

SELF-REGULATION WITHIN BIG HISTORY AND CYBERNETIC REVOLUTION

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2016 IBHA



What is self-regulation?

Self-regulation is a system's ability to maintain and/ or adapt its status to changing conditions.

Self-regulation has different levels of development

- simple self-regulating systems.
- complex self-regulating systems.
- intelligent self-regulating systems



What is self-regulation?



Simple self-regulating system - coffee machine which can turn on automatically at a certain time and keep coffee hot as long as needed.

Complex self-regulating system - the machine which can organize purchasing, delivery, grinding and preparation of coffee.

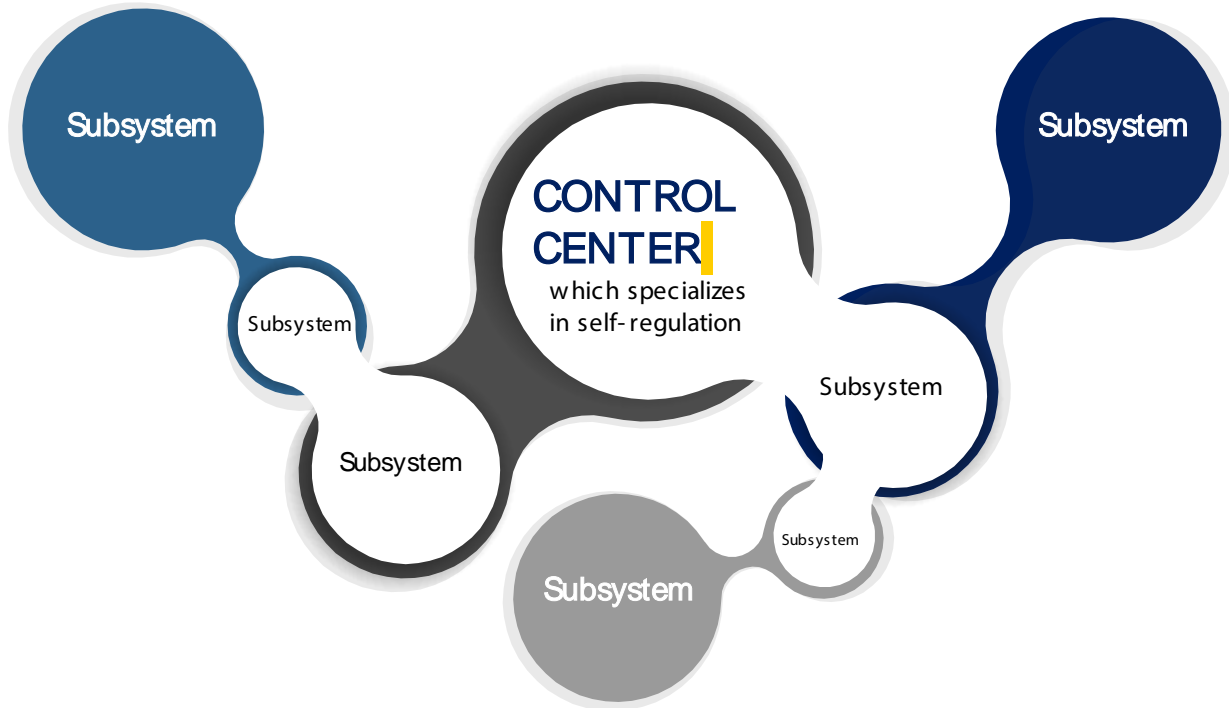


Complex self-regulating system - navigator chooses the best route, monitors and analyses many parameters, and guides the driver who only has to steer.

Intelligent self-regulating system - an automobile which will prevent the person from driving if he is drunk and, on his own will deliver him home.



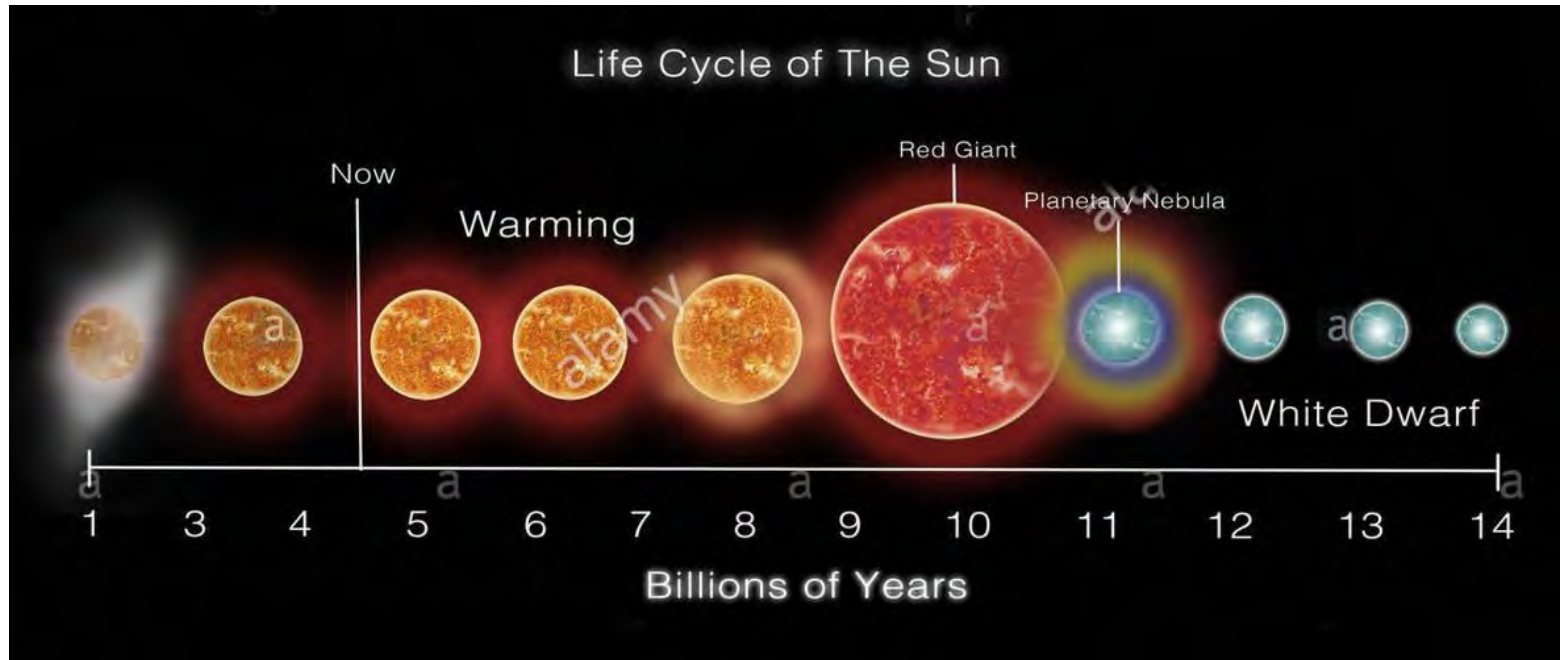
What is self-regulation?





Self-regulation and Big History

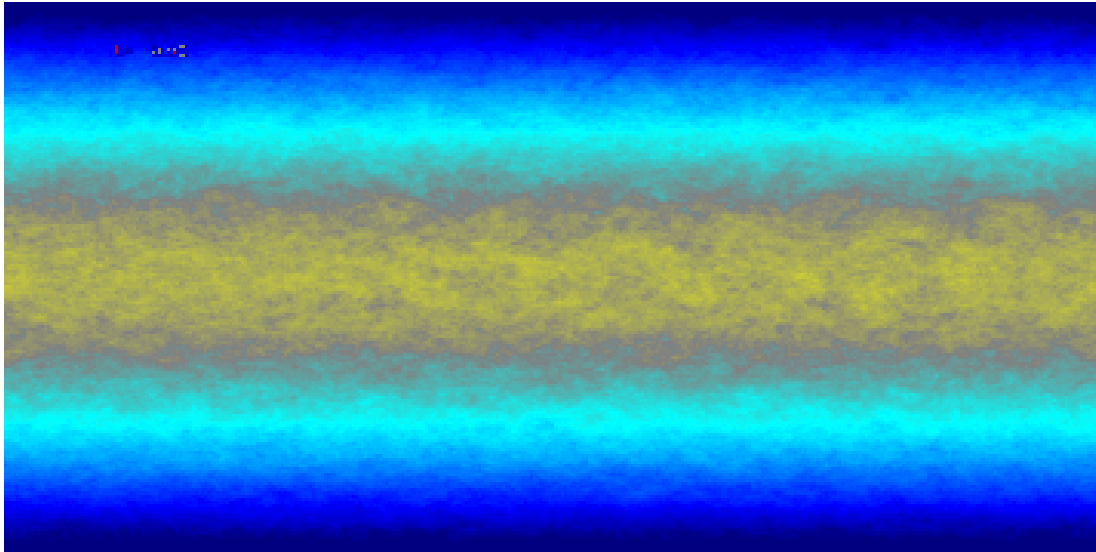
Self-regulation in stars





Self-regulation and Big History

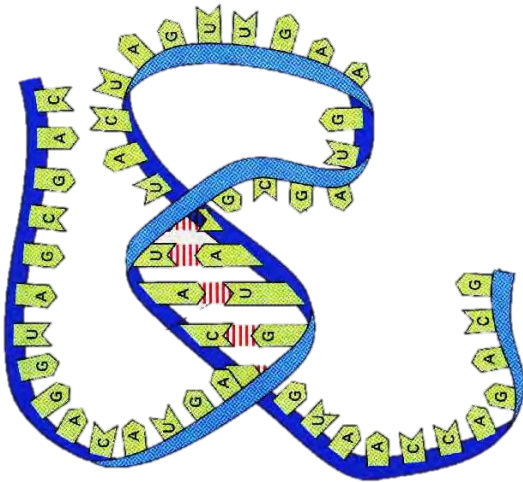
Self-regulation in stars



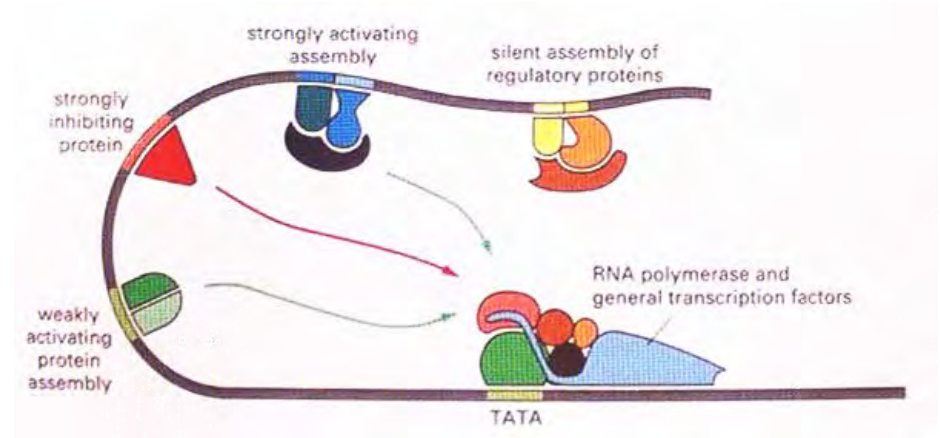


Self-regulation and Big History

Life on Earth



RNA molecule

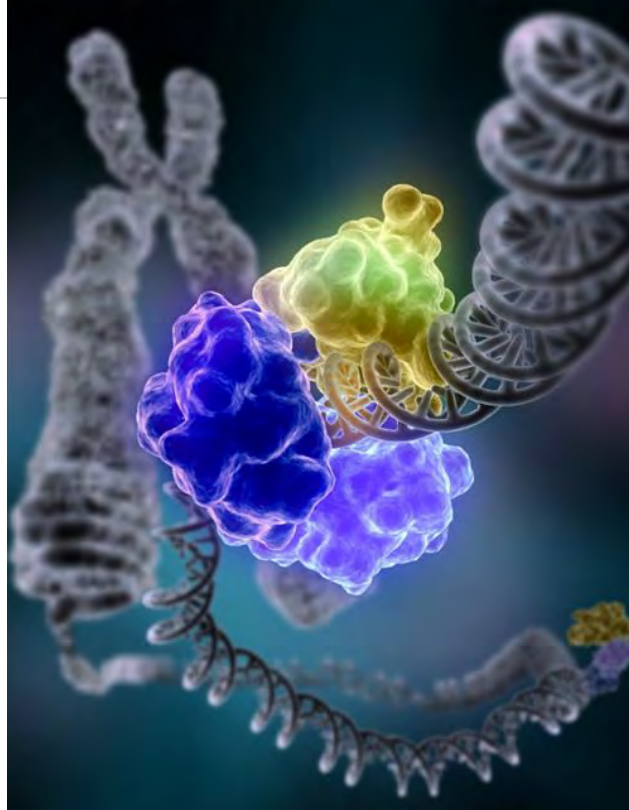


DNA transcription depends on which regulatory factor is working at that particular time.



Self-regulation and Big History

Life on Earth



DNA ligase, during the process of repairing chromosomal damage



Self-regulation and Big History

Life on Earth



Over 4 billion years ago, chemical elements were surrounded by the lipid bubbles, called coacervates



Thresholds and Technological Breakthroughs

Agrarian
Revolution

Industrial
Revolution

Cybernetic
Revolution

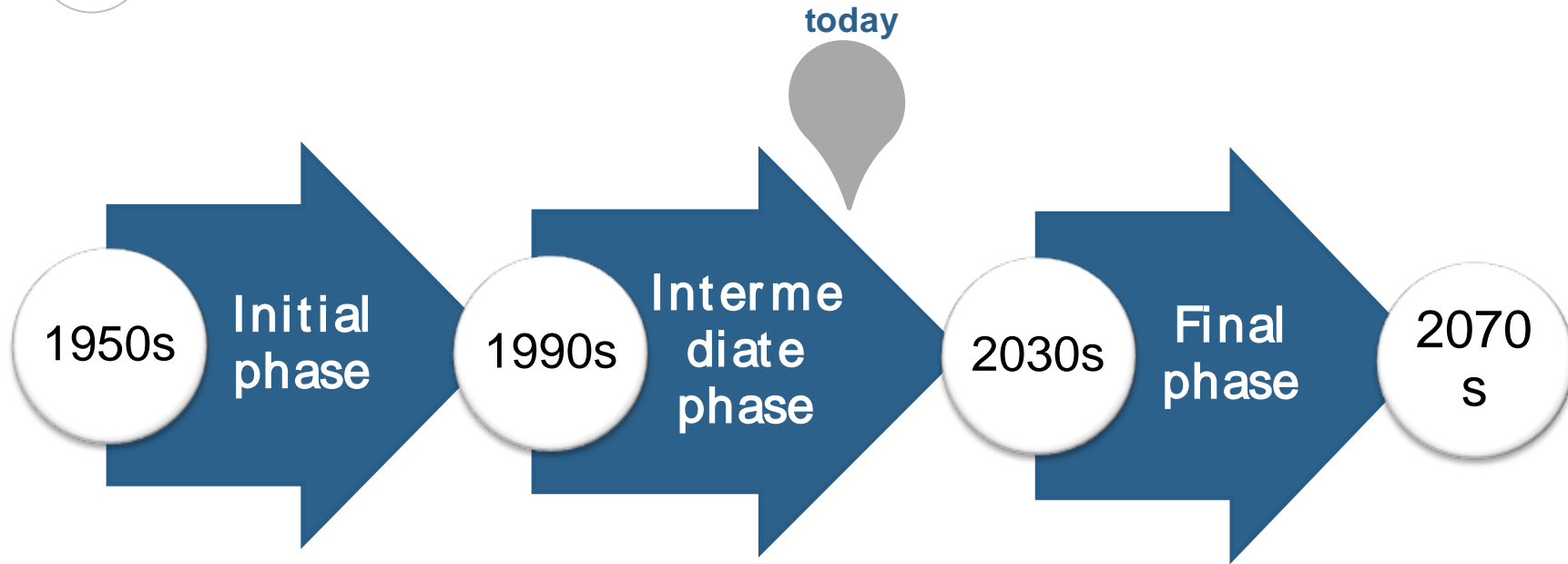
Agriculture
Threshold

Modern
Revolution
Threshold

Future
Threshold



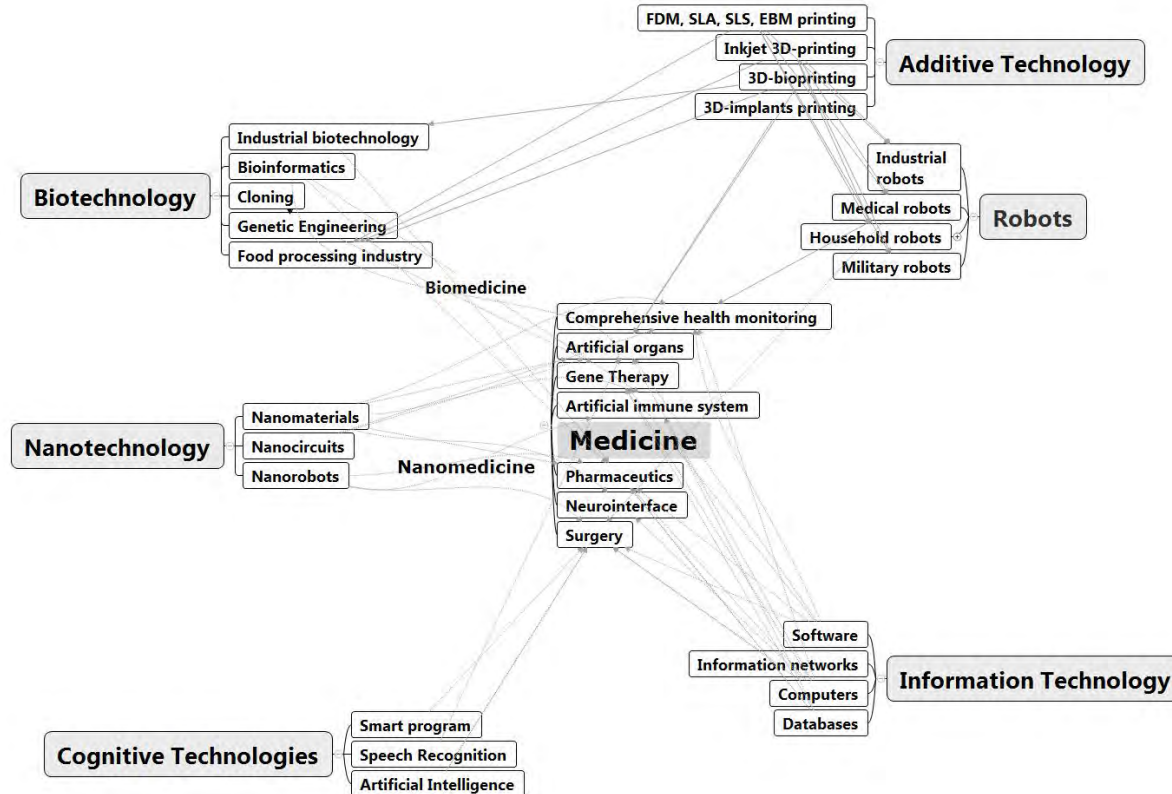
Thresholds and Technological Breakthroughs



We call this revolution as 'Cybernetic' because self-regulating systems will play the key role in this revolution. As it's known, Cybernetics is an approach for exploring regulatory systems, their structures, constraints, and possibilities



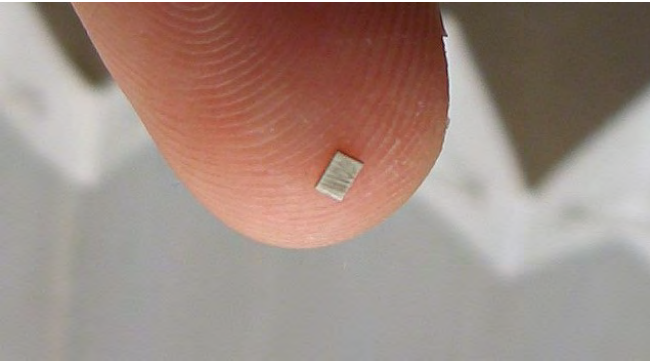
MANBRIC Complex





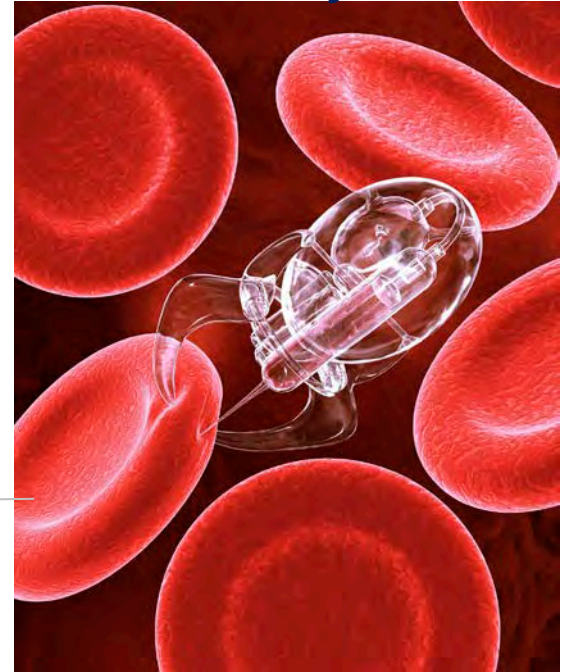
Comprehensive Health Monitoring and Artificial Immune System

Today

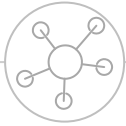


Nanochip

In 30 – 40 years

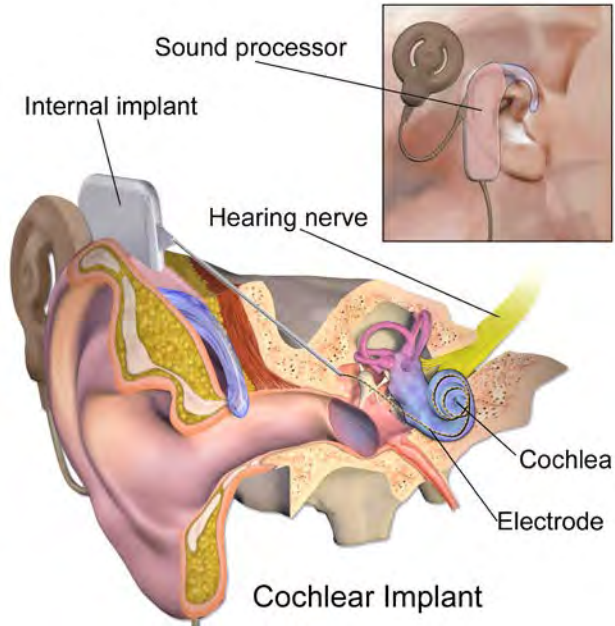


Google nanobot

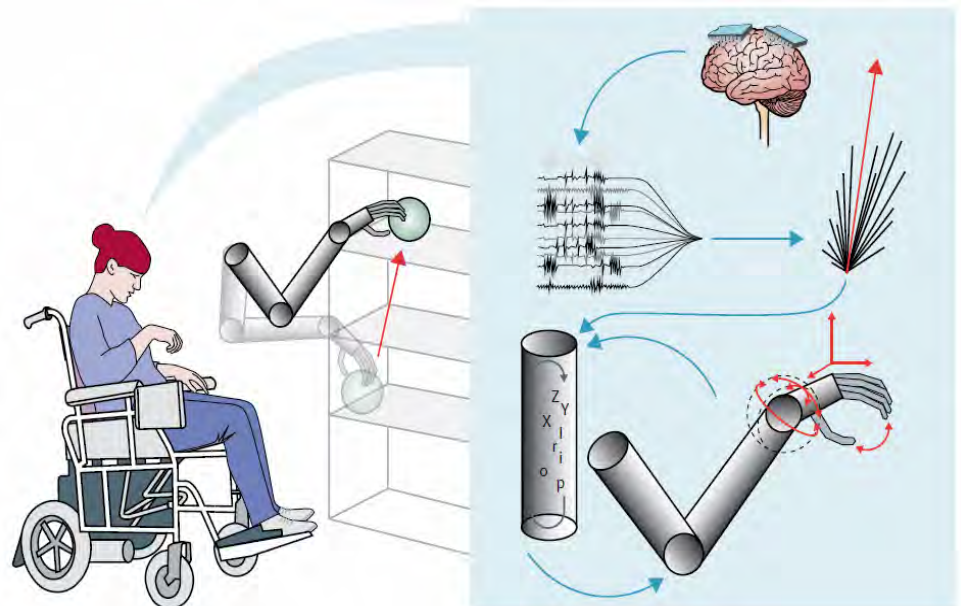


A Brain-Computer Interface (BCI)

Today



In 30 – 40 years



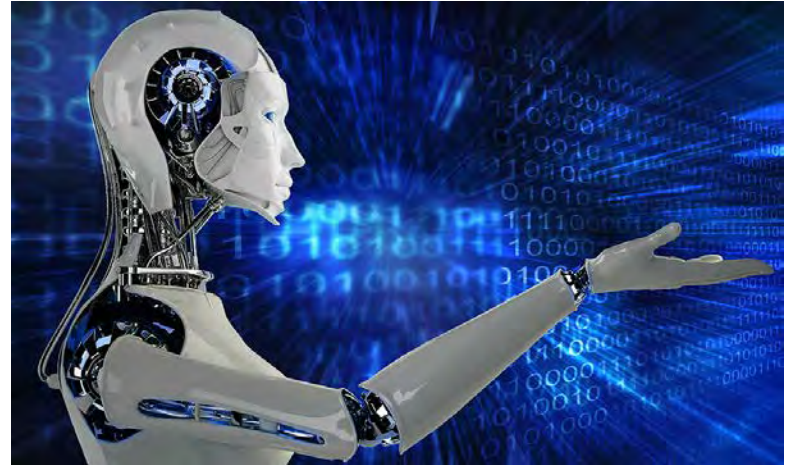


Robots

Today



In 30 – 40 years





Smart devices

Today

In 30 – 40 years





why is self-regulation so important

- self-regulation is one of the universal phenomena and is closely connected with Big History.
- Self-regulation has become very complex in some systems, especially in biological ones.
- We suppose that self-regulation will be the main trend of the forthcoming Cybernetic revolution.
- It is very important to understand how self-regulation develops. It can help us to make some predictions and to anticipate the side effects and risks of the coming technological revolution.

Thank You For Attention!

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