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# Learning and Connectivism in MOOCs

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# How I See the World

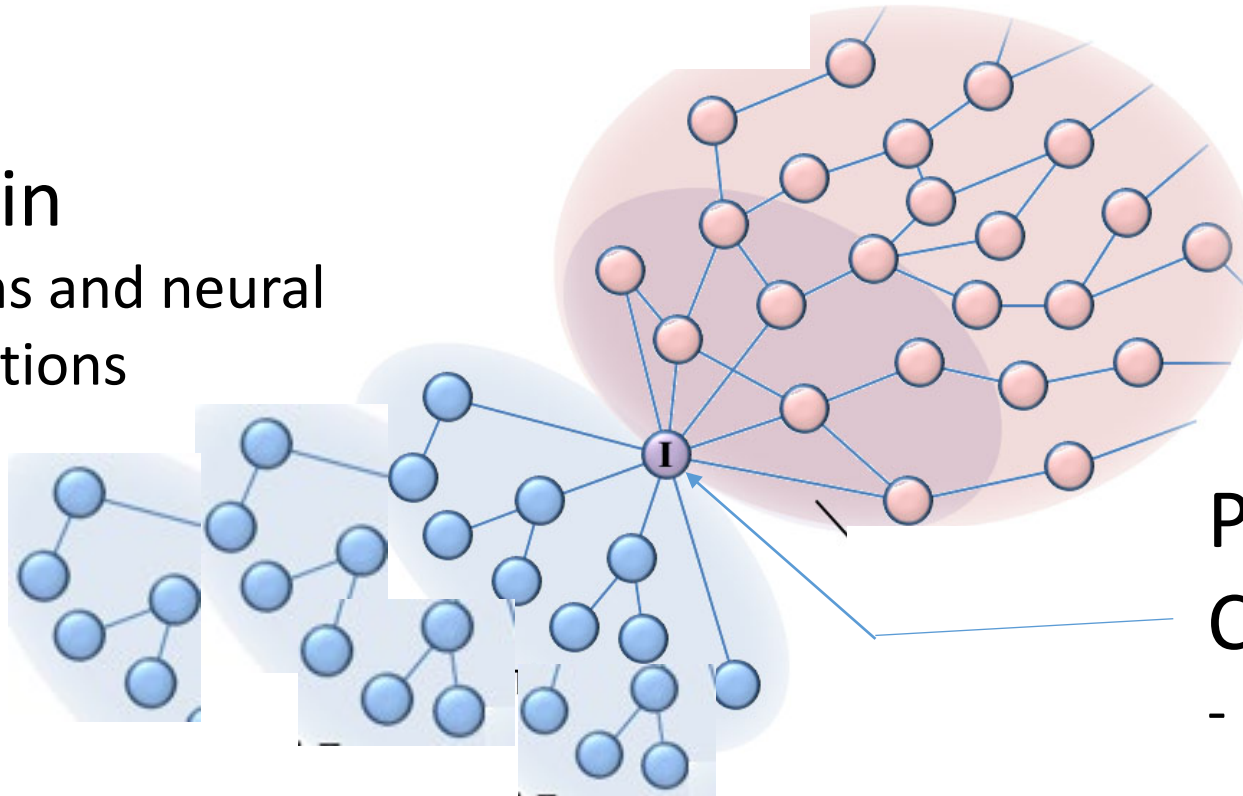


# How I See the World

## A connectivist perspective

### My Brain

- Neurons and neural connections



### The World

- People, things, ideas, concepts, all connected to each other

### Perception and Communication

- The world speaks to me and I speak to the world

# How I See the World

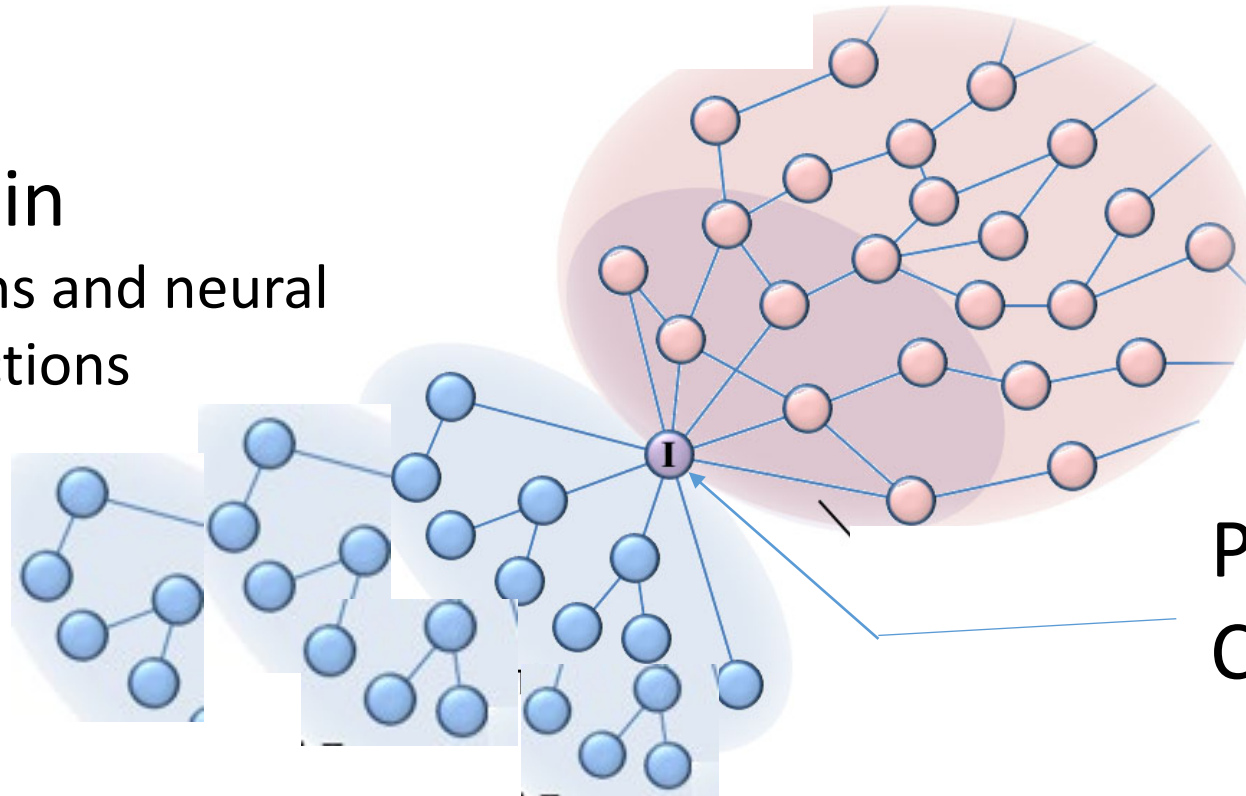
## The MOOC

## MOOC

- A learning network

## My Brain

- Neurons and neural connections



Perception and  
Communication



# How I See the World

## Literacies

Comprehension, understanding and communication

**Skills**  
Abilities, habits, competencies

	Syntax	Semantics	Context	Use	Cognition	Change
Aggregate						
Remix						
Repurpose						
Feed Forward						

Autonomy

Diversity

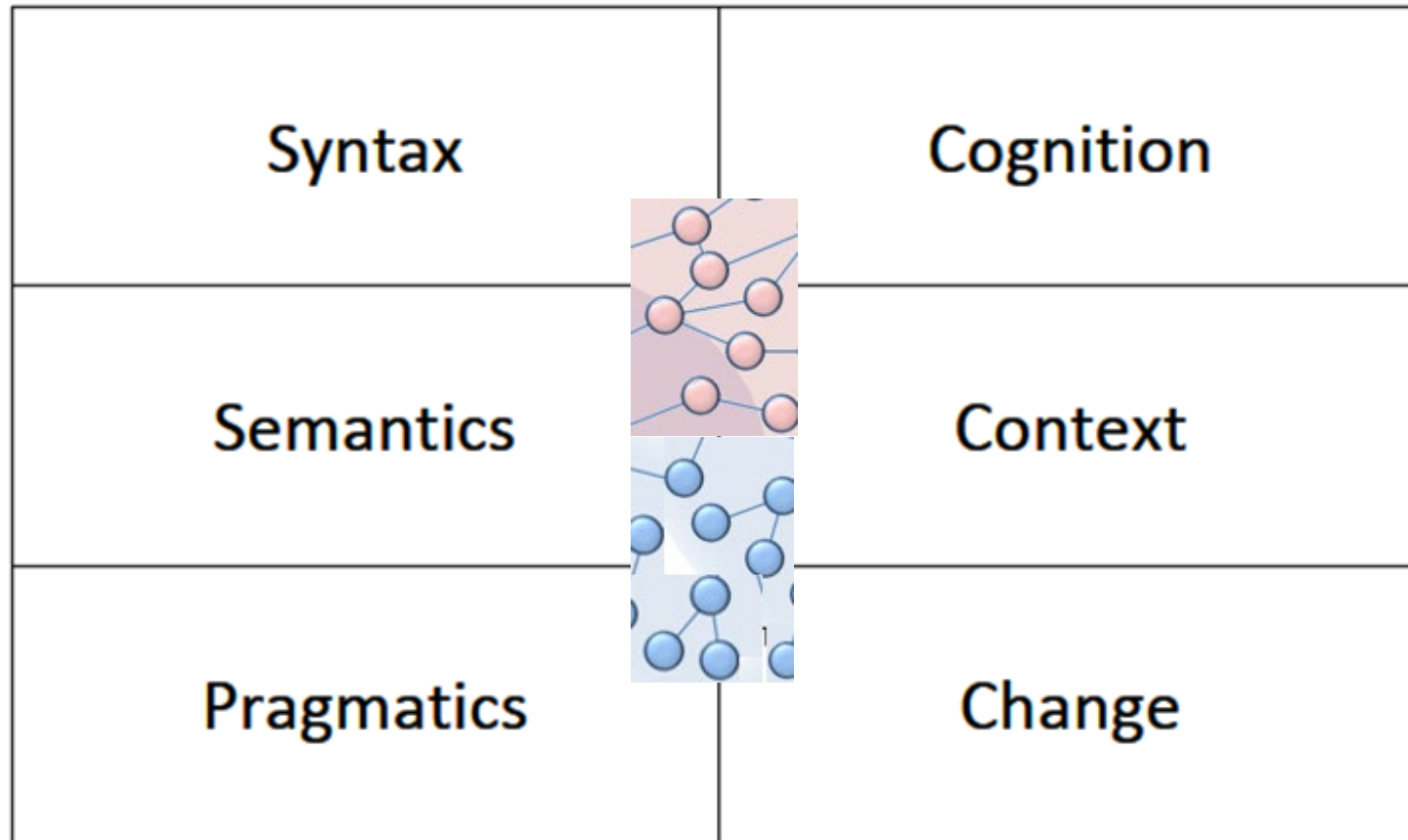
Values

Openness

Interaction

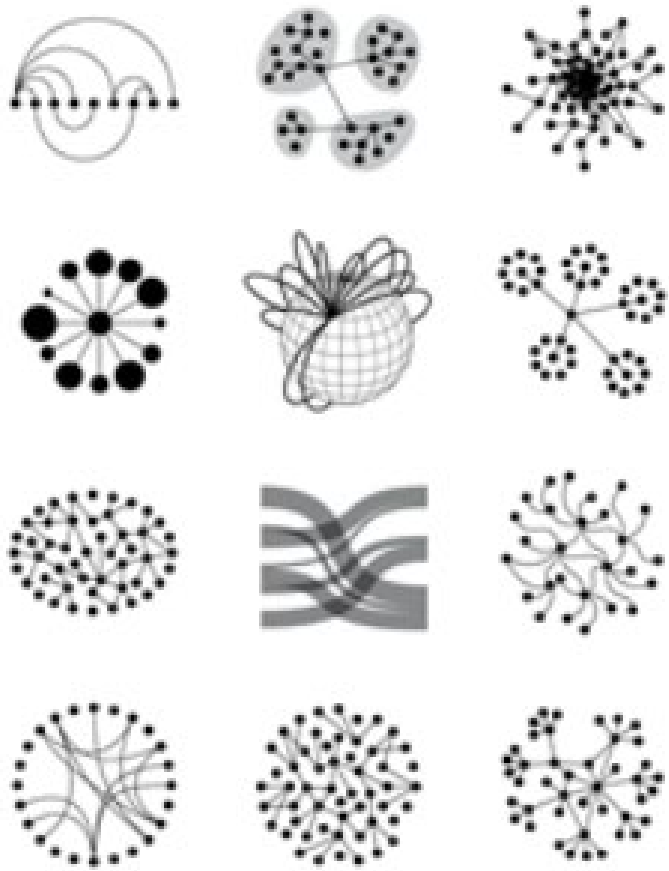
# How I See the World

## The Critical Literacies



# Syntax

Not just rules and grammar



Forms: archetypes? Platonic ideals?  
Rules: grammar = logical syntax  
Operations: procedures, motor skills  
Patterns: regularities, substitutivity  
Similarities: Tversky - properties, etc

Image: <http://www.visualcomplexity.com/vc/blog/?author=1>



# Syntax

Learning Theories: trying to find patterns in phenomena

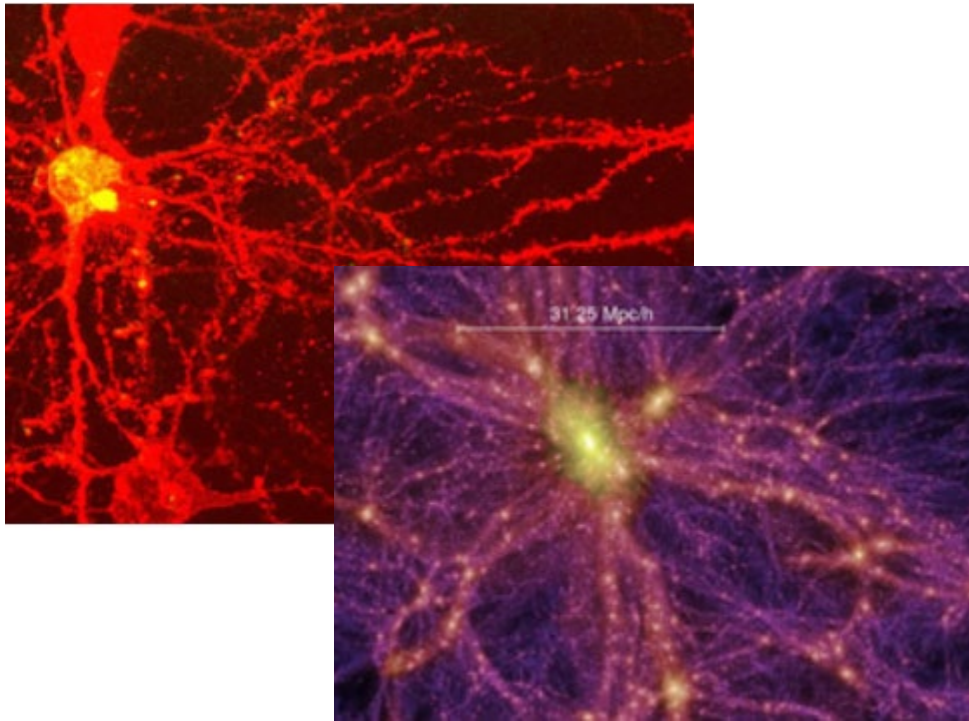


- Behaviourism – learning & practice
- Instructivism – learning from worked examples, testing
- Cognitivist – the importance of models and comprehension
- Constructivist – creating our own learning

Image: <http://www.visualcomplexity.com/vc/blog/?author=1>

# Syntax

## Networks and Connections in the World



- The way things are organized in the world is important
- A pile of sand is different from a sand castle
- We observe individual entities self-organizing
- These form complex networks from the brain to galaxies

Image: <http://www.visualcomplexity.com/vc/blog/?p=1312>



# Semantics

## Theories of truth / meaning / purpose / goal

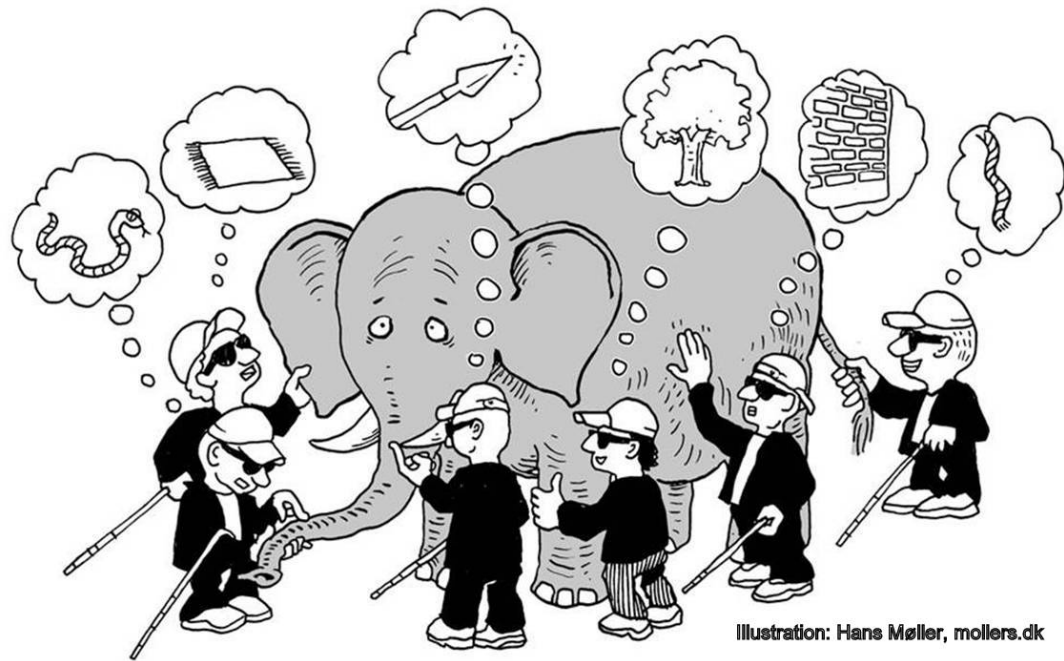


- Truth and belief: sense and reference
- Interpretation and models (probability, logical space, frequency, wagering / strength)
- Learning theories: Hebbian, back-prop, Boltzmann
- Decisions: voting / consensus / emergence

Image: <https://darkjapanese.wordpress.com/tag/collocations/>

# Semantics

## A MOOC as a way of Seeing the World



- The MOOC brings together many perspectives
- No one perspective is correct or true
- The whole is created by *interaction*

Image: <http://rathchakra.wordpress.com/>

# Semantics

Knowledge is not Transmitted, it is *Created*



- Each piece contributes to the whole
- Each person sees the *new* from a certain perspective
- We feed back and forth

# Semantics

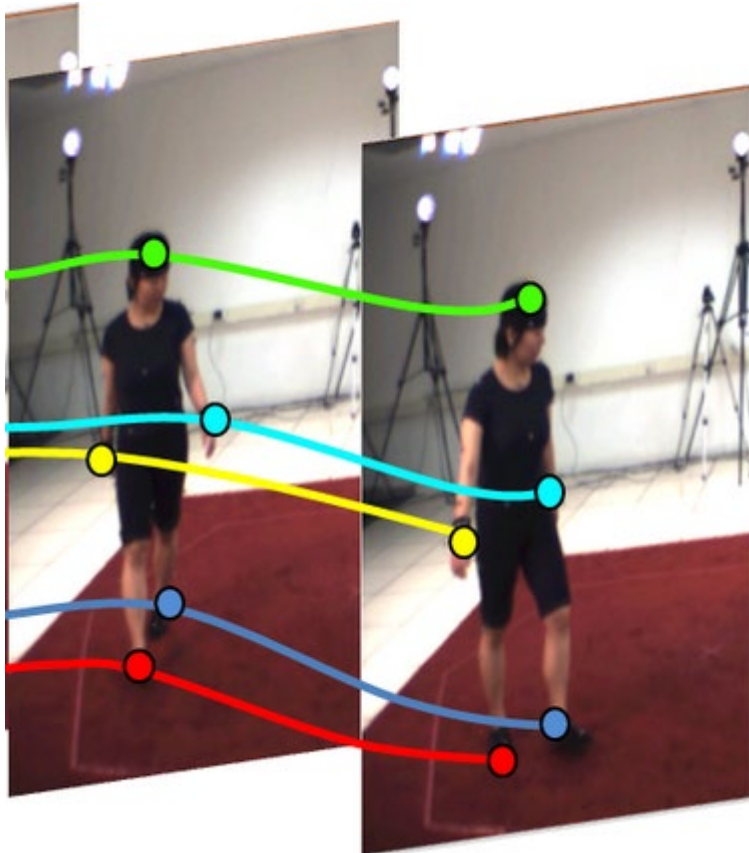
## What We Learn Depends on How We Interact



- Autonomy – each individual decides for him or her self
- Diversity – each person has their own values and goals
- Openness – new members and new ideas are welcome
- Interactivity – we learn through communication

# Pragmatics

## Use / actions / impact



- Speech acts (J.L. Austin, Searle) assertives, directives, commissives, expressives, declarations (but also - harmful acts, harassment, etc)
- Interrogation (Heidegger) and presupposition

Image: <http://ftp.tnt.uni-hannover.de/print/papers/view.php?ind=1&ord=month&mod=DESC>



# Pragmatics

## How to Do Things With MOOCs



- Educate – model and demonstrate processes and actions
- Inform – tell stories, recount experiences
- Promote - Pass on an idea or a way of life (memetics)
- Recruit – find others to join

# Pragmatics

## How to do things *in* MOOCs

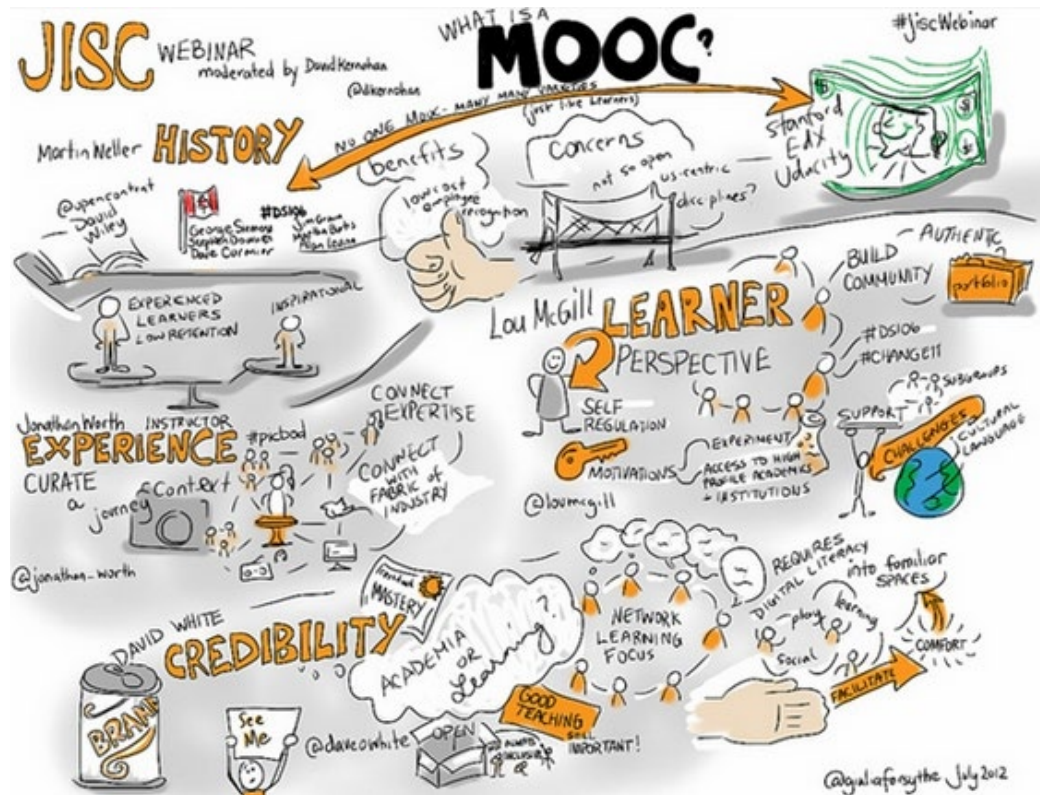


- Aggregate – listen to many diverse sources
- Remix – bring these different perspective together
- Repurpose – reform these new ideas in your own way
- Feed Forward – share your perspectives

Image: <http://www.lifeaftercoffee.com/2008/11/03/hello-iamthenode-and-im-here-to-make-you-vomit/>

# Pragmatics

## What a MOOC Does



- Asks questions
- Experiments
- Explores
- Discovers
- Creates

# Context

## Placement, environment



- explanation (Hanson, van Fraassen, Heidegger)
- meaning (Quine); tense - range of possibilities
- vocabulary (Derrida); ontologies, logical space
- Frames (Lakoff), worldviews

# Context

## Possibilities for Learning on the Internet



- The internet created a location where networks could form
- Online communities *already* learning in self-organizing groups
- eg. OSS, Napster...

# Context

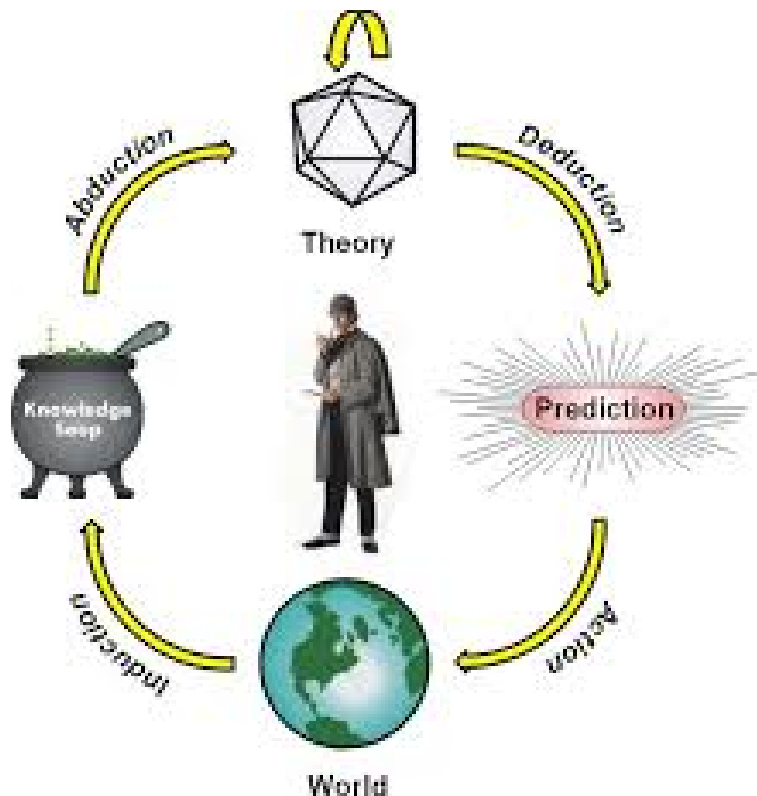
## Learning in the Workplace



- the skills gap
- informal learning
- just-in-time learning (vs just-in-case)
- learning as something we support rather than provide

# Cognition

## Reasoning, inference and explanation

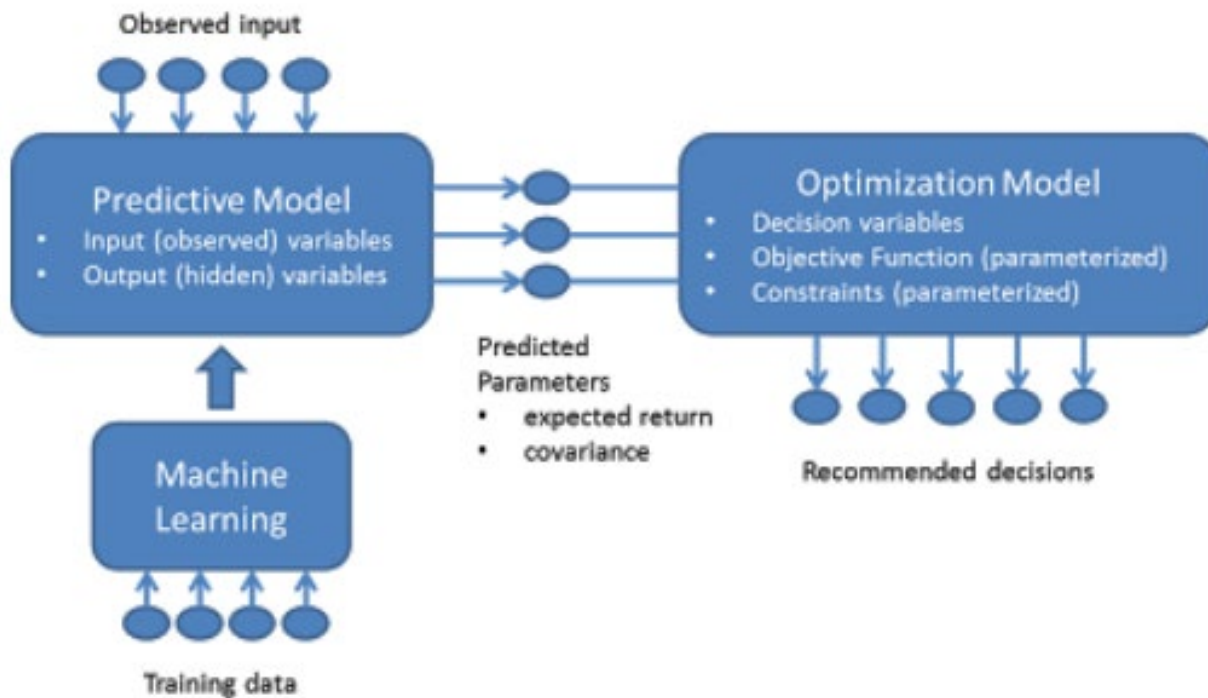


- description -  $X$  (definite , allegory, metaphor)
- definition -  $X$  is  $Y$  (ostensive, lexical, logical (necess. & suff conds), family resemblance, identity, personal identity, etc)
- argument -  $X$  therefore  $Y$  - inductive, deductive, abductive, modal, probability (Bayesian), deontic (obligations), doxastic (belief), etc.)
- explanation -  $X$  because of  $Y$  (causal, statistical, chaotic/emergent)

Image: <http://www.jfsowa.com/pubs/challenge>

# Cognition

## The Challenge of Learning Analytics



- Analytics predict performance using neural network techniques (machine learning)
- *But* this process requires 'Big Data' – with resulting privacy issues



# Cognition

How do we infer someone has learned?



- Traditional testing is a very poor sort of induction
- We identify good doctors, good food, good writers by *recognizing them*
- In a MOOC, achievement is demonstrated in open work, and recognized by peers

# Change

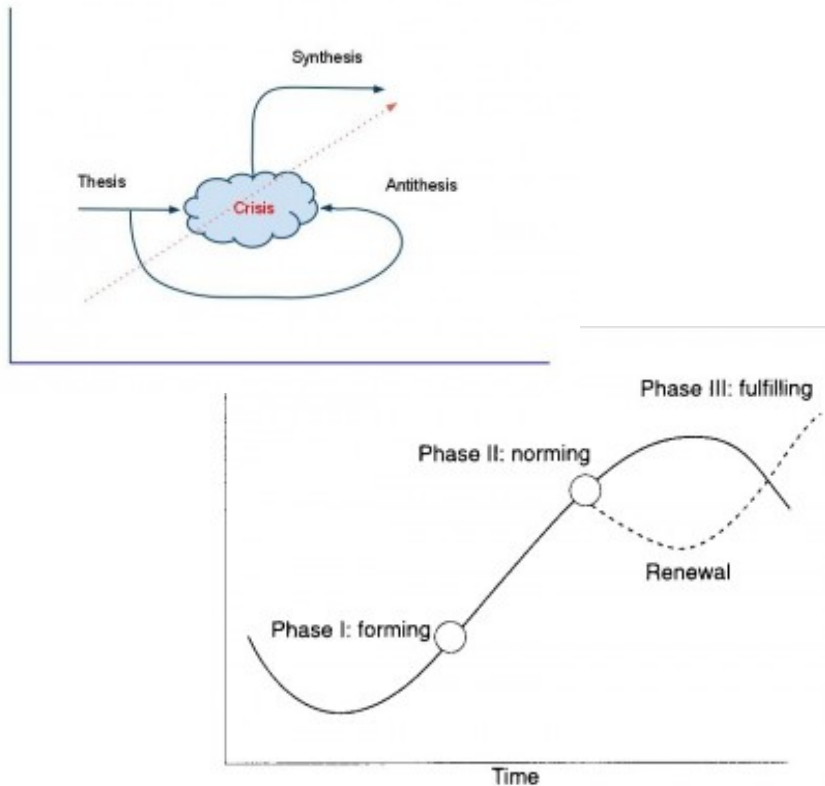
## Graphs / Drivers / Attractors / Forces



- relation and connection: I Ching, logical relation
- flow: Hegel - historicity, directionality; McLuhan
- games, for example: branch and tree, database
- scheduling - events; activity theory / LaaN

# Change

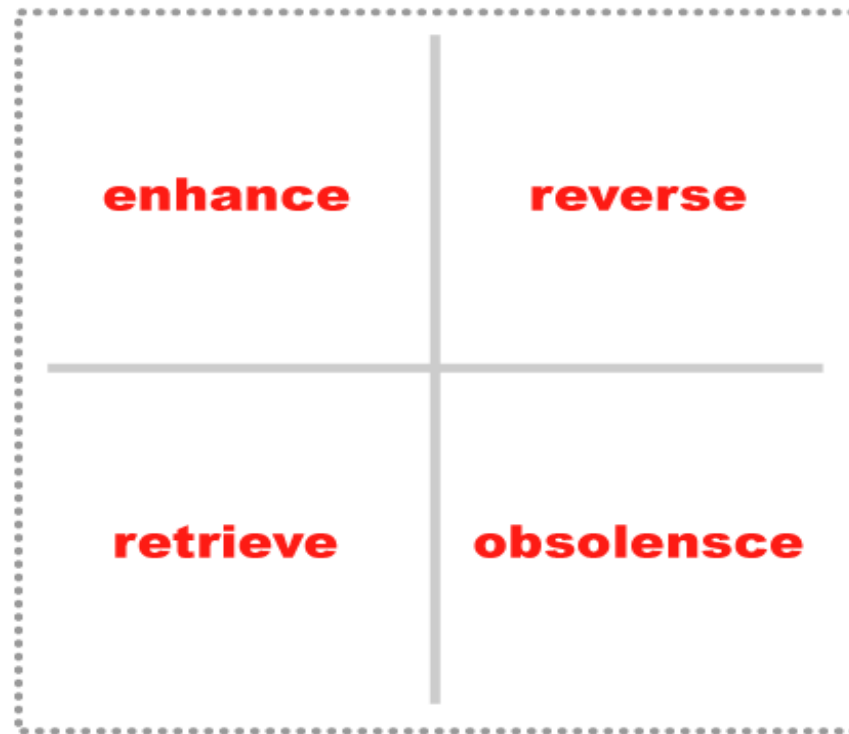
## Varieties of Change



- Easy to think things will always be the same (vs the Tipping Point)
- Cycles and Arcs
- The dialectic

# Change

## Consequences of Change



- What do MOOCs and connectivism enhance?
- What do they reverse?
- What thing from the past do they retrieve and make new?
- What current thing do MOOCs make obsolete?

# Change

## Drivers and (Strange) Attractors



- We think of the future in terms of today's imperatives: jobs, money, security
- But what is important to us today may not always be
- There's no way to *predict* but we can imagine what will matter...

# How I See the World



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