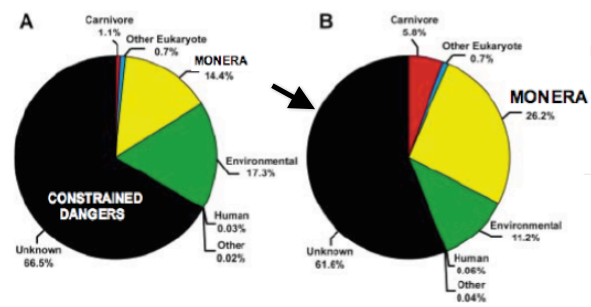
<http://armsada.eu>

p. 4/22

New-Generation Sequencing Technologies:
Faster Results and New Applications
T. Harkins

ancient
integrated
endophysiotope
dangers

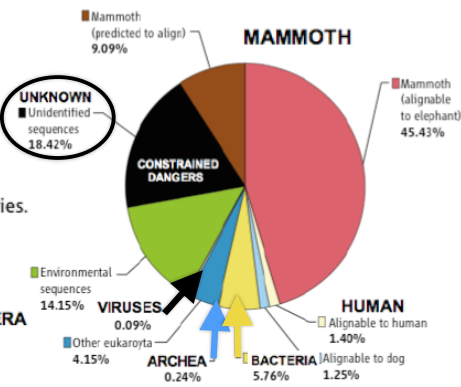
Characterization of two independent cave bear genomic libraries.



ALL LIVING SYSTEMS ARE INHABITED BY VIRUS-LIKE CONSTRAINED DANGERS. FOR EXAMPLE THE RECONSTITUTED GENOME OF THE MAMMOTH WAS HOSTING NOT ONLY ANCIENT GENES OF TODAY HUMAN, BACTERIAL AND VIRAL SPECIES BUT ALSO A HUGE AMOUNT OF VIRUS-LIKE CONSTRAINED SEQUENCES, "CONSTRAINED DANGERS" WHICH ARE IN BLACK.

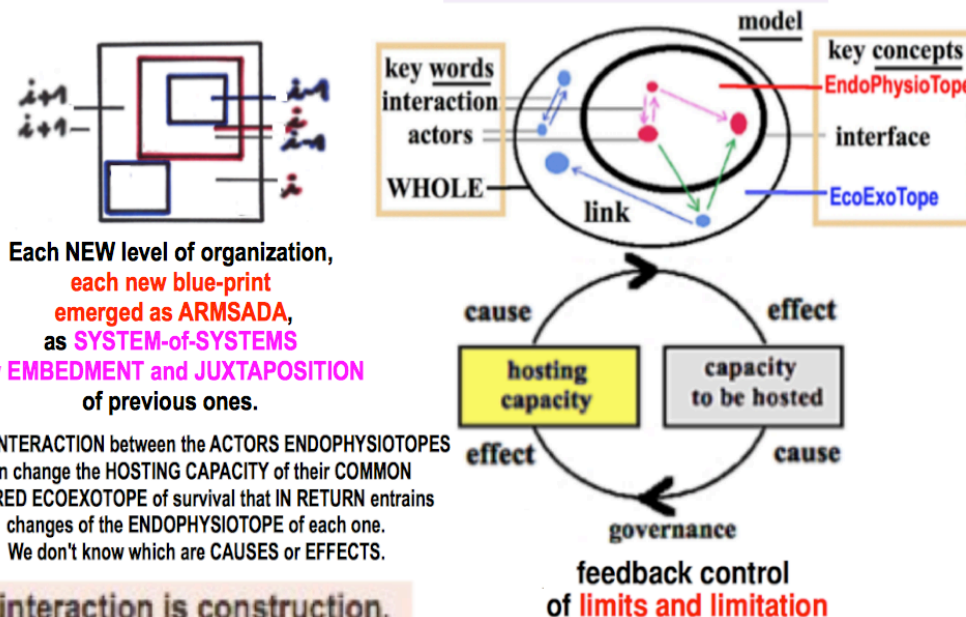
THE SAME FOR EXTINCT CAVE BEARS SPECIES, WITH DIFFERENT AMOUNTS OF CONSTRAINED DANGERS, DEPENDING ON THE ECOEXOTOPE OF THEIR SURVIVAL. MANY OF THESE SEQUENCES ARE SIMILAR TO DNA AND RNA CARCINOGENIC VIRUSES.

Fig. 1. Characterization of the mammoth metagenomic library, including percentage of read distributions to various taxa. Host organism prediction based on BLASTZ comparison against GenBank and environmental sequences database.



Class	Members
DNA viruses	
Papovavirus	Polyomavirus, SV40 virus, human papillomaviruses (eg. HPV-16)
Adenovirus	Adenoviruses 12, 18, and 31
Herpesvirus	Epstein-Barr virus
Hepadnavirus	Hepatitis B virus
RNA viruses	
Retrovirus type C	Murine sarcoma and leukemia viruses, avian sarcoma and leukemia viruses, human T cell leukemia viruses I and II
Retrovirus type B	Mouse mammary tumor virus

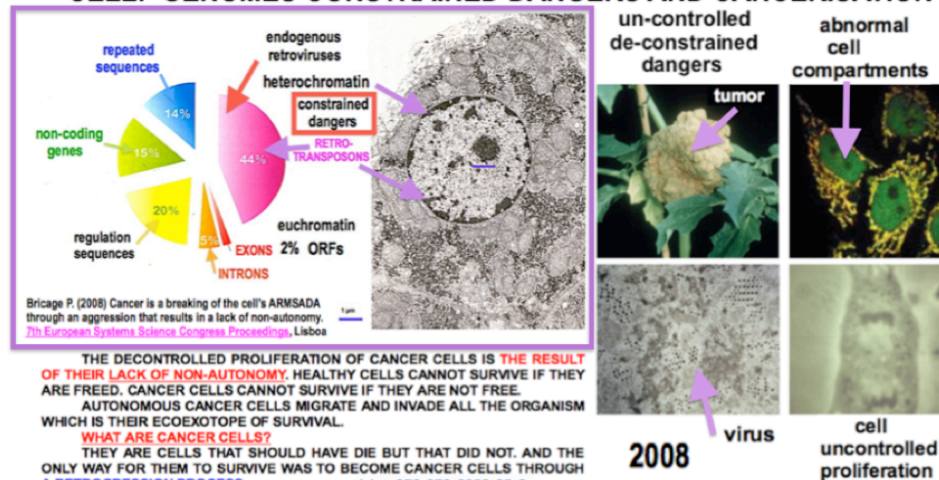
SYSTEMIC CONSTRUCTAL LAW



"interaction is construction,
construction is interaction."

In the Mammoth genome, viral and bacterial genomes are integrated,
the same for the extinct cave bear genome.
These CONSTRAINED DANGERS were necessary for their survival.

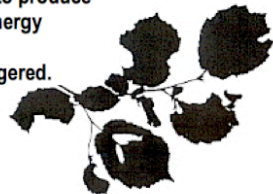
CELL: GENOMES CONSTRAINED DANGERS AND CANCERISATION



The same for Man genome.

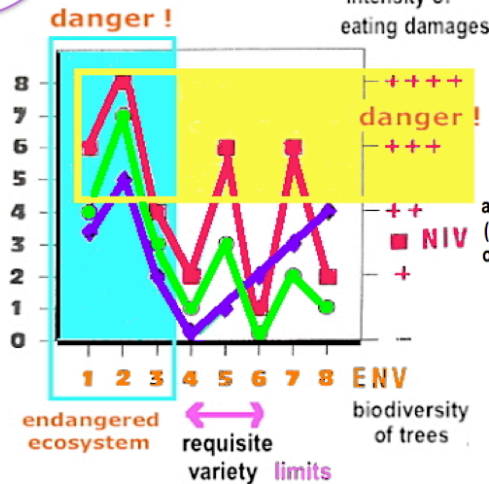
And we know that cancers originate from the breaking of the cell ARMSADA at the genome level.

Without enough leaves to produce their matter and energy trees will die.
The forest is endangered.



The survival of an ecosystem like a forest is depending on a minimal **requisite variety** of tree species. If the biodiversity of the trees is too low the density and diversity of the leaf eaters are too high.

diversity of ravagers
● DIV
◆ DEN
density of ravagers



The survival is "in-between":
not too little-not too much.

You can see the flow of an insect pest which is eating a forest:
- the dark zone of trees is died trees, "eaten" ones,
- the orange zone is "being eaten" trees, invaded dying ones, and the green zone is next "to be eaten" trees. The arrows are indicating the beetle moving for food.

Insects and pests

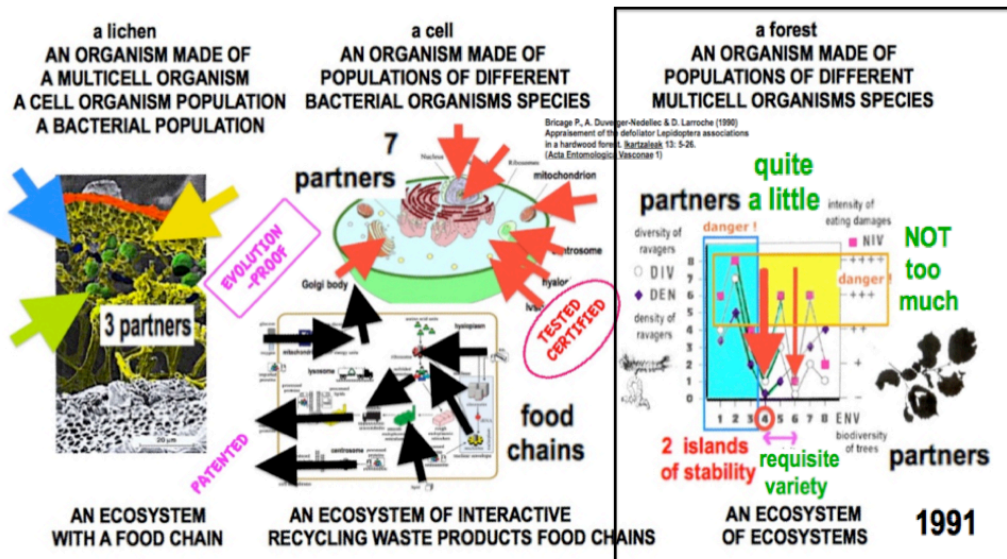
The mountain pine beetle (responsible for the brown and orange patches pictured) is just one dramatic example of a growing insect threat to some forests. Thanks in part to a warming climate, in Canada the native beetle has spread into forests 300 kilometers east of its original territory in western Canada. (That's a 3-hour drive at typical highway speeds.)



But indeed it is **not a forest**, but a **planted field of trees** (like a field of corn), all from the same species: pines (variety = 1)!

Whatever the LEVEL OF ORGANIZATION all living systems are ARMSADA.

UES-EUS Valencia, Spain - Globalization and Crisis. Complexity and Governance of Systems. - October 15th, 2014



Associations for the Reciprocal and Mutual Sharing of Advantages and DisAdvantages

PLACENTA LEGUMES NODES PLAGUE ARMSADA ARE EVERYWHERE

Klevvtska A.M. & al. (2001) Identification and characterization of variable-number tandem repeats in the *Yersinia pestis* genome. J. Clin. Microbiol. 39: 3179-3185. 2001

Kim A.I. & al. (2003) Mycobacteriophage Bxb1 integrates into the *Mycobacterium smegmatis* groEL1. Molecular Microbiology 50(2): 463-473.

Ibid BRICAGE P. (2002a) <http://www.afsct.asso.fr/resSystemica/Crete02/Brilage.pdf>

LIE T.A. (1984) Host genes in *Pisum sativum* L. conferring resistance to European Rhizobium leguminosarum strains., p. 415-425. Plant and Soil n° 82.

LIE T.A. & TIMMERMAN P.C.J.M. (1983) Host-genetic control of nitrogen fixation in the legume-Rhizobium symbiosis: complication in the genetic analysis du to maternal effects., p. 449-53. Plant and Soil n° 75.

PIROT A.M. & al. (1983) Nitrogen fixation in French-bean nodules in relation to ageing. role of bacteroids. p. Physiol. Vég., n° 21.

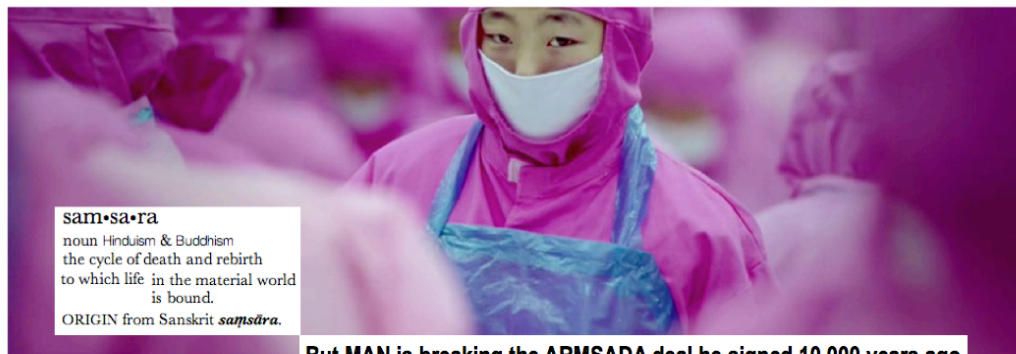
Klymiuk N. & al. (2003) Characterization of endogenous retroviruses in sheep. J. Virol. 77(20): 11268-11273.

Kobinger G.P. & al. (2006) Chimpanzee adenovirus vaccine protects against Zaire Ebola virus. Virology 346(2): 394-401.

Dunlap K.A. & al. (2006) Endogenous retroviruses regulate periimplantation placental growth and differentiation. Proc Natl Acad Sci USA 103:14390-14395. 2008

Isbn: 978-972-9059-05-6

<http://armsada.eu>



sam•sa•ra
noun Hinduism & Buddhism
the cycle of death and rebirth
to which life in the material world
is bound.
ORIGIN from Sanskrit *saṃsāra*.

But MAN is breaking the ARMSADA deal he signed 10,000 years ago
with the domestic part of Nature he took out of the wild food webs.



Too much food is needed: more and more food for more and more men.
And the VARIETY of the domestic food webs is lessening everywhere,
and the VARIETY of all wild food webs is lessening too everywhere,
with less and less food for the actors of the wild part of Nature.

There are, therefore: **the plan**, the act of creation itself and the blessing:
"And God blessed them, and God said to them,
'Be fruitful and multiply, and **fill the Earth and subdue it**; and
have dominion over the fish of the sea and over the birds of the air
and over every living thing that moves upon the Earth'".

Genesis 1 : 28.qua

**ENHANCE the CAPACITY OF HOSTING
of your ECOEXOTOPE**

Do look at the Bible.
We must read again but in another way the sentences of Genesis.

For thousands of years we have enhanced the capacity of hosting of our ecoexotope
of survival: more food for more men and more and more...

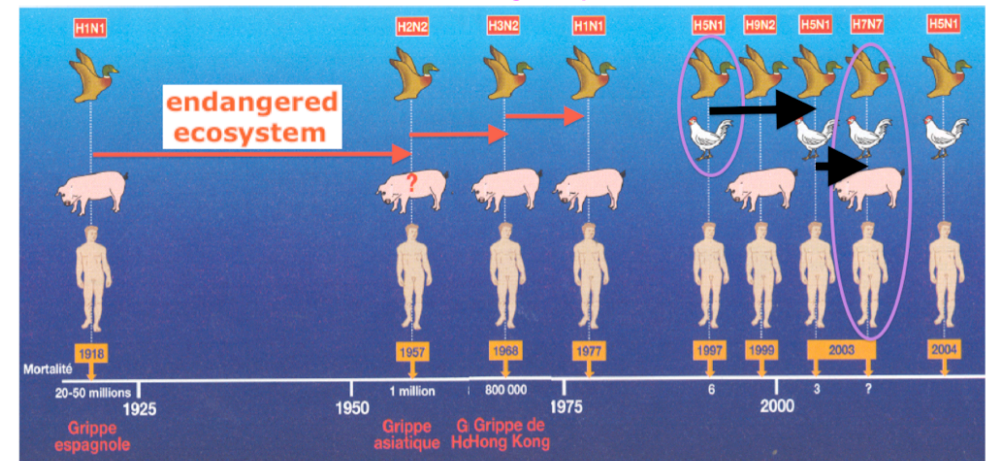
→ That was THE plan!

That is an unsustainable, crazy, way of survival.

This plan is not sustained today neither by our domestic partners nor by our wild
competitors. That is an irresponsible way of dominion!

But it is a "who wins will lose" game.
So TO SURVIVE, for NOT TO DIE, bacteria and viruses from the wild
are jumping into domestic food webs more and more,
invading the anthropic food chains and MAN too!

MAN is an endangered species.



Flu viruses, for example, but others are jumping the same (Ebola, Nile's Virus...),
are flowing from wild bird species to domestic birds like fowls, and pigs, and
finally men, and more and more species are invaded, and more and more rapidly.

MAN is an endangered species.

There are, therefore: **the plan**, the act of creation itself and the blessing:
"And God blessed them, and God said to them,
'Be fruitful and multiply, and **fill the Earth and subdue it**; and
have dominion over the fish of the sea and over the birds of the air
and over every living thing that moves upon the Earth'".

Genesis 1 : 28.qua

**ENHANCE the CAPACITY OF HOSTING
of your ECOEXOTOPE**

regard to natural resources,
especially under the pressure of industrialization,
**an irresponsible culture of "dominion" has been reinforced
with devastating ecological consequences**

(VATICAN-21670, Monday March 09, 2015)

~~fill the Earth and subdue it~~
fill the Earth but be subdued to it

➔ **ENHANCE the CAPACITY TO BE HOSTED of your ENDOPHYSIOTOPE**

Maybe there was a mistake in copying and translation...

Maybe the sentence at the origin was NOT "to subdue" BUT "to be subdued"...

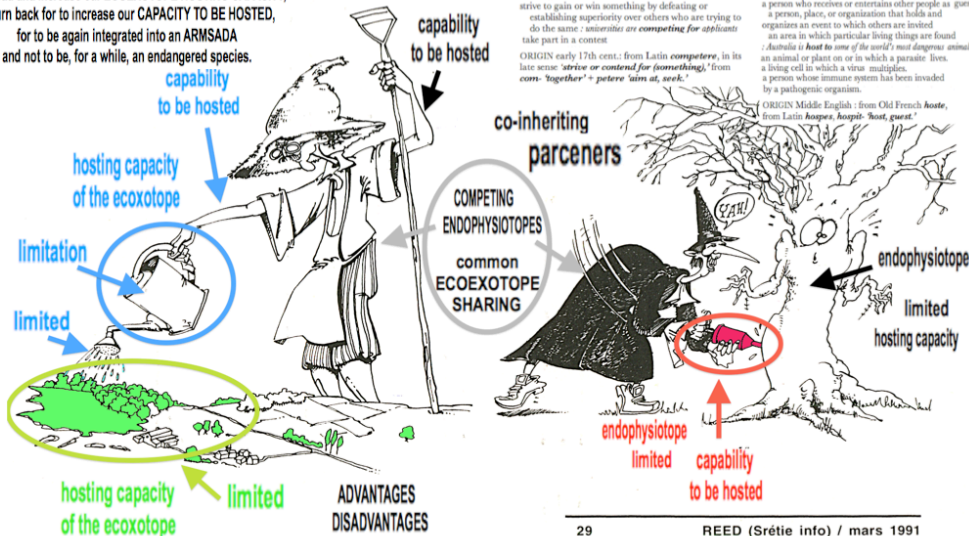
We had to read: "ENHANCE YOUR CAPACITY TO BE HOSTED"

rather than "ENHANCE YOUR CAPACITY OF HOSTING",
NOT "have dominion OVER", BUT "have dominion WITH",
ENHANCE THE BALANCE BETWEEN THE SHARERS!

A lot of ancient Societies knew that.

A lot of philosophic systems know that.

We can model that. We can make simulations.
But today we are facing up to an alternative:
go ahead and increase our ECOEXOTOPE HOSTING CAPACITY,
or turn back for to increase our CAPACITY TO BE HOSTED,
for to be again integrated into an ARMSADA
and not to be, for a while, an endangered species.

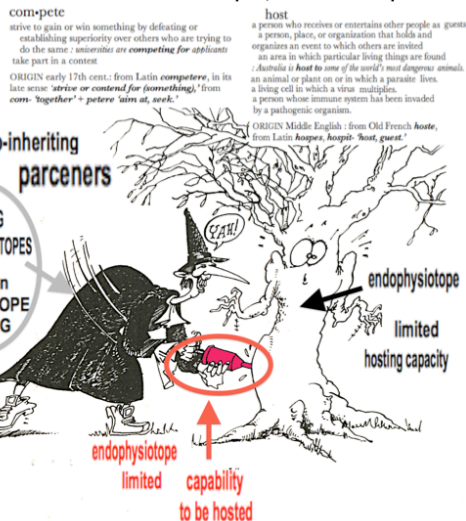


applicative insights in prevention
www.afscet.asso.fr/res/Systemical/Lib0008/bricage2.pdf

by P BRICAGE

Dec 19, 2008 - AIDS is the result of the limiting "hosting capacity" of the human
and of the unlimited "capacity to be hosted" of the virus'

We do not know the LIMITS of the world ecosystem
in which we are a small part, and no more a partner.



29 REED (Srétie info) / mars 1991

ARMSADA

www.armsada.eu/files/pbSystemicEthics.pdf

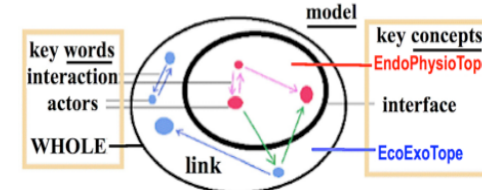
by P BRICAGE

Nov 12, 2011 - Hosting Capacity of an Ecotope/Capacity to be Hosted of an
Endophysiotope. 1b. Boundaries, Biosphere, Emergence: Evolutionary ...

~~have dominion OVER every living thing~~
have dominion WITH every living thing

dominion (historical):

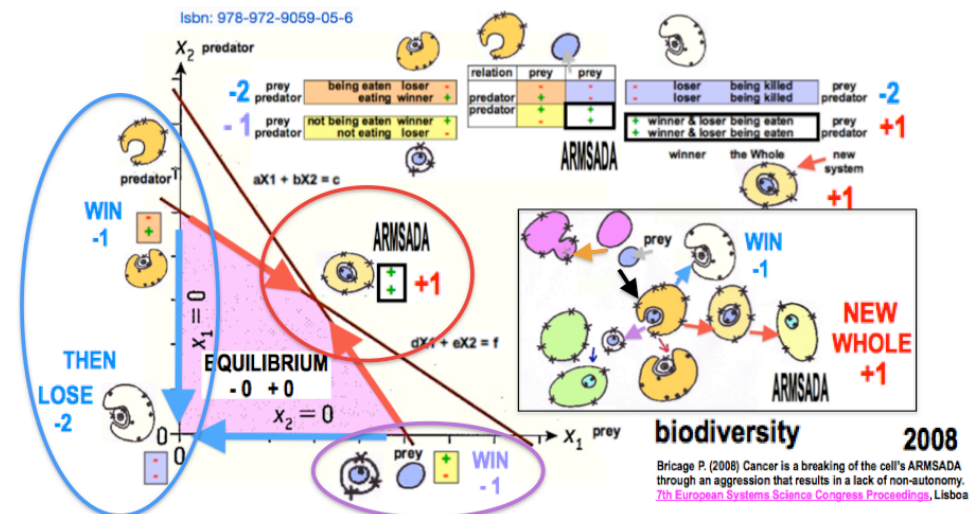
each of the self-governing territories of the British Commonwealth



**ENHANCE the BALANCE of INTERACTIONS BETWEEN
the CAPACITY TO BE HOSTED of your ENDOPHYSIOTOPE
and the CAPACITY OF HOSTING of the ECOEXOTOPE
YOU ARE SHARING WITH ALL OTHER LIFE FORMS**

We can model that in term of Prisoners' dilemma "game",
but it is not a game...
and the important point is not quantitation but quality and variety.

TO SURVIVE THAT IS TO EAT AND NOT TO BE EATEN: PRISONERS' DILEMMA



19/02/14


<http://armsada.eu>

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All living systems emerged with the **MERGING** into an **ARMSADA**,
by **EMBEDMENT** and **JUXTAPOSITION** of previous **SYSTEMS OF SYSTEMS**.
In an **ARMSADA** all partners have to be subduable and be subdued
for their **WHOLE** to be sustainable and maybe sustained.

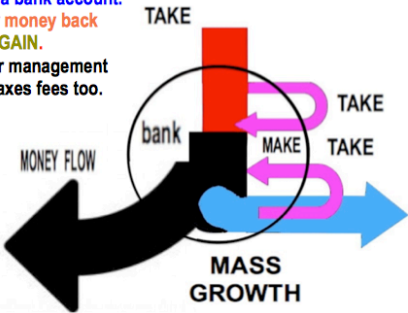
The **MUTUAL** survival always depends on
RECIPROCALLY SHARED RESTRICTIONS.

All partners **MUST SIMULTANEOUSLY LOSE** the capacity to kill all other one!



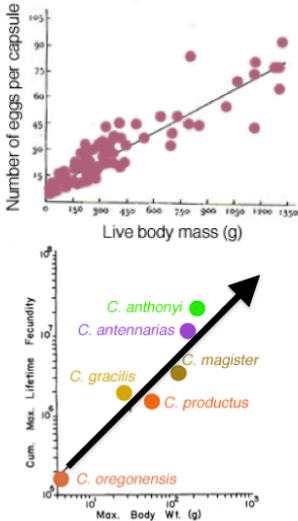
That is an **EXAM** each species has to **PASS**
many times, again and again, during its lifetime.
When it passes its lifetime is extended.
But when it fails only 1 time, it is eradicated.
The longer a species enhances its capacity to be hosted,
the longer its lifetime.

Today, in France, you **MUST, BY THE LAW**,
always put your money into a bank
and you MUST PAY to have a bank account.
And when you take your money back
you MUST PAY AGAIN.
And of course you pay for management
and administration and taxes fees too.



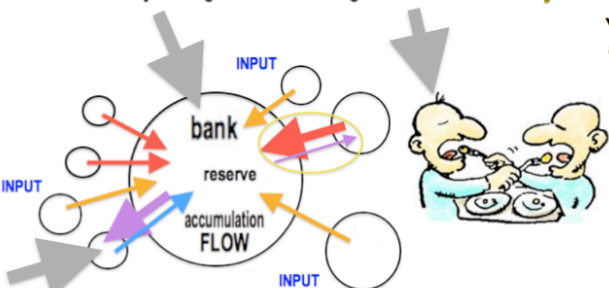
Interaction	Species A	Species B
Commensalism	Receives benefit	Not affected
Mutualism	Receives benefit	Receives benefit
Parasitism	Receives benefit	Harmed

In biological standards, the banking system is a **PARASITE**.
And indeed it is growing like a **PARASITE** does,
creating **SOCIAL DISEASES**.



BY THE LAW... YOU MUST PAY
TO ALLOW THE BANK TO MAKE MONEY WITH YOUR MONEY!
That is a **WIN-WIN DEAL** between the political system
and the banking system. And **YOU ARE THE LOSER**.

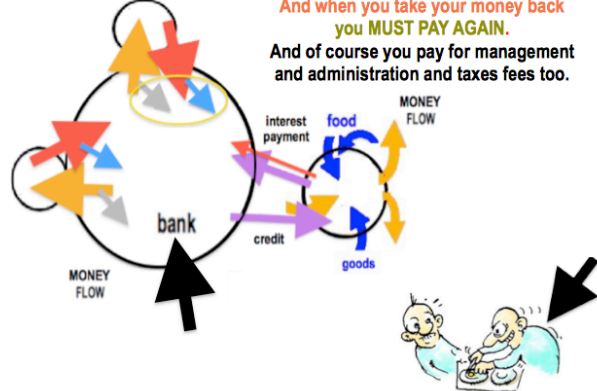
Tens years ago it was behaving like a **mutualistic system**.



You could **put your money as you wanted**
and got it back without to pay and freely.
Of course the banker could
make money with your money
but you could get a part of **the benefits**.

Today, in France, you **MUST, BY THE LAW**,
always put your money into a bank
and you MUST PAY to have a bank account.
And when you take your money back
you MUST PAY AGAIN.
And of course you pay for management
and administration and taxes fees too.

How is functioning the banking system?



YOU CANNOT ALWAYS WIN.
WIN-WIN situation are not **SYSTEMIC** ones.
WIN-WIN deals give advantages to few partners,
but, sooner or later, they give birth to **LOSERS**.
ADVANTAGES for someones
are always disadvantages for other ones.
And greater the advantages,
greater the disadvantages.



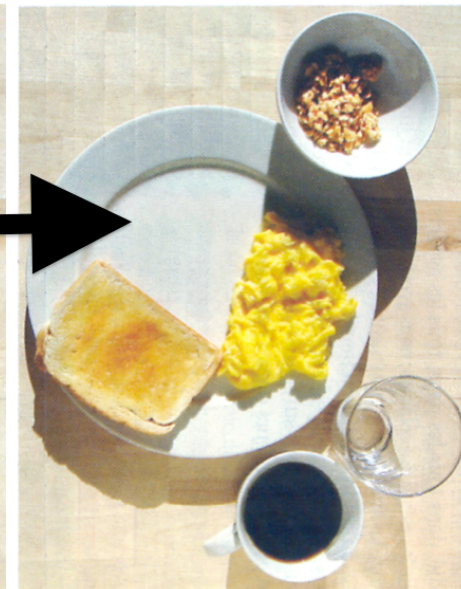
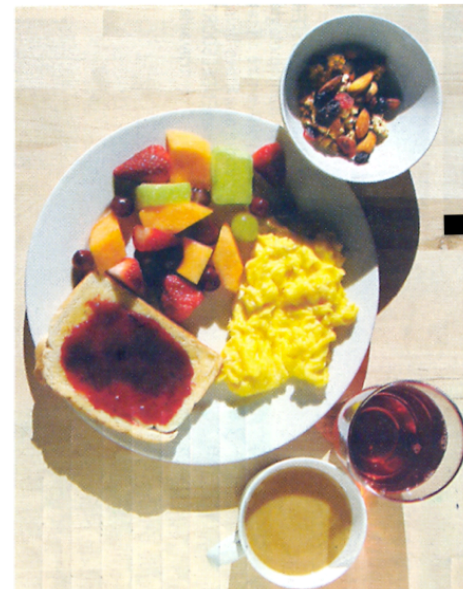
We can model that. We can make simulations.
But today we are facing up to an alternative:
go ahead and increase our **ECOEXOTOPE HOSTING CAPACITY**,
or turn back for to increase our **CAPACITY TO BE HOSTED**,
for to be again integrated into an **ARMSADA**
and not to be, for a while, an endangered species.

We do not know the **LIMITS** of the world ecosystem
in which we are a small part, and no more a partner.

THAT CANNOT BE A SUSTAINABLE WAY OF SURVIVAL
neither for us nor for the banking system and the Society.
We know that only **RECIPROCAL REWARDS**
can stabilize **COOPERATION**.
ONLY the **ARMSADA** way is a sustainable one.



My today breakfast,
with the help of bees.



My tomorrow breakfast
without bees.



thank you so much

σας ευχαριστώ

谢谢！

спасибо большое

grazie mille



muchas gracias

Vielen Dank

merci beaucoup

muito obrigado

شكرا جزيلاً

Pierre BRICAGE

the opinion against a discredited "win-win deal" between the lobbies of "banks and political class" against common people, of "Man and its domestic animal" against Nature [15]. There are never advantages without disadvantages [4, 5, 17, 19]. Greater the advantages of human progress greater their disadvantages: a more and more degraded ecoxodope of survival and the emergence of new risks for the endophysidope survival [29]. Birds species frequencies changes are indicators of ecoxodope changes [2]. Some species are winning whereas others are losing. Balance is changing: general practitioners prosper and specialists decline.

Abstract
The "win-win deal" is supposed to be a situation which is advantageous or satisfactory for everyone, in which the outcome benefits each party - often 2 opposing groups [18, 22, 23], e.g. a "win-win proposition" for buyer and seller-. In conflict resolution [24], a "win-win strategy" is a process that aims to accommodate all disputants. In group-dynamic games studies [22], "win-win" games are called "games without losers". Increasingly popular since the end of the Vietnam war, they have been successfully applied to all levels of society [16]. They are supposed to emphasize the importance of cooperation [1] and a holistic approach to life [28] and society [27]. No-one is left out, all players are involved and supposed to be treated as equally important and valuable. There are no losers and everyone enjoys the accomplished task [25]. The classic example is the prisoners dilemma [18, 22] in which 2 prisoners must decide whether to confess a crime or not, neither knowing what the other will do.
If we look at Human interactions within ecosystems (inter-specific interactions) [14] or at living and banking systems comparison (intra-specific interactions) [23], the win-win solution is never a solution [22] but always a problem [23]. Ecosystems are not at all "win-win" associations [19]; whatever the actors in a network **there are never advantages for some ones without disadvantages for other ones** [6, 9]. The win-win approach is not a systemic one: *"nobody must be a permanent winner"* [16], "everybody alternatively is a winner and a loser" [17]. No local couple of actors can be isolated from the global network of actors [10, 13, 22] in which they are sharing advantages and disadvantages [6, 7]. Whatever the system and its level of organization [6], it is structured with an endophysidope (endo: internal, topo: space-time, physio: of functioning) which is hosted by an ecoxodope (exo: external, topo: space-time, eco: of inhabitation) of survival [5, 6]. The system spaces are modular, by embedment and juxtaposition of systems [19], and so are times, by embedment and juxtaposition of clocks [21]. Whatever the level of organization, the local modules are in interaction at different scales, within and between levels of organization, but governed by the same global power laws [20]. And that is the modularity of the actors and their interactions, which are causes of advantages or disadvantages that are at the origin of adaptation processes [9, 13]. Sooner or later winner-loser, rations like predator-prey interactions will give rise to an Association for the Reciprocal and Mutual Sharing of Advantages and Disadvantages (ARMSADA) in which, for one to survive, all the other ones must survive first, and in which everyone is both a winner and a loser. An ARMSADA is a resilient system. Symbiosis [30] is not a win-win association but a partnership for mutual sharing of advantages and disadvantages [17]. At the systemic level, taking into account all actors that are in interactions and share the hosting capacity of the same ecoxodope, you cannot always be a winner: sooner or later you will be a loser [10]. Your capacity to be hosted must be in-between. And you must be lucky!

The emergence of anti-systems candidates in the United States (e.g. Donald Trump or Bernie Sanders) and in Europe (with the rise of extremist parties everywhere) indicates a spectacular uprising of the opinion against a discredited "win-win deal" between the lobbies of "banks and political class" against common people, of "Man and its domestic animal" against Nature [15]. There are never advantages without disadvantages [4, 5, 17, 19]. Greater the advantages of human progress greater their disadvantages: a more and more degraded ecoxodope of survival and the emergence of new risks for the endophysidope survival [29]. Birds species frequencies changes are indicators of ecoxodope changes [2]. Some species are winning whereas others are losing. Balance is changing: general practitioners prosper and specialists decline.

Abstract

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"WIN-WIN" is not the solution but the problem!
What next?

Evolutionary systems, theories of living systems and theories of social systems

- Pierre BRICAGE

Pierre Bricage

Originally trained as biochemist and geneticist, postgraduate in molecular genetics as well as a quantitative and applied genetics (alumnus of 3 of the top 5 of best small universities -Times Higher Education 2016, World Banking-2016), he has been a senior research fellow at the Centre for Population and Development Studies, University of Sussex (UK), ENS Lyon (in ENS, Paris, France, Caltech, US), as inter- and trans-disciplinary researcher he taught in several Universities in Europe, Africa and China and performed research activities in various laboratories (in France and Africa). Now retired Professor of Biology from Université de Paris (Paris 6, Paris 7, Paris 12, Paris 13, Paris 14, Paris 15, Paris 17, Paris 18, Paris 19, Paris 20, Paris 21, Paris 25, Paris 26, Paris 27, Paris 28, Paris 29, Paris 30, Paris 31, Paris 32, Paris 33, Paris 34, Paris 35, Paris 36, Paris 37, Paris 38, Paris 39, Paris 40, Paris 41, Paris 42, Paris 43, Paris 44, Paris 45, Paris 46, Paris 47, Paris 48, Paris 49, Paris 50, Paris 51, Paris 52, Paris 53, Paris 54, Paris 55, Paris 56, Paris 57, Paris 58, Paris 59, Paris 60, Paris 61, Paris 62, Paris 63, Paris 64, Paris 65, Paris 66, Paris 67, Paris 68, Paris 69, Paris 70, Paris 71, Paris 72, Paris 73, Paris 74, Paris 75, Paris 76, Paris 77, Paris 78, Paris 79, Paris 80, Paris 81, Paris 82, Paris 83, Paris 84, Paris 85, Paris 86, Paris 87, Paris 88, Paris 89, Paris 90, Paris 91, Paris 92, Paris 93, Paris 94, Paris 95, Paris 96, Paris 97, Paris 98, Paris 99, Paris 100, Paris 101, Paris 102, Paris 103, Paris 104, Paris 105, Paris 106, Paris 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We are what we made.
Gregory BATESON



**We are what we eat.
We are how we are eaten.**

2 “TRIVIAL” CONCEPTS:

* TO SURVIVE IT IS "TO EAT" & "NOT TO BE EATEN"

* THERE ARE NEVER ADVANTAGES WITHOUT DISADVANTAGES

1 NEW PARADIGM:

ALL THE LIVING SYSTEMS EMERGED FROM AN ARMSADA



ASSOCIATION for the RECIPROCAL and MUTUAL SHARING OF ADVANTAGES and DISADVANTAGES

2 "EVIDENT" FACTS:

MODULARITY & ERGODICITY

Key words: ago-antagonism [9, 16], antagonism [13], ANSADo [6, 7, 15, 16, 17], capacity to be hosted [4, 10], of the endoparasitoids [9, 16], competition [15], copacitation [1, 19, 26, 27, 28], hosting capacity of the ectoparasitoid [5, 9], mutualism [50], persons dilemma [10], symbiosis [9], win-win [22].

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Inspirational Systems Change Needed.
Katri-Liisa Pulkkinen

**“You never change things by fighting the existing reality.
To change something, build a new model
that makes the existing model obsolete.”**

Buckminster Fuller

THAT IS EXACTLY WHAT NATURE IS DOING!

We are on obsolete model!
And maybe the new MODEL,
the new ARMSADA BLUE-PRINT is ON the way,
but today without us.

<http://armsada.eu>



EMOTIONAL REFLEXIVE LEADERSHIP
Michaela Bristol-Faulhammer

VALUES ARE EXPRESSED IN LANGUAGES
(De Saussure, 1966)
and VALUES ARE THE DRIVING FORCES FOR ACTION

TREATISE OF ENTIRETY
Magda C. Kaspary

treatise **from LATIN** *tractare*
integrity **INTEGER**

GOVERNANCE FROM BELOW
Asimina KOUKOU

Greek etymology of words

**What is THE VALUE, the MEANING, of
BLACK and WHITE**

**in our EUROPEAN SOCIETIES and
in the INDIAN SOCIETY ?**

**DON'T BE A FIELD,
BE A FOREST!**

**What is THE VALUE, the MEANING, of
GREEN and RED**

**in our EUROPEAN SOCIETIES and
in the CHINESE SOCIETY ?**

THERE ARE NEVER ADVANTAGES WITHOUT DISADVANTAGES.
FOR TO TURN DISADVANTAGES INTO ADVANTAGES
AND TO AVOID ADVANTAGES TURN TO DISADVANTAGES
ARMSADA IS A SYSTEMIC SOLUTION.
YOU CAN NEVER ALWAYS BE A WINNER,
SOONER OR LATER YOU WILL BE A LOSER.

We are on obsolete model!
And maybe the new MODEL,
the new ARMSADA BLUE-PRINT is ON the way,
but today without us.

<http://armsada.eu>



**ALL THAT IS AN ADVANTAGE FOR A PARTNER
IS A DISADVANTAGE FOR THE OTHER ONE
AND RECIPROCALLY.**

“ENHANCE YOUR CAPACITY TO BE HOSTED”
rather than “ENHANCE YOUR CAPACITY OF HOSTING”,
NOT “have dominion OVER”, BUT “have dominion WITH”,
ENHANCE THE BALANCE BETWEEN THE SHARERS!

**DON'T BE A FIELD,
BE A FOREST!**

THAT IS EXACTLY WHAT NATURE IS DOING!