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## Reflections on the Anthropology of Salt

Alfons Fíguls, Joan Aranda, Daniel Arlanzón, Dolors Bonache, Jorge Bonache, Agustín Fuentes, Fidel Grandia, Aitor Henestrosa, Mireia Martínez, Judit Pons, et al.

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2024

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#1

**SALT MINING WITH LITHICS TOOLS:  
A VISION AROUND THE WORLD**

# VS#1

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# Reflections on the Anthropology of Salt

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## Resum

*L'any 2012, el Dr. Marius Alexianu va proposar una nova disciplina anomenada Anthropology of Salt. Han passat dotze anys de la seva proposta i tot havent-se celebrat 4 International Congresses on the Anthropology of Salt, no s'ha concretat el mètode de treball de la nova disciplina. Arran de portar a terme el Sal Cardonensis Project, vàrem reflexionar sobre si és possible o no aquesta nova disciplina. Vàrem arribar a la conclusió que no hi vàrem proposar-la com a un concepte científic i el definim com aquell coneixement fruit de l'addició de les diferents disciplines que tracten la qüestió de la sal per tal de comprendre la seva relació amb la humanitat i/o el coneixement humà. És a dir, des d'una perspectiva relacionada amb l'antropologia i amb major pes de la geologia.*

## Abstract

*In 2012, Dr. Marius Alexianu proposed a new discipline called Anthropology of Salt. Twelve years have passed since his proposal, and despite the celebration of four International Congresses on the Anthropology of Salt, the working method of this new discipline has not been concretized. Following the implementation of the Sal Cardonensis Project, we reflected on the feasibility of this discipline. We concluded that it is not feasible and suggested it as a scientific concept, defining it as knowledge resulting from the integration of various disciplines addressing the issue of salt to comprehend its relationship with humanity and/or human knowledge. In other words, from a perspective related to anthropology, with a greater emphasis on geology.*

Keywords: Anthropology of salt, field of knowledge, Sal Cardonensis Project, salt and scientific concept.

## Introduction

In 2012, Dr. Marius Alexianu proposed a new discipline called the Anthropology of Salt within the

framework of the Second Archeoinvest Symposium: From ethnoarchaeology to the anthropology of salt, held on April 20 and 21 in Iași, Romania (Alexianu,

<sup>1</sup> All those who sign this article are researchers at IREC and participate in the Salt Cardonensis Project. Alfons Figuls (Prehistorian), Joan Aranda (Geologist), Daniel Arlanzón (Historian and Geographer), Dolors Bonache (Economist), Jorge Bonache (Physicist and Engineer), Agustín Fuentes (Historian), Fidel Grandia (Geologist), Aitor Henestrosa (Historian), Mireia Martínez (Art Historian), Judit Pons (Geologist), Ferran Ruz (Historian), Raül Segarra (Classical Studies), Loreto Serena (Philologist), Mercè Vendrell (Biologist), and Olivier Weller (Prehistorian).

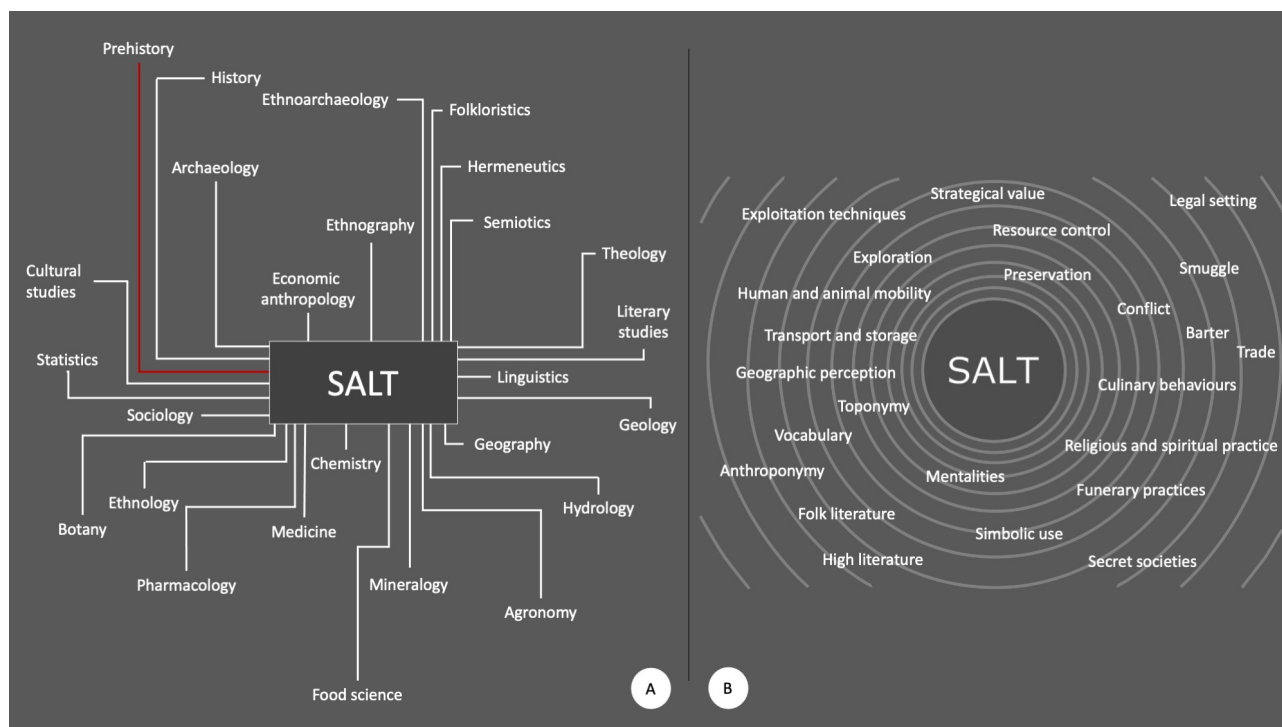


Fig. 1: Diagram by Dr. Marius Alexianu outlining the discipline of salt anthropology (Alexianu, 2015b). We, from IREC, added prehistory as a field to be considered.

2015a). The focus of this discipline is humanity and its relationships with salt.

According to Dr. Alexianu, three factors led to the development of the anthropology of salt:

Numerous research studies conducted as part of two projects on the ethnoarchaeology of salt, *Ethnosol* and *EthnosolRo*, revealed that inhabitants of Romanian villages near salty springs acquired integrated knowledge of various aspects of salt from a young age (Alexianu, 2023a, p. V).

The influence of Gómez Miedes and his book *Commentariorum de sale libri*. Because the whole (salt) surpasses the sum of its parts (different fields studying the topic), emphasizing holism (Alexianu, 2023a and 2023b).

The absence of contemporary books examining all aspects of salt. "I gradually realized that in order to understand the true complexity of the role played by salt in the evolution of human societies everywhere it

would be necessary to revisit the Renaissance model while adapting it to current studies and methodologies. This goal could only be achieved, in my opinion, by studying the anthropology of salt" (Alexianu, 2023a, p. V).

From the outset, Dr. Alexianu emphasized the need to achieve the parameters required for the anthropology of salt to be considered a discipline, predicting that this could only be achieved in the future (speaking of decades) to attain a genuine anthropological discourse on salt, highlighting its necessity to be particularly transdisciplinary (Alexianu, 2015b).

If we analyze each field of knowledge<sup>2</sup> proposed by Dr. Alexianu (2015a, 2015b, 2017, 2018, and 2022) independently, we observe only one convergence—each field studies salt using a specific methodology within its knowledge domain (Fig. 1a and b).

The initiative to bring together all fields of knowledge on salt is ambitious and desirable, but in practice, it

<sup>2</sup> *Archaeology, history, ethnography, ethnoarchaeology, heritage studies, economic anthropology, food sciences, statistics, sociology, geology, mineralogy, geography, hydrology, botany, chemistry, medicine, pharmacology, ethnology, theology, agronomy, symbology, linguistics, folklore studies, cultural studies, literary studies, hermeneutics, legal sciences, etc.* (Alexianu, 2015b).

seems unrealizable. Therefore, based on our experience in the Sal Cardonensis Project<sup>3</sup>, we believe that the anthropology of salt needs to be redefined. This work puts forward a set of reflections resulting from the attempt by the research team of the Salt Cardonensis Project to implement Dr. Alexianu's proposed approach.

We consider ourselves one of the few research groups that have categorized their project as belonging to the anthropology of salt. However, we were initially disoriented in defining and implementing this discipline. Initially, it seemed impossible for us to achieve its concretization, as a diachronic analysis suggested that what we were doing was using history as the backbone of research, with other fields serving as mere auxiliary sciences, deviating from Dr. Alexianu's initial spirit.

The feeling we had was that we were working without a sense of direction. We were investing a significant amount of time and effort in constructing and dressing a work methodology that no one had applied

because the procedures for this research had not been established.

Although we attempted to involve our colleagues in the new discipline, we did not succeed in our purpose. Perhaps they prefer more monodisciplinary research, which has a well-established work methodology. We believe that part of the problem lies in the oxymoron of being in the same conference room, for example, in Iasi in 2015, discussing history<sup>4</sup>, archaeology<sup>5</sup>, tourism<sup>6</sup>, ethnoarchaeology-mythology<sup>7</sup>, or aesthetics<sup>8</sup>, and yet missing geologists and mining engineers to discuss the "sapientia" of salt: origins, formation, and more current extraction systems.

We want to make it clear that our intention is not to undermine anything; on the contrary, our proposal is constructive and aimed at consolidation, without intending to offend anyone, and with the desire to keep the anthropology of salt alive, which we believe is necessary to classify research related to salt and humanity.

<sup>3</sup> *The project's name is the result of combining the two preeminent lingua francas: Latin (past) and English (present). This project aims to highlight the role that cardonina halite played throughout history and simultaneously give it a social purpose. The research results must be shared with the public because research and its outcomes should not be a monopoly of researchers.*

<sup>4</sup> *Very interesting was Wes Forsythe's presentation on salt production in Ireland, an understudied area where salt production was essential for the Irish economy in the late medieval and post-medieval periods (Alexianu, 2015b).*

<sup>5</sup> *For instance, we can highlight the work presented by Valeriu Cavruc on evidence of salt production in the Bronze Age in Romania. Special attention to the Băile Figa site in northeast Transylvania or the work of Blas Castellón on the central-southern zone of Mexico, where underground water currents cross ancient marine deposits, generating natural brine that emerges at various points in the current mountainous landscape. The raw materials for salt production are these sources of salty water, and their presence has been the subject of knowledge and control for at least 2500 years (Alexianu, 2015b).*

<sup>6</sup> *Highlighting Katia Hueso's proposal on the most effective way to preserve salt heritage through artisanal salt production, followed by the creation of products and tourist services linked to salt and its associated values (Alexianu, 2015b).*

<sup>7</sup> *Very interesting was the ethnoanthropological and mythological contribution of the Salt Mountain, located in the Torkhilog pocket, Davst soum, Uvs province, a remote western part of Mongolia. It was said to have originated from an old man and a woman who stored their treasures with salt in bags underground while waiting for their son. The salt melted due to the sun, rain, and humidity, turning into a salt hill. Another example is the myth of the salt lake in the eastern province of Dornod, which originated from the actions of To wang or Togtokhtör, a wise man who brought salt from China and planted it in an empty place (Alexianu, 2015b).*

<sup>8</sup> *In contrast, Ștefana Andrei's presentation on Salina Center Iasi was merely a promotion of her beauty center and sharply contrasted with the more academic aspects addressed in the First International Congress on the Anthropology of Salt. Therefore, it is not surprising that when trying to convince colleagues to participate in salt anthropology, they may be skeptical because they do not see how it can be considered a discipline when there is no common methodological (theoretical and practical) framework for all those studying sodium chloride (Alexianu, 2015b).*



Two volumes<sup>9</sup> have been published (Alexianu et al., 2023; Plata Montero, 2022) out of the four International Congress on the Anthropology of Salt developed so far (with the proceedings of Los Cabos and Baton Rouge still pending), and it would be interesting to ascertain if everyone agrees with the idea despite their participation, or if there is consensus to open a debate. We are convinced that it's necessary to initiate a discussion without aiming to generate any controversy because twelve years after the conception of Anthropology of Salt, there is still no theoretical framework for all those working on the topic. We believe it's essential to discuss this among all those involved in the world of salt, and we want this article to serve as the starting point. It is evident that there is a problem because there is no methodological framework; it's not that we want to give a solution to something that is not a problem. We are attempting to begin constructing a solid infrastructure to give even more prominence to Anthropology of Salt, but we need to do it with everyone who works in the world of salt, as we have stated before.

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## The Discussion

Initially, we attempted to meticulously apply Dr. Marius Alexianu's proposal (2015a and 2015b) but were unsuccessful. We were unable to find the connecting links. The first obstacle we encountered was the fact that the various disciplines mentioned by Dr. Alexianu are highly heterogeneous, with guidelines that cannot be universally applied to create a genuine discipline. For instance, unifying the methodology applied in geology with that of a classical text study is impossible. We could not find a way to systematize multiple disciplines from very different fields into a single methodology.

Next, we considered simplifying it by domains, fitting all the pieces together at the end like a puzzle, but this approach did not convince us. It was too complex and not operationally viable (Fig. 2).

We then raised the following question: Is the new discipline a utopia? This question has been a subject of debate and reflection among us.

Each of us, as co-authors of this article, has a different specialty that complements the shortcomings of each member, and the sum of our knowledge provides a much more comprehensive and precise view of the salt issue. In other words, following Descartes' spirit in the Discourse on the Method, we can advance more or less in knowledge of nature individually. Still, if we combine other research on the subject, we obtain a holistic result. We also recognize that there is much more to be done to complete this global knowledge.

With this, we do not betray Dr. Alexianu's initial idea. From the proposal of transdisciplinarity made by Dr. Alexianu (2015a), where the process by which the boundaries of individual disciplines transcend to address problems from multiple perspectives with a view to generating emergent knowledge from a perspective of Aristotelian holism (Alexianu, 2015a, 2017, 2018, 2022). In the field of anthropology, holism gives primacy to society over the individual, considering it more than the sum of its individual parts.

Thus, we began to build (the infrastructure) and dress (the superstructure) the concept to obtain as much information as possible. This approach should provide us with a diachronic and synchronic view of the Salt Valley of Cardona, applicable to any other project. Therefore, we debated what needed to be done:

The first issue was to determine which disciplines would or would not be part of the study of salt and its human relationship. Should it be closed to certain disciplines, those we deemed appropriate, or open according to the needs of each specific work to enrich the research further? We believe that any field of knowledge related to salt is necessary for a broader and more accurate understanding of salt, both as human knowledge and in the context of human communities. We think that a closed system would limit our interaction with other fields of knowledge, deviating from Dr. Alexianu's wisely proposed idea of transversality.

The second question posed to each researcher who signed the article was how to approach the study of

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<sup>9</sup> A. Plata Montero, ed. 2022, *Seven millennia of salting. III Congreso internacional de Antropología de la sal / 3rd International Congress on the Anthropology of s. Añana: Añanako Gatz Harana Fundazioa Fundación Valle Salado de Añana*, M. Alexianu, R. Curcă, O. Weller and A. Dumas, ed. 2023, *Mirrors of Salt: Proceedings of the First International Congress on the Anthropology of Salt 20-24 August 2015, 'Al. I. Cuza' University. Iasi: Archaeopress Publishing Ltd*,

the Salt Valley within their field of knowledge from the perspective that anthropology is a discipline that studies the human being integrally, as Dr. Alexianu states, from a holistic aspiration (Alexianu, 2017, p. 117).

There is a tendency to generate axioms with sensitive archaeological evidence, while there is a tendency to question and/or doubt intelligible archaeological data. Obviously, a significant portion of the data obtained from the exploitation of Cardona salt

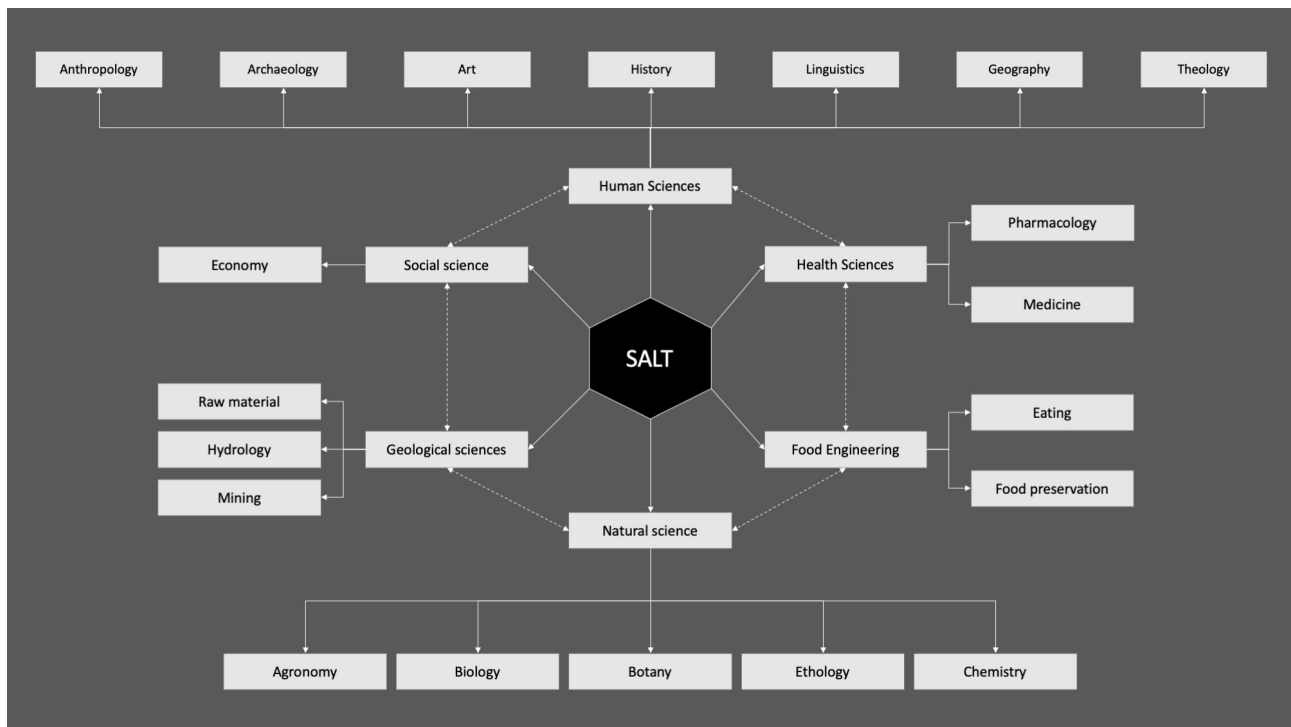


Fig. 2: Attempt to simplify Dr. Marius Alexianu's proposal, but attempting to interrelate everything causes considerable complexity, making it challenging to carry out. Therefore, we discarded it.

The third issue we debated was that any diachronic research (if understood as the evolution of events) or synchronic research (if understood as relative to events occurring simultaneously) is fundamentally based on history or, in any case, geology.

The fourth question debated was our refusal to accept that certain areas of knowledge, such as economics, toponymy, classical written sources, become mere auxiliary tools of history. Therefore, we propose that events can be analyzed by breaking them down into all their parts to understand these areas (economic, societal, political, religious, ethnographic...) and give them an entity within the Anthropology of Salt.

The fifth question is the challenge of breaking prejudices that have traditionally existed at the archaeological level. K. C. Chang defines archaeology as the study of the past through the observation of its remains (Chang, 1983, p. 11). But what happens when one of the remains, a solid substance, turns into a solution and is not tangible to the human eye?

belongs to the category that Plato calls intelligible. Understanding prehistoric Cardona mining does not depend on sensation but on the intellectual effort that leads us to seek it, and this applies to any archaeological research on salt.

The knowledge proposed by Dr. Marius Alexianu is based on epistemic logic, spirituality, and pragmatism to provide a truly holistic view (Alexianu, 2017, p. 117). This was a subject of debate because we considered that the object itself, salt, was displaced to a secondary position. For us, it is essential to give much more importance to the knowledge of salt itself as a natural element and to understand its origins, which have conditioned human settlements throughout history and society itself. In other words, the starting point for any research related to halite must be a geological study to locate the origin of this salt and the evolution it may have had in relation to humanity.

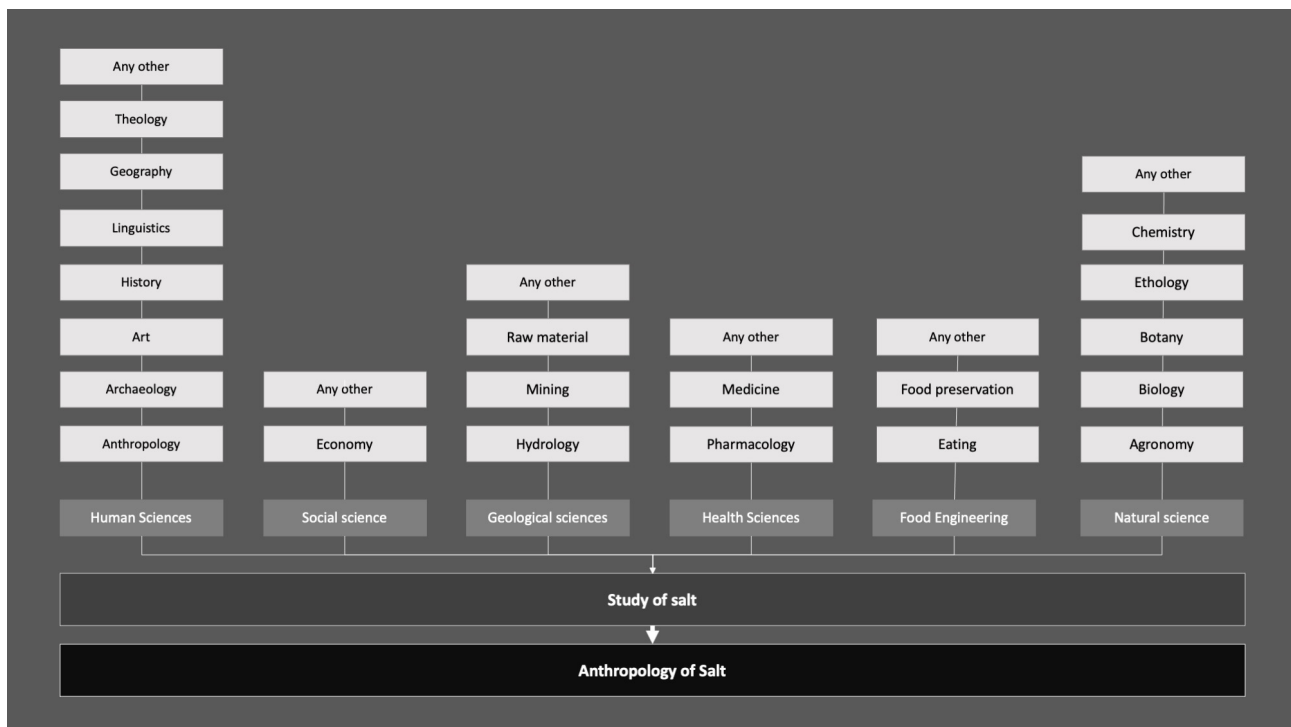


Fig. 3: Illustration of the scientific concept of salt anthropology. Fields of study can be added, representing the accumulation of knowledge from various disciplines addressing the issue of salt to understand its relationship with humanity and/or human knowledge. A perspective related to anthropology and geology.

## Conclusions

Each of us is familiar with the methodology of the discipline they have learned. In this sense, we have numerous references, such as Colin Renfrew and Paul Bahn with their "Archaeology: Theories, Methods, and Practice" (2012), Jean-Claude Miskovsky with "Géologie de la préhistoire: méthodes, techniques, Applications" (2002), E. H. Carr with "What Is History?" (1961), Pompeu Fabra and the "Gramàtica catalana" (1995), Greg Mankiw with "Principles of Economics" (2018), Oriol de Bolòs, Josep Vigo, Ramon M. Masalles, Josep M. Ninot with "Flora manual dels Països Catalans" (2005), Alberto Bernabé Pajares and Felipe Hernández with "Manual de crítica textual y edición de textos griegos" (2010), Arthur N. Strahler with "Physical geography" (1951), Ernst Gombrich with "Ideals and Idols. Essays on Values in History and Art" (1979), Martin P. A. Jackson and Michael R. Hudec with "Salt Tectonics. Principles and Practice" (2017), Jerry B. Marion and Stephen T. Thornton with "Classical Dynamics of Particles and Systems" (1995), Josep M. Mata i Perelló and Joaquim Sanz i Balagué with "Guia d'identificació de minerals (Països Catalans i d'altres)" (2008), and Bertin Jacques with "Sémiologie graphique" (1998). The aforementioned are some of the reference manuals in each discipline of the researchers who are

part of the Salt Cardonenis Project. However, there is currently no manual for the discipline of Salt Anthropology. Why? From our modest opinion, Anthropology of Salt is currently an ideal or a theoretical project since, from an epistemological point of view, it does not fit the criteria of a scientific discipline. If we understand a discipline as an organized and methodical way of studying a specific branch of knowledge, we cannot consider Anthropology of Salt a discipline because there is no stipulated working method. Instead, there is a very good idea with good intentions that does not materialize despite four International Congresses on the Anthropology of Salt held since the proposal in Iași (Romania) in 2015 (Iasi, Los Cabos, Añana, and Baton Rouge). There is no methodology that encompasses all knowledge fields about salt proposed by Dr. Alexianu: archaeology, history, ethnography, ethnoarchaeology, heritage studies, economic anthropology, food sciences, statistics, sociology, geology, mineralogy, geography, hydrology, botany, chemistry, medicine, pharmacology, ethology, theology, agronomy, symbology, linguistics, folklore studies, cultural studies, literary studies, hermeneutics, legal sciences, etc. (Alexianu, 2015b).

So, what is Anthropology of Salt? We believe it can be considered as a scientific concept. Based on this idea,

we have developed a definition respecting the spirit of Dr. Alexianu's initial idea without deviating from his proposal. We focused on his definition (theory) and its practical application in the Salt Cardonensis Project (praxis) (Fig. 3). We implemented it, for example, in the exhibition: "La Vall Salina. Un espai singular a través dels seus noms," where toponymy, history, geology, and modern mining are related, or in Mercè Vendrell's work on halophyte plants found in a very sensitive space, under significant pressure from mining activities, and their presence is diminishing due to anthropogenic activity in a saline environment (Vendrell, 2022).

Why do we emphasize the importance of geology? For us, it is fundamental to have a thorough understanding of the mineral we are studying and/or to know the reasons for the emergence of saline water and/or to comprehend saline tectonics (evaporite deposition and flow, salt structures, salt systems, and practical applications), that is, to understand how and why salt structures evolve and the resulting forms (Jackson and Hudec, 2017). We cannot comprehend the anthropology of salt without the relevant geological knowledge because only then can we understand the relationship between humans and the environment. Regardless of whether salt exploitation is mechanical, physical, or chemical, it is necessary in all cases.

Similarly, Dr. Zheng Miamping proposes "salinology" for the study of saline lakes. He focuses on understanding the chemistry, physics, and biology of these ecosystems. Dr. Miamping's main objective is to explore the unique characteristics of saline lakes, providing a scientific basis for their sustainable management and for the intelligent development of sectors such as agriculture, mining, and tourism related to these environments (Mianping, 2001). In our case, applied to the relationship of salt with humanity (Fig. 3).

We believe that from this point of view, we do not betray Dr. Alexianu's initial spirit, and research can be both diachronic and synchronic according to the study's needs.

Eager to delve into the intelligible world, we find Dr. Marius Alexianu's idea of including a wide range of knowledge areas in the study of sodium chloride to be very appropriate. This could lead us back to the concept of the "homo universalis" or "uomo universale," but this is not the ultimate goal; it is not about returning to concepts like truth but rather

focusing on knowledge. For us, transdisciplinarity is crucial, meaning generating emergent knowledge. Knowledge has brought us to where we are and propels us forward as a society. Nevertheless, we do not want to reach a situation where the more specialized we are, the less global vision we possess. Within each specialization, we believe it is essential to have knowledge from other fields, i.e., a much broader view of the surrounding world. Following this idea, from the Salt Cardonensis Project, we advocate maintaining fluid communication between scientific communities, starting from the notion that heritage is not exclusive to each academic field. This is how we will arrive at the discipline of Salt Anthropology. Knowledge is not the exclusive heritage of each academic field, and this should be the essence of Salt Anthropology. As mentioned earlier, each of us has a unique specialization that collaborates in mitigating others' inherent deficiencies, and the convergence of each field contributes to obtaining a substantially broader and more accurate understanding in the field of salt-related topics.

This leads us to reflect on the first humans using salt. They had to know what it was, its purpose, they had to experiment, reason, and transmit their knowledge to find and exploit it. This means they had to build galleries to reach salt veins (e.g., Hallstatt) or be good physico-chemists to obtain solid salt from a solution (e.g., briquetage). Why did they start using salt to season food? How did our ancestors know that salt preserves animal proteins? Or, why and since when has salt been used in religious rituals? These are many questions we can ask, and the answer can always be found in transdisciplinarity.

We believe that studying who exploited salt, how it was exploited, when it was exploited, who benefited from it, and its uses is not enough. It is also essential to understand the geological phenomena that have generated the presence of this salt on the surface or in the Earth's crust to better comprehend human capabilities to obtain it, whether through mechanical, physical, or chemical processes. Therefore, geology must be one of the pillars of Salt Anthropology.

Thus, the concept of Salt Anthropology cannot be a closed and rigid concept. It must be open to facilitate an exchange with all knowledge areas related to the study element, salt. These exchanges will provide information of varying degrees, some more general and others more specific.

We are sure that not everyone will agree with what we propose because, for some, Salt Anthropology may be considered a label (an identifier that is part of a set of data related to salt) or a category (knowledge around salt) to differentiate it from other studies. Or even for those who prefer to continue their monodisciplinary studies and want nothing to do with Salt Anthropology or do not even consider its existence.

For all those who are linked or interested in Salt Anthropology, projects must start considering it as such, adopting it, improving it, generating synergies, and knowledge networks among research groups in the disciplines that are part of it. This is the only way to ensure the development and improvement of the concept.

We understand that our work is systematic and conducted with the aim of increasing or enhancing knowledge about Cardona salt in relation to humans in all its aspects, from its use as a necessary mineral for daily life to cultural aspects. This same model can be applied to any research project related to salt.

We are clear that, despite attempting a masterful proposal, there will be defects that need improvement. From our perspective, this definition is the starting point for a methodological and conceptual debate to which we would like everyone to contribute, both those in favor and those with doubts because the purpose of Salt Anthropology is the understanding of humanity regarding this mineral, forming part of humanistic and Earth sciences.

As Descartes pointed out, it is not enough to have a good sense of things; it must be applied correctly.

*Ou bien on peut les comparer aux chefs d'armée, dont les forces ont coutume de croître à proportion de leurs victoires, et qui ont besoin de plus de conduite pour se maintenir après la perte d'une bataille, qu'ils n'ont, après l'avoir gagnée, à prendre des villes et des provinces: car c'est véritablement donner des batailles que de tâcher à vaincre toutes les difficultés et les erreurs qui nous empêchent de parvenir à la connaissance de la vérité, et c'est en perdre une que de recevoir quelque fausse opinion touchant une matière un peu générale et importante; il faut après beaucoup plus d'adresse pour se remettre au même état qu'on était auparavant, qu'il ne faut à faire de grands progrès lorsqu'on a déjà des principes qui sont assurés (Descartes 1637).*

We hope that in future congresses related to Salt Anthropology, there will be concrete methodological contributions that help grow this good idea expressed by Dr. Alexianu in 2012.

We hope that our contribution sets a path to follow and further strengthens Salt Anthropology because, as Dr. Alexianu states, salt is the mineral that has most conditioned human life, from material aspects to spiritual questions and everyday attitudes (Alexianu, 2015b).

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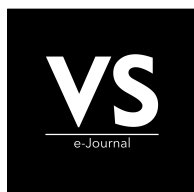
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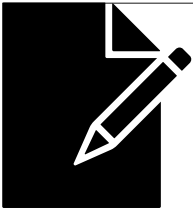
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