

# Information Organising: An Evolutionary and Developmental Framework

Professor Amanda Spink  
Loughborough University

# My Talk

- Spink, A. (2010). Information Behavior: An Evolutionary Instinct. Springer
- Evolutionary and lifetime development framework for information organising behaviour
- Research questions

# Key Propositions

- Early humans developed information organising behaviour capabilities – classifying and categorising
- Humans have always engaged in information organising behaviour
- Information organising behaviour – an important instinct and socio-cognitive ability

# Information Organising Behaviour

- Information organising behaviour a sub-process within information behaviour
- Information Behaviour is the totality of human behavior in relation to sources and channels of information
- Information behaviour model consists of:
  - Seeking, sense-making, foraging, organising & using
  - Multitasking, cognitive shifting/coordination
  - Social, personality, cognitive and cultural aspects
  - Longitudinal, iterative and complex
  - May involve interaction with information technologies

# What We Need to Understand About Information Organising Behavior?

Evolutionary, biological and developmental origin

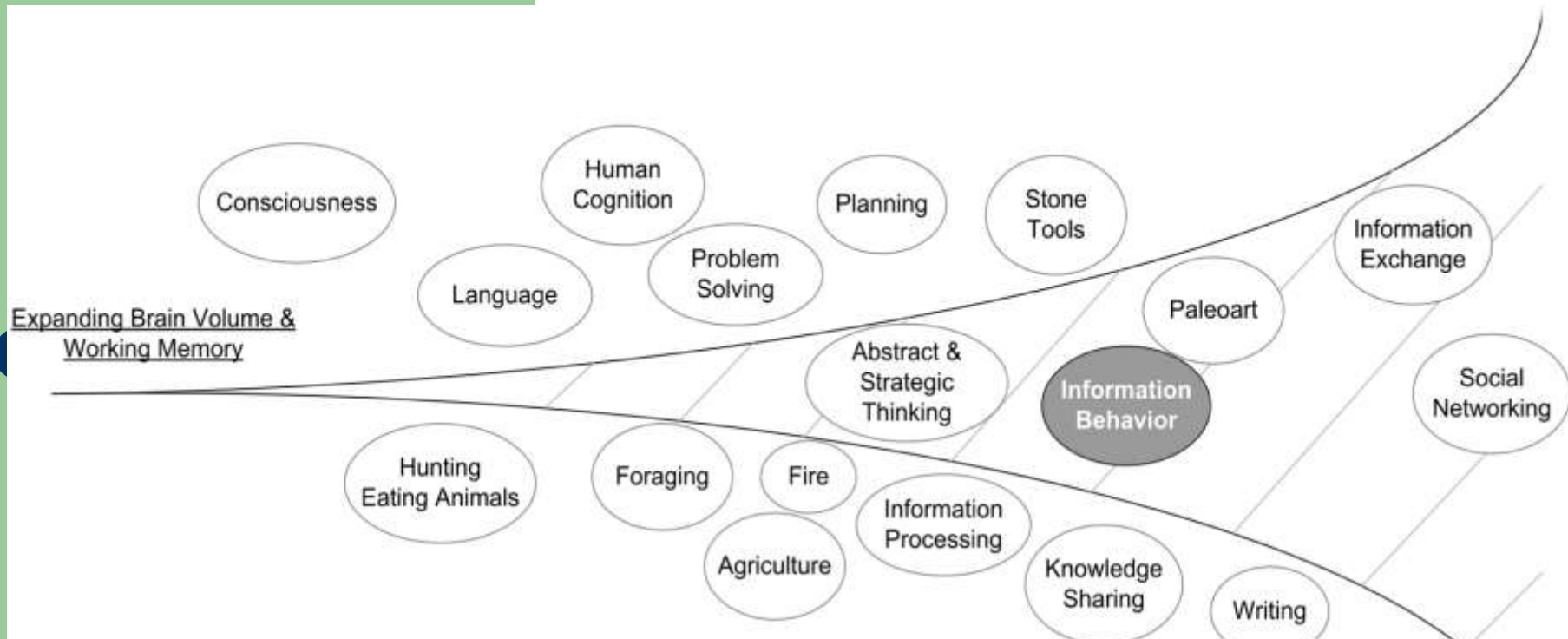
Role of genetics versus environment

How information organising behaviour capabilities evolved over human species development?

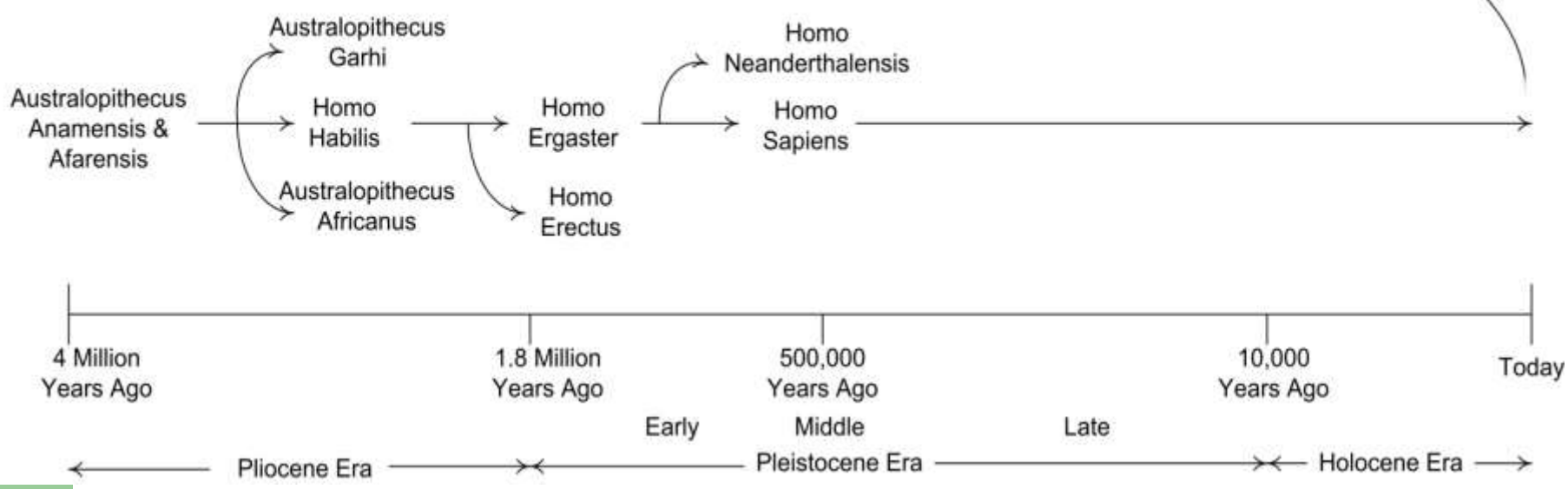
How information organising behaviour emerges and evolves over a human lifetime?

# Information Organising Behaviour Origin

- Evolutionary psychology and cognitive archaeology suggests that early humans evolved information organising behaviour capabilities (Mithen; Tooby & Cosmides)
- Information organising behaviour evolved as an important human socio-cognitive ability and competency.
- Spink, A., & Cole, C. (2007). Information behavior: A sociocognitive ability. *Evolutionary Psychology*, 5(2), 257-274.



Hominid Family Tree



# Information Organising Behaviour Origin

- Key proposition: Information organising behaviour evolved with early humans
- How and why did information organising behaviour evolve in early humans?



# Neuro-Evolution in Early Hominids

- Transformation in early human cognitive architecture
- *Homo-sapien* hunter-gatherers shifted to farming
- *Homo sapiens* enhancement of specific human cognitive capabilities, including - integrated action across space and time, response inhibition and preparation.

# Information Organising Behaviour Origin

- Enhanced cognitive information processing ability to hold a variety of information in active attention
- Gave *Homo sapiens* struggle for adaptation and survival – foraging to agriculture

# Information Organising Behaviour Origin

- Homo sapiens experienced enhanced working memory (EWM) capacity (Wynn & Coolidge)
- Enhanced cognitive capabilities, including planning, abstract thinking, information behaviour, information organising behaviour

# Evolutionary Framework for Information Behaviour

- Evolutionary psychology and cognitive archaeology suggest that information organising behaviour emerged in early humans
- Information organising behaviour is a cognitive mechanism and socio-cognitive ability as an attribute or trait that is unique and unusual to humans, e.g., language

# Information Organising Behaviour Origins

- Evidence of paleoart (cave art) representations of information organising behaviour

*Image of cave art removed for copyright reasons*

## 30,000 BC: Paleoart – Cave Art

- Images of large animals – often in context
- Supports various aspects of information behaviour
- Example of organising and using information

# Information Organising Behaviour Over the Ages

- Artifacts developed over the centuries to support information organising behaviour
- Examples of personal information organising behaviour over the ages

# Artifacts Exhibiting Information Organising Behaviours

|                 |   |
|-----------------|---|
| 30,000 BC       | Paleoart - Cave Art   |
| 6600 BC         | Ideographs  |
| 4240 - 3000 BC  | Calendars, Paper (Papyrus), Cuneiform   |
| 2700 - 1300 BC  | Ink, Hieroglyphs, Alphabet, Phaistos Disc, Logographs, Maps   |
| 1250 - 500 BC   | Scrolls, Manuscripts, Glossaries, Dictionaries, Paper (Parchment)   |
| 320 - 8 BC      | Library, Bibliographies, Concept of Categories, Library Classification System   |
| 79 - 1200 AD    | Codex, Woodblock Printing, Tree Diagram, Quill Penn, Library Catalogue, Movable Type, Almanacs, Paper (Rag)                                 |
| 1309 - 1626 AD  | Registers, Printing Press, Bookbinding, Public Lending Library, Library Catalogue (Printed), Dictionaries, Newspapers, information Graphics |
| 1735 - 1900 AD  | Taxonomy (Binominal), Magazines   |
| 1900 AD – Today | Marc (Metadata), Hyperlink, Internet, Web   |



# 320-8 BC: Library, Bibliographies & Library Classification System

---

*Image of a library interior  
removed for copyright  
reasons*

# People's Information Organising Behaviour Over the Ages

- Research investigated the information organising behaviours reported in their personal writings by:

Napoleon Bonaparte

Charles Darwin

Giacomo Casanova

- Spink, A., & Currier, J. (2006). Toward an evolutionary perspective on human Information behavior: An exploratory study. *Journal of Documentation*, 62(2), 171-193.

# Napoleon Bonaparte

- Information seeking, organizing and using behaviour
- Maps – organising geographic information
- Methodical information collecting and organising behaviour

*Image of Napoleon Bonaparte removed for copyright reasons*

# Charles Darwin

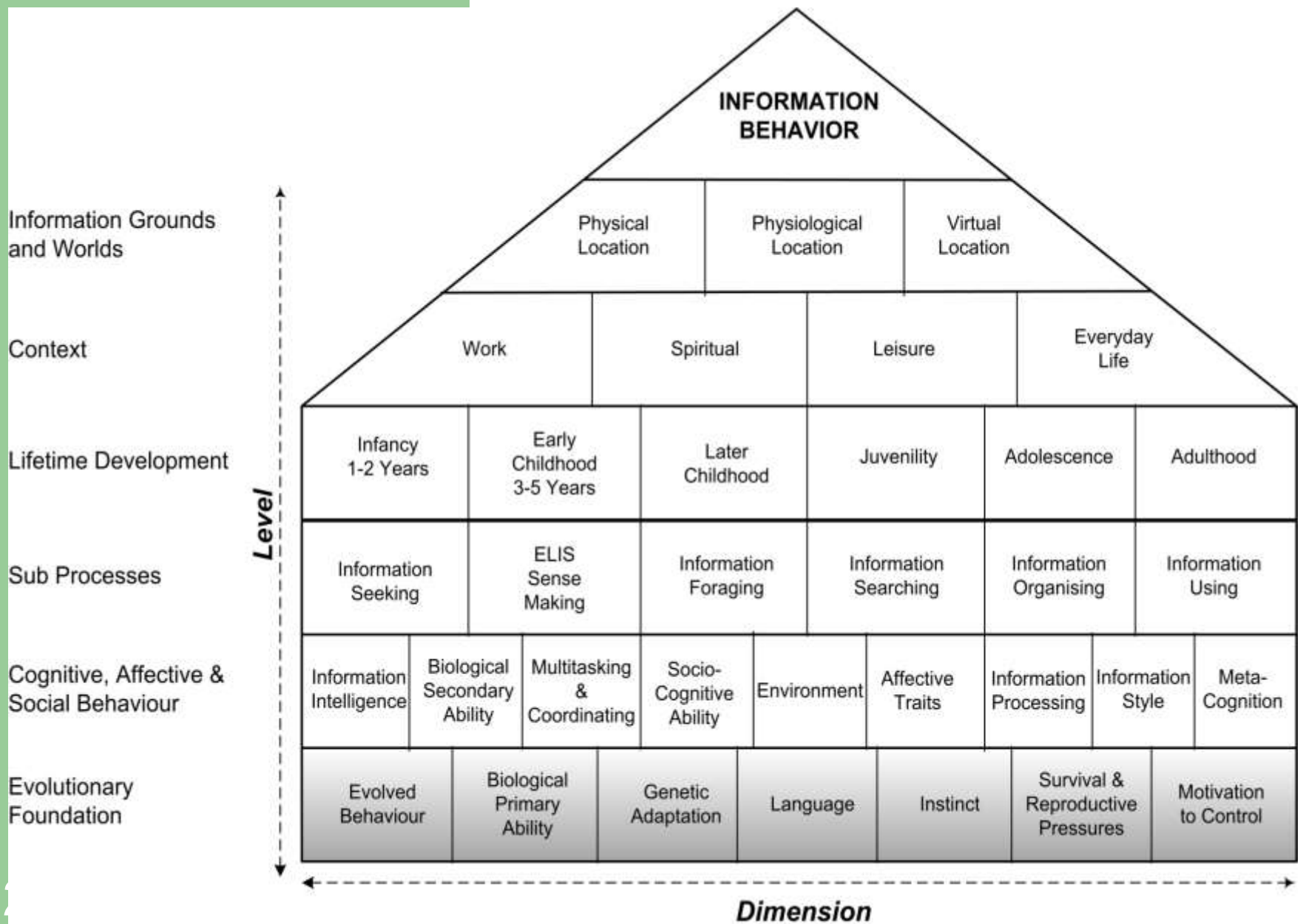
- Information seeking, organizing and using behaviour
- Created indexes to his papers

*Image of Charles Darwin removed for copyright reasons*

# Giacomo Casanova

- Spy and business man – information gathering, organizing and using behaviour
- Librarian and information organizer

*Image of Casanova  
removed for copyright  
reasons*



# Lifetime Development Model of Information Organising Behaviour

- Developmental psychology - human lifetimes consist of transitions in an individual's development
- How does information behaviour develop as a socio-cognitive ability in early childhood, and progress in childhood, adolescence to adulthood?
- Origin and transitions in information organising behaviour development over lifetime?

*Image of a child learning removed for copyright reasons*

# Information Organising Behaviour – Further Research

- An evolutionary adaptive basis linked to survival and human socio-cognitive ability
- Lifetime development with social, personality, cognitive and cultural aspects
- Longitudinal, iterative and complex behaviour patterns
- How does information organising relate to information foraging, seeking, sense-making and use.



# Information Organising Behaviour – Further Research

- Further develop a more holistic information behaviour framework – evolutionary and developmental
- Integrate information behaviour research with social and behavioural sciences, e.g., evolutionary and social psychology, cognitive archaeology

# Conclusions

- Provide better theories, models and vocabularies for people to understand their own information organising behaviours
- Help develop and promote positive change across the human lifespan and develop positive interventions
- Help people learn and think more about their information behaviors

Questions?

Thank You

