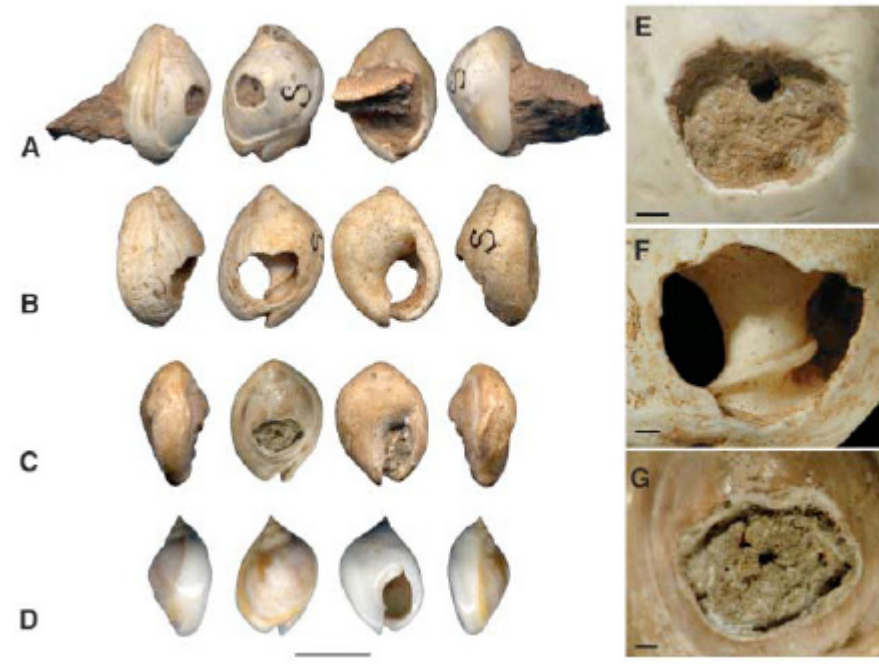


## Context & Challenge

Shell beads from 100,000 years B.P. to present,



N. gibbosulus shell beads from Es-Skhul (A & B), Oued Djebbana (C), and a present-day shore (D). (E to G) Macrophotographs of the perforations on the archaeological specimens. From (Vanhaeren et al., 2006)

- Emergence of modern cognition; modern abilities in humans since at least 100,000 years (d’Errico & Stringer, 2011)
- Increase in archaeological studies pointing toward early use of symbolic representations in *H. sapiens* (d’Errico et al., 2001; d’Errico et al., 2008)

- Understand early traces of symbolism & collective agreement on meaning, e.g. social identity (Kuhn & Stiner, 2007a)
- Shift from material artefacts to cognitive functions, reasoning and culture

## Approach

### Existing approaches in cognitive archaeology

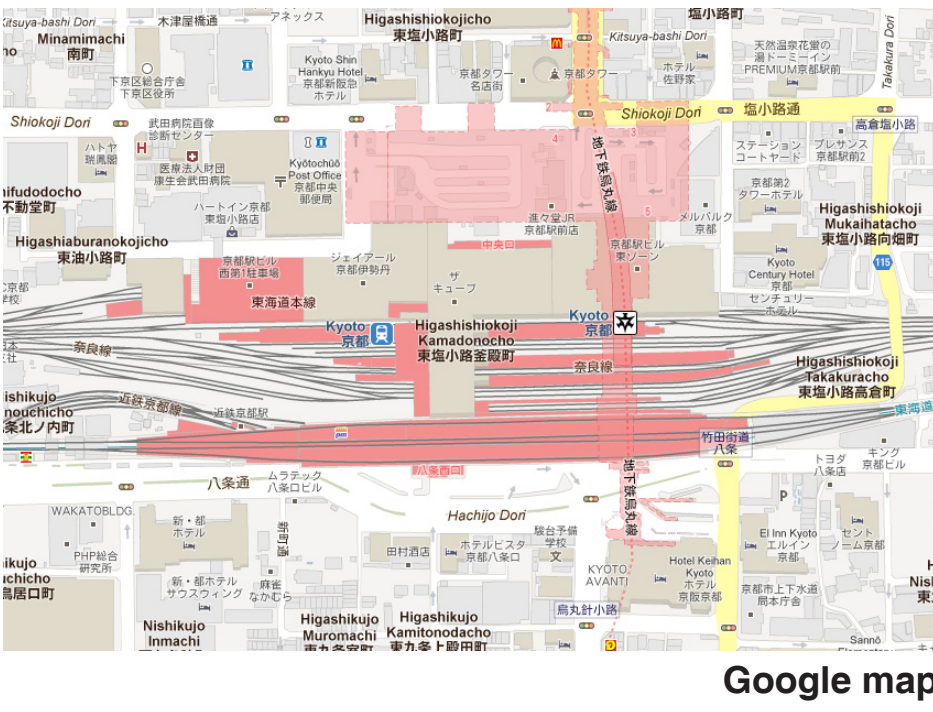
- Relate early symbols to cognitive components and abilities (Coolidge & Wynn, 2005; Henshilwood & Dubreuil, 2009)
- Consider how different categories of signs apply to artifacts (Rossano, 2010)

### Our own approach

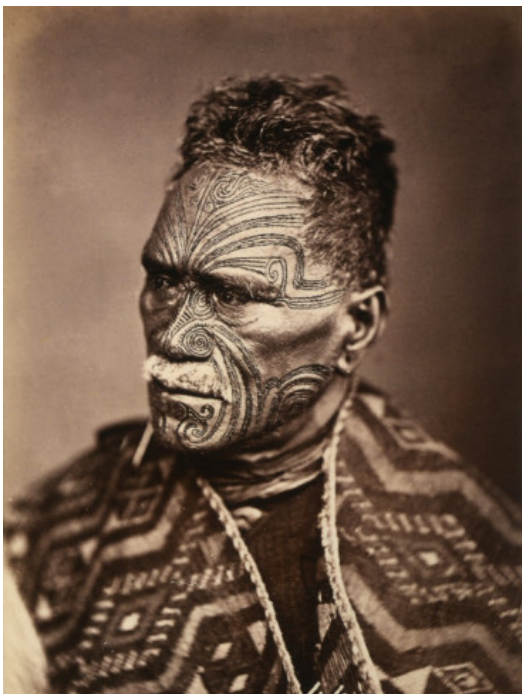
- Depart from Peirce (1935)’s distinction between *icons*, *indexes* and *symbols*
- Get *psychological* insights from modern situations

## Notion of representational medium (*R-medium*)

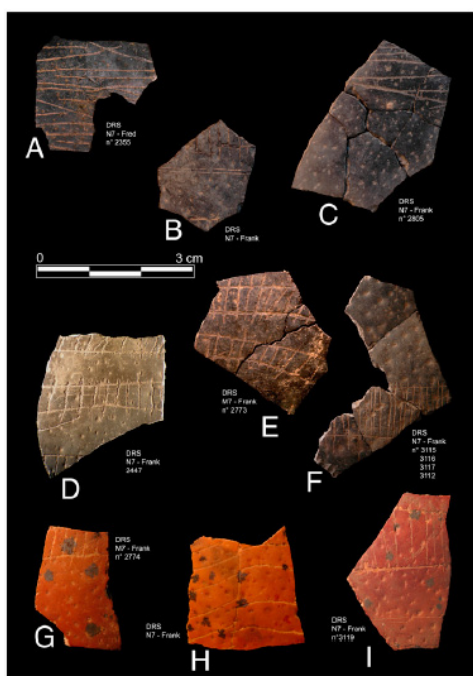
- A ‘generic’ acception of representation close to the notion of *sign*
- R-media carry representations between entities able to make sense of them



WORD



Alinari archive



Texiera et al., 2010

### Primary & elaborated properties of R-media

- **Primary** properties: defined independently of any potential interpreter (sensorial modality, matter vs energy etc.)
- **Elaborated** properties: *conceptualized* by the users, partly derived or independent from primary properties, whether intentionally or not
- Difficulty to guess elaborated properties without explication

### Classifying R-media

- Distinction between artificial & natural signs based on the intentionality of the emission process (Eco, 1988)
- Carrying representations as a primary or derived function of the R-medium

	‘Natural’ R-medium	‘Artificial’ R-medium
Primary function	-	neckties, engravings
Secondary function	bones seen as relics	altered shells used as beads

### Competition and balance between R-media

- The *properties* of a R-medium constraint the representations it may carry
- Different R-media may compete to carry signification in a given domain, e.g. social identity

## Present and past judgments of value

### The emergence of photography

- Quest for a precise and conform representation of reality
  - Divorce between the truth of a representation & its authenticity induced by
    - the autonomous process of production of the picture
    - the cheap mechanical reproduction of this initial image.
- Contrary to a painted masterpiece, the value of a picture cannot come from its authenticity and unicity (Benjamin, 1936)
- Value - an *elaborated* property - is derived from *primary* properties

### Application to prehistoric R-media

- Assumption: our ancestors had similar experience and judgments of value

	Body alterations	Body painting	Beads, ornaments	Language
Investment	Expensive	Rather cheap	Rather expensive	Very cheap
Cost of lie	High	Low	Not so low	Very low
Transferable information	No	No	Yes	Yes, easily
Overt/covert	Overt	Overt	Overt/Covert	Overt/Covert
Ritualization	High	High	Medium?	Primarily poor
Flexibility	Medium	Medium/High	Medium	Very high
Time domain	Long	Short	Medium to long	Short to Long

- Body alterations or beads in reaction to ‘free-riders’ using language?

→ A *semiotic balance* with evolving judgements regarding *primary* and *elaborated* properties, e.g. shift from colorants to ornaments (Kuhn & Stiner, 2007b)

## An evolutionary road to modern symbols?

- A gradual rather than abrupt trajectory toward modern semiotic capacities
  - Natural R-media with a secondary function of signification
  - Artificial R-media with intentional modifications of the primary properties for a secondary function of signification
  - Gradual shift to artificial R-media with a primary function of signification
- Possible coexistence of individuals with differing degrees of mastery of signs in a group, all using R-media but only some *producing* them

## Conclusions & Perspectives

- A framework to consider early symbolic activities in the light of modern ones
- Emphasizes the notions of **value** and **judgment**, and **interaction** between R-media rather than independence
- A **gradual development** of our semiotic capacity
- Bolter & Gruisin (1988)’s *immediacy* and *hypermediacy* for further studies

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