

The socio-economic life in the Tassili n'Ajjer region (Algeria) during the Holocene: A rock art perspective

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INTRODUCTION:

The neolithic revolution, or neolithization, preceded the emergence of civilization and is the phase of human history in which humans started to control their food supply, by transitioning gradually from hunting and gathering to producing their own food (Childe G. 1936: 74). The definition and criteria of neolithization vary from one region to another. This change in the method of food acquisition in the central Sahara is primarily attributed to the drought and the challenging living conditions, which led the inhabitants to seek new solutions and adapt their economic lifestyle (Aumassip G. 1984: 200). In the central Sahara, the Neolithic is characterized by the presence of ceramic and the domestication of animals and plants, along with the use of grindstones and a lithic industry that included polished tools, microliths, blades, and micro-blades (Hugot H.J. 1990: 632, Gallay A. 1986: 18). Rock art plays a crucial role in revealing various practices that would otherwise be challenging to identify in the region due to the lack of excavations and the state of conservation of the archaeological record.

MATERIAL AND METHODS:

1. Study area:

The high plain (or “Tassili”) of N'Ajjer is located in the central Sahara region, which is part of the world's largest hot desert, the African Sahara. The Sahara is characterized by the scarcity of fauna and flora - primarily centred around rivers, high temperatures, and high diurnal temperature variations between days and nights (Casajus D. 2011: 3). Covering an area of 8 million km2, its northern and southern boundaries are defined by the annual precipitation levels, approximately 100mm and 150mm, respectively. The Tassili n'Ajjer high plain is situated between the longitudes of 6° to 12° east and the latitudes of 22° to 27° north. It is located in the southeast of Algeria, sharing borders with Libya, Niger, and Mali, covering an area of 80,000 km2. In 1982, it was designated as a cultural park -of significant cultural and natural value- and inscribed on the UNESCO list (Barry 1991: 57).

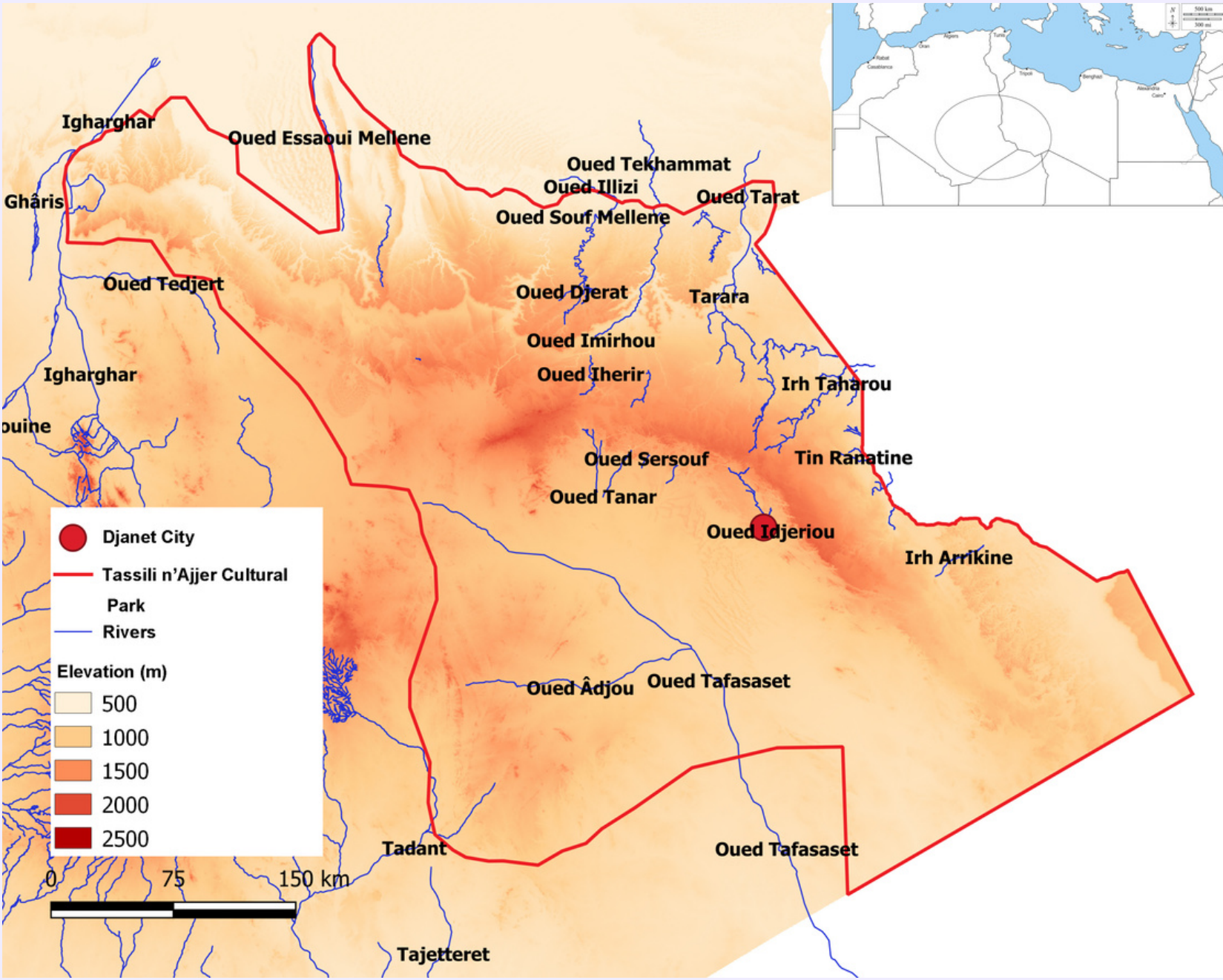


Fig.1: The geographic location of the Tassili n'Ajjer park

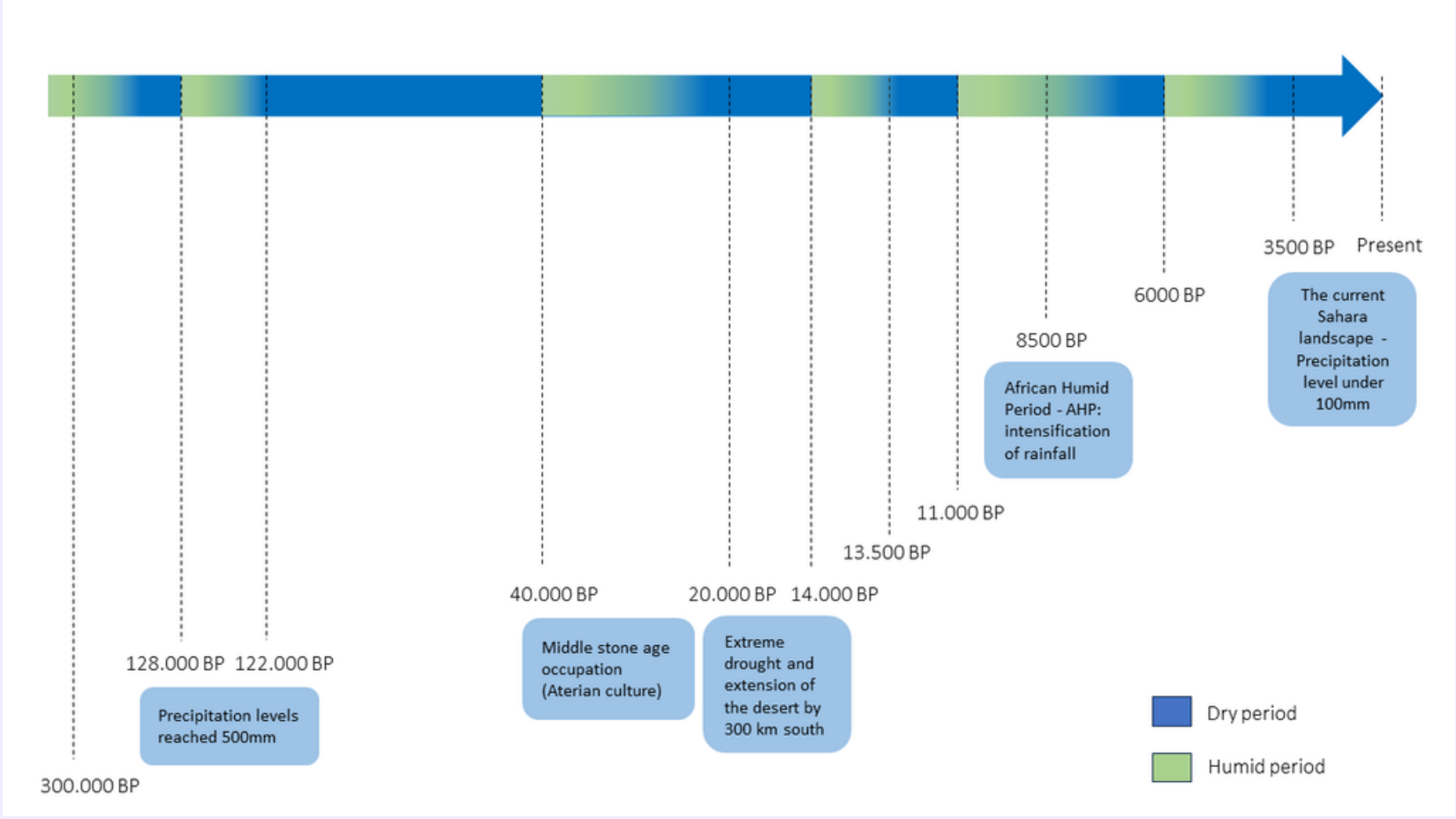


Fig.2: The alternation of humid and dry periods during the Pleistocene and Holocene

2. The economic transition in the Tassili n'Ajjer through the rock art:

2.1. Chronology of the rock art:

- Rock art serves as an important component of the archaeological record, offering insights into human activity in the region. Various research approaches have been employed since its discovery in 1847, including the classification of art into different categories based on the depicted subjects and drawing styles (relative dating), as well as the application of absolute dating techniques to determine the age of pigments or the stratigraphy of rock shelters.
- Pastoral art: The main topic of this art is cattle, and it provides evidence about food-producing groups and their day-to-day activities.

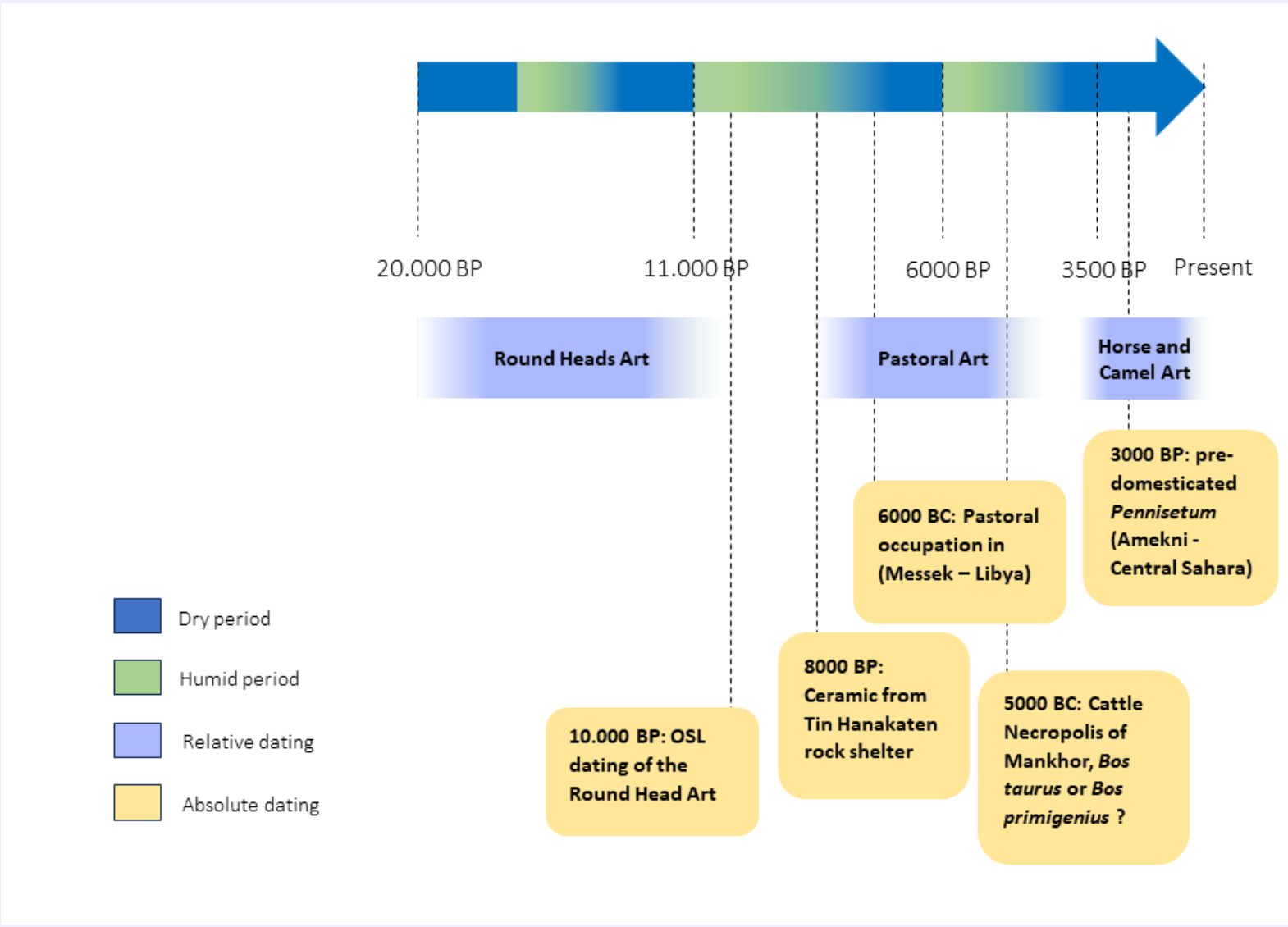


Fig.3: Relative and absolute dating in the Tassili n'Ajjer

2.2. The criteria of the neolithization

Criteria	Socio-Economic value	The archaeological record in the central Sahara	How to identify in the art?
Ceramic	<ul style="list-style-type: none">Conservation and cooking of grains.Collection of seeds: pre-agriculture.	<ul style="list-style-type: none">Absolute dating: 8000 BC in Tin Hanakaten rock shelter	<ul style="list-style-type: none">Shape and size and decorations of the container.Presence of tools associated with ceramic production.
Domestic plants	<ul style="list-style-type: none">Necessitated the use of containers, potentially ceramic, for grain conservation until the next season.Increased group sizes and specialization in activities.	<ul style="list-style-type: none">Pre-domesticated <i>Pennisetum</i> - 3000 BC.Systematic grain collection in Libya between 8200 BC and 6400 BC, including dormant seeds.	<ul style="list-style-type: none">Shape of the domesticated plantPresence of tools associated with agriculture.
Domestic animals	<ul style="list-style-type: none">Control of food supply during the droughtConsumption of meat, blood, milk, and use of wool and skinDogs or other animals might have served additional purposes.	<ul style="list-style-type: none">5000 BC: Cattle Necropolis of Mankhor, <i>Bos taurus</i> or <i>Bos primigenius</i>?Domesticated ovicaprids in northern Algeria (Capeletti)	<ul style="list-style-type: none">Change in behaviour (proximity to humans...)Morphological changes:<ul style="list-style-type: none">o Juvenile traitso Lop earso Spotted coat colorationo Changes in horn size.

RESULTS

Using a sample of 87 rock art images from the pastoral period collected from various sources, we attempted to identify elements representing the neolithization process as described in the criteria outlined in the neolithization table.

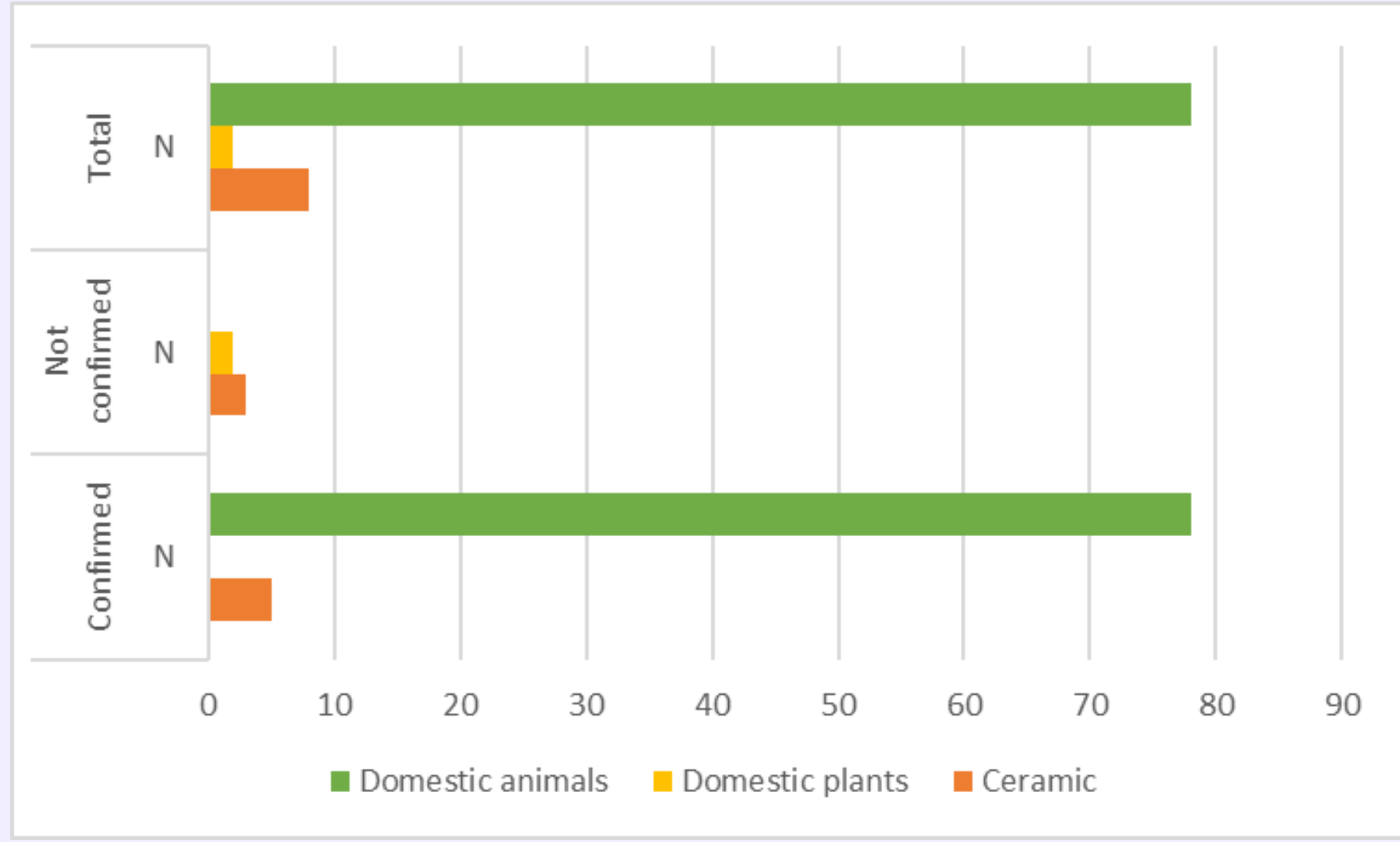


Fig.4: Neolithization Criteria in Rock Art Images from the Pastoral Period

DISCUSSION

- During dry periods, the region experienced the existence of "ecological niches" where higher altitudes allowed for some level of precipitation, enabling human presence even under challenging conditions (Aumassip G. et al. 1994: 22).
- Due to the difficulty of conducting fieldwork in 2021, we compiled a database of 200 rock art photos from various sources. For our analysis, we utilized a sample of 84 photos from different regions that belonged to the pastoral period.
- Our aim was to establish parameters to determine whether the representations in the photos aligned with the neolithization criteria described in the literature.
- In our sample, the depictions of ceramics did not always match those found in the archaeological record, as we encountered various shapes and encountered difficulties in identifying the specific materials used for the containers.
- Our sample did not include any representations of domesticated plants or objects associated with agriculture.
- The primary evidence of animal domestication was found in the rock art, which proves challenging to study in the archaeological record.

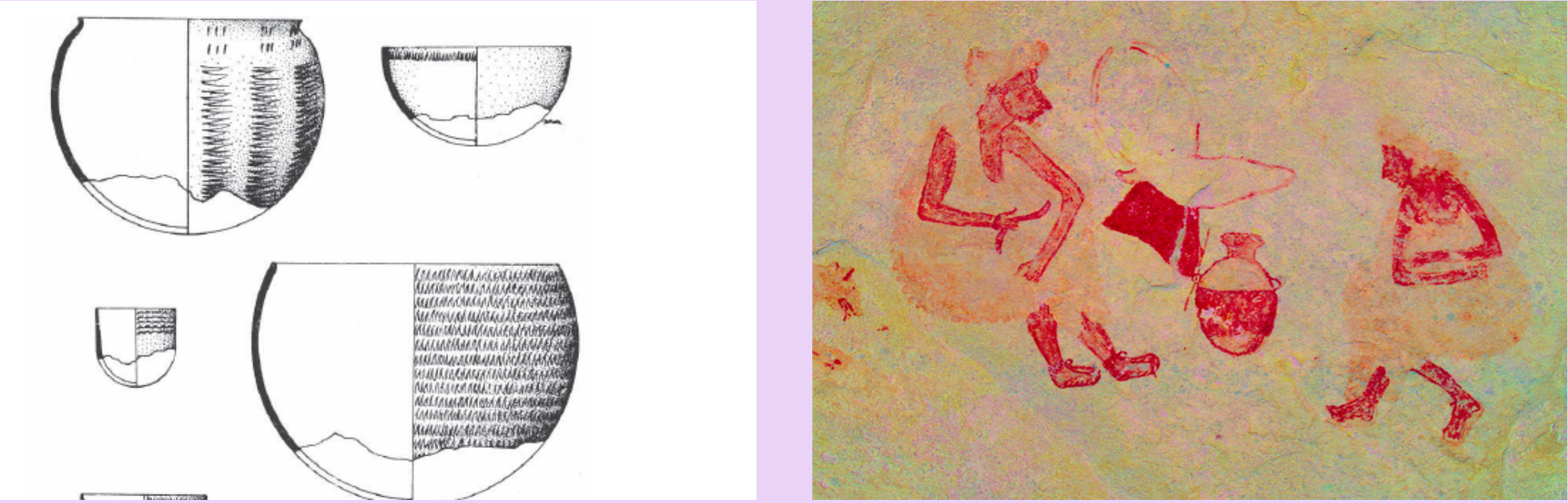


Fig.5: Examples of the shape of ceramic from archaeological records and from the art (Itheren rock shelter)

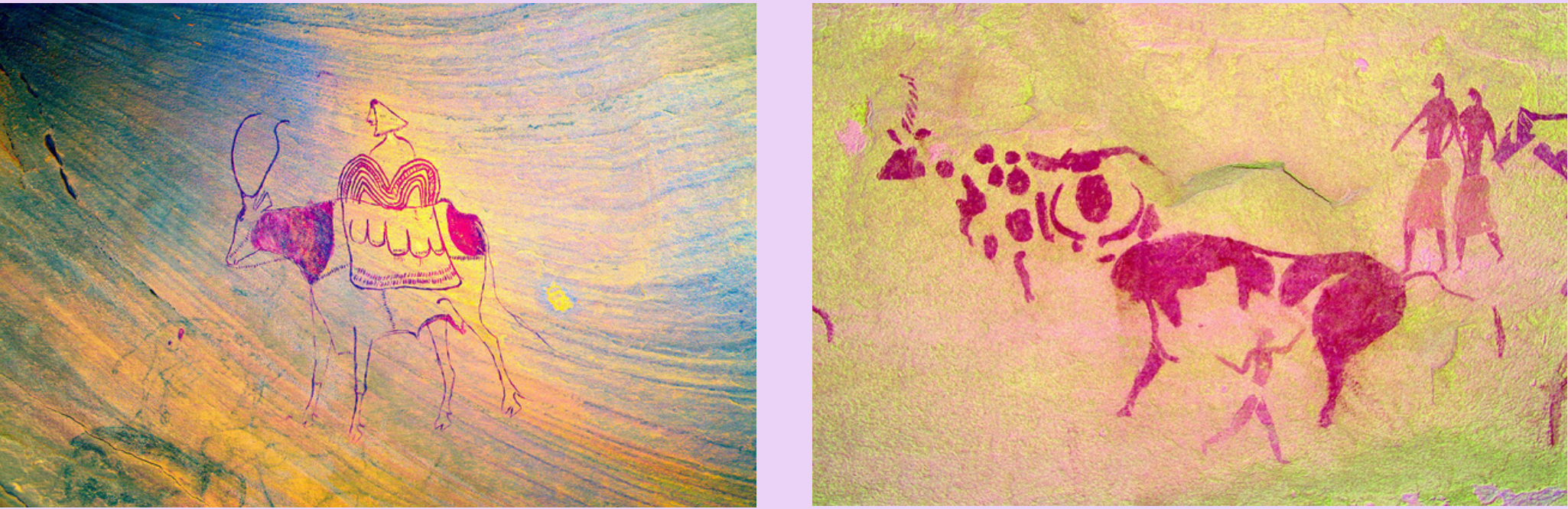


Fig.6: Domesticated cattle. A shelter in Oued Djerat (left) and Jabbaren rock shelter (right)

Acknowledgment: The rock art photos used in this study belong to ©Fliegel Jezerniczky Expeditions ©Jitka Soukopova ©Bernard Fouilleux ©Fondazione Passaré

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