

# **Reflections on Knowledge, Communication and Knowledge Organization**

**Alan Gilchrist**

***Knowledge Organization – making a difference***

ISKO UK biennial conference

13<sup>th</sup>– 14<sup>th</sup> July 2015 London



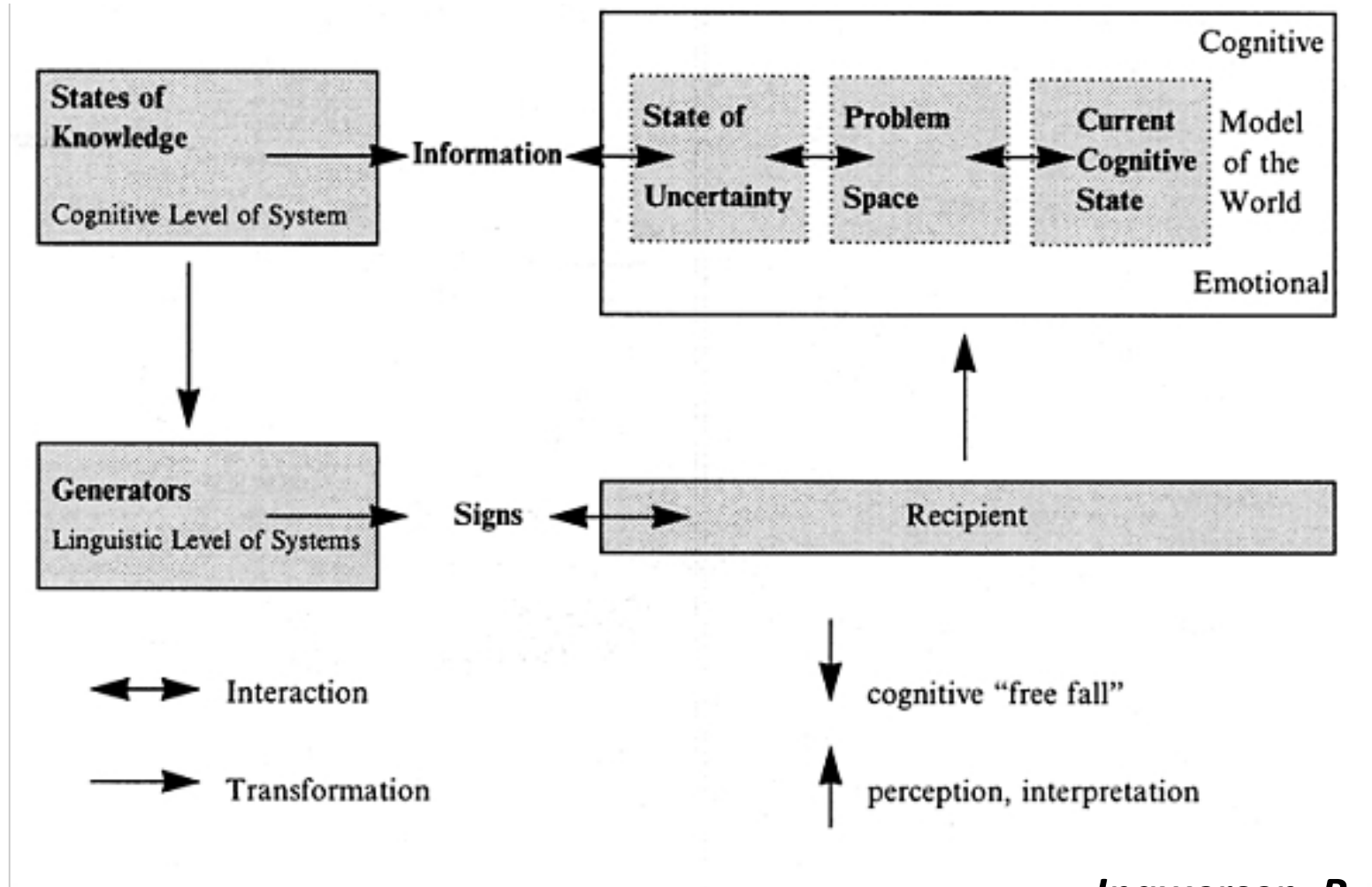
*C. Zwartti*

*“Bad news, Gilchrist – somehow  
you’ve come to someone’s attention.”*

**“Information has come to denote whatever can be coded for transmission through a channel that connects a source with a receiver, regardless of semantic content”**

**Theodore Roszack**

# Cognitive Model



*Ingwersen, P*

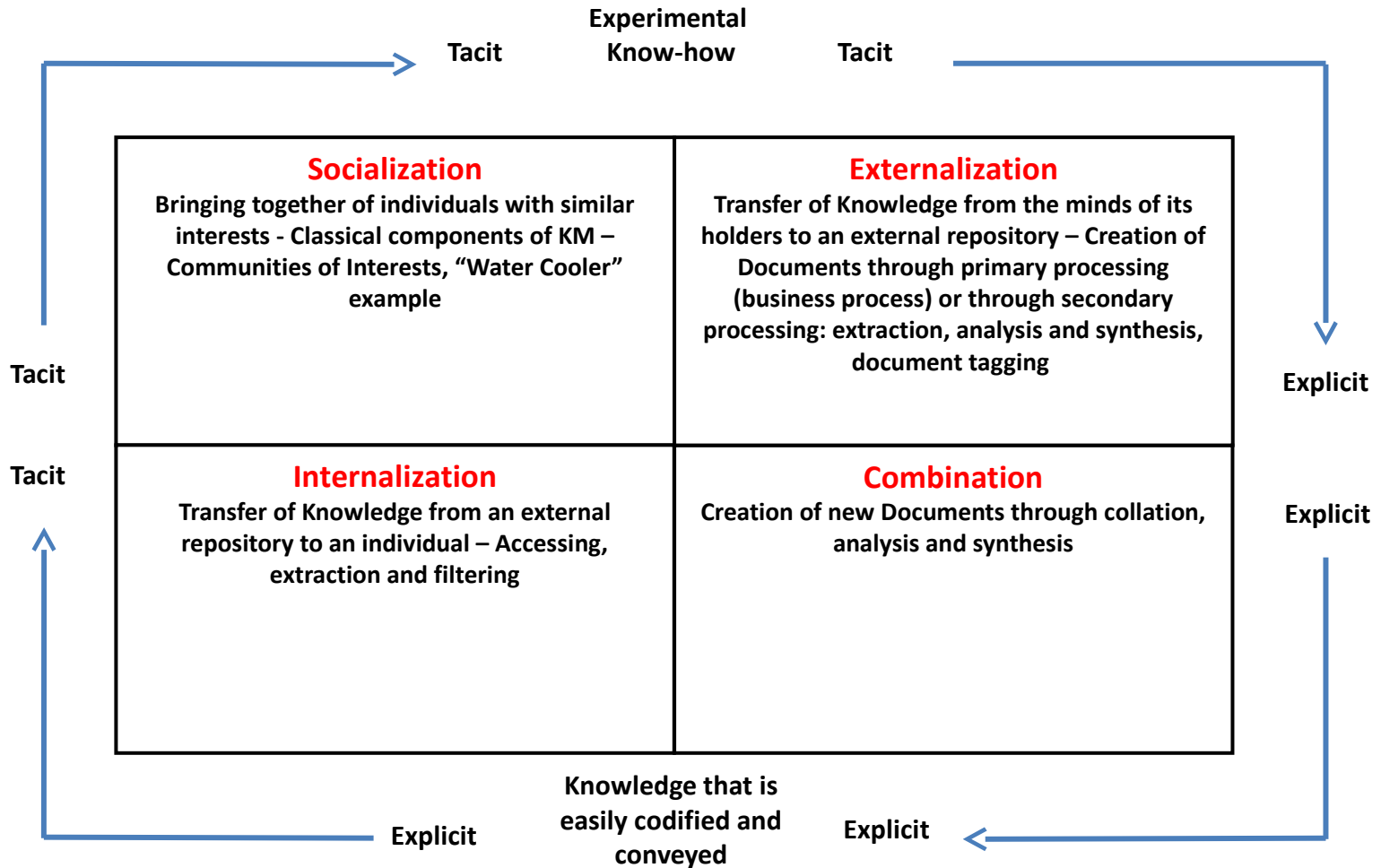
“...words don't have meanings. There is no direct relationship between the thing you are talking about and the words you use. Only as these words are related through the thoughts of a person do they have meaning. Meaning is not in the object or in the symbol but in the interaction of these through the human communication process

*Myers & Myers*

# Semantic levels

- **Phonological:** interpretation of speech sounds within and across words
- **Morphological:** componential analysis of words, including prefixes, suffixes and roots
- **Lexical:** word level analysis including lexical meaning and part of speech analysis
- **Syntactic:** analysis of words in a sentence in order to uncover the grammatical structure of the sentence
- **Semantic:** determining the possible meanings of a sentence, including disambiguation of words in context
- **Discourse:** interpreting structure and meaning conveyed by texts larger than a sentence
- **Pragmatic:** understanding the purposeful use of language in situations, particularly those aspects of language which require world knowledge

# SECI Model

























*Nonaka, I and Takeuchi, H*

# Akkadian Cuneiform script

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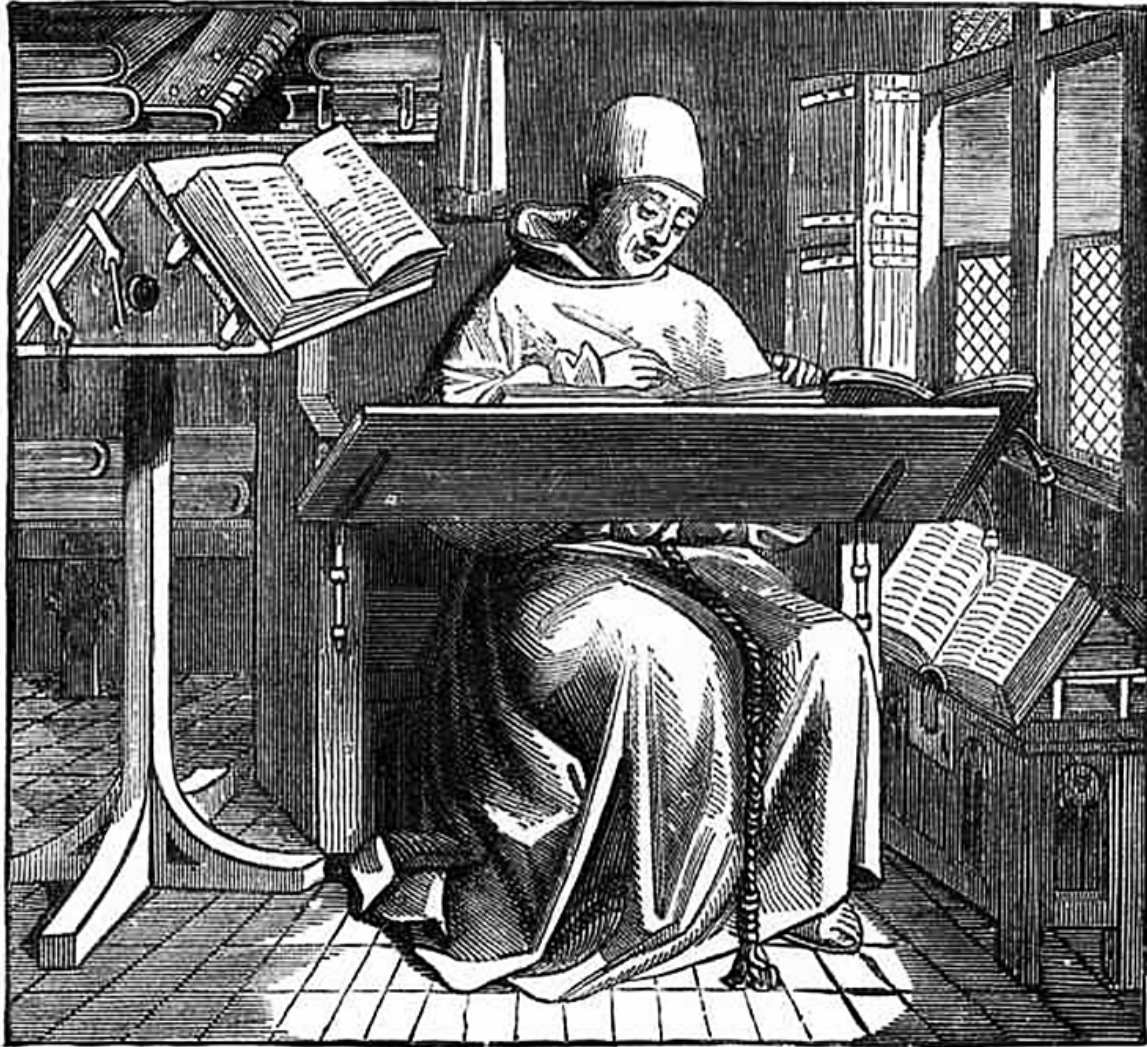
# Phoenician Alphabet

							
Z Zayin Weapon	W Waw Hook	H He Window	D Daleth Door	G Gimel Camel	B Beth House	' Aleph Ox	
							
N Nun Fish	M Mem Water	L Lamedh Ox-Goad	K Kaph Palm of Hand	Y Yodh Hand	T Teth Unknown	H Heth Fence	
							
T Taw Mark	SH Shin Tooth	R Resh Head	Q Qoph Monkey	S Sadhe Fishhook	P Peh Mouth	' Ayin Eye	S Samekh Support

# Alexandria Library



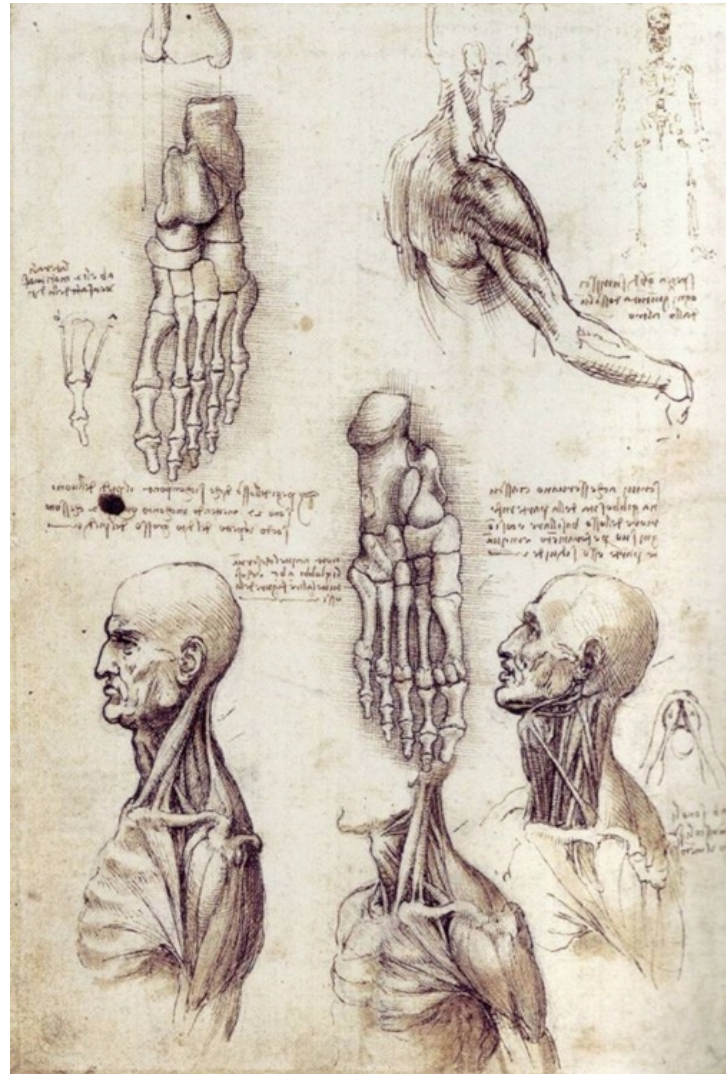
# The Monasteries



SCRIPTORIUM MONK AT WORK. (From *Lacroix*.)



# The Renaissance



# Printing



# The Industrial Revolutions

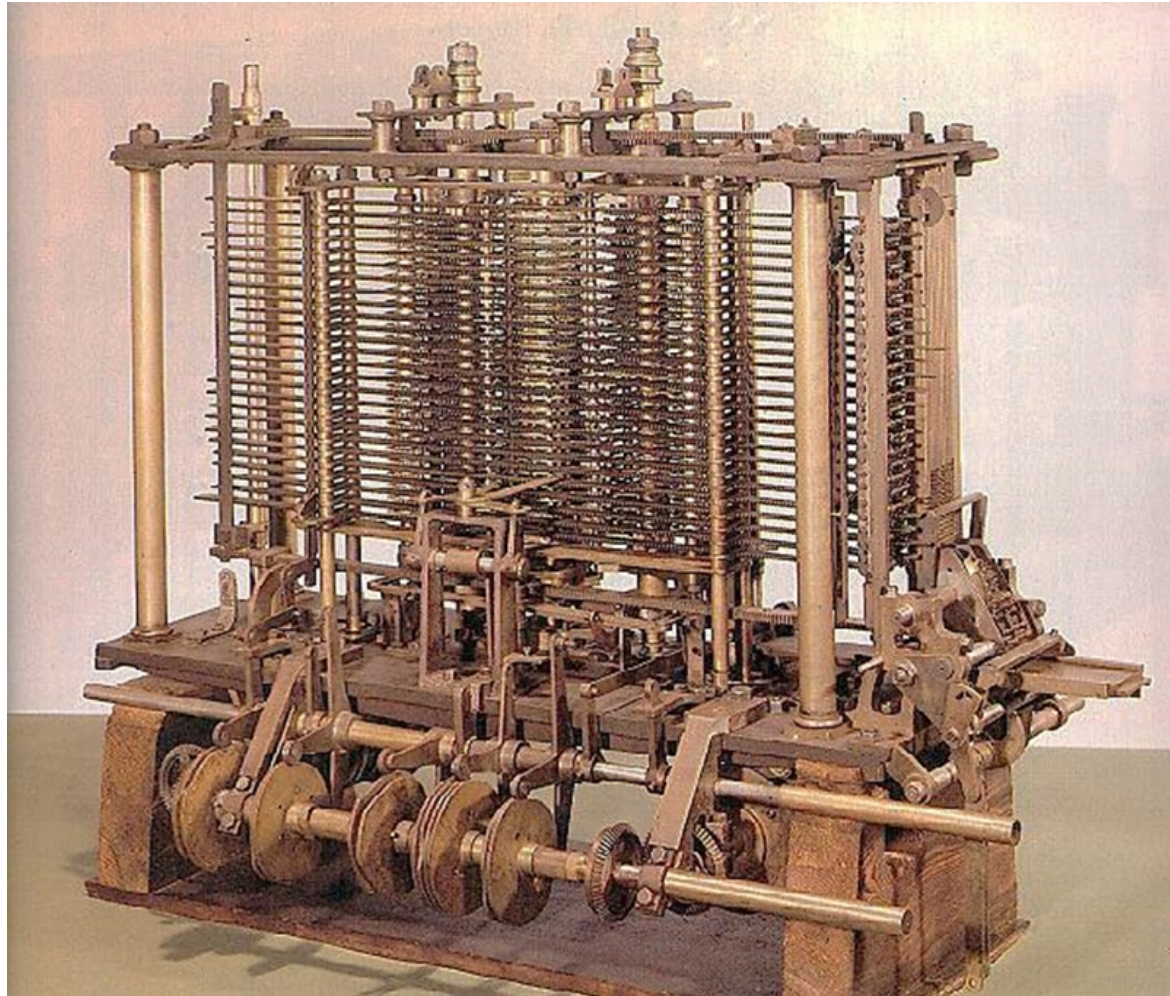


**“I think not. I fancy the descriptions we get of its use in America are a little exaggerated; but there are conditions in America which necessitate the use of instruments of this kind more than here. Here we have a superabundance of messengers, errand boys, and things of that kind.”**

***Sir William Preece UK Post Office Engineer***



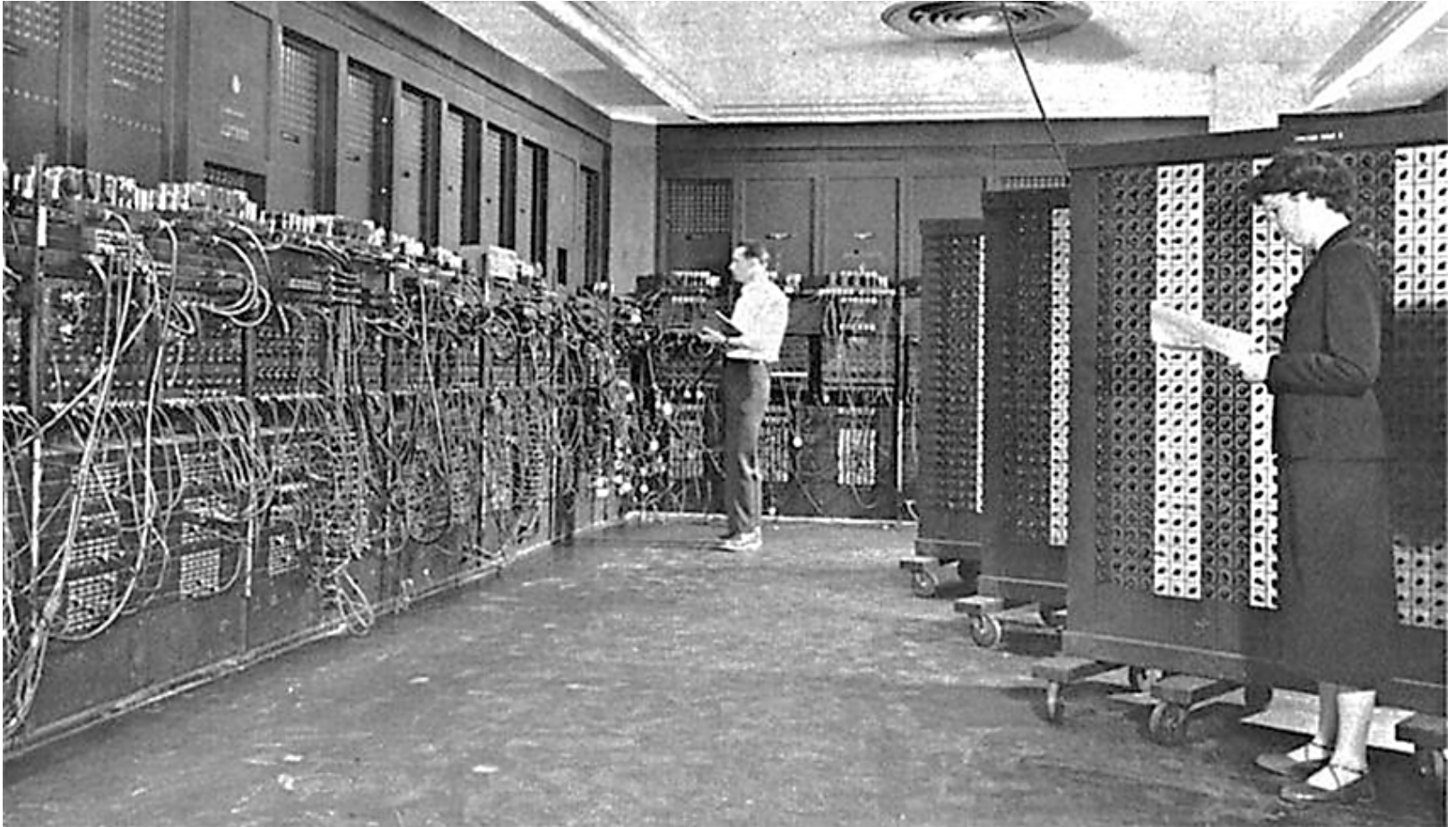
# Babbage engine



# **Question from a Member of Parliament**

**Pray Mr Babbage, if you put into the machine wrong figures, will the right answers come out?**

# ENIAC



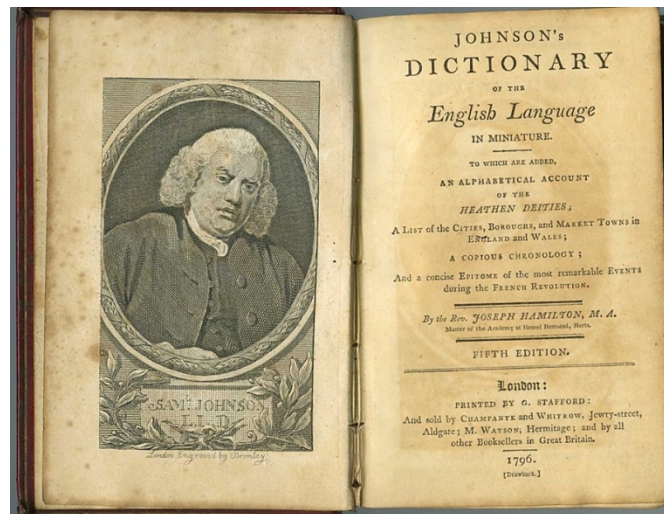
**“Wholly new forms of encyclopaedias will appear, ready made with a mesh of associative trails running through them, ready to be dropped into the memex and there amplified”**

*Vannevar Bush 1945*

# Johnson's Dictionary 1755

## Bookworm

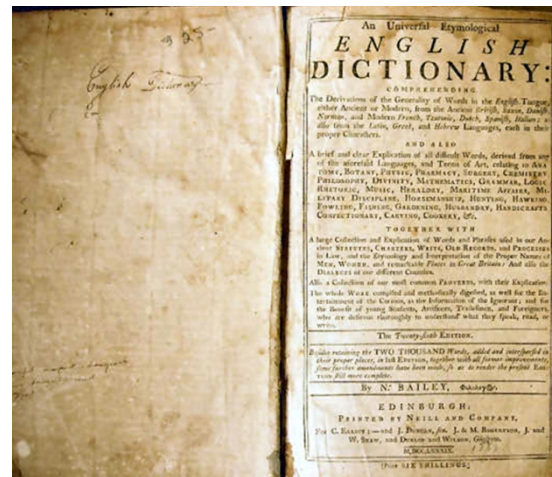
- (1) A worm or mite that eats holes in books, chiefly when damp.
- (2) A student too closely given to books; a reader without judgement.



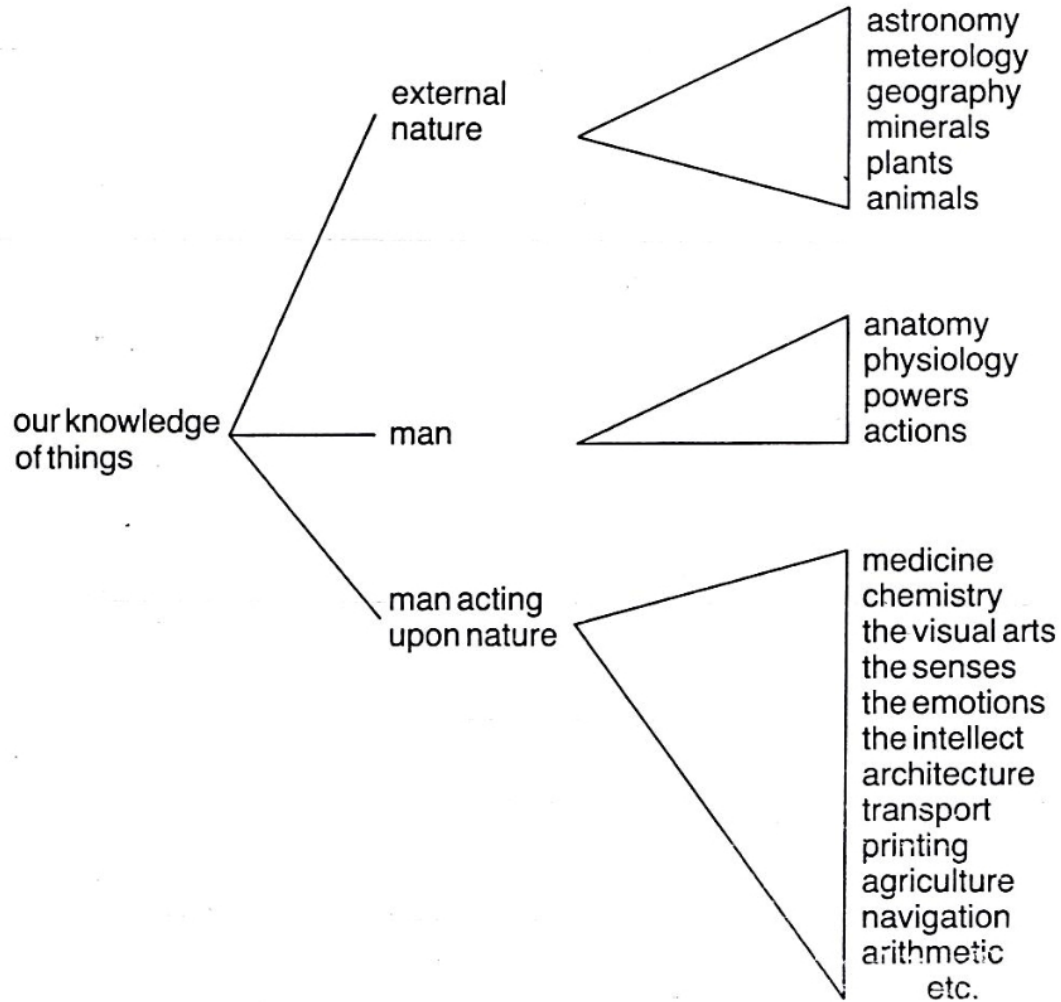
# Nathan Bailey's Dictionary (late 18<sup>th</sup> C)

Black – A colour

Dog – An animal well known



# Taxonomy of Knowledge



# **DDC Classes**

**1<sup>st</sup> edition**

**0.0 General Works**

**0.1 Philosophy**

**0.2 Religion**

**0.3 Social Sciences**

**0.4 Philology**

**0.5 Natural Sciences**

**0.6 Useful Arts**

**0.7 Fine Arts**

**0.8 Literature**

**0.9 History**



- 1. That enumerative classifications have a superficial foundation.**
- 2. That the discovery of new knowledge cannot be anticipated in an enumerative system; and**
- 3. That the discovery of new knowledge can be anticipated in a faceted system (based on the view that new knowledge is formed by combination of a priori existing categories).**

*S.R. Ranganathan*

# Fundamental Categories for Faceted Classification

## **Entities/things/objects**

*(By characteristics)*

Abstract entities

Naturally occurring entities

Living entities, Organisms

Artefacts (man-made)

Attributes: properties/qualities,  
states/conditions

Materials/substances, constituent  
substances

Parts/components

Whole entities/Complex entities

*(By function)*

Agents (Performers of actions—  
inanimate and animate)

Individuals, personnel,  
organizations

Equipment/apparatus

Patients (Recipients of action—  
inanimate and animate)

End-products

## **Actions/activities**

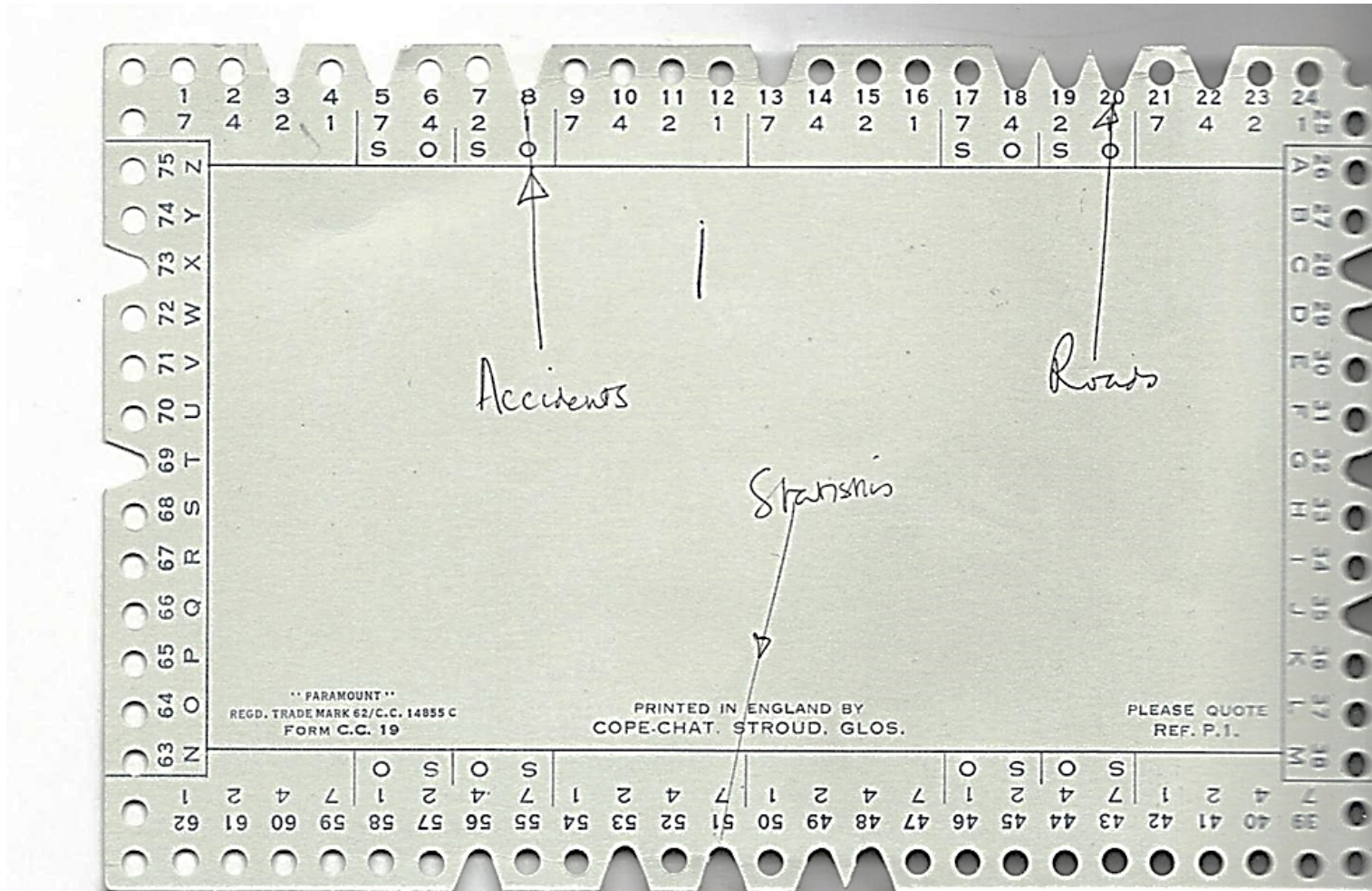
Processes/functions (internal  
processes, intransitive actions)

Operations (external, transitive  
actions)

## **Space/place/location/environment**

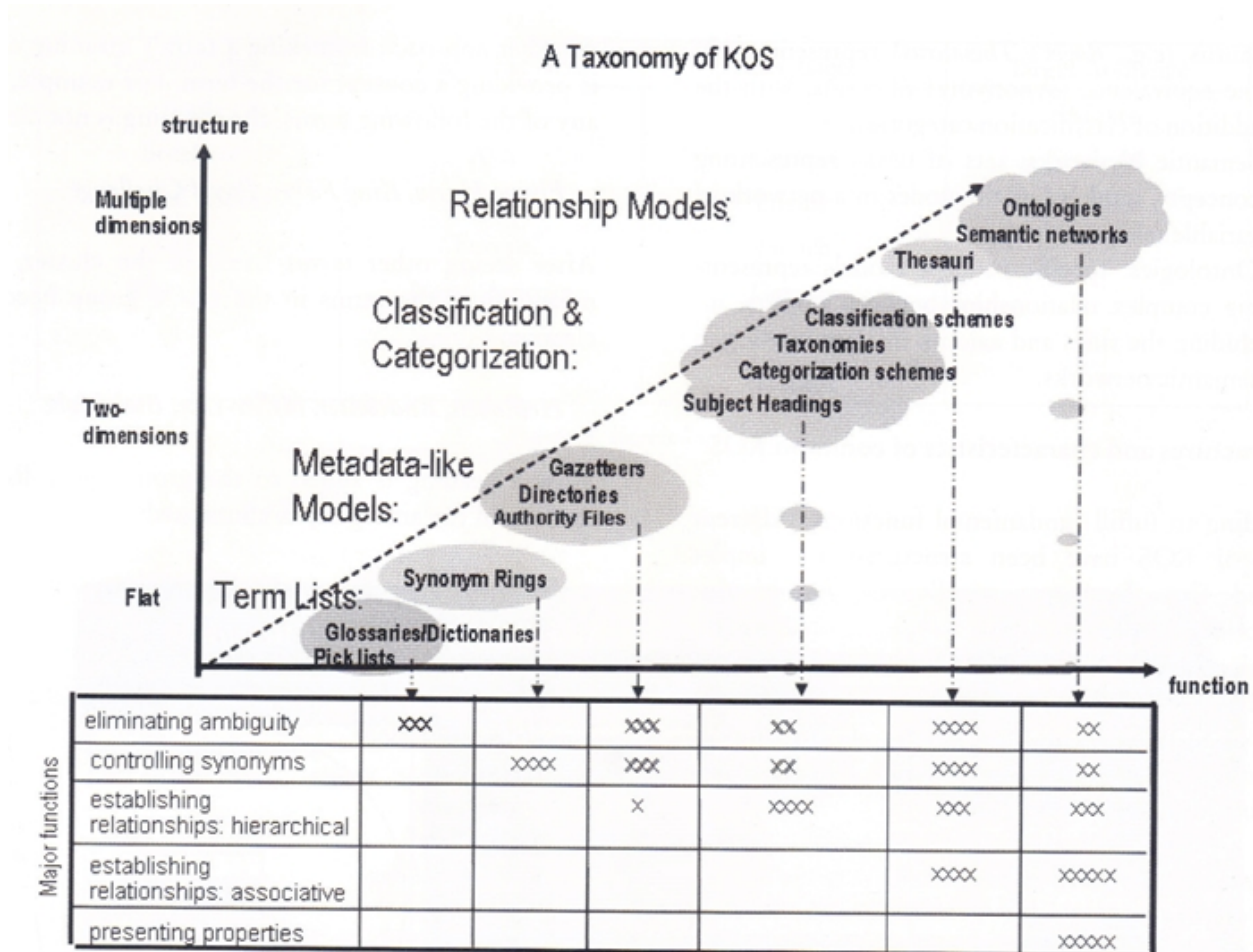
## **Time**

# Edge-notched card



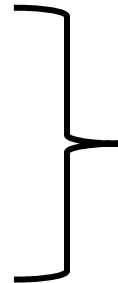


# Structured vocabularies



Zeng, M

**Information Retrieval**  
**Information Extraction**  
**Computational Linguistics**



**Semantics are implicit**

**Knowledge Representation**  
**Artificial Intelligence**  
**Database Management**



**Formal semantics**

**“Gartner predicts in a recent study that by 2017, 33% of Fortune 100 organizations will experience an information crisis due to their inability to effectively value, govern and trust their enterprise information”.**

**KO deals with abstract entities (I, K & Language)**

**KO creates and applies models that must be continuously updated**

**KO applications are wider than traditional information retrieval**



**Thank you for listening**

**Enjoy the Conference, and continue  
to make a difference**