

FACULTY OF INFORMATICS
MASARYK UNIVERSITY



Knowledge Management

Department of Computer Systems and Communications

Academic Year: 2016-2017

The learning processes

Francesco Caputo

fcaputo@mail.muni.cz

The basic assumption

La knowledge cannot builds upon *the application of deterministic algorithms and mechanistic approaches*.

The mechanistic approaches adopt pathways in which the investigate *variables are exogenous respect to the actors' behaviours*.

The real problem is that in *conditions of complexity* the variable cannot be ex ante defined.

The connectivity scheme

The *connectivity scheme* is useful to explain the evolution dynamics.



According to the *connectivity scheme* the machines do not function only by respecting specific rules and guidelines but they can also *build new knowledge*.

The connectivity approach vs. the cognitivist approach

Connectivity Approach



Cognitivist Approach



The connectivity approach vs. the cognitivist approach

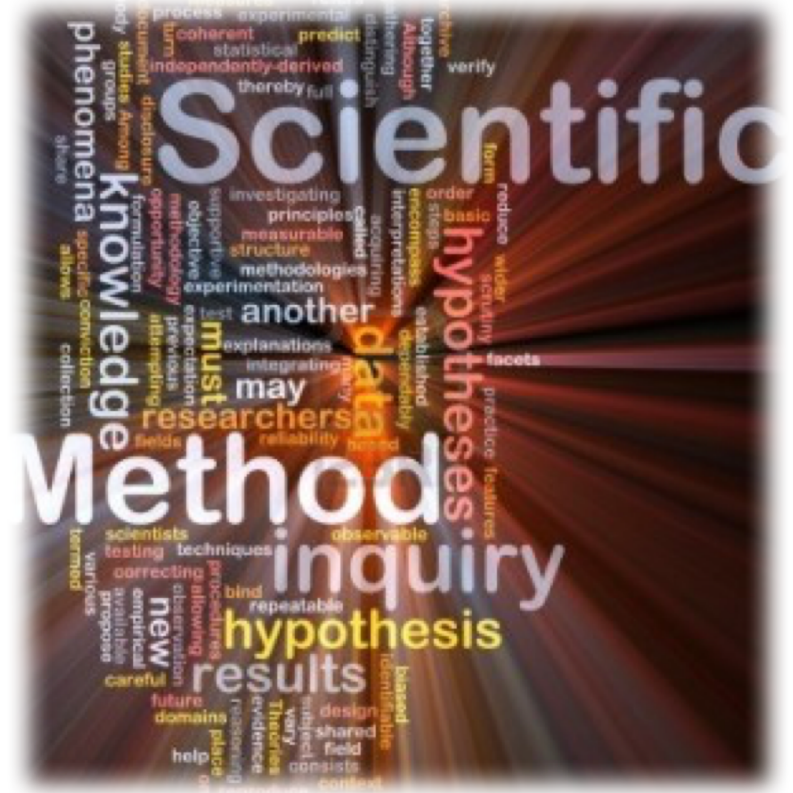
The differences between the *tacit and explicit knowledge* offer the opportunity for understand the double dynamics of modern production:

- ✓ *The logic-rational learning (hypothesis)*
- ✓ *The evolutionary learning (trial and error)*



The logic-rational learning

By adopting the *falsificationist approach* (Popper, 1968), the logic-rational learning *rejects the induction* as opportunity to extend the empirical knowledge about a specific dynamic to all the similar dynamics.



The evolutionary learning

In the *evolutionary approach* all the possible expatiations and solutions are verified in order to evaluate their efficiency and applicability.



The final aim is to identify the more 'adapt' solution able to ensure the achievement of a specific aim

The evolutionary learning

The evolutionary approach builds upon a logic of *Problem Solving*

direct to:

- ✓ *Build several variables*
- ✓ *Select the variables*
- ✓ *Investigate and explain the better variables*



The evolutionary learning

The *evolutionary learning* has several disadvantages such as:

- ✓ *A relevant number of mistakes*
- ✓ *The strong link between actual and virtual*



The learning strategies

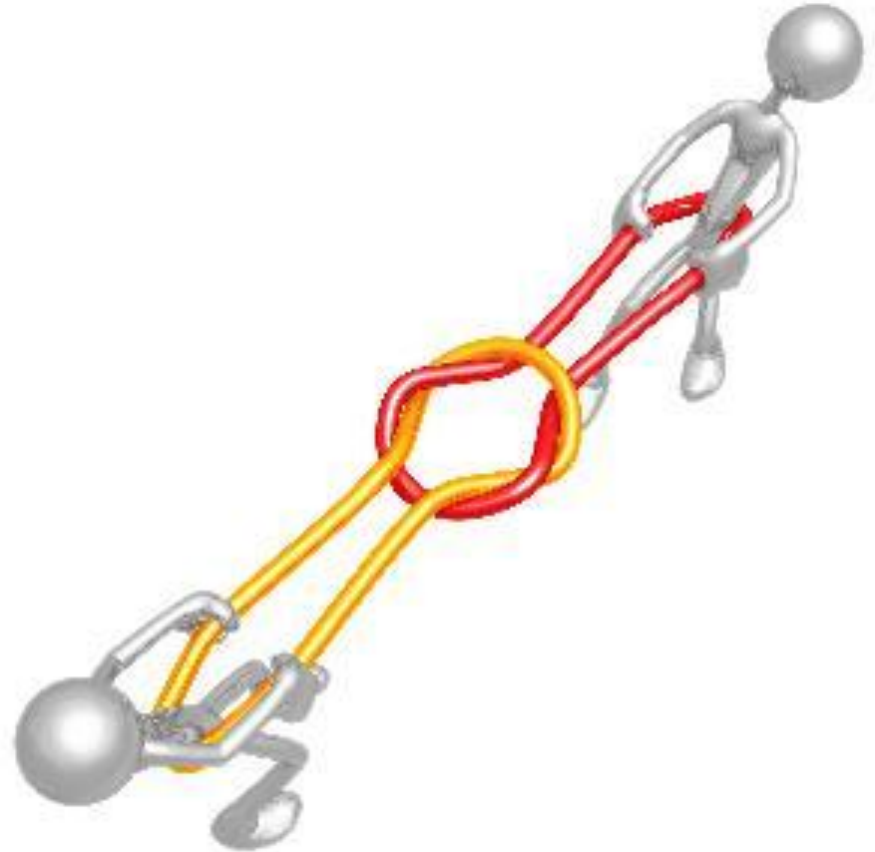


In the light of *knowledge drivers*, the difference between the logic-rational learning and the evolutionary learning is related to the opportunity offered by the first approach *to distinguish the value of knowledge to the value produced by the sharing of knowledge.*

The learning strategies

The knowledge should be:

- ✓ *Multipliable*
- ✓ *Sharable*
- ✓ *Reflexive*



The learning strategies

In order to build a positive approach to the learning processes and knowledge management it is need build *three steps*:

- ✓ *To investigate the complexity of cognitive processes*
- ✓ *To identify the cognitive mediators that affect the knowledge drivers*
- ✓ *To define an effective representation for the production*





Questions ???

