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Who, Why, When, and Where From? The Peopling of the Canary Islands and the Challenges of Archaeometry

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Archaeologists in the Canary Islands have gathered substantial quantitative data from radiocarbon measurements and aDNA analyses. While undeniably helpful and necessary for apprehending past human activity, their interpretation, based on theories underpinning models developed for island chains, has lagged, leaving a gap in our understanding of processes of occupation and social network systems. The decontextualized nature of the archaeological landscape of the Canaries and a lack of consensus about proper radiocarbon methodologies are some of the factors contributing to heated scholarly debate. Here, for the Canary Islands, the author reviews the current literature on aDNA and discusses settlement theories, the chronological evidence used for occupation models, and how such perspectives align with current thinking on island colonization.

Keywords: Canary Islands, island archaeology, theory, palaeogenetics, radiocarbon dating, human settlement

Introduction: The Canaries and Aboriginal Origins

Population origins and the development of insular cultures in the Canary Islands present archaeology with complex questions. Various proposals regarding the initial human occupation of this region suggest a broad timeframe spanning from *c.* 1000 BC to AD 300. Palaeogenetic evidence, discussed below, hints at the influence of at least two major migratory events led by North African populations. Analysis of ancient DNA (aDNA) from Canary aboriginals reveals a genetic mosaic with contributions from North African, sub-Saharan, and southern European haplogroups. However, despite archaeological advances, fundamental questions common to theory of island archaeologies, such as the 'who, when, where from, and why' (Napolitano et al., 2021: 15) continue to challenge scholars in the context of the Canary Islands. Obstacles arise from the highly disturbed state of the Canarian aboriginal material record and the subtle fragmentation in collaborative approaches.

European colonization began in the fifteenth century AD, followed by 200 years of looting motivated by antiquarianism causing the loss of innumerable artefacts and mortuary remains (Álvarez Sosa & Morfini, 2014; Ortiz-García, 2016). Since the 1950s, overdevelopment to satisfy tourist demands and the consequent destruction of archaeological sites (Mazzola de Los Ríos, 2016) have left many unfillable gaps.

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Furthermore, the politicization of archaeology to legitimize nationalist movements, such as those led by the Francoist regime or the 1980s Canarian terrorist group known as the Movement for the Independence and Autonomy of the Canarian Archipelago (MPAIAC), have tainted academic and public discourse (Farrujia de la Rosa & del Arco-Aguilar, 2004).

Currently, two theoretical perspectives, labelled here the Mediterraneanist versus North Africanist stance, dominate discussions on the peopling of the Canary Islands. Both acknowledge the importance of the Maghreb region as an ancestral place of origin for tribes of the Canary Islands, but the Mediterraneanists differ from the North Africanists in hypotheses related to the cultural and chronological origin of the first settlers (Figure 1).

Mediterraneanists posit that the Canary archipelago was settled during the Late Bronze Age to Iron Age transition by palaeo-Berber populations of Phoenico-Punic affinity (Atoche-Peña, 2002). Following a stepping-stone model (del-Arco-Aguilar, 2021), Phoenician seafarers are thought to have moved westward from the easternmost islands, establishing economic outposts along the north-western African coasts for resource exploitation (Bueno-Ramírez et al., 1995; González Antón et al., 1998; González Antón & del Arco Aguilar, 2009). Romanized North African peoples subsequently maintained these commercial outposts (Mederos Martín & Escribano Cobo, 2002), possibly in contact with earlier Phoenico-Punic (and/or) palaeo-Berber islanders. In Lanzarote, Roman material

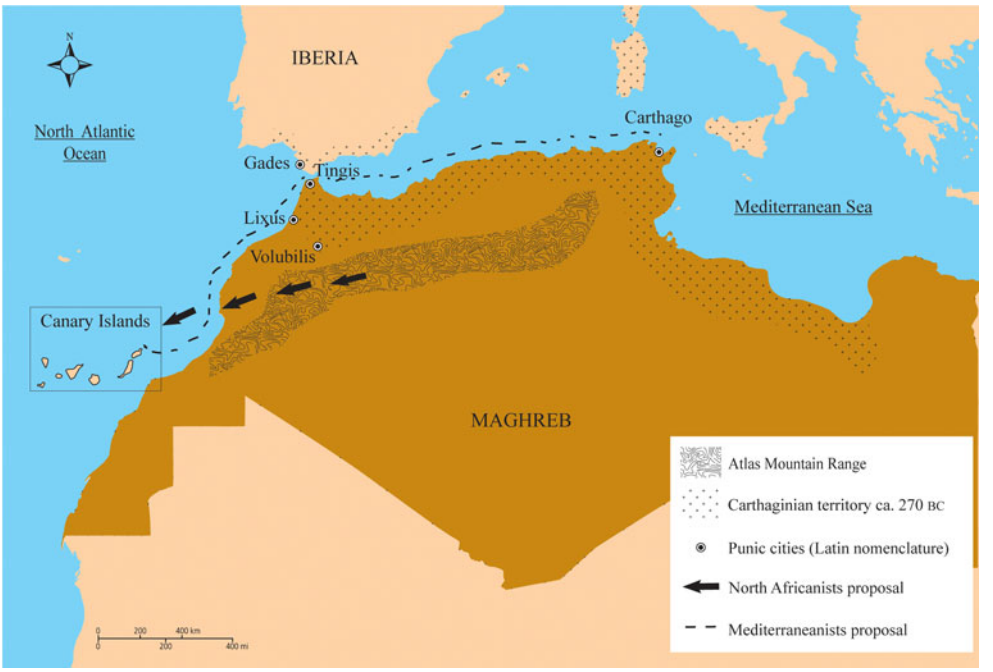

Figure 1. *Location of the Canary Islands and surrounding territories within the temporal context of c. 270 BC. Major Punic—later Roman—urban centres are marked with their Latin names. Given our lack of knowledge on the exact routes that ancient settlers used to reach the archipelago, the paths drawn are not intended to represent literal routes proposed by other authors; instead, they are provided as a guide to illustrate differences in peopling origins within the Maghreb region.*

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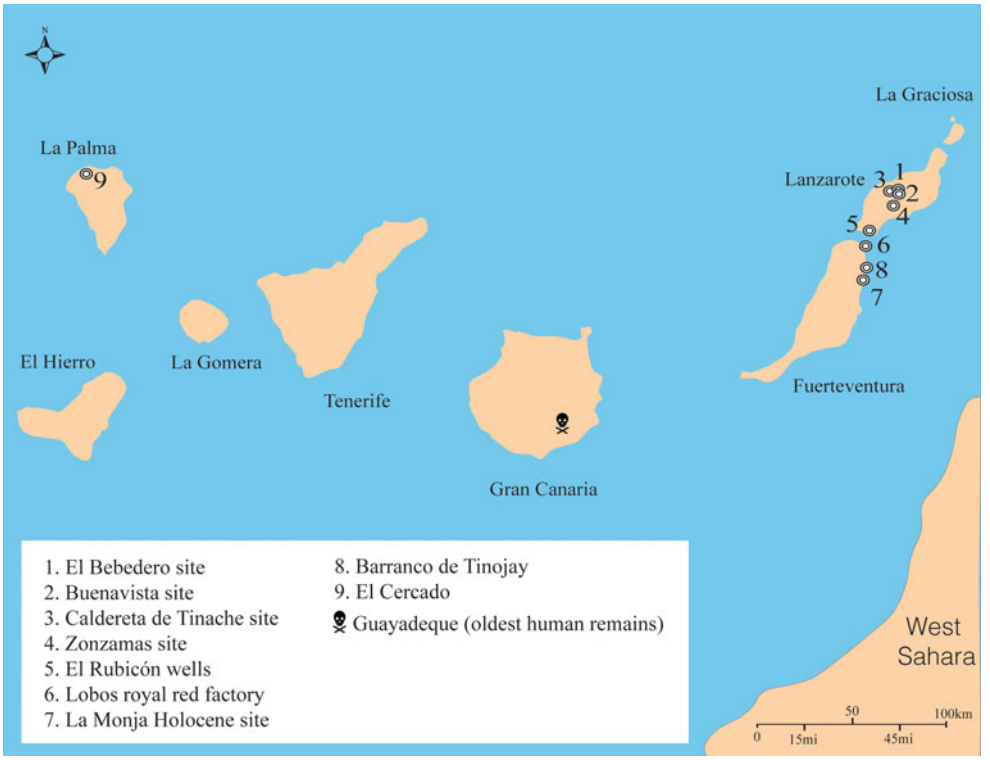

Figure 2. *The Canary Islands with sites mentioned in the text noted.*

culture has been found alongside native artefacts at El Bebedero, Caldereta de Tinache, and Buenavista (Atoche-Peña, 2011) (Figure 2). Recent discoveries, including the Lobos royal red factory (del-Arco-Aguilar et al., 2016), confirm the Roman presence in the Canary Islands (Blázquez, 1977). Pliny the Elder's *Historia Naturalis* additionally describes the profiteering character of Roman incursions (Santana Santana, 2002).

North Africanists propose that the peopling of the Canary Islands was led by autochthonous Amazigh groups, the ancestors of pastoralist Berbers from present-day Morocco, Tunisia, and Algeria (Navarro Mederos, 1997; Tejera Gaspar et al., 2006; Fregel et al., 2019). This approach encompasses various peopling models with differing timelines. Some scholars attribute the relocation of unskilled seafaring Berber tribes to the Romans (Tejera Gaspar et al., 2006; Jiménez González, 2013). Others interpret rock art and linguistics as evidence of initial settlement around 500 BC, first by an 'Archaic Amazigh' group followed by a 'Romanized Amazigh' migration (Farrujia de la Rosa et al., 2009). Another perspective, using human skeletal remains from funerary contexts, suggests a multiple-wave settlement process starting around AD 250, with a second migration around AD 600 (Alberto-Barroso et al., 2020, 2021). Currently, no human remains dating to before *c.* AD 250 have been found (Figure 2).

Issues regarding radiocarbon dates ensure that the North Africanists and Mediterraneanists continue to disagree (Velasco-Vázquez et al., 2020; Atoche-Peña & del-Arco-Aguilar, 2023). Additionally, there has been a tendency to

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underutilize indirect evidence from palaeoecology and palaeostratigraphic studies that suggest a human presence in the Canaries during the mid- to late Holocene (Meco et al., 2018; Ravazzi et al., 2021). A lack of archaeological findings suggesting inter-insular communication obscures knowledge on the ancient seafaring abilities of Canary tribes. Finally, the casual use of words like 'exploration', 'utilization', and 'settlement' or 'colonization' confuses discourses of settlement models in Canarian archaeology. These issues have fuelled debate whether substrate populations arrived independently or were brought in.

Island Settlement and Archaeological Theory

The literature on island archaeology regarding human insular settlement is vast, drawing on many influences (Sahlins, 1955; Broodbank, 2000; Erlandson & Fitzpatrick, 2006; Rainbird, 2007; Dawson, 2014). Biogeography is seen as the foundation for theory on island archaeology (Evans, 1973) and it emphasized the ecological constraints and origins of biological diversity within insular environments (MacArthur & Wilson, 1967). Human biogeography put special attention to size, distribution, population structure, and interactivity among island communities (Terrell, 1976). In Mediterranean landscapes, Cherry (1981) defied biological determinism by arguing that human island occupation was a nuanced sociocultural process. Then, the term 'islandscapes' was introduced to underline the human element in island lifestyles and landscape awareness (Broodbank, 2000). The dichotomy between isolation and interaction has been largely discussed (Terrell et al., 2001; Fitzpatrick & Anderson, 2008), stressing that island communities should be studied with other geographic systems (Terrell, 2020; Dawson et al., 2023).

Deciphering the peopling of islands has relied on multiple settlement models. Initially, archaeological theories of insular occupation were grounded in comparative ethnology, with diffusionism prominent in the early twentieth century. As the discipline transitioned towards multidisciplinarity, holistic models began to integrate anthropology's four-field approach, which combines linguistics, archaeology, physical, and cultural anthropology (Patrick, 2010). Multiple factors may have influenced human migration. Environmental approaches, considering past landscape changes, elucidate how the Pleistocene sea level drop may have driven the peopling of Island Southeast Asia for example (O'Connor & Hiscock, 2018). Ideological processes may also have prompted human migration to new regions (Napolitano et al., 2021). Observed among Polynesian island tribes, the practice of primogeniture restricted non-firstborn offspring from inheriting local land, thus potentially facilitating the ancient settlement of new landscapes (Bellwood, 1996). Furthermore, the study of seafaring technology has been key in understanding settlement narratives.

Human Settlement Models for the Canary Islands

In using the categories by Guerrero Ayuso (2001) to discuss the phases of human settlement in the Canary Islands, I emphasize the differences between discovery or exploration, utilization, and settlement or colonization. Exploratory activities encompass purposeful, planned missions, followed by utilization, defined as 'many, tentative, impermanent, short-distance reciprocal movements' (Cherry, 1981: 60), preceding stable settlements. Archaeologists recognize the complexity of finding material culture and human remains linked to early exploration

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(Dawson, 2004). In the Canaries, coastal landscape alterations due to tourism-related development projects (Mazzola de Los Ríos, 2016) have hindered the investigation of sites where discovery activities may have occurred. Mediterraneanists argue that evidence of ancient exploration resides in ancient rock art. The petroglyphs of Barranco de Tinojay, Fuerteventura (Amezcua, 1995), and in El Cercado, La Palma (Mederos Martín & Escribano Cobo, 1997) (Figure 2), suggest depictions of Phoenician ships (González Antón et al., 1998). Ancient texts also provide evidence of pre-Hellenic seafaring expeditions to the Canaries. Accounts such as the fourth-century BC Periplus of Pseudo-Scylax (Shipley, 2020), Pharaoh Necho II's expedition to Africa around 600 BC, the voyages of the Greek geographer Hecataeus of Miletus (*c.* 550–476 BC), and the fifth-century BC Carthaginian Hanno the Navigator together suggest an exploratory phase during the Iron Age preceding settlement in the Canary Islands (Santana Santana, 2002).

The possibility of exploratory arrivals evolving into utilization during the Bronze Age aligns with the long history of *Homo sapiens*' oceanic navigation (Westaway, 2019). Considering the known Phoenician presence on African Atlantic coasts (Stieglitz, 1984), a Phoenico-Punic arrival to the Canaries during the Late Bronze Age (González Antón & del Arco Aguilar, 2007) does not oppose additional small-scale arrivals of north-western African herders. These groups may have ventured onto the seas for various reasons, such as escaping demographic or environmental pressures (Onrubia Pintado, 2001). During a stage of frequent visitation, the first settlers would have begun the process of landscape learning via cultural adaptations (Dawson, 2014) leading towards establishment of permanent communities and potential colonization of natural resources. Insular settlement stages may, however, not be linear, resulting in multiple settlement attempts by different people (Guerrero Ayuso, 2001). Consequently, abandonment becomes a factor (Dawson, 2010), introducing complexity into the study of island peopling. According to Castilian chronicles written between the fifteenth and seventeen centuries AD, an ancient Canarian provenance myth attributes their origin to an abandonment by seafarers (Jiménez Gómez, 2003). Mediterraneanists hypothesize abandonment as part of the fall of the Carthaginians post Punic Wars, leaving a reduced population in the islands or complete desertion until the arrival of the Romans. Upon the fall of the Roman Empire, another major abandonment may have occurred (Atoche-Peña, 2013).

Distinguishing between visitation and colonization is necessary to understanding the process involved in landscape exploitation. However, the often-limited archaeological material from these settlement stages presents a challenge (Broodbank, 1999; Guerrero Ayuso, 2001). In the Canary Islands, osteological evidence from exploration and/or utilization periods is scarce—or non-existent—compared to the extensive skeletal record found in permanent settlements and/or colonization contexts. Site preservation is also a problem when attempting to identify peopling stages based on architectural typologies. Aboriginal architecture in the Canaries is characterized by freestanding stone walls and the construction of artificial caves, while natural cavities were often used for burials (Rodríguez-Martín & Martín-Oval, 2009; Alberto-Barroso et al., 2016). The repurposing of early settlements by historical inhabitants and local herders further complicates stratigraphic analyses. Yet, indirect clues may be found through palaeoecological studies. For instance, the presence of *Mus musculus domesticus* (house

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mouse) has been linked to a Roman presence in El Bebedero, Lanzarote (Criado & Atoche, 2003). The single specimen KIA-36470, calibrated using intcal04.14C and with 2σ interval, yielded an age of AD 128–313 (1815 ± 25 BP) (Alcover et al., 2009). Furthermore, at La Monja site in Fuerteventura (Figure 2), researchers found an ovicaprid bone and red ochre within an alluvial deposit intercalated between two marine beachrocks from two Holocene highstands. The lower deposit, dating to about 2830 BC (Meco et al., 2011), represents the Middle Holocene period, while the younger deposit, dated at about AD 490, represents the Late Holocene period (Meco et al., 2011; 2018). Despite the long chronological gap between these dated deposits, the stratigraphic nature has been interpreted as an indication of anthropogenic landscape changes causing erosion during a period of use (Onrubia Pintado et al., 1997).

The transformation of forests into open landscapes is often linked to land optimization for grazing and agriculture, characteristic of permanent and intensive anthropogenic activities (Guerrero Ayuso, 2001). Evidence of such modifications in the Canary Islands has been investigated via palynological records from sediment cores in the La Laguna Lake basin, Tenerife. This evidence suggests a decline in *Quercus* (oak) and *Carpinus* (birch) pollen taxa between 2735 and 35 BC, coinciding with the emergence of shrubs, grasses, and the laurel forest (de Nascimento et al., 2009). Fossil charcoal remains hint at the occurrence of intense fires in La Gomera over the last 3600 years, with pollen records documenting a shift in vegetation from the endemic laurel forest to a drier woody heath (Nogué et al., 2013). In Gran Canaria, studies on fossil charcoal reveal an increase in fire episodes around 435–335 BC (de Nascimento et al., 2015; 2020).While volcanic activity may have played a role in these deposits, Ravazzi et al. (2021) argue that the lack of forest recovery and the abundance of coprophilous fungal spores in sediment cores suggest anthropogenic activity as the likely cause.

An additional characteristic of intensive human settlements is demographic stress (Guerrero Ayuso, 2001), also described by ethnohistory in the Canary Islands (Morales Padrón, 1978). Archaeological evidence from multiple silos throughout Gran Canaria (Ascanio-Padrón et al., 2004; Henríquez-Valido et al., 2019) confirms the presence of a large native population dependent on surplus. Wheat, barley, and legumes were mostly grown on the larger islands of Gran Canaria and Tenerife, where intensive sheep/goat herding was also practised (del-Arco-Aguilar et al., 1990; Velasco-Vázquez, 1999; Morales Mateos, 2006). Islanders also hunted and foraged wild resources to supplement their diet (Arnay-de-la-Rosa et al., 2010; Reinhard et al., 2021). Hunter-gatherer economies could have been more significant on islands where agriculture did not reach productive levels, such as in Fuerteventura (González-Reimers et al., 2001) or La Palma (Pérez González, 2007). To cope with carrying capacity, social formations may develop strategies such as crop diversification, storage, subsistence heterogeneity, trading, mobility, and other cultural adaptations (Guerrero Ayuso, 2001). These activities were evident throughout the Canaries since at least *c.* AD 665 (Morales et al., 2013).

Canarian Human Palaeogenomics and Settlement Models

Recent investigations by Serrano and colleagues (2023) have offered novel wide-genome data and radiocarbon dates showing the potential contributions of

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three main population sources to basal Canary islanders: ancient Maghrebi, early Neolithic European, and Eurasian Steppe groups. This study reaffirms the high haplotypic diversity among first settlers, indicating genetic variation resulting from at least two major waves of settlement (Rodríguez-Varela et al., 2017; Fregel et al., 2019; Serrano et al., 2023). Ancient mitochondrial DNA (mtDNA) analyses support the idea that matrilineal kinship systems were in place, at least within the population of Punta Azul, in El Hierro Island (Ordóñez et al., 2021). Also, palaeogenetics provides valuable insights into inter- and intra-insular migration trends. For example, it reveals the presence of the mtDNA haplogroup H in Tenerife (47.2 per cent) and La Palma (56.7 per cent) suggesting reciprocal contact between the western Canary Islands (Fregel et al., 2009), but not with the eastern islands (Serrano et al., 2023). Hence, it has been proposed that there was some inter-island connectivity during the second to ninth centuries AD, followed by a period of isolation from the ninth to the fourteenth century. Yet, the easternmost region faces a challenge, as the primary palaeogenetic dataset comes from Gran Canaria and Tenerife, with Lanzarote and Fuerteventura represented by only four individuals dated between the seventh and ninth centuries AD. The absence of human remains for the eastern islands is problematic, considering the stepping-stone model assumes this region would have been occupied first (Atoche-Peña & del-Arco-Aguilar, 2023), and should therefore provide the oldest human genotypes. Interestingly, genomic data from extant barley seeds indicates that an older grain strain was grown in Lanzarote and exchanged between eastern and western islands (Hagenblad & Morales, 2020), thus supporting the stepping-stone model.

The diversity detected in aDNA findings has already been observed in the archaeological and ethnohistoric record. This is evident in the presence of different ceramic types, votive iconography, burial practices, political systems, and language (Onrubia Pintado, 1992; Navarro Mederos, 1997; Alberto-Barroso & Velasco-Vázquez, 2010; del Pino Curbelo et al., 2016). Attributing the origins of the initial settlers to North African descent is merely stating a geographical reality. The novelty lies in recognizing the ethnic and cultural diversity that existed among the ancient Canary aboriginals, evident in both their paternal and maternal ancestral lines (Supplementary Materials: Tables S1 and S2). The presence of Y-chromosome single nucleotide polymorphisms such as T-M184 or E-M33 have acknowledged the membership of first islanders to broader ancestral groups like T or E haplogroups from different geographic origins (Table S2). The human settlement of the Canary archipelago was a complex process, marked by intricate migratory movements akin to those involved in the peopling of the vast region of North Africa over millennia (Simões et al., 2023).

Overreliance on a single method to determine the initial human settlement of the Canaries and neglecting island settlement theory and traditional archaeological methods may yield oversimplified population stories. As mentioned earlier, distinct stages of insular colonization leave behind specific archaeological evidence. The majority of radiocarbon dates associated to palaeogenetic findings belong to AD fifth century and beyond. Hence, I suggest that skeletal material used in aDNA investigations may belong to adapted populations, indicating a stage of permanent settlement rather than an initial colonization or exploration period in the Canary Islands. Another issue concerns the lack of emphasis on radiocarbon methodology.

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The most influential and recent publications in Canarian palaeogenetics (Fregel et al., 2019; Serrano et al., 2023) do not provide details on the laboratory methods used to obtain chronological data from human bone, and they often lack proper calibration of dates. This oversight is particularly concerning for islander populations with direct access to marine resources that would possibly increase the reservoir effect from enriched marine carbon consumed via food. Thus, if archaeologists are to solely rely on the accuracy and precision of the radiocarbon dating method to support specific population histories, we should then consider the intricacies behind the methods and the interpretation of quantitative results.

Radiocarbon Dating and Canarian Archaeology

Chronologies, both radiocarbon and dated aDNA data, are contested in Canarian archaeology (for a comprehensive list of radiocarbon measurements published in the Canaries, see the bibliography cited in this section and sources therein). Some researchers dispute the validity of key dates obtained from long-lived materials such as wood or charcoal (Pardo-Gordó et al., 2022). Insufficient stratigraphic context or doubtful laboratory practices contribute to the scepticism (Velasco-Vázquez et al., 2020) surrounding the utilization of chronologies proposing a Late Bronze and Early Iron Age human settlement (Atoche-Peña & del-Arco-Aguilar, 2023). Also, radiocarbon chronologies indicating that the colonization of Gran Canaria took place in *c.* AD 300 (Alberto-Barroso et al., 2019) cast doubts on the basis of collagen processing methods used to prepare bone samples (Pardo-Gordó et al., 2022). Other issues affecting human collagen radiocarbon dating include a lack of consideration for the calibration of chronometric measurements such as the marine carbon reservoir effect (MCRE) and the establishment of a local regional (ΔR) offset (Pardo-Gordó et al., 2022). Furthermore, the methodological challenges to define and discuss all components of Bayesian modelling in constructing ^{14}C sequences are a pervasive issue in archaeology (Bayliss, 2015), and so in the Canaries.

In the Canaries, the current body of radiocarbon-dated skeletons is marked by a conspicuous absence of information regarding laboratory pretreatment protocols. This omission hampers our ability to assess the reliability of results. Notably, even in the most comprehensive aDNA dataset published to date, there remains a gap in the discussion of the methodology employed to obtain ^{14}C dates from human skeletons, particularly those involving non-collagen data (Serrano et al., 2023). In the field of Canarian archaeology, discrepancies remain on the appropriateness of the sample materials despite established global agreements (Waters et al., 2020) and the absence of detailed sample cleaning protocols to isolate collagen (Devièse et al., 2018). Furthermore, caution is warranted when interpreting dates derived from sediments, ash, and those generated at the Gakushuin laboratory (Blakeslee, 1994; Waters et al., 2020).

Of considerable concern for the chronometric hygiene of published datasets from ancient Canarian human bone, the MCRE is not considered here when applying calibration curves to radiocarbon dates (Pardo-Gordó et al., 2022). The lag in carbon cycling between the atmosphere and the surface ocean, compounded by exchanges between surface and deeper ocean radiocarbon levels, further complicates the mixing process. Indeed, regions characterized by notable ocean upwelling events, as observed in coastal southern Iberia (Monge Soares, 1993), exhibit

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variations in radiocarbon concentrations due to seawater mixing and upwelling phenomena that ought to be considered (Bronk Ramsey, 2008). The Canary archipelago is possibly affected by different upwelling events, such as the north-west Africa coastal upwelling system (Soares & Dias, 2007). In a study by Matos Martins and colleagues (2012), using archaeological marine shells, burnt wood, and/or bones from Fuerteventura and Tenerife, researchers calculated differential offsets in Tenerife showing lower ΔR values (weighted mean 0 ± 35 ^{14}C yr) compared to Fuerteventura ($+185 \pm 30$ ^{14}C yr). A high ΔR has been correlated with strong upwelling versus the low or negative ΔR that represents less seawater rising (Matos Martins et al., 2012). Although context uncertainty exists in some of the samples utilized by Matos Martins and colleagues (2012), their work establishes a precedent for a careful consideration of oceanic phenomena, particularly the MCRE impacting ^{14}C measurements in ancient human bone of the Canary Islands.

Discussion

Unravelling the Canarian aboriginal past is complex. Homogenizing terms such as 'North African', 'Berber', or 'Amazigh' simplify the story and do not account for the geographical vastness of the Maghreb, nor the inherent cultural and linguistic diversity that existed for millennia in North Africa and the Mediterranean. Furthermore, without providing some sort of settlement model that reconciles the nuances involving the usage of terminology in island colonization literature, the proposal of North African herders as sole settlers of the archipelago seems incomplete. We might ask, for example, why established mountainous communities would embark on a risky seafaring voyage, taking with them their entire cultural and economic package. Non-endemic Canary items such as fig trees are an example of the careful planning behind the successful peopling of the region. Hence, the complex stories of exploration and settlement may be seen as diverse, accommodating various scenarios. This includes the possibility of both skilled Bronze Age navigators and herding populations of north-west Africa playing roles in the region's history throughout the mid- to late Holocene period.

Archaeological, ethnohistoric, and linguistic data have already pointed to a multiplicity of groups responsible in the peopling of the archipelago. Palaeogenomics has confirmed that such diversity is the result of founding effects, genetic drift, bottleneck phenomena, and waves of population replacement (Rodríguez-Varela et al., 2017; Serrano et al., 2023). In the Punta Azul site, a bottleneck effect was a likely precursor of the total fixation of H1cf mtDNA haplotype among its population (Ordóñez et al., 2017). This marker suggests specific kinship practices supported by matrilineal ties to a common female ancestor that carried H1cf (Ordóñez et al., 2021). These findings are an example of how archaeometry can be used to answer anthropological questions and enable us to deepen insights into the cultural development of prehistoric Canarian societies. By integrating different sources of knowledge, we may be able to better understand quantitative results. For example, what does the difference in genetic packages between the eastern and western Canary Islands say about migratory trends and social complexity in the region? Folklore from ethnohistoric sources, such as the legend of Tauco and Guajara or the incursions by Gran Canaria aboriginals into the easternmost islands (Mederos Martín & Escribano Cobo, 2005), depicts an

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antagonistic relationship between some of these insular groups. These stories illustrate interaction rather than isolation, and perhaps these relationships did not always result in genetic mixing.

Integrating complex methods from the natural sciences with the social sciences can give rise to epistemological challenges, and these issues have led to recent discussions on proper methodological practices (Cook et al., 2015; Roberts et al., 2018). Archaeology is a difficult science that has changed through a series of paradigm shifts, the most recent of which is the 'Third Science Revolution' that prioritizes Big Data (Kristiansen, 2014). However, in a recent presentation, Girotto and Price (2023) argue that archaeological data is 'messy' instead of 'big' and that, despite machine learning and quantitative determinism, we still do not understand the semantic patterns of the past. Unsurprisingly, the more quantitative results are obtained, the greater the realization of human complexity. Rightly so, 'amassing larger datasets does not remove the explanatory nature of the creation of these datasets' (Chilton, 2014: 38). Some authors even question the interdisciplinary character of quantitative archaeology (Ribeiro, 2021). The Third Science Revolution may not be as interdisciplinary as marketed, since it professes a single way of acquiring information and/or conducting research via the materialist approach (Ribeiro, 2022). The knowledge gathered from combining art or philosophy and archaeology is generally not regarded as interdisciplinary. Additional critiques suggest that interdisciplinarity might be making archaeology less collaborative as divisions ensue diversity of interpretations with 'different cliques insulating themselves in their own ivory towers' (Ribeiro, 2022: 96).

These divisions between archaeology and interdisciplinary methodologies have surfaced in the press (Callaway, 2018; Galán, 2018), with archaeologists arguing that sociocultural complexity cannot be explained via haplotypes or radiocarbon dates alone. Palaeogenomic and absolute dating provide valuable information. Yet, they may not fully account for the explanatory power of the theoretical models of traditional archaeology, such as the sociopolitical, economic, and/or environmental processes that can help us understand the prehistoric peopling of islands.

Archaeologists face challenges in effectively communicating study results, especially as aDNA findings make international headlines. For instance, attributing North African ancestry to ancient Canary aboriginals is vague, as the term 'North African' covers the region from Western Sahara, including the Canary Islands, to Egypt. This simplistic terminology, though media-friendly (Efe, 2023), lacks nuance in understanding North Africa's population history. For example, haplotypes observed in ancient aboriginal Canarians are also found in Bronze Age Mediterranean groups (Tables S1 and S2). Admixture modelling indicates that the Steppe pedigree in the archipelago may have originated from populations with ancestry linked to Phoenico-Punics from Ibiza and Sardinia, as well as Romans from England (Serrano et al., 2023). The presence of sub-Saharan haplotypes raises questions about whether they result from independent migrations from West African coasts. Onrubia Pintado (2001) proposed a similar hypothesis with migrations through the Tarfaya basin around the first millennium BC. Finally, models of insular settlement put forth by archaeometry tend to downplay the seafaring element perhaps potentially shaped by assumptions on the technological proficiency of certain groups. Neglecting the role of seafaring in the success of early settlers may contribute to greater informational gaps behind these complex processes.

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Conclusions

Crafty archaeology involves both talent and innovation in the process of using method, theory, and philosophy to unravel the past (Shanks & McGuire, 1996). In the Canarian context, this means quantitative data must be interpreted in light of ethnohistoric records along with archaeological and anthropological theory. Regarding the Canary Islands, the lack of material evidence dating to the periods of exploration and the utilization of insular resources have proved major obstacles into developing a comprehensive understanding of peopling processes. Additional hurdles include the problem of semantics and overspecialization. In island colonization literature, words such as 'exploration', 'utilization', and 'settlement' or 'colonization' must be defined. Unique environmental and cultural contexts shape each definition. Also, the scientific hyper-specialization behind the Third Science Revolution could be contributing to informational gaps between subdisciplines. Here, I have highlighted the lack of an integrated discussion of peopling hypotheses in Canarian archaeology, where the topic is polarized around two main perspectives: North Africanists and Mediterraneanists. As I have discussed here, integrating scientific data, archaeological findings, biogeographic details, and ethnohistoric information provides a less dualistic perspective, capturing the intricate cultural and genetic diversity among ancient aboriginal Canary groups.

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Supplementary Material

To view supplementary material for this article, please visit https://doi.org/10.1017/eaa.2024.4.

References

Alberto-Barroso, V. & Velasco-Vázquez, J. 2010. Manipulación del cadáver y práctica funeraria entre los antiguos canarios: La perspectiva osteoarqueológica. *Revista Tabona*, 18: 91–120.

Alberto-Barroso, V., Delgado-Darias, T., Moreno-Benítez, M.A. & Velasco-Vázquez, J. 2019. La dimensión temporal y el fenómeno sepulcral entre los antiguos Canarios. *Zephyrus*, 84: 139–60.

Alberto-Barroso, V. Delgado-Darias, T., Velasco-Vázquez, J. & Santana-Cabrera, J. 2016. En la ambigüedad de tu piel: Sobre momias y tumbas. *Revista Tabona*, 20: 33–60.

Alberto-Barroso, V., Velasco-Vázquez, J., Delgado-Darias, T. & Moreno-Benítez, M.A. 2020. Los antiguos canarios ante la muerte: Tradición vs ruptura. In: Julio Castillo, ed. *Gran Canaria las Huellas del Tiempo* (Actas XV Semana Científica Telesforo Bravo). Instituto de Estudios Hispánicos de Canarias , pp. 13–40.

Alberto-Barroso, V., Velasco-Vázquez, J., Delgado-Darias, T. & Moreno-Benítez, M.A. 2021. The End of a Long Journey: Tumulus Burials in Gran Canaria (Canary Islands) in the Second Half of the First Millennium AD. *Azania: Archaeological Research in Africa*, 56: 281–303.

Alcover, J.A., Rando, J.C., García-Talavera, F., Hutterer, R., Michaux, J., Trias, M., et al. 2009. A Reappraisal of the Stratigraphy of

Cueva del Llano (Fuerteventura) and the Chronology of the Introduction of the House Mouse (*Mus musculus*) into the Canary Islands. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 277: 184–90. https://doi.org/10.1016/j.palaeo.2009.03.016

Álvarez Sosa, M. & Morfini, I. 2014. *Tierras de momias. La técnica de eternizar en Egipto y Canarias* Tenerife: Ad Aegyptum.

Amezcua, J. 1995. Los grabados naviformes de Tinojay. In: A.F.M. Hormiga, E.R.D.L. Arbelo & J.R.B. Mesa, eds. *IV Jornadas de Estudio sobre Lanzarote y Fuerteventura*. Arrecife: Cabildo Insular de Lanzarote, pp. 557–615.

Arnay-de-la-Rosa, M., González-Reimers, E., Yanes, Y., Velasco-Vázquez, J., Romanek, C.S. & Noakes, J.E. 2010. Paleodietary Analysis of the Prehistoric Population of the Canary Islands Inferred from Stable Isotopes (Carbon, Nitrogen, and Hydrogen) in Bone Collagen. *Journal of Archaeological Science*, 37: 1490–501. https://doi.org/10.1016/j.jas.2010.01.009

Ascanio-Padrón, A., Mendoza-Medina, F., Moreno-Benítez, M. & Suárez-Medina, I. 2004. Intervención arqueológica en El Tejar (Santa Brígida, Gran Canaria): Primeros resultados. In: F. Morales-Padrón, ed. *XV Coloquio de Historia Canario-Americana*. Las Palmas: Cabildo de Gran Canaria, pp. 2131–46.

Atoche-Peña, P. 2002. La colonización del archipiélago canario: ¿Un proceso mediterráneo? In: W.H. Waldren & J.A. Ensenyat, eds. *World Islands in Prehistory: International Insular Investigations* (BAR International Series, 1095), Oxford: British Archaeological Reports, pp. 337–54.

Atoche-Peña, P. 2011. Excavaciones arqueológicas en el sitio de Buenavista (Lanzarote): Nuevos datos para el estudio de la colonización protohistórica del archipiélago. *Gerión*, 29: 59–82.

Atoche-Peña, P. 2013. Consideraciones en la relación con la colonización Protohistórica de las Islas Canarias. *Anuario de Estudios Atlánticos*, 59: 521–64.

Atoche-Peña, P. & del-Arco-Aguilar, M.C. 2023. Carbono 14 y colonización protohistórica de las Islas Canarias: La importancia del contexto arqueológico en la interpretación histórica. *Anuario de Estudios Atlántico*, 69: 1–34.

Bayliss, A. 2015. Quality in Bayesian Chronological Models in Archaeology. *World Archaeology*, 47: 677–700. https://doi.org/10.1080/00438243.2015.1067640

Bellwood, P. 1996. Hierarchy, Founder ideology, and Austronesian Expansion. In: J. Fox & C. Sather, eds. *Origins, Ancestry and Alliance: Explorations in Austronesian Ethnography*. Canberra: Department of Anthropology, Australian National University, pp. 18–40.

Blakeslee, D.J. 1994. Reassessment of Some Radiocarbon Dates from the Central Plains. *Plains Anthropologist*, 39: 203–10.

Blázquez, J.M. 1977. Las Islas Canarias en la antigüedad. *Anuario de Estudios Atlánticos*, 23: 35–50.

Bronk Ramsey, C. 2008. Radiocarbon Dating: Revolutions in Understanding. *Archaeometry*, 50: 249–75. https://doi.org/10.1017/S0033822200039473

Broodbank, C. 1999. Colonization and Configuration in the Insular Neolithic of the Aegean. In: P. Halstead, ed. *Neolithic Society in Greece*. Sheffield: Sheffield Academic Press, pp. 15–41.

Broodbank, C. 2000. *An Island Archaeology of the Early Cyclades*. Cambridge: Cambridge University Press.

Bueno-Ramírez, P., Balbín-Behrmann, R., del Arco-Aguilar, M.C. & González-Antón, R. 1995. Datos sobre la colonización púnica de las Islas Canarias. *ERES Arqueología/Bioantropología*, 6: 7–28.

Callaway, E. 2018. The Battle for Common Ground. *Nature*, 555: 573–76. https://doi.org/10.1038/d41586-018-03773-6

Cherry, J.F. 1981. Pattern and Process in the Earliest Colonization of the Mediterranean Islands. *Proceedings of the Prehistoric Society*, 47: 41–68. https://doi.org/10.1017/S0079497X00008859

Chilton, E.S. 2014. Plus Ça Change: From Postprocessualism to 'Big Data': A Response to 'Towards a New Paradigm? The Third Science Revolution and its Possible Consequences in Archaeology'. *Current Swedish Archaeology*, 22: 35–40. https://doi.org/10.37718/CSA.2014.02

Cook, G.T., Ascough, P.L., Bonsall, C., Hamilton, W.D., Russell, N., Sayle, K.L., et al. 2015. Best Practice Methodology for 14C Calibration of Marine and Mixed Terrestrial/Marine Samples. *Quaternary*

Geochronology, 27: 164–71. https://doi.org/10.1016/j.quageo.2015.02.024

Criado, C. & Atoche, P. 2003. Estudio geoarqueológico del yacimiento de El Bebedero (siglos I a. C. a XIV d. C., Lanzarote, Islas Canarias). *Cuaternario y Geomorfología*, 17: 91–104.

Dawson, H. 2004. Understanding Colonisation: Adapatation Strategies in the Central Mediterranean Islands. *Accordia Research Papers*, 10: 35–60.

Dawson, H. 2010. 'One, None, and a Hundred Thousand': Settlements and Identities in the Prehistoric Mediterranean Islands. *Shima*, 4: 82–98.

Dawson, H. 2014. *Mediterranean Voyages: The Archaeology of Island Colonisation and Abandonment*. Abingdon: Routledge.

Dawson, H., Picornell-Gelabert, L., Calvo-Trias, M., Servera-Vives, G. & Valenzuela-Oliver, A. 2023. The 'Island Laboratory' Revisited: Integrating Environmental and Sociocultural Approaches. *The Journal of Island and Coastal Archaeology*, 18: 1–10.

de Nascimento, L., Nogué, S., Criado, C., Ravazzi, C., Whittaker, R.J., Willis, K.J., et al. 2015. Reconstructing Holocene Vegetation on the Island of Gran Canaria Before and After Human Colonization. *The Holocene*, 26: 113–25. https://doi.org/10.1177/0959683615596836

de Nascimento, L., Nogué, S., Naranjo-Cigala, A., Criado, C., McGlone, M., Fernández-Palacios, E., et al. 2020. Human Impact and Ecological Changes During Prehistoric Settlement on the Canary Islands. *Quaternary Science Reviews*, 239: 106332. https://doi.org/10.1016/j.quascirev.2020.106332

de Nascimento, L., Willis, K.J., Fernández-Palacios, J.M., Criado, C. & Whittaker, R.J. 2009. The Long-Term Ecology of the Lost Forests of La Laguna, Tenerife (Canary Islands). *Journal of Biogeography*, 36: 499–514. https://doi.org/10.1111/j.1365-2699.2008.02012.x

del-Arco-Aguilar, M.C. 2021. De nuevo sobre el descubrimiento y colonización antiguos de Canarias: Reflexiones sobre aspectos teóricos y datos empíricos. *Anuario de Estudios Atlánticos*, 67: 1–27.

del-Arco-Aguilar, M.C., de-Arco-Aguilar, M.M., Atiénzar Armas, E. & Hopf, M. 1990. Estudio de los restos vegetales de la Cueva de Don Gaspar y algunas anotaciones sobre la agricultura prehistórica de Tenerife. *Investigaciones Arqueológicas*, 2: 13–29.

del-Arco-Aguilar, M.C., del-Arco-Aguilar, M.M., Benito-Mateo, C. & Rosario-Adrián, M.C. 2016. *Un taller romano de púrpura en los límites de la Ecúmene: Lobos 1 (Fuerteventura, Islas Canarias), primeros resultados*. Santa Cruz de Tenerife: Organismo Autónomo de museos y Centros.

del Pino Curbelo, M., Rodríguez Rodríguez, A., Buxeda i Garrigós, J., Mangas Viñuela, J., Day, P.M., González Quintero, P., et al. 2016. Las cerámicas aborígenes de Gran Canaria (Islas Canarias) a través del yacimiento de La Cerera: materias primas, tecnología y función. *Trabajos de Prehistoria*, 73: 90–114. https://doi.org/10.3989/tp.2016.12165

Devièse, T., Stafford, T.W., Waters, M.R., Wathen, C., Comeskey, D., Becerra-Valdivia, L., et al. 2018. Increasing Accuracy for the Radiocarbon Dating of Sites Occupied by the First Americans. *Quaternary Science Reviews*, 198: 171–80. https://doi.org/10.1016/j.quascirev.2018.08.02

Efe 2023, 08/16/2023. El ADN pone luz a la colonización de Canarias. *Canarias7*. https://www.canarias7.es/sociedad/adn-pone-luz-colonizacion-canarias-20230816071203-nt.html

Erlandson, J.M. & Fitzpatrick, S.M. 2006. Oceans, Islands, and Coasts: Current Perspectives on the Role of the Sea in Human Prehistory. *The Journal of Island and Coastal Archaeology*, 1: 5–32. https://doi.org/10.1080/15564890600639504

Evans, J.D. 1973. Islands as Laboratories for the Study of Culture Process. In: C. Renfrew, ed. *The Explanation of Culture Change: Models in Prehistory*. London: & Pittsburgh (PA): University of Pittsburgh Press, pp. 517–20.

Farrujia de la Rosa, A.J. & del Arco-Aguilar, M.C. 2004. El tema del primitivo poblamiento humano de Canarias y su inserción dialéctica en la política franquista: José Pérez de Barradas y Sebastián Jiménez Sánchez. In: F. Morales-Padrón, ed. *XV Coloquio de historia canario-americana*, Las Palmas de Gran Canaria: Cabildo Insular de Gran Canaria, pp. 1172–85.

Farrujia de la Rosa, A.J., Pichler, W. & Rodrigue, A. 2009. The Colonization of

https://doi.org/10.1017/eaa.2024.4 Published online by Cambridge University Press

the Canary Islands and the Libyco-Berber and Latino-Canarian Scripts. *Sahara*, 20: 83–100.

Fitzpatrick, S.M. & Anderson, A. 2008. Islands of Isolation: Archaeology and the Power of Aquatic Perimeters. *The Journal of Island and Coastal Archaeology*, 3: 4–16. https://doi.org/10.1080/15564890801983941

Fregel, R., Ordóñez, A.C., Santana-Cabrera, J., Cabrera, V.M., Velasco-Vazquez, J., Alberto, V., et al. 2019. Mitogenomes Illuminate the Origin and Migration Patterns of the Indigenous People of the Canary Islands. *PLoS One*, 14: e0209125. https://doi.org/10.1371/journal.pone.0209125

Fregel, R., Pestano, J., Arnay, M., Cabrera, V.M., Larruga, J.M. & Gonzalez, A.M. 2009. The Maternal Aborigine Colonization of La Palma (Canary Islands). *European Journal of Human Genetics*, 17: 1314–24. https://doi.org/10.1038/ejhg.2009.46

Galán, L. 2018. Enigmas de la prehistoria: Opinión. *El Pais*. https://elpais.com/elpais/2018/10/12/opinion/1539345411_768224.html?event=go&event_log=go&prod=REGCRART&o=cerrado

Girotto, C. & Price, H. 2023. Processualism 2.0? AI as Echo of Machine Determinism in Social Archaeology. Paper presented at: European Association of Archaeologists Annual Meeting: Weaving Narratives, Belfast.

González Antón, R. & del Arco Aguilar, M.C. 2007. *Los enamorados de la Osa Menor: Navegación y pesca en la protohistoria de Canarias*. Santa Cruz de Tenerife: Organismo Autónomo de Museos y Centros.

González Antón, R. & del Arco Aguilar, M.C. 2009. Navegaciones exploratorias en Canarias a finales del II milenio a.c. e inicios del primero. El cordón litoral de La Graciosa (Lanzarote). *Canarias Arqueológica: Arqueología/Bioantropología*, 17: 9–80.

González Antón, R., del Arco Aguilar, M.C., Balbín Behrmann, R. & Bueno Ramírez, P. 1998. El Poblamiento de un Archipiélago Atlántico: Canarias en el Proceso Colonizador del primer Milenio A.C. *ERES Arqueología/Bioantropología*, 8: 43–100.

González-Reimers, E., Velasco-Vázquez, J., Arnay de la Rosa, M., Santolaria-Fernández, F. & Galindo-Martín, L. 2001. Paleonutritional Analysis of the Pre-Hispanic Population from Fuerteventura (Canary Islands). *The Science of the Total Environment*, 264: 215–20. https://doi.org/10.1016/S0048-9697(00)00717-8

Guerrero Ayuso, V.M. 2001. The Balearic Islands: Prehistoric Colonization of the Furthest Mediterranean Islands from the Mainland. *Journal of Mediterranean Archaeology*, 14: 136–58. https://doi.org/10.1558/jmea.v14i2.136

Hagenblad, J. & Morales, J. 2020. An Evolutionary Approach to the History of Barley (*Hordeum vulgare*) Cultivation in the Canary Islands. *African Archaeological Review*, 37: 579–95. https://doi.org/10.1007/s10437-020-09415-5

Henríquez-Valido, P., Morales-Mateos, J., Vidal-Matutano, P., Santana-Cabrera, J. & Rodríguez Rodíguez, A. 2019. Arqueoentomología y arqueobotánica de los espacios de almacenamiento a largo plazo: el granero de Risco Pintado, Temisas (Gran Canaria). *Trabajos de Prehistoria*, 76: 120–37. https://doi.org/10.3989/tp.2019.12229

Jiménez Gómez, M.d.l.C. 2003. El mar en la mitología de los bimbaches. *Revista Tabona*, 12: 137–58.

Jiménez González, J.J. 2013. *La Tribu de los Canarii. Arqueología, Antigüedad y Renacimiento*. Santa Cruz de Tenerife: Le Canarien.

Kristiansen, K. 2014. Towards a New Paradigm? The Third Science Revolution and its Possible Consequences in Archaeology. *Current Swedish Archaeology*, 22: 11–34. https://doi.org/10.37718/CSA.2014.01

MacArthur, R.H. & Wilson, E.O. 1967. *The Theory of Island Biogeography*. Princeton (NJ): Princeton University Press.

Matos Martins, J.M., Mederos Martín, A., Cesário Portela, P.J. & Monge Soares, A.M. 2012. Improving the 14C Dating of Marine Shells from the Canary Islands for Constructing More Reliable and Accurate Chronologies. *Radiocarbon*, 54: 943–52.

Mazzola de Los Ríos, A. 2016. Zonas Arqueológicas del Sureste de Gran Canaria: Historia de una Gestión Patrimonial (unpublished dissertation, Facultad de Humanidades, Universidad de La Laguna). Available at: <http://riull.ull.es/xmlui/handle/915/3284>

https://doi.org/10.1017/eaa.2024.4 Published online by Cambridge University Press

Meco, J., Lomoschitz, A., Rodríguez, Á., Ramos, A.J.G., Betancort, J.F. & Coca, J. 2018. Mid and Late Holocene Sea Level Variations in the Canary Islands. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 507: 214–25. https://doi.org/10.1016/j.palaeo.2018.07.020

Meco, J., Muhs, D.R., Fontugne, M., Ramos, A.J.G., Lomoschitz, A. & Patterson, D.A. 2011. Late Pliocene and Quaternary Eurasian Locust Infestations in the Canary Archipelago. *Lethaia*, 44: 440–54. https://doi.org/10.1111/j.1502-3931.2010.00255.x

Mederos Martín, A. & Escribano Cobo, G. 1997. Indicios de navegación atlántica en aguas canarias durante época aborigen. *Revista de Arqueología*, 18: 6–13.

Mederos Martín, A. & Escribano Cobo, G. 2002. *Fenicios, Púnicos y Romanos. Descubrimiento Y Poblamiento de las Islas Canarias*. Santa Cruz de Tenerife: Viceconsejería de Cultura y Deportes, Gobierno de Canarias.

Mederos Martín, A. & Escribano Cobo, G. 2005. Los Aborígenes Canarios y la Navegación. *Mayurqa*, 30: 851–67.

Monge Soares, A.M. 1993. *The 14 C Content of Marine Shells: Evidence for Variability in Coastal Upwelling off Portugal During the Holocene* (Isotope techniques in the study of past and current environmental changes in the hydrosphere and the atmosphere). Vienna: International Atomic Energy Agency.

Morales, J., Rodríguez, A., Alberto, V., Machado, C., Criado, C. & Rando, J.C. 2013. The Impact of Human Activities on the Natural Environment of the Canary Islands (Spain) During the pre-Hispanic Stage (3rd–2nd Century BC to 15th Century AD): An Overview. *Environmental Archaeology*, 14: 27–36. https://doi.org/10.1179/174963109X400655

Morales Mateos, J. 2006. La explotación de los recursos vegetales en la prehistoria de las Islas Canarias. Una aproximación carpológica a la economía, ecología y sociedad de los habitantes prehispánicos de Gran Canaria (unpublished PhD dissertation, Universidad de Las Palmas de Gran Canaria).

Morales Padrón, F. 1978. *Canarias: Crónicas de su conquista*. Las Palmas de Gran Canaria: El Museo Canario.

Napolitano, M.F., DiNapoli, R.J. & Stone, J.H. 2021. Introduction. In: M.F. Napolitano, J.H. Stone & R.J. DiNapoli, eds. *The Archaeology of Island Colonization: Global Approaches to Initial Human Settlement*. Gainesville (FL): University Press of Florida, pp. 1–34. https://doi.org/https://doi.org/10.2307/j.ctv1m9×2s3.6

Navarro Mederos, J.F. 1997. Arqueología de las islas Canarias. *Espacio Tiempo y Forma. Serie I, Prehistoria y Arqueología*, 10: 447–78.

Nogué, S., de Nascimento, L., Fernández-Palacios, J.M., Whittaker, R.J. & Willis, K.J. 2013. The Ancient Forests of La Gomera, Canary Islands, and Their Sensitivity to Environmental Change. *Journal of Ecology*, 101: 368–77. https://doi.org/10.1111/1365-2745.12051

O'Connor, S. & Hiscock, P. 2018. The Peopling of Sahul and Near Oceania. In: E.E. Cochane & T.L. Hunt, eds. *The Oxford Handbook of Prehistoric Oceania*. Oxford: Oxford University Press, pp. 26–47.

Onrubia Pintado, J. 1992. Canaries (îles). *Encyclopédie berbère Canaries (îles)*, 11 [online], [accessed 29 June 2023]. Available at: <https://doi.org/10.4000/encyclopedieberbere.2046>

Onrubia Pintado, J. 2001. *Les occupations humaines holocènes du bassin côtier de Tarfaya (Sahara nord-atlantique) et l'origine des Iles Canaries*. L'homme maghrébin et son environment depuis 100000 ans (Actes du colloque international de Maghnia 2001), Alger.

Onrubia Pintado, J., Meco, J. & Fontugne, M. 1997. Paleoclimatología y presencia humana Holocena en Fuerteventura. Una Aproximación Geoarqueológica. In: *Homenaje a Celso Martín de Guzmán (1946–1994)*. Las Palmas: Universidad de Las Palmas de Gran Canaria, pp. 363–73.

Ordóñez, A.C., Arnay, M. & Fregel, R. 2021. Genetic Studies Contribution to the Study of Matrilocality in Funerary Practices on the Canary Islands. *Canarias Arqueológica: Arqueología-Bioantropología*: 235–49.

Ordóñez, A.C., Fregel, R., Trujillo-Mederos, A., Hervella, M., de-la-Rúa, C. & Arnay-de-la-Rosa, M. 2017. Genetic Studies on the Prehispanic Population Buried in Punta Azul Cave (El Hierro, Canary Islands). *Journal of Archaeological Science*, 78: 20–28. https://doi.org/10.1016/j.jas.2016.11.004

https://doi.org/10.1017/eaa.2024.4 Published online by Cambridge University Press

Ortiz-García, C. 2016. 'Antigüedades guanchinescas'. Comercio y coleccionismo de restos arqueológicos canarios. *Culture & History Digital Journal*, 5: e017. http://doi.org/10.3989/chdj.2016.017

Pardo-Gordó, S., González Marrero, M.d.C., Vidal Matutano, P. & Rodríguez-Rodríguez, A. 2022. Dataciones de contextos aborígenes y coloniales de la isla de gran canaria: una propuesta de protocolo de higiene radiocarbónica. *Revista de Prehistoria y Arqueología*, 22: 217–42. http://dx.doi.org/10.25145/j.tabona.2022.22.11

Patrick, V.K. 2010. Peopling of the Pacific: A Holistic Anthropological Perspective. *Annual Review of Anthropology*, 39: 131–48. https://doi.org/10.1146/annurev.anthro.012809.104936

Pérez González, E. 2007. La dieta de los Benahoritas. Las Estrategias de subsistencia de los antiguos habitantes de la isla de La Palma a través de un análisis historiográfico, arqueológico y bioantropológico. *Revista de Estudios generales de la Isla de La Palma*, 3: 265–76.

Rainbird, P. 2007. *The Archaeology of Islands*. Cambridge: Cambridge University Press.

Ravazzi, C., Mariani, M., Criado, C., Garozzo, L., Naranjo-Cigala, A., Perez-Torrado, F.J., et al. 2021. The Influence of Natural Fire and Cultural Practices on Island Ecosystems: Insights From a 4800 Year Record from Gran Canaria, Canary Islands. *Journal of Biogeography*, 48: 276–90. https://doi.org/10.1111/jbi.13995

Reinhard, K.J., Martín-Oval, M., del-Arco-Aguilar, M., Rodríguez-Maffiotte-Martín, C. & del-Arco-Aguilar, M.C. 2021. Analysis of Mummified Intestines Samples From the El Chorrillo (Canary Islands, Spain): The Recovery of Macroscopic and Microscopic Evidence of Dietary Practices. *Canarias Arqueológica: Arqueología-Bioantropología*: 483–94.

Ribeiro, A. 2021. Vagueness, Identity, and the Dangers of a General Metaphysics in Archaeology. *Open Philosophy*, 4: 20–35. https://doi.org/10.1515/opphil-2020-0149

Ribeiro, A. 2022. Methodological Anarchism Against Interdisciplinary Archaeology. *Forum Kritische Archäologie*, 11: 93–105.

Roberts, P., Fernandes, R., Craig, O.E., Larsen, T., Lucquin, A., Swift, J., et al. 2018. Calling all Archaeologists: Guidelines for Terminology, Methodology, Data Handling, and Reporting When Undertaking and Reviewing Stable Isotope Applications in Archaeology. *Rapid Communications in Mass Spectrometry*, 32: 361–72. https://doi.org/10.1002/rcm.8044

Rodríguez-Martín, C. & Martín-Oval, M. 2009. *Guanches: Una Historia Bioantropológica*. Santa Cruz de Tenerife: Organismo Autónomo de Museos y Centros.

Rodríguez-Varela, R., Günther, T., Krzewińska, M., Storå, J., Gillingwater, T.H., MacCallum, M., et al. 2017. Genomic Analyses of Pre-European Conquest Human Remains from the Canary Islands Reveal Close Affinity to Modern North Africans. *Current Biology*, 27: 1677–79. https://doi.org/10.1016/j.cub.2017.09.059

Sahlins, M.D. 1955. Esoteric Efflorescence in Easter Island. *American Anthropologist*, 57: 1045–52. https://doi.org/10.1525/aa.1955.57.5.02a00150

Santana Santana, A. 2002. *El conocimiento geográfico de la costa Noroccidental de África en Plinio: La posición de las Canarias* (Vol. 88). Hildesheim: Olms.

Serrano, J.G., Ordóñez, A.C., Santana, J., Sánchez-Cañadillas, E., Arnay, M., Rodríguez-Rodríguez, A., et al. 2023. The Genomic History of the Indigenous People of the Canary Islands. *Nature Communications*, 14: 4641. https://doi.org/10.1038/s41467-023-40198-w

Shanks, M. & McGuire, R.H. 1996. The Craft of Archaeology. *American Antiquity*, 61: 75–88. https://doi.org/10.1017/S0002731600050046

Shipley, G. 2020. *Pseudo-Skylax's Periplous: The Circumnavigation of the Inhabited World: Text, Translation and Commentary*, Liverpool: Liverpool University Press.

Simões, L.G., Günther, T., Martínez-Sánchez, R.M., Vera-Rodríguez, J.C., Iriarte, E., Rodríguez-Varela, R., et al. 2023. Northwest African Neolithic Initiated by Migrants from Iberia and Levant. *Nature*, 618: 550–56.

Soares, A.M.M. & Dias, J.M.A. 2007. Reservoir Effect of Coastal Waters off Western and Northwestern Galicia. *Radiocarbon*, 49: 925–36. https://doi.org/10.1017/S003382220004279X

Stieglitz, R.R. 1984. Long-distance Seafaring in the Ancient Near East. *The Biblical Archaeologist*, 47: 134–42. https://doi.org/10.2307/3209914

Tejera Gaspar, A., Chávez Álvarez, M.E. & Montesdeoca, M. 2006. *Canarias y el África Antigua*. La Laguna: Centro de la Cultura Popular Canaria.
Terrell, J.E. 1976. Island Biogeography and Man in Melanesia. *Archaeology & Physical Anthropology in Oceania*, 11: 1–17.
Terrell, J.E. 2020. Metaphor and Theory in Island Archaeology. *The Journal of Island and Coastal Archaeology* [online]: 1–11. https://doi.org/10.1080/15564894.2020.1830892
Terrell, J.E., Kelly, K.M. & Rainbird, P. 2001. Foregone Conclusions? In Search of Papuans and Austronesians. *Current Anthropology*, 42: 97–124. https://doi.org/10.1086/318436
Velasco-Vázquez, J. 1999. *Canarios. Economía y dieta de una sociedad prehistóricas*. Las Palmas: Cabildo de Gran Canaria.
Velasco-Vázquez, J., Alberto-Barroso, V.N., Delgado-Darias, T., Moreno-Benítez, M., Lécuyer, C. & Richardin, P. 2020. Poblamiento, colonización y primera historia de Canarias: El C14 como paradigma. *Anuario de Estudios Atlánticos*, 66: 1–24.
Waters, M.R., Stafford, T.W. & Carlson, D.L. 2020. The Age of Clovis: 13,050 to 12,750 cal yr BP. *Science Advances*, 6: eaaz0455. https://doi.org/10.1126/sciadv.aaz0455
Westaway, M.C. 2019. The First Hominin Fleet. *Nature Ecology & Evolution*, 3: 999–1000. https://doi.org/10.1038/s41559-019-0928-9

Biographical Notes

Paloma Cuello del Pozo is a PhD candidate in archaeology at the Department of Anthropology, Texas A&M University, interested in analytical methods with a special focus in stable isotope analyses. Her research includes aDNA data to contextualize isotopic results to explore questions of landscape use, economic activities, mobility, and the origin of ancient Canarian aboriginals. She is developing a baseline of bioavailable strontium stable isotopes in the archipelago to compare data with archaeological human remains from Tenerife and Gran Canaria. Her project incorporates AMS radiocarbon dates to gain a diachronic understanding of archaeological events. Other areas of interest include mortuary archaeology, osteology, and palynology.

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Qui, pourquoi, quand et d'où? Le peuplement des Canaries et les enjeux de l'archéométrie

Les archéologues des îles Canaries ont amassé une quantité considérable de dates radiocarbone et de donnés paléogénétiques. Leur analyse, quoiqu'indéniablement utile et nécessaire à notre compréhension d'activités anciennes, n'est cependant pas accompagnée de modèles d'interprétation plus poussés basés sur de théories élaborées pour les archipels. Cette situation crée une lacune dans notre conception des réseaux sociaux et du peuplement anciens des Canaries. Le caractère décontextualisé des paysages archéologiques des Canaries et le manque de consensus sur l'usage correct des méthodes de datation radiocarbone figurent parmi les facteurs menant à de vifs débats entre spécialistes. Pour les îles Canaries, l'auteur de cet article passe en revue la documentation actuelle sur l'ADN ancien, examine les théories concernant son peuplement et les données chronologiques utilisées dans l'élaboration de modèles d'occupation et considère si ces perspectives s'harmonisent avec les idées courantes concernant la colonisation des îles. Translation by Madeleine Hummler

Mots-clés: îles Canaries, archéologie des îles, théorie, paléogénétique, datation radiocarbone, peuplement humain

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Wer, warum, wann und woher? Die Ansiedlung der Kanarischen Inseln und die Herausforderungen der Archäometrie

Die Archäologen der Kanarischen Inseln haben eine Menge von Radiokarbon-Datierungen und paläogenetischen Daten zusammengesammelt. Obwohl die Analysen dieser Angaben zweifellos für unser Verständnis von menschlicher Tätigkeit in der Vergangenheit sinnvoll und nötig sind, gehen diese Untersuchungen nicht mit einer eingehenden Deutung, welche auf sich auf Theorien der Entwicklung von Inselketten stützt, einher. Dadurch entsteht eine Lücke in unserer Auffassung der Besiedlung und gesellschaftlichen Netzwerken der Kanarischen Inseln. Der zusammenhanglose Charakter der kanarischen archäologischen Landschaft und mangelnde Einigkeit über die korrekte Anwendung von Radiokarbon-Datierungsmethoden tragen zu regen Diskussionen zwischen Wissenschaftler bei. Für die Kanarischen Inseln bewertet die Verfasserin die aktuellen Veröffentlichungen über altDNA, betrachtet Ansiedlungstheorien sowie die chronologischen Begründungen von verschiedenen Besiedlungsmodellen und erwägt, inwiefern diese Perspektiven den gegenwärtigen Denkweisen über die Kolonisation von Inseln entsprechen. Translation by Madeleine Hummler

Stichworte: Kanarische Inseln, Inselarchäologie, Theorie, Paläogenetik, Radiokarbon-Datierung, Besiedlung

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