

## Modern Evolutionary Synthesis

- All evolutionary phenomena can be explained in a way consistent with known genetic mechanisms and the observational evidence of naturalists.
- Evolution is gradual
- Natural selection is by far the main mechanism of change; even slight advantages are important when continued. The object of selection is the phenotype in its surrounding environment.
- The role of genetic drift is equivocal.
- Thinking in terms of populations, rather than individuals

#### Memes vs. Genes

• "Examples of memes are tunes, ideas, catch-phrases, clothes fashions, ways of making pots or of building arches. Just as genes propagate themselves in the gene pool by leaping from body to body via sperms or eggs, so memes propagate themselves in the meme pool by leaping from brain to brain via a process which, in the broad sense, can be called imitation." Richard Dawkins, The Selfish Gene 1986

#### Theory of memes

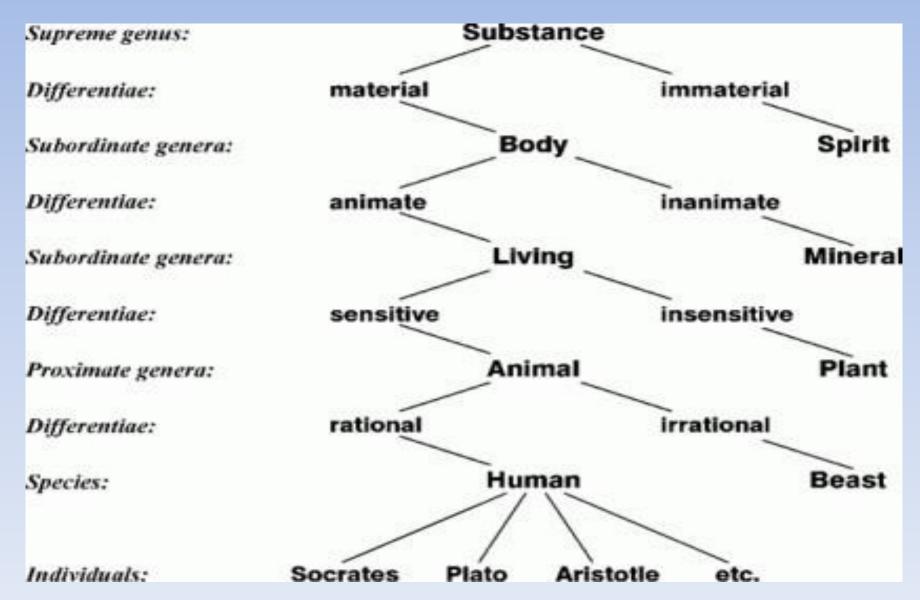
- Memes self replicate in a similar way to the way genes do.
- Memes have similar properties to genes: Mutation, Competition and Variation.
- Memes that propagate less may become extinct.
- Memes which replicate the most spread best.
- Mind Mapping software variety facilitates evolution



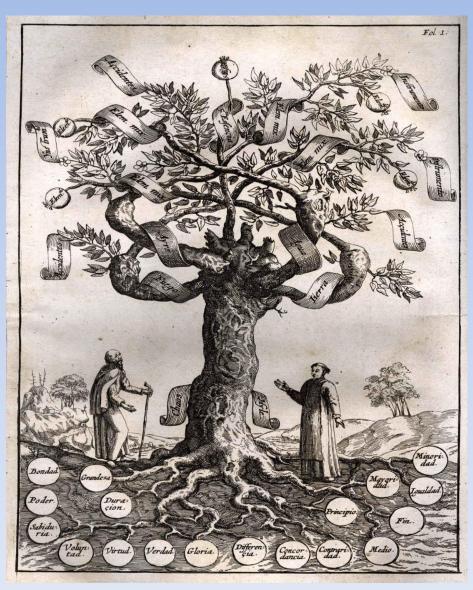
## Mind Mapping as a meme

- Tree of Categories. Porphyry 300 AD
- Ars Magna. Ramon Llull 1247
- d'Alembert 1750
- Phylogenetic tree. Darwin 1838
- Semantic Networks. A.M. Collins and M. Ross Quillian 1967
- "Mind Map". Tony Buzan 1970
- First MM software. Mind Maps Plus 1991
- "Idea Map". Jamie Nast 1992
- "Information Map". José M. Guerrero 2007
- Information Map automation. José M. Guerrero 2008

## Porphyry 300 AD



## Ramon Llull 1247

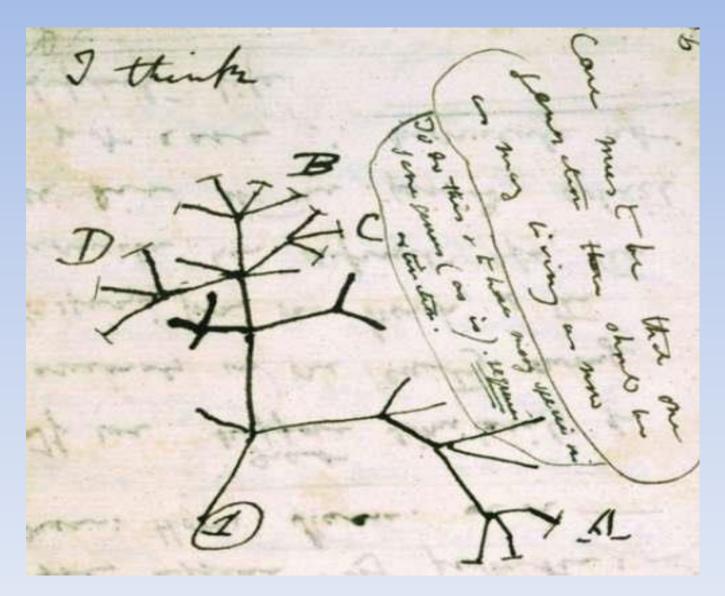


#### d'Alembert 1750

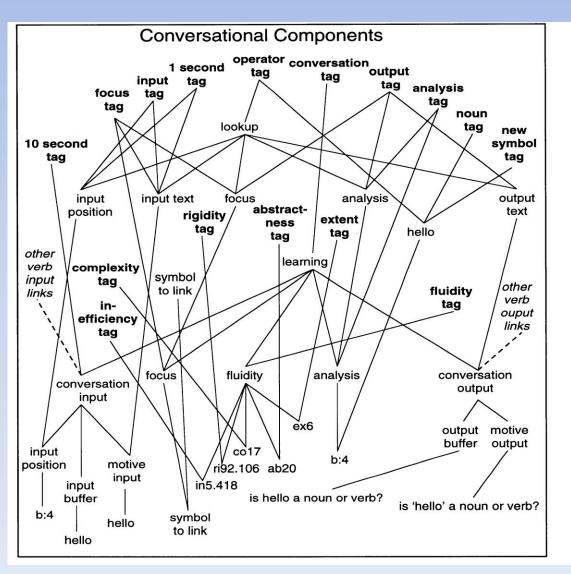
#### 'S Y S T É M E F I G U R É DES CONNOISSANCES HUMAINES.

DES CONNOISSANCES HUMAINES. ENTENDEMENT. MEMOIRE RAISON Exceptioners. HISTOIR? DEFENDENCE. PRILOSOPHIE

# Darwin 1838



# Semantic Networks. Collins & Ross Quillian 1967



## Mind Map. Tony Buzan 1970

 A Mind Map is a graphical technique to visualize connections between several ideas or items of information and that follows a strict set of rules. It is always organized around a unique central idea or word.

## Example of Mind Map



# "Idea Map". Jamie Nast 1992

 An Idea Map is a Mind Map adapted to the communication needs of the business world, and that does not follow such an strict set of rules.

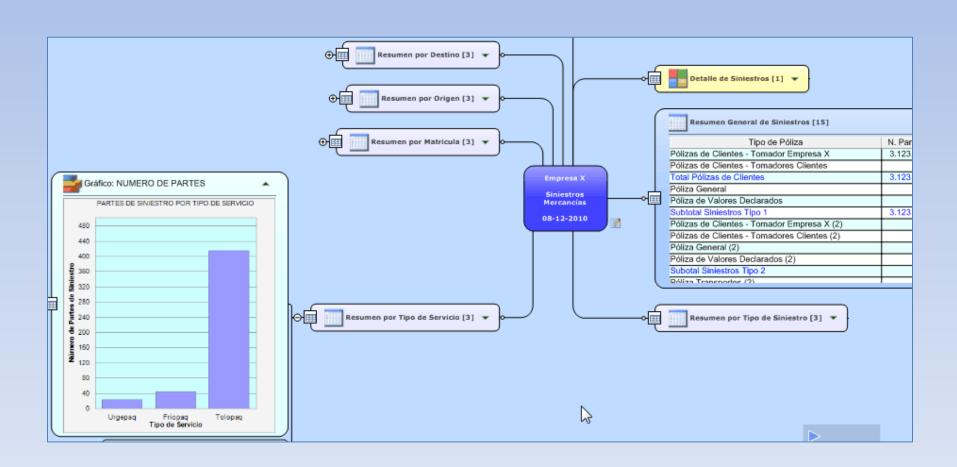
#### Example of Idea Map



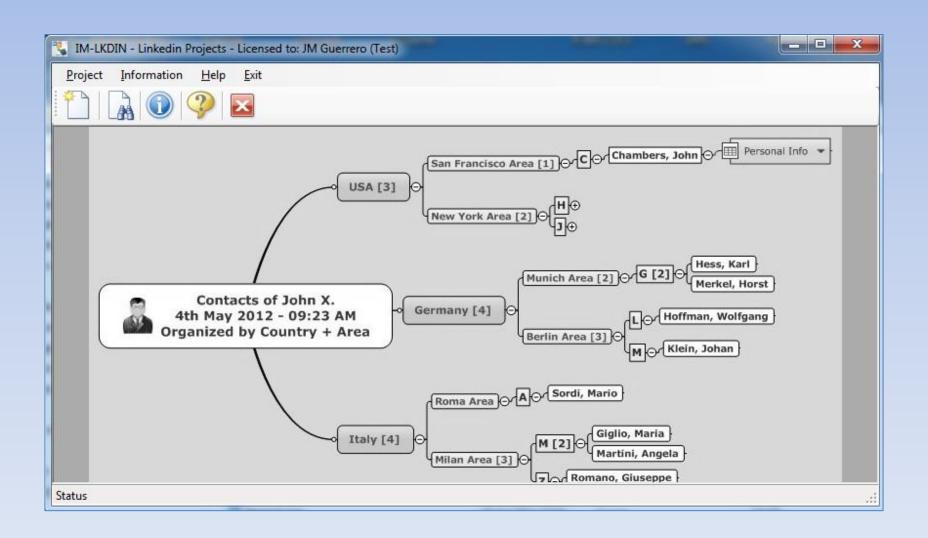
#### "Information Map". José M. Guerrero 2007

 An Information Map is an Idea Map that includes spreadsheets and charts (and possibly Data Bases)

#### **Example of Information Map**



#### Information Map automation. Jose M. Guerrero 2008





## **Evolution of Mind Mapping**

- More features of Information Maps
- Advances in automation of Information Maps
- New software to manage Information Maps
- Integration of Mind Mapping and Open Data
- Integration of Mind Mapping and Big Data



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Mind Mapping automation

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