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C. Chanteraud, Emilie Chalmin, H el ene Salomon, Julien Monney, Kim  
G enuite, Jean-Victor Pradeau, Jean-Jacques Delannoy

### ► To cite this version:

C. Chanteraud, Emilie Chalmin, H el ene Salomon, Julien Monney, Kim G enuite, et al.. On Palaeolithic coloring agents: epistemological analysis of scientific process. XVIIIe congr es de l'Union International des Science Pr ehistoriques et Protohistoriques, Jun 2018, Paris, France. hal-03457884

**HAL Id: hal-03457884**

**<https://hal.science/hal-03457884>**

Submitted on 30 Nov 2021

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# On Palaeolithic coloring agents: epistemological analysis of scientific process

## How to build cultural knowledge at the Grotte aux Points (Aiguèze, Gard, France)

Claire Chanteraud<sup>1</sup>, Emilie Chalmin<sup>1</sup>, Hélène Salomon<sup>1</sup>, Julien Monney<sup>1</sup>, Kim Genuite<sup>1</sup>, Jean-Victor Pradeau<sup>2</sup>, Jean-Jacques Delannoy<sup>1</sup>  
<sup>1</sup>Univ. Grenoble Alpes, Univ. Savoie Mont-Blanc (USMB), Environment Dynamics and Territories of Mountains (CNRS - EDYTEM), 73000 Chambéry, France  
<sup>2</sup>Univ. Nice Sophia Antipolis (UNS), Cultures et Environnements Préhistoire, Antiquité, Moyen Âge (CNRS-CEPAM), 06000 Nice, France

**A method to increase knowledge on coloring agent economy**

What were the coloring agents used during the Palaeolithic? How to recognize, define and describe them? What kind of information may they have recorded?

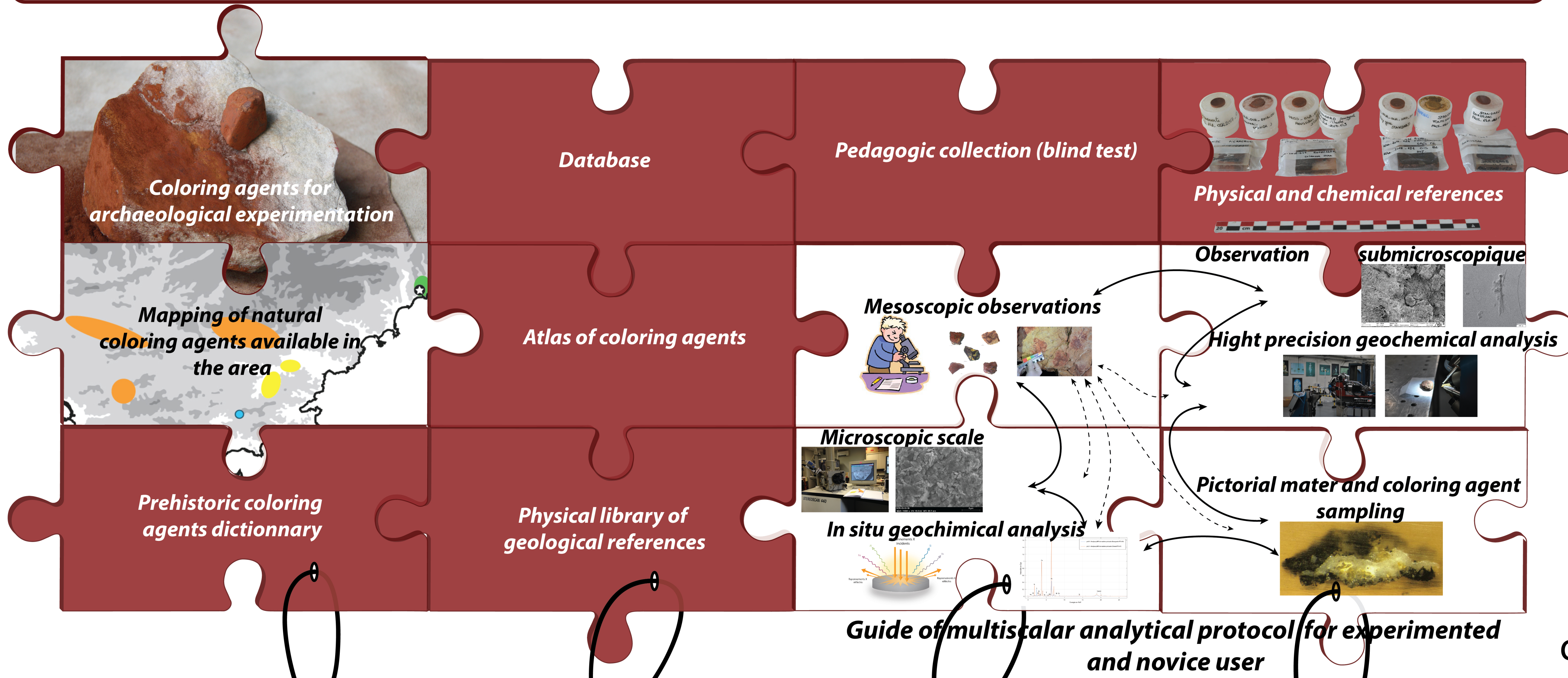
This topic needs interdisciplinary approaches. There is a crucial challenge to overcome which starts from sharing semantics adapted from geosciences, archeology and material sciences. This allows to strengthen the fundamental knowledge to build the working hypothesis and the methodology.

At this point, by studying current scientific methods and discourses on past human activities related to coloring agent exploitation, we can focus on the possible weaknesses in the scientific procedures.

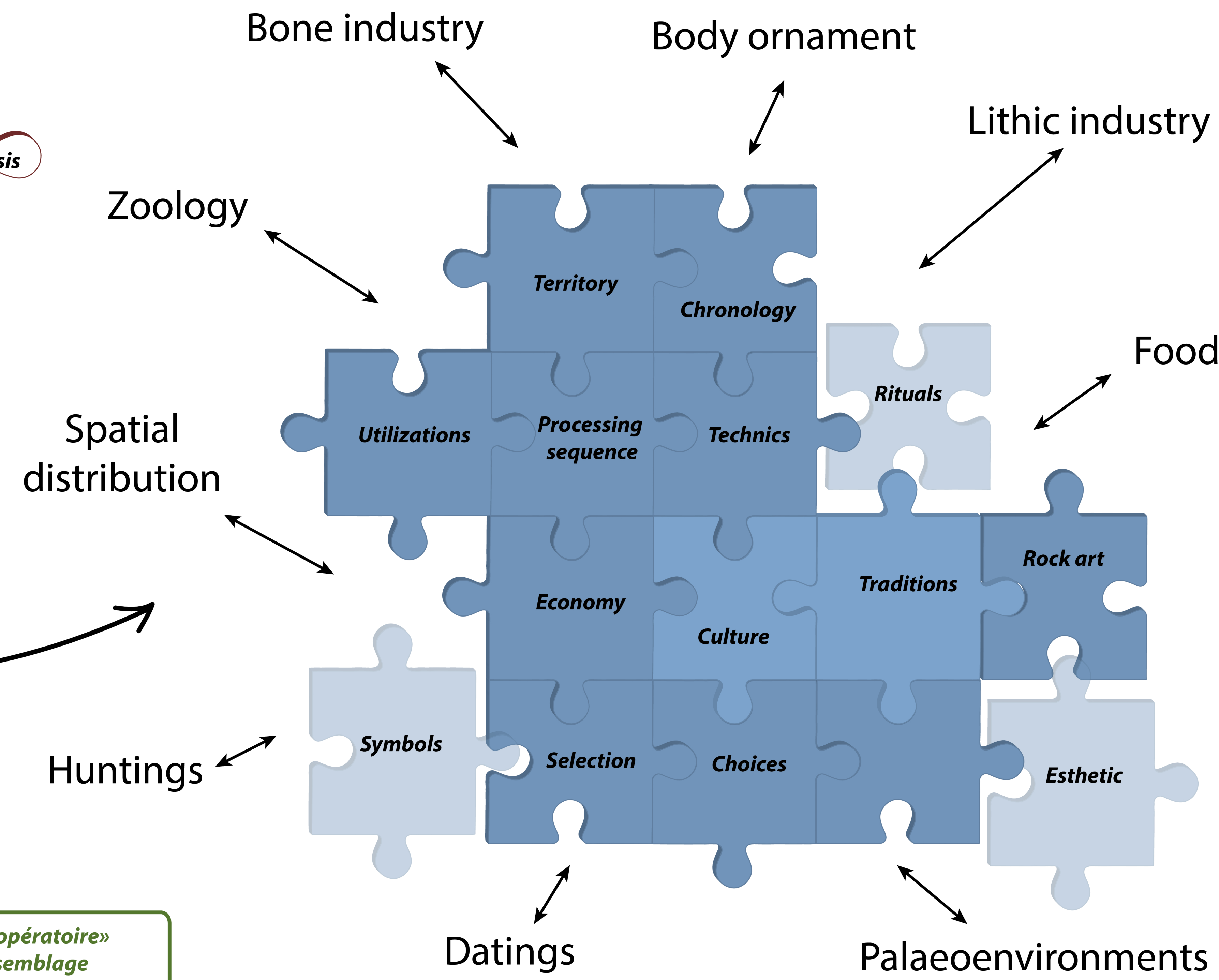
**Caption**

- Tool of the Pigmentotheque project
- Coloring agents of the archaeological assemblage
- Part of knowledge in cultural discussion
- Coloring agents potentially admissible in the archaeological assemblage
- Iterative reflexion path

**Toolbox of coloring agents**



**Contextualization of rock art and archaeological coloring agents**

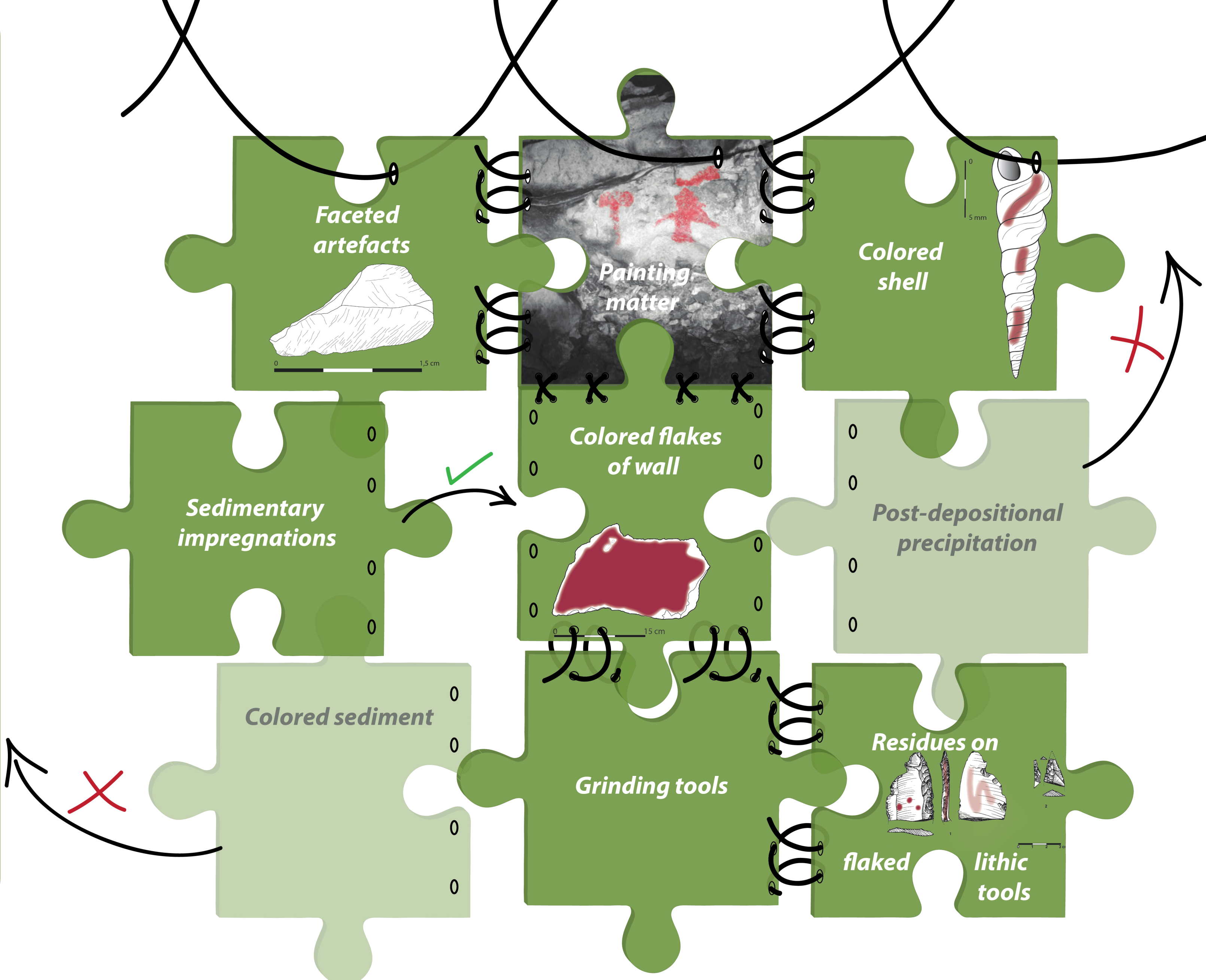


**Archaeological assemblage and environmental inputs**

In order to identify the **NATURE** of the « coloring agent », the construction of an archaeological assemblage with cohesive and non cohesive coloring agents needs a definition and an identification with an iterative methodology.

With the «toolbox» of the Pigmentotheque we can :

- 1/ Distinguish taphonomic inputs from anthropogenic traces on the archaeological remains.  
With several steps control, the non anthropic remains are discarded (X) whereas other are recognized as archaeological remains (✓).
- 2/ Identify the intrinsic characteristics of the coloring agents (physical-chemical and sensitive) and different ranges of raw materials
- 3/ Compare the cohesive and non-cohesive archaeological remains.
- 3/ Find relationships between coloring rocks, pigments, paintings and raw material available in the area



**Discussion about the «chaîne opératoire» from the archaeological assemblage**

What is the **NATURE** of colored and coloring remains ?

- Found the origine of the raw material
- Discuss choice criteria
- Identified the use
- Preparation of pictorial matter
- Application mode on the wall

Identify this nature permit to :

- 1/ Establish the anthropic or taphonomic origine of the coloring agents
- 2/ Identify the properties of coloring agents

**References**

Chalmin E, Salomon H, Pradeau JV, Monney J, Chanteraud C (2018) «Towards a library of raw ferruginous and manganous rocks: challenges to source coloring rocks used during the Prehistory». XVIII<sup>e</sup> congress UISPP. Paris

**Thanks**

Cité de la Préhistoire - Aven d'Orgnac for the access to the collections (Grotte aux points and Abris des Pêcheurs)  
 Institut Néel (Grenoble) for the access to the scanning electron microscope (S. Pairis)  
 Financing supports:  
 PCR Datation grottes ornées, SRA DRAC Occitanie, leading by J. Monney  
 PCR Pigmentotheque, SRA DRAC Auvergne-Rhône-Alpes, leading by E. Chalmin and H. Salomon, 2016-2019  
 Mascara, AAP USMB, leading by JJ Delannoy and E Chalmin