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# Contested grounds: a non-binary isotopic approach to sex and gender in precolonial coastal Brazil

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#### Palabras clave:

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### **ABSTRACT**

Bioarchaeology has often been pointed to as the most entrenched bastion of normative binary assumptions in gender archaeology. There is some irony to it, since bioarchaeologists are the most acquainted with the biosocial plasticity of the skeleton. In this paper, I reassess isotopic ( $\delta^{13}$ C,  $\delta^{15}$ N) and mortuary data from Armação do Sul (Florianópolis, Brazil) that was formerly analyzed from a normative male/female perspective, this time through a non-binary lens. I highlight bodily differences imprinted by dietary and mortuary practices that were oriented in the socio-material world, adding variables that speak to other forms of differentiation than sexual dimorphism and that emphasize intersectionality in social configurations.

#### **RESUMEN**

A menudo se ha señalado a la bioarqueología como el bastión más arraigado de las perspectivas binarias de sexo y género en la arqueología. Hay algo de ironía en esto, ya que les bioarqueólogues son les más familiarizades con la plasticidad biosocial del esqueleto. En este artículo, reexamino los datos isotópicos ( $\delta^{13}$ C,  $\delta^{15}$ N) y mortuorios del sitio Armação do Sul (Florianópolis, Brasil) que se abordaron previamente desde una perspectiva binaria normativa, esta vez a través de una lente no-binaria. Resalto las diferencias corporales impresas por prácticas alimentarias y mortuorias que se orientaron en el mundo sociomaterial, agregando variables que expresan otras formas de diferenciación además del dimorfismo sexual y que enfatizan la interseccionalidad en las configuraciones sociales.

### RESUMO

A bioarqueologia tem sido frequentemente apontada como um dos bastiões das perspectivas binárias de sexo e gênero na arqueologia. Há certa ironia nisso, já que bioarqueólogues são aquelus mais familiarizades com a plasticidade biossocial do esqueleto. Neste artigo, reexamino dados isotópicos ( $\delta^{13}$ C,  $\delta^{15}$ N) e mortuários do sítio Armação do Sul (Florianópolis, Brasil) que foram anteriormente abordados sob uma perspectiva binária normativa, desta vez através de uma lente não-binária. Destaco diferenças corporais produzidas por práticas alimentares e mortuárias que se orientavam no mundo sociomaterial, acrescentando variáveis que expressam outras formas de diferenciação para além do dimorfismo sexual e que enfatizam a interseccionalidade nas configurações sociais.

### 1. Introduction<sup>1</sup>

A massive uprooting of dualistic thinking in the individual and collective consciousness is the beginning of a long struggle, but one that could, in our best hopes, bring us to the end of rape, of violence, of war.

Gloria Anzaldúa (1987, p. 80)

I believe the rainbow always has more colors than society has categories, and that society is always trying to cram humanity's rainbow into the few categories it does have.

Joan Roughgarden (2004, p. 396)

Bioarchaeological and mortuary approaches have often been pointed to as the most entrenched bastions of normative binary assumptions in gender archaeology (Gilchrist, 1999; Voss, 2005; Sofaer, 2006; Geller, 2008a). These "binary binds" are represented by the two-sex/two-gender system, which presumes a direct correspondence between anatomical dimorphism and gender identity, and the sex/gender system, which takes sex as a biological given and gender as a

<sup>&</sup>lt;sup>1</sup> Florianópolis is Kaingang, Laklānō-Xokleng, and Guarani ancestral land. I acknowledge Armação do Sul and the other indigenous archaeological sites in the city as part of this long-term history and I support the construction of the Indigenous Passage House Goj Ty Sá in the area of the deactivated Saco dos Limões Integration Terminal. This right has been denied by the city government due to conflicting real estate interests in the area that commune with the current fascist and genocide Brazilian federal government, which has recently announced the conversion of this public area into a federal real estate fund to be opened for private investments



cultural construction, leading to a material/discursive dichotomy (Ghisleni et al., 2016, p. 767). Together, the two-sex/two-gender and the sex/gender systems constrain knowledge production around specific kinds of bodies and persons and preclude the envisioning of identities and ontologies otherwise (sensu Escobar, 2008). Although bioarchaeological and mortuary research in the context of gender archaeology have been gradually overcoming the two-sex/two-gender bind by acknowledging variability in gender experience that is not determined by anatomical dimorphism, the reliance on the materiality of the skeleton and the methodological dependence on dimorphic difference make escaping from the second bind more unlikely and tend to reproduce the sex/gender, biological/social, material/discursive dichotomies.

There is some irony to this reproduction of the material/discursive divide though, since bioarchaeologists are precisely the ones who are most acquainted with the plasticity of the skeleton in the interaction of genetic, epigenetic, and socioenvironmental factors at large such as dietary other cultural practices. In fact, social bioarchaeology, as defined by Agarwal and Glencross (2011, p. 3), aims at "reconstructing the biological footings of the skeletal body and cultural framework that has together created the social spaces and the social creatures that inhabit them". In another place, Agarwal (2012, p. 29) also reminds us that besides the "millions of years of evolutionary history and trajectories laid down during genetic development, individual life history plays a significant role in creating each person's unique skeletal morphology". Therefore, social bioarchaeology is about underscoring the relationships between the various social and physical forces that shape our bodies. This is especially true in the case of stable isotopes. Isotopic bioarchaeology deals with the environmental imprints gathered to the skeleton by means of everyday or more exceptional socially experienced practices such as diet and residential mobility, which means that stable isotopes analysis can only happen in the intersection/ coproduction of the material and the discursive and as such may inspire attempts to break out of the sex/ gender divide.

This paper is one such attempt. By discussing isotopic ( $\delta^{13}$ C,  $\delta^{15}$ N) and mortuary analyses at Armação do Sul (Florianópolis, Southern Brazil), a shell-matrix site (also known as "sambaqui") that resulted from funerary activities undertaken between 2900  $\pm$  30 and 1150  $\pm$  30 years BP, I reassess data that was formerly produced and interpreted under a female/male normative binary perspective of sex and gender (Oppitz, 2015; Oppitz et al., 2018), this time through a non-binary lens. Attentive to the critique of third-sex and third-gender narratives

(Voss, 2005; Ghisleni, Jordan & Fioccoprile, 2016; Moral, 2016), I avoid searching for gender variability in the disjunction between anatomical dimorphism and expected normative gender, or "anomalies" within the norm. Instead, I try to destabilize the grounds of the material-discursive apparatus that sustains sexual dimorphism as a primary axis of analysis (Barad, 2007; Geller, 2008a; Marshall & Alberti, 2014), adding variables that speak to other forms of differentiating bodies and identities and that emphasize intersectionality in social configurations (Gonzalez, 1982; Lugones, 1987; Crenshaw, 1989). By holding to an experimental tone, this paper is only a first move toward a non-binary analysis of sex and gender relations in the archaeology of sambaquis that does not intend to be conclusive but expects to open up a possibility. This move depends upon certain methodological adjustments, feminist and decolonial, which will be discussed throughout the paper.

### 2. Feminism and gender in archaeology

Sex, gender, and sexuality studies in archaeology have been keeping pace with the waves of the feminist movement for decades. The first wave emerged at the end of the nineteenth century with the suffrage movements and was characterized by the fight for political, social, and economic rights. The priorities of this initial phase of the feminist movement were much more political than academic, having little repercussion in the production of archaeological or scholarly knowledge (Stockett & Geller, 2006, pp. 4-5). Some women archaeologists of the time, however, such as Amelia Edwards, Margaret Murray, and Hanna Rydh, stood out not only for their active political involvement with feminism and the struggle for women's rights, but also for a concern in representing the women of the past in their own research and archaeological narratives (Arwill-Nordbladh, 1998; Champion, 1998).

As women achieved public emancipation and more rights were acquired, the focus of the movement gradually changed to include a critical analysis of the patriarchy, concerned with revealing the structures of women oppression and fighting for the rights of the body, sexuality, and reproduction (Gilchrist, 1999, p. 14; Spencer-Wood, 2011, pp. 7-8). This change of focus marked the second wave of the feminist movement, which started in post-war Europe (Beauvoir, 1949) and gained visibility in the US in the 1960s (Friedan, 1963). An important theoretical mark of this period, besides the structuralism and explanatory universalism in the theory of the patriarchy, was the deconstruction of biological determinism allowed by the distinction between biological sex and cultural gender (Stoller,



1968; Rubin, 1975; Scott, 1986). The sex/gender system challenged the inevitability of gender roles and power relations between men and women by seeing these as culturally constructed rather than naturally given (Voss, 2005, pp. 57-58). At this point it is crucial to highlight that while women in the US of the 1960s were acquiring rights and living a context of political and cultural effervescence, the US government was working to deprive Brazilian women and citizens at large of their own rights by supporting the 1964's civil-military coup in Brazil. The years of repression gave a different tone to the second wave of the Brazilian feminist movement, which went beyond the usual concerns with the patriarchy to include the fight for democracy, amnesty, and improvement of living standards (Pinto, 2003).

Although some feminist critiques and archaeological research on gender were developed in Norway in the 1970s (Dommasnes, 1992), it was only in the 1980s that the second wave would reverberate more deeply in archaeology with the foundational article by US-American archaeologists Conkey and Spector (1984) and the inauguration of the Norwegian journal K.A.N: Kvinner i arkeologi i Norge (K.A.N. Women in Archaeology in Norway) (Engelstad, 2007). These newly emerged feminist archaeologies aimed at deconstructing androcentric bias and gender stereotypes in archaeological theory and practice, locating women and analyzing gender power relations in the past as well as in academia and the archaeological workplace (Gero & Conkey, 1991; Spector, 1993; Gilchrist, 1994; Nelson, Nelson, & Wylie, 1994; Claassen & Joyce, 1997). Feminist archaeologies incorporated the sex/gender system in the archaeological inquiry and sought to validate gender as an analytical category by investigating historical and cultural variability in gender relations, a path that would also reveal the roots of female oppression (Gilchrist, 1999, p. 15; Stockett & Geller, 2006, p. 9; Bolger, 2012, pp. 5-6).

By bringing a concern toward exposing how the present affects the archaeological past and the way the archaeological past can uphold the social asymmetries of the present -what Joan Gero (1985) called a "reflective sociology of archaeology" or a "reflective socio-political research"- feminist archaeologists raised an epistemological critique of processualism and scientificism, debating issues of positionality, ideology, scale, symbolic practices, and challenging the subject-object dualism and the myth of scientific objectivity (Wylie, 1982; Conkey & Spector, 1984; Gero, 1985; Longino, 1987, 1990; Haraway, 1988). This critique was contemporary with but independent of the postprocessual critique, taking part in the lively theoretical landscape of the time and initiating the debate of reflexivity that later would become popular under Hodder's (1997) systematization.

The feminisms of the second wave, however, did not pay attention to the differences between women, such as ethnicity, class, and sexuality, taking the experiences of the white, middle-class, cisgender, and heterosexual women as universal. Soon enough, women of color and other feminists outside the US and European mainstream began to question this universalism, arguing that by ignoring difference, white middle-class woman were reinstating the very oppression that they were fighting against (Davis, 1981; Gonzalez, 1982; hooks, 1984; Carneiro & Santos, 1985; Anzaldúa, 1987; Spivak, 1988; Abu-Lughod, 1990). Later, the entanglement of gender, ethnicity, class, race, sexuality and other axes of subordination would be organized under the concept of intersectionality (Crenshaw, 1989).

This context of more complex and nuanced understanding of gender and its connections with other aspects of social identity also prompted a critique of the second wave's fixed binary categories of gender and sexuality. Queer theory emerged to destabilize these binaries and to emphasize fluidity and ambiguity in gender and sexual identities, beginning by questioning the sex/gender system (Laqueur, 1992; Butler, 1993). As Nicholson (1994) contends, the incorporation of the sex/gender system by the feminists of the 1970s created the conditions to escape biological determinism but instituted a biological foundationalism. Butler's (1993) theory of performativity is key to the critique of the prediscursiveness of sex, maintaining that both sex and gender identities are created through the repetition of cultural practices materially inscribed on bodies and constantly negotiated.

Intersectionality and queer theory together characterize the third wave of feminism, greatly influenced by post-structuralism and post-colonialism. With a shift in focus from equity and inequality to difference, the third wave amplified the scope of feminism to include more diverse subjectivities. In archaeology, the scope was also amplified with the development of Black feminist archaeologies (Franklin, 2001; Battle-Baptiste, 2011), archaeologies of sexuality (Meskell, 1999; Joyce, 2000; Voss, 2000), and a general concern with investigating the connections between different realms of social identity in the past, considering evidence of non-binary gender and sexualities, and exploring bodily experiences and the potentialities of performativity theory (Dowson, 2000; Alberti, 2005; Croucher, 2005; Geller, 2008b), adding to the second wave's focus on women visibility and androcentric essentialisms (Bolger, 2012, pp. 6-7).

In Brazil, archaeological studies with a focus on gender emerged from 1990 onwards (Lima, 1995; Landa, 1999; Schaan, 2001; Sene, 2003; Escórcio & Gaspar, 2005; Pessis, 2005; Lima, Castro & Silva, 2012; Ribeiro, 2013; Fredel, 2015; Caromano et al., 2017).



Until then -and, to some extent, continuing to date-PRONAPA<sup>2</sup> and its imperialist legacy of scientificism, determinism, and social evolutionism hindered the engagement of Brazilian archaeology with certain politically loaded theoretical debates, such as power, ideology, social action, and identity, including both gender and feminism. Gender archaeology in Brazil has been mostly concerned with identifying the origins of the patriarchy (e.g. the sexual division of labor and differential access to food) but also with challenging androcentric perspectives of the past by making women visible, usually from a binary male-female perspective (cf. Jácome & Furquim, 2019 for a review). Despite the prominence of Black Brazilian feminists and other Latin American women such as Lélia Gonzalez (1982) and María Lugones (1987) in the shaping of the third wave of the feminist movement, concerns with intersectionality and queer theory have only recently been absorbed by Brazilian archaeology (e.g. Gontijo & Schaan, 2017; Hartemann, 2019; Oliveira & Klokler, 2018; Pinto, 2015; Ribeiro, 2017; Roedel, 2017).

# 3. Persisting binaries and methodological challenges

Notwithstanding the decades of feminist and queer critique in the discipline, normative binary assumptions of gender, sex, and sexuality continue to hinder knowledge production, directing archaeological inquiry towards specific kinds of bodies and subjectivities. These "binary binds", according to Ghisleni et al. (2016), are supported by the two-sex/two-gender system, which presumes a direct correspondence between anatomical dimorphism and gender identity, and the sex/gender system, which takes sex as a biological given and gender as a cultural construction, leading to a material/discursive dichotomy.

This persistence of binary assumptions can be explained by a fear of compromising "gender" as a category of analysis, since "deconstructions of sex and gender destabilize precisely those categories (e.g. male, female, woman, man) that are necessarily invoked to model engendered social worlds of the past" (Voss, 2000, p. 186). It can also be explained by the inescapable materiality of the archaeological record, especially in the case of bioarchaeology and mortuary research (Gilchrist, 1999; Voss, 2005; Sofaer, 2006; Geller, 2008a), where "[...] our interrogations frequently begin with biological sexing of human skeletons, without

<sup>2</sup> Programa Nacional the Pesquisas Arqueológicas (PRONAPA) was an archaeological program that resulted from a partnership celebrated in 1965 between the Smithsonian Institute and the Comissão de Aperfeiçoamento de Pessoal de Nível Superior (CNPq), right after the civil-military coup in Brazil. the benefit of direct observation or engagement with embodied individuals" (Gilchrist, 1999, p. 19). Indeed, some archaeologists uphold that sex is a material reality observable in osteological variation and that so are the resulting male/female osteological categories, the point being what people do with this given materiality and what society allows them to do (Sofaer, 2006; Fuglestvedt, 2014).

The analytical dependence upon biological dimorphism in archaeological practice is so deep that even the attempts to escape it sometimes are caught in its own dualistic logic. The third gender and third sex narratives figure among these attempts. By searching for the "deviant" patterns, these narratives hold to a certain expectation of what a standard pattern should be, reifying the binary male/female opposites as a universal normative and taking the "thirds" as the non-normative instead of trying to understand contextually how difference and other configurations of the normative could be playing out (Voss, 2005; Matić, 2012; Ghisleni, Jordan & Fioccoprile, 2016; Moral, 2016).

The example of third gender narratives underscores the methodological challenge of how to approach the archaeological record without falling into a male/ female and sex/gender dualism. On that matter, feminist bioarchaeologist Pamela Geller (2008a, p. 119) states:

To clarify, comparing bodies does allow for identification and assessment of biological differences. However, the process of categorization and attachment of specific (and narrow) meanings pertaining to 'normal' masculinity and femininity requires reflection – not just for intersex individuals but for everyone.

Inspired by Butler (1993), Geller (2008a, pp. 120-122) demonstrates how social phenomena, such as the male/female binary, can be easily naturalized through scientific practice. She looks at the shifts in osteological criteria of sex determination through time and their attached social meanings, showing how the cranium and the pelvis emerged as the primary markers of sex difference in the eighteenth century, when the smaller skull and larger pelvis were taken as biological proof of woman's intellectual inferiority and natural predisposition to childbirth and childcare. In the twentieth century, the elemental focus shifted almost exclusively to the skull until, after 1970, the focus turned again to the pelvis. That said, Geller (2008a, p. 122) asks: "given bioarchaeologists' emphasis on the pelvis, therefore, is it possible that a feminine ideal remains bound to notions of motherhood, even in the late twentieth and early twenty-first centuries?".

Following Geller's take, I argue that bodily differences



do exist, but they are not naturally given, they are not dichotomous, and they most certainly are not always produced in terms of sex or whatever the moderncolonial social order and its heteronormative bias understands by sex. They are bodily differences long before they become sex differences. At this point we can engage with Barad's (2007) agential realism, as suggested by Marshall and Alberti (2014), and contend that bodily differences are materialdiscursive phenomena, contingently produced in the entanglement between apparatuses of bodily production (i.e. agencies of observation) and objects of observation. Apparatuses are boundary-making practices that produce matter and meaning through agential cuts. From an agential realist perspective, osteological differences therefore, based reproductive capability and categorized under a male/ female binary are nothing but the result of an agential cut enacted by a specific apparatus (e.g. the measuring instrument, the analytical protocol, the sociopolitical context) in intra-action with a skeleton (instead of "interaction", which assumes the prior existence of independent entities). Anatomical dimorphism is only one particular material configuration among others and is always opened to contestation: a change in the apparatus changes the agential cut, hence the delineation of the body (Barad, 2007, p. 175).

This change in the apparatus to allow for alternative non-binary configurations in the assessment of past genders, sexes, and sexualities requires that we do science as feminists, paying attention to the unstated assumptions that influence the course of inquiry, acknowledging our ability to affect it, and building frameworks that are more appropriate to our scientific goals and political values (Longino, 1987, pp. 60-63). This stance has been taken by second wave feminist archaeologists, who worked against the androcentric bias and emphasized, among other principles, the importance of a shift in scale (Conkey & Spector, 1984) and of integrating multiple lines of evidence (Wylie, 1989) to identify gender differences in the past. While these principles remain paramount today, if we are to attend to the third wave concerns as well we need to take a step back in the course of inquiry and mind the starting points (Geller, 2008a; Ghisleni, Jordan & Fioccoprile, 2016). Every time we begin to question our data with an a priori male/female division, taking sex as the main analytical axis, we are assuming that anatomical differences concerning reproductive capability were understood in terms of sex and represented the main organizing principle in a given past society. Instead,

[...] we might interrogate whether gender is a sociocultural construct independent of or

contingent upon anatomical differences, genetic binaries, or physiological processes. Or, we might think about how social differences –age (i.e. young, old, dead), societal position (i.e. class), group affiliation (e.g. ethnicity, occupation), and community or family role– shape those biological differences that modern researchers identify as standards of criteria for sexing. In doing so, we might recognize other cultures' conceptualization of gendered identities at different stages in the life course. Or, more generally, we can think about biological difference as the combined and multifaceted outcome of developmental stage, local biology, environment, and/or socioeconomic circumstances (Geller, 2008a, p. 129).

If we turn to the body itself and start with questions of difference rather than sex, thinking in terms of bodily differences and embodiment rather than biologically given sexual differences, we are drawn to a biocultural realm wherein difference is necessarily produced in the crossing of numerous biological, social, and environmental variables, and identity is thus necessarily intersectional.

### 4. Research at Armação do Sul

Armação do Sul is a shallow, sandy, funerary site with a small amount of shell in its sediments and some large shell lenses scattered throughout the stratigraphy. The site is located on the central coast of Santa Catarina (Florianópolis, Southern Brazil) (Figure 1) and is dated between 2900  $\pm$  30 and 1430  $\pm$  30  $^{14}$ C years BP. It was studied by João Alfredo Rohr and Margarida Andreatta in 1969 and 1974 (Rohr & Andreatta, 1969; Rohr, 1974), who excavated 269m<sup>2</sup> from an estimated total area of 2000 m<sup>2</sup>. The excavation revealed 86 human burials and the spatial distribution of other materials and features such as fire pits, piled rocks, faunal remains, lithic, and bone artifacts is closely related to the distribution of the burials, indicating that the activities performed in the excavated area were mainly funerary and ritual (Oppitz, 2015). The materials collected by Rohr and Andreatta are part of the archaeological collection of the Museu do Homem do Sambaqui "Pe. João Alfredo Rohr, S.J." (Colégio Catarinense, Florianópolis/SC).

Since the 1970s, the archaeological materials from Armação do Sul, especially the skeletal collection, have been studied by a number of scholars (Neves, 1988; DeMasi, 1991; Schmitz et al., 1992; Lessa & Scherer, 2008; Okumura, 2008; Scherer, 2012; Oppitz, 2015). My own research involved stable isotopes analysis of strontium ( $^{87}$ Sr/ $^{86}$ Sr), carbon ( $\delta^{13}$ C), and nitrogen ( $\delta^{15}$ N), as well as mortuary analysis (spatial distribution and



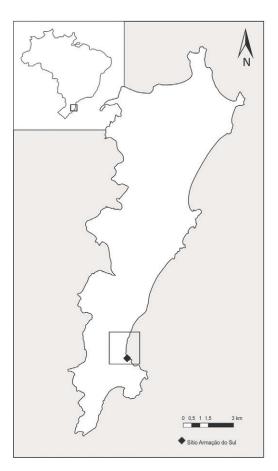






Figure 1. Location of Armação do Sul site, on Santa Catarina Island (Florianópolis, Southern Brazil), and detail of the coastal plain of Armação beach.

grave goods), and the establishment of a detailed site chronology (Oppitz, 2015).

As an attempt to escape modern-colonial narratives (sensu Mignolo, 2000) of social change that attribute transformations in the coastal archaeological record (e.g. shifts in mound building practices, diet, and introduction of pottery) to the arrival and hegemony highland agricultural communities and have dichotomy hunter-gatherer/agricultural ceramic/non-ceramic as a theoretical and analytical derivative bind, I approached isotopic and mortuary data from a long term, practice-oriented, and multidimensional perspective, a move that required some analytical adjustments. If change is assumed to be multidimensional, this multidimensionality should be considered in the data creation process. Therefore, instead of the usual grouping of data into ceramic and non-ceramic series, I completed a multidimensional statistical analysis, the isotopic and mortuary data being contextually understood in the short, medium, and long-term, and at site (Armação do Sul), local (central coast of Santa Catarina), and regional (coast of Santa Catarina) scales, to create a positive tension between individual and structure, change and stability, synchrony and diachrony. The radiocarbon dates

obtained for 30 individuals from Armação do Sul facilitaded the development of this analysis. The fine chronology allowed change to be assessed in a more nuanced way and the cross-referencing of radiocarbon, mortuary, and stratigraphic information enabled the development of a relative site chronology, indicating two different periods of site activity: the early (3100-2500 BP) and the late period (2500-1200 BP)<sup>3</sup>.

The conventional ceramic/non-ceramic dualism in the statistical processing of data would have led to the testing of difference between Armação do Sul's total sample (non-ceramic) and other sites on the central coast such as Tapera or Base Aérea (ceramic), reifying the very modern-colonial narratives of complexity and social change which I was trying to escape. The long-term multidimensional analysis, on the other hand, converted dichotomic difference and variability into change and

<sup>&</sup>lt;sup>3</sup> Early period: skeletons buried in brown sand and/or dated between 3100 and 2500 BP. Most burials are in the southeast portion of the excavated area and are covered with red ochre. Bone points are rare and most children present shell bead adornments. Late period: skeletons buried in black earth and/or dated between 2500 and 1200 BP. Most burials are in the northwest portion of the excavated area and few are covered in red ochre. Bone points are frequent and only some children present shell bead adornments (Oppitz, 2015).



social distinction, and allowed those elements referring to long-term traditions to be differentiated from those expressing contingent choices for the solution of specific situations, making the palimpsests intelligible -and, most importantly, making them recognizable as palimpsests. With this shift in theoretical and analytical perspectives, it was possible to see historical continuity between Armação do Sul and later ceramic sites and to demonstrate that change was already happening priorly to the occurrence of pottery on the coast, the latter figuring as just one transformation among many (e.g. mound-building, dietary, mobility, and mortuary practices). No positive evidence either of contact with highland populations or of their presence on the coast was found. It was also possible to conclude that people at Armação do Sul and in the central coast of Santa Catarina more broadly were changing on their own terms, with clear indications that change was taking different forms at different places along Santa Catarina's coast. Finally, the multidimensional processing of data enabled us to see both dietary and mortuary practices playing important roles in the production and reproduction of social distinction, revealing gender and age differences that could not be seen otherwise.

When analyzing social distinction, however, I followed the normative two-sex/two-gender binary playbook and matched gender with sex ascertained from skeleton anatomical dimorphism as male or female. Now it is time to complexify and add a few more nuances to change and social identity at Armação do Sul by combining previous decolonial aims with a feminist agenda and a non-binary intersectional perspective. Indeed, the multidimensional approach aligns well with feminist epistemologies which argue for a consideration of scale and multiple lines of evidence (Conkey & Spector, 1984; Wylie, 1989). I draw upon paleodietary data previously obtained from nitrogen and carbon isotopes and its correlations with mortuary data to reassess sex and gender relations at Armação do Sul.

### 5. Dietary practices: making bodies in life

Social bioarchaeology aims at "reconstructing the biological footings of the skeletal body and cultural framework that has together created the social spaces and the social creatures that inhabit them" (Agarwal & Glencross, 2011, p. 3). In other words, it is about underscoring the relationships between the various social and physical forces that shape our bodies. Social bioarchaeology thus starts from the principle that we are biosocial beings that take form in the relationship with the socio-material world surrounding us. We are material-discursive bodies, and this is especially true in the case of stable isotopes research, wherein

archaeologists deal with the environmental imprints gathered to the skeleton by means of everyday or more exceptional socially experienced practices, such as diet. In the words of feminist physicist Karen Barad (2007, p. 152-153):

All bodies, not merely "human" bodies, come to matter through the world's iterative intra-activity—its performativity. This is true not only of the surface or contours of the body but also of the body in the fullness of its physicality, including the very "atoms" of its being. Bodies are not objects with inherent boundaries and properties; they are material-discursive phenomena.

The different isotopic compositions present at the bottom of the food chain are acquired by animals and humans when they eat. Since the  $\delta^{15}N$  and  $\delta^{13}C$  values vary between different types of plants and environments and undergo trophic enrichment along the food chain, the analysis of the isotopic composition of specific and isolated tissues can indicate an individual's diet (DeNiro & Epstein, 1978, 1981; Schoeninger et al., 1983; Walker & DeNiro, 1986; Ambrose, 1993). While the  $\delta^{13}C$  values obtained indicate whether the diet was based on  $C_3$ ,  $C_4$  or CAM plants, the  $\delta^{15}N$  values may indicate the relative consumption of terrestrial and marine resources, as well as give an estimate of the trophic level occupied by the analyzed individual.

The things we eat and how we eat them participate in the formation of our bodies and identities. We are what we eat, and this cliché never ceases to be accurate in a very literal sense. Food is a biological necessity, but it is also part of a system of communication: when we eat, we are not simply manipulating an object, but transmitting a situation (Douglas, 1972; Barthes, 1979). Food, therefore, "is dually corporeal in that it participates in the creation of the physical person as well as the social person" (Atalay & Hastorf, 2006, p. 284). More than merely granting us with a physical existence and transmitting information, however, foodways are extremely productive practices, hence biologically and socially structured but also structuring of these realms (Bourdieu, 1977; see Lima, 1997 for an archaeological example from Brazil). Dietary practices can thus be considered performative, as they materialize social conventions through reiteration and enable their reproduction or contestation in the interstices of repetition, originating bodies that are different (Butler, 1993).

Bodily differences are produced at a social discursive level, but also through what Jane Bennett's (2010) calls the vitality of matter and the efficacy of food. Bennett (2010) considers not only what people do with food, but



also what edible matter (proteins, carbohydrates and lipids) do to people, taking food as a powerful agent that modifies human matter both quantitatively and qualitatively, affecting not just our size and volume but also our mood and cognitive dispositions, thus carrying an additional moral and political efficacy. Accordingly, discourse is not exclusive to the social realm, pertaining also to the world of things, as matter enables and constrains the production of bodily differences (Barad, 2007).

Physical and social persons, matter and discourse, emerge together and, most importantly, are differently produced through the metabolic processes, representations, performativity of dietary practices, and affordances of edible matter. This production of difference is what makes paleodietary analysis wellsuited to the study of gender and social identity. Archaeologists have been using diet inferred through stable isotopes to investigate the making of past bodies and social identities for some time. Gero & Conkey's (1991) Engendering Archaeology, the first edited volume on gender archaeology in the US, has a chapter by Hastorf (1991) on food, gender, and politics, wherein change in Andean gender relations with the entry of the Inka state are observed through isotopic and botanical data. Hastorf (1991) observes a differential access to maize, an increased circumscription of female activities in the domestic sphere, and an escalation in their maize processing workload to support predominantly male social-political activities, suggesting that women's political position diminished under Inka rule. Other examples include Atalay and Hastorf's (2006) study on food habitus and Pearson and Meskell's (2015) work

focused on age differentiation and the production of bodies. In another article, Pearson et al. (2013) correlate isotopic and mortuary data to see if change in burial practices is accompanied by a change in diet in order to reinforce social identities. Besides the concern with past social and gender relations, these studies all use isotopic data in tandem with other sorts of evidence, demonstrating the importance of multi-stranded approaches to the investigation of diet and foodways in the making of bodies and social identities.

### 5.1. Isotopic analysis

This study focuses on  $\delta^{15}N$  and  $\delta^{13}C$  data obtained from collagen samples (mostly rib fragments) of 31 adult individuals buried at Armação do Sul. Data obtained for children is excluded due to the small size of the sample (n= 4). The determination of  $\delta^{15}N$  and  $\delta^{13}C$  composition was carried out on a Thermo Finnigan Delta Plus mass spectrometer coupled to a CHNS - EA 1110 elemental analyzer, at the Laboratório de Ecologia Isotópica do Centro de Energia Nuclear na Agricultura, Universidade de São Paulo (CENA/USP). Complete protocols, sample information, and results can be consulted in Oppitz (2015).

Overall,  $\delta^{15}N$  and  $\delta^{13}C$  values obtained for adult individuals suggested a marine-focused diet of high trophic level and based mainly on fish. There is, however, some variability within this general trend. Besides the statistical outliers, at least three cohesive groups can be observed amongst the individuals analyzed (Figure 2).

While some individuals stand out for presenting medium  $\delta^{15}N$  values and lower  $\delta^{13}C$  values when

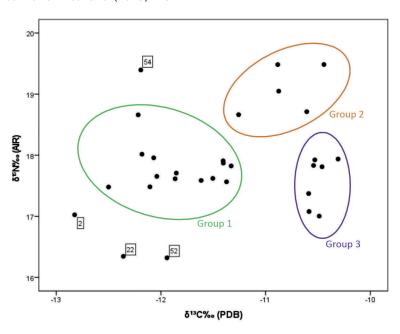


Figure 2. Scatter plot of  $\delta^{15}N$  and  $\delta^{13}C$  values obtained for the adult individuals. Outliers are labeled by their ID numbers.



compared to the whole sample (Group 1), others present higher  $\delta^{13}$ C and  $\delta^{15}$ N values (Group 2), while a third group differ for carrying higher  $\delta^{13}$ C values and slightly lower  $\delta^{15}N$  values (Group 3). The outliers are all to the left of the chart, presenting lower  $\delta^{13}$ C values and  $\delta^{15}N$  signatures that are either higher or lower than the sample's general trend. Therefore, with respect to isotopes, different sorts of bodies emerge from the scatter plot. Some are individually different, unique in their isotopic signatures, and others are clustered in cohesive groups that might be expressing more pervasive social norms. They carry specific  $\delta^{13}$ C and  $\delta^{15}$ N imprints, which means that they also carry particular combinations of proteins, carbohydrates, lipids, nucleic acids, and other organic compounds. Isotopic difference imprinted through dietary practices that are negotiated in the socio-material world is extended to the molecular level, affording certain physical and cognitive dispositions, from size and strength to feelings

These different bodies, however, emerged at different moments in the 1500 years long-term history of the site. They are not coeval. If we view the isotopic data from a diachronic perspective, it is possible to see some of the differences pointed above being converted into change

other two groups) remain a constant throughout the 1500 years of site occupation, showing only a slight movement towards the right of the chart. From this diachronic perspective, both the early and the late period of site occupation have at least two clusters of bodies when it comes to nitrogen and carbon isotopic signatures. Moreover, two individuals that presented results coherent with the sample in the general scatter plot have now become outliers with regard to the samples for their respective periods (ld. 37 and 5).

My first move here towards a non-binary and intersectional perspective is to demonstrate that the different groups of bodies being produced by dietary practices at Armação do Sul do not perfectly coincide with the distribution of dimorphically-attributed sex (Figure 4). Skeletons had their sexes determined according to Buikstra and Ubelaker's (1994) protocol<sup>4</sup>, which is based on pelvic differences (since the female pelvis is designed to birth children). In the absence of the pelvis or the impossibility of analyzing it due to post-depositional processes, other elements such as cranial features are considered. The "sexing" of bodies was thus predicated upon anatomical differences and/or reproductive capability (Geller, 2005, p. 599).

Isotopic group and dimorphic sex information do not

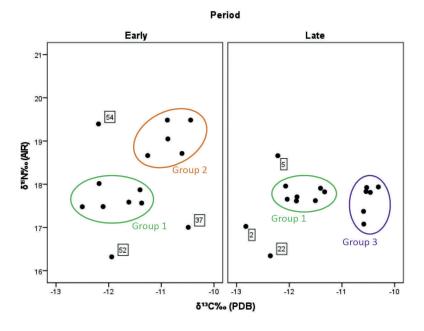


Figure 3. Scatter plot of  $\delta^{15}$ N and  $\delta^{13}$ C values obtained for the adult individuals and diachronically distributed (early period= 3100-2500 BP; late period= 2500-1200 BP). Outliers are labeled by their ID numbers.

and continuity (Figure 3). Groups 2 and 3 represent change as bodies carrying higher  $\delta^{15}N$  signatures cease to be produced in the later period of the site and bodies with higher  $\delta^{13}C$  emerge. Group 1, on the other hand, represents continuity, since bodies with lower  $\delta^{15}N$  and  $\delta^{13}C$  imprints (relatively to the isotopic values of the

correlate at either the more distanced scale of the long term, where Group 1 comprises skeletons identified

<sup>&</sup>lt;sup>4</sup> Sex determination of the skeletons from Armação do Sul was done by bioarchaeologists Andrea Lessa and Luciane Zanenga Scherer, to whom I thank for the huge support during my master research.



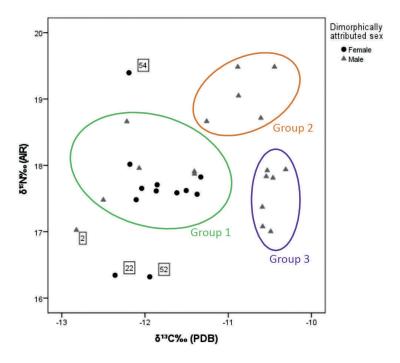


Figure 4. Scatter plot of  $\delta^{15}$ N and  $\delta^{13}$ C values obtained for the adult individuals. Outliers are labeled by their ID numbers.

as male and female, and Groups 2 and 3 comprise skeletons identified as male (Figure 4); or at the closer scale of the different occupation periods, where both early and late periods have one isotopic group with skeletons identified as male and female and another with skeletons identified as male (Figure 5). Outliers are identified as both male and female. Instead of a clear-cut sexual dimorphism, isotopic data points towards intersectionality and fluidity in the production of

physical and social persons through time by means of dietary practices.

Building upon the third wave critique of the naturalization of sex and sexual dimorphism expressed in the male/female binary (Laqueur, 1992; Butler, 1993; Geller, 2005, 2008a), as well as in the agential realist understanding of matter as produced and productive, *i.e.* bodily differences as the result of material-discursive practices (Barad, 2007; Marshall & Alberti, 2014), I take

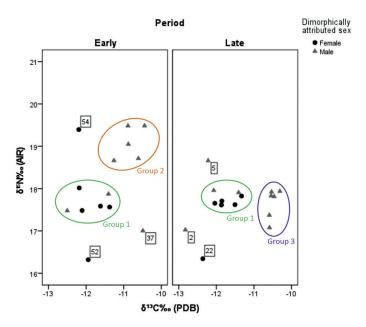


Figure 5. Scatter plot of  $\delta^{15}$ N and  $\delta^{13}$ C values obtained for the adult individuals and diachronically distributed (early period= 3100-2500 BP; late period= 2500-1200 BP). Outliers are labeled by their ID numbers.



anatomical differences estimated according to Buikstra & Ubelaker (1994) as a specific material configuration that emerges in the entanglement of humans and/or nonhuman agencies that enable and constrain the mattering (e.g. from the skeleton itself to the measuring instrument, the researcher, or the sociopolitical context). The apparatus "... enact[s] what matters and what is excluded from mattering" (Barad, 2007, p. 148), eliminating other possible differences that could emerge through alternative configurations.

Pelvic anatomical information pertaining to locomotory functions (cf. Geller, 2008, p. 122) and reproductive capability is thus re-signified as a contingent –and always contestable– variable amongst others such as isotopic signatures, entheseal alterations or even height. Accordingly, there is no reason why it should be a priori considered the main organizing principle of a given society and, consequently, neither the primary interpretative or analytical axis of research practice. The design of the pelvis becomes an element of bodily difference instead of evidence of sexual difference. Once this data is re-signified, the crossing of

and smaller pelvis and of variable isotopic values. Anatomical features and isotopic differences imprinted by dietary practices that were oriented in the sociomaterial world were conjointly producing bodies and identities at Armação do Sul.

### 6. Mortuary practices: making bodies in death

Catherine Bell (1992) defines ritual as the product of the ritualization of specific activities, where ritualization is a strategic form to act in the world that privileges what is being done over other usually more prosaic activities, differentiating itself from other forms of social action. The formalization and periodicity of ritualized acts make them powerful in the embodiment of perceptual schemes, naturalizing the social order through the misrecognition of its sources and arbitrariness. This same potential for naturalization can be used for subversion though. This is what Bell (1992, p. 207) calls the "flip side" of ritualization's strategic effectiveness: ritualized acts are much more about power than about control and the processes of objectification and embodiment are

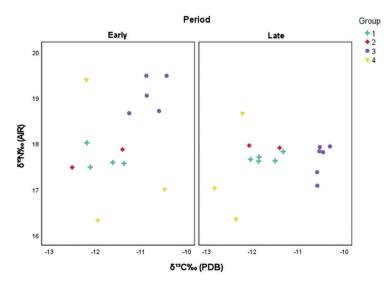


Figure 6. Scatter plot of the  $\delta^{15}N$  and  $\delta^{13}C$  values obtained for the adult individuals and diachronically distributed (early period= 3100-2500 BP; late period= 2500-1200 BP), marked by isotopic/anatomical groups.

isotopic and anatomical bodily differences enables the emergence of a new arrangement (Figure 6).

This time, at least three coherent groups of bodily differences emerge in each of the site's chronological moments, and a fourth of outliers. Group 1 corresponds to bodies of comparatively larger pelvis and lower  $\delta^{15}N$  and  $\delta^{13}C$  values; Group 2 corresponds to bodies of comparatively smaller pelvis and lower  $\delta^{15}N$  and  $\delta^{13}C$  values; Group 3 is formed by bodies of comparatively smaller pelvis, higher  $\delta^{13}C$  values, and variable  $\delta^{15}N$  values; and Group 4 gathers bodies of both larger

always traversed by consent, resistance, and negotiated appropriation. As a "strategic arena for the embodiment of power relations" (Bell, 1992, p. 170), ritualization is centralized in the body, which orchestrates the perceptual schemes and is also orchestrated by them.

Mortuary practices are a form of ritual, resulting from the strategic ritualization of the contexts of death, producing and reproducing the social order by means of the deceased body. The funerary ritual acts to redefine the social relationships between the living and between the living and the deceased, resulting



either in the affirmation of these relationships and the reinstatement of order, or in the use of death to challenge the continuity of this pre-existing order and to promote social change.

Key to Bell's (1992) ritualization theory is the understanding of ritual as social action instead of representation. Accordingly, mortuary practices such as the treatment and disposition of the body or the choice of grave goods not merely represent identities but act in their constitution. The funerary ritual thus guarantees a continuity in the production of identities beyond the person's death, shaping bodies and bodily differences through the manipulation of the materiality of death in ways that can reinforce or subvert the identities enacted by the deceased. Productive, materializing, and discursive, mortuary ritual is, just like foodways, one of the various practices that reiterate gender and sex conventions, giving them an act-like status that dissimulate their arbitrariness and allow them to produce what they name (Butler, 1993, p. 12-13).

Gender performativity – and identity at large – enacted through mortuary practices is significantly determined by the choices and the socio-material circumstances of the living, which means that the funerary context encountered by the archaeologist and its constitutive elements, such as grave goods, do not always refer to the deceased's identities in a straightforward way. Nevertheless, the deceased brings to the funeral that which is central to any ritualized act: the body. If we follow Barad's (2007) lead and acknowledge that discourse is not exclusive to the human realm, then we can devise that the continuous production of the body beyond death is certainly manipulated by the living but is also enabled and constrained by the socio-material world and the biographical life of the deceased, materially expressed in bone, flesh, and personal objects. Therefore, there is some degree of control over funerary performativity by the dead and its materialities. The living add a layer of materiality over a pre-existing materiality in ways that can confirm, contradict, or have nothing to do with it. Archaeologically speaking, if we do have a correlation between mortuary practices and other act-like instances of performativity -such as dietary practices – then we can infer that the mortuary practices are referring to the identities enacted in life by the deceased and reinforcing them. This seems to be the case in the context of Armação do Sul.

### 6.1. Mortuary analysis

My previous study of the mortuary practices at Armação do Sul involved spatial analysis of burial distribution in the area and stratigraphy of the site, as well as statistical analysis of the grave objects, including both descriptive and quantitative variables (Oppitz,

2015). The results pointed to important synchronic and diachronic variability along age (children-adults), dimorphically-attributed sex (male-female), temporal axes (early-late periods). For this article, however, I narrow the focus to the correlations between adult mortuary and isotopic data, besides taking the different groups of bodies that emerged in the intersection of anatomical and isotopic differences as an analytical axis instead of dimorphic sex. The mortuary elements considered here are the spatial distribution and the minimum number of grave goods and/or different types of grave goods in each burial. By crossreferencing mortuary, isotopic, and anatomical data, I seek to emphasize and reinforce the intersectional identities potentially observed in each one of these strands of data.

With regard to the spatial distribution of the burials in the funerary area, there is a clear pattern wherein bodies identified as Group 2 in the crossing of isotopic and anatomical variables (comparatively lower  $\delta^{15}$ N and  $\delta^{13}$ C values and smaller pelvis) are situated at the north end of the site while Groups 1, 3, and 4 intermingle around the empty central area without a specific arrangement (Figure 7).

This pattern is more conspicuous in the earlier period of occupation, when bodies from Group 2 are completely separated from the others, buried in a portion of the funerary area that is occupied mainly by children (Figure 8). In the later period, Group 2 continues in the north end area, intermingled with child burials, but they are not the only ones: there is a general movement towards the north of the site (Figure 8). What is striking is that despite this movement, both periods of occupation have bodies from Group 2 demarcating the north end of the circle.

When we analyze the spatial distribution according to the number of grave goods items and types, we can see clearly that burials in the north end of the area have a small number of objects and limited variability in object types (Figure 9). Once more, however, the early period of occupation shows it in a more salient way. While both Group 2 burials from the first period were completely excavated, Group 2 burials from the second period did not have the inferior limbs excavated, preventing a reliable estimate of the number of grave objects.

By comparing the spatial distances between burials with the number of types of grave objects in a 3D scatter plot, we can observe that bodies identified as Group 2 are isolated from the others at the north end and with the smallest numbers of types. We can also notice a tendency of Group 1 burials presenting a smaller number of types when compared with Group 3, which presents the largest numbers of object types. Bodies identified as Group 4, in their turn, do not follow a specific pattern with regard to grave goods (Figure 10).

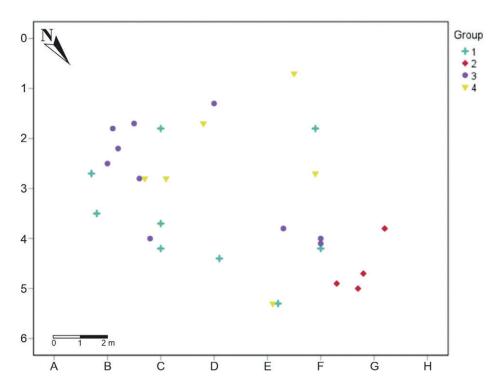


Figure 7. Spatial distribution of burials in the excavated area of Armação do Sul, marked by isotopic/anatomical group. Letters and numbers identify the different excavation units.

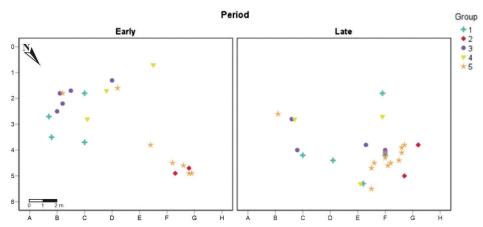


Figure 8. Spatial distribution of burials in the excavated area of Armação do Sul in the early and late periods of occupation, marked by isotopic/anatomical group. The location of child burials is included for the sake of interpretation. Letters and numbers identify the different excavation units.

Finally, by correlating  $\delta^{13}C$  and  $\delta^{15}N$  values with the number of items and types of grave goods (Pearson's r), it is possible to statistically reinforce the existence of the bodies emerged in the intersection of dietary and anatomical differences. Carbon isotopic values frequently present a moderate positive correlation with the number of items and types, higher  $\delta^{13}C$  values being usually related to higher numbers of grave objects. Nevertheless, these correlations are not significant, probably due to  $\delta^{13}C$ 's small trophic enrichment (1‰), which makes differences between isotopic signatures more subtle. Nitrogen isotopic values, however, always present high and significant correlations with the

numbers of grave objects. In the early period, there is a strong positive correlation with the number of items and types, the former significant at the 0,05 level (r = 0.723, p = 0.02,  $r^2 = 0.52$ , n = 11) and the latter at the 0.01 level (r = 0.711, p = 0.006,  $r^2 = 0.50$ , n = 13). In the later period, once the outliers are excluded, there is a strong and significant negative correlation with the number of items and types, the former at the 0,01 level (r = -0.695, p = 0.008,  $r^2 = 0.48$ , n = 13) and the latter at the 0,1 level (r = -0.552, p = 0.05,  $r^2 = 0.30$ , n = 13). Therefore, while in the first period of site occupation the presence of high numbers of items and types of grave goods is related to the intake of higher trophic level resources, in the



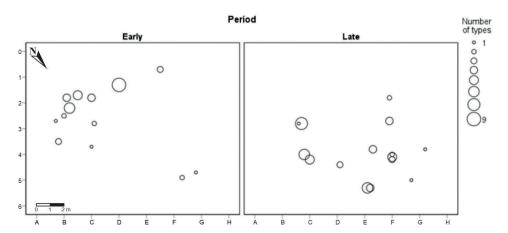


Figure 9. Spatial distribution of burials in the excavated area of Armação do Sul in the early and late periods of occupation, marked by the number of types of grave goods, *i.e.* the diversity of objects in the grave. Letters and numbers identify the different excavation units.

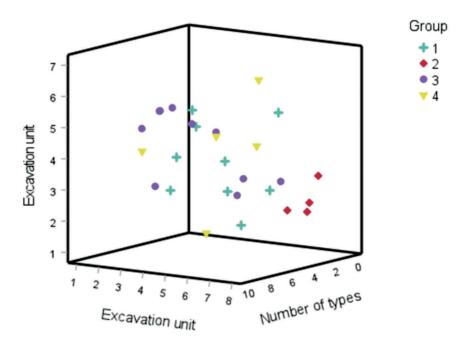


Figure 10. 3D scatter plot representing the spatial distances between burials and the number of types of grave objects, *i.e.* the diversity of objects in the grave.

second period it is related to the intake of comparatively lower trophic level resources.

Throughout the long-term history of Armação do Sul, it seems that bodies identified as Group 3 have usually gathered the highest concentration and diversity of grave objects, besides differentiating themselves with higher  $\delta^{13}$ C signatures and sometimes higher (early period), sometimes lower  $\delta^{15}$ N signatures (late period). Groups 1 and 2, on the other hand, usually differentiated themselves by gathering fewer and less diverse grave objects and maintaining lower  $\delta^{13}$ C and  $\delta^{15}$ N signatures through time. Moreover, although mingled with Group 1 with regard to the isotopic signatures, bodies identified as Group 2 usually occupy the left end of the scatter plots due to their very low number of items

and types of grave goods; they also occupy the north end of the funerary area when it comes to the spatial distribution of the burials. Last but not least, although Group 4 is constituted by outliers in terms of dietary practices embodied as  $\delta^{13}$ C and  $\delta^{15}$ N signatures, it is usually integrated with both Group 1 and Group 3 concerning body production beyond death.

As a result, the groups of differential bodies previously identified in the crossing of isotopic and anatomical information remain a valid analytical axis when mortuary variables are included. Isotopic-anatomical bodily differences and social identities enacted in life were being reinforced in death, confirming the configurations observed and supporting the narrative of intersectionality.



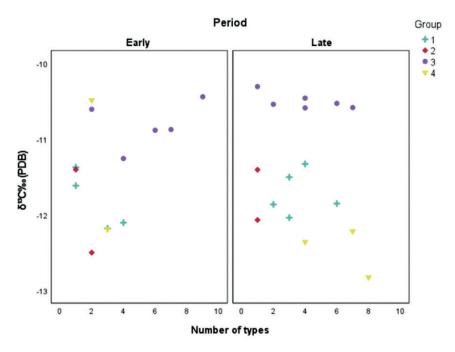


Figure 11. Scatter plot of  $\delta^{13}$ C values and number of types of grave objects, *i.e.* the diversity of objects in the grave, marked by group.

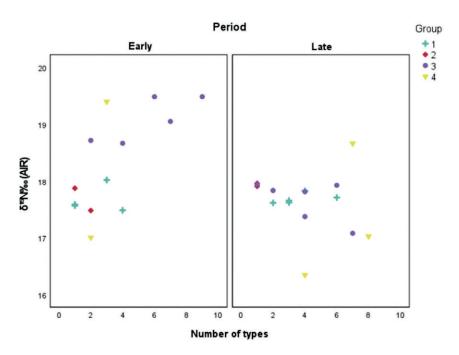


Figure 12. Scatter plot of  $\delta^{15}$ N values and number of types of grave objects, *i.e.* the diversity of objects in the grave, marked by group.

### 7. Bodies and identities in life and death

Difference is not natural. Every form of categorization is historical and needs to be materially and discursively produced. In its ubiquity and material-discursive power, dietary practices appear as important means of production and reproduction of difference, as does mortuary practices in the other more extraordinary side of social life, ritually extending the production of difference through death. In this making of difference,

sex and gender categories may emerge, or they may not. For Butler (1993, pp. 9-10), bodies matter discursively, the sex/gender system being iteratively materialized and stabilized over time through certain regulatory norms that create the effect of a fixed boundary. Barad (2007), on the other hand, gives a greater importance to the simultaneous emergence of matter and discourse. For her, bodies do matter, but they are also already matter and it is in the entanglement of bodies and



apparatuses of observation that bodily differences such as sexual dimorphism come to be.

The reassessment of Armação do Sul's isotopic and mortuary data from a non-binary perspective indicates that bodies in this precolonial community from coastal Brazil were being differently produced through dietary and mortuary practices in ways that do not coincide with sex dimorphically attributed through osteological markers of reproductive capability. Isotopic data considered from a diachronic perspective points to at least two coherent dietary groups in each of the periods of site occupation, as well as an informal third group that gathers the outliers scattered in all directions of the plot. Different  $\delta^{15}$ N and  $\delta^{13}$ C signatures result from repetitive dietary practices that are daily, long-term, and grounded in the socio-material world, shaping bodies in quantitative and qualitative ways far beyond the atomical level: atoms gather as molecules and molecules of protein, carbohydrates, and lipids shape size, cognitive dispositions, and feelings (Bennett, 2010). At first sight, the two groups which emerge might seem to be evincing a binary situation, but the crossing of isotopic and pelvis anatomical information unsettles the binary grounds. While one of the dietary groups is fully constituted by bodies of comparatively smaller pelvises, the other comprises bodies with both smaller and larger pelvises. In the end, at the intersection of isotopes and anatomy, we have a minimum of three groups of bodies and a fourth of outliers being materially-discursively produced in each of the site's chronological moments.

These three groups of bodies and their associated identities were performatively sustained in life and also in death. Mortuary data indicates that anatomical and isotopic bodily differences were reinforced through the funerary ritual: they mattered and continued to matter after death. This extended reproduction of difference is evident in the case of Group 2, identified as bodies with smaller pelvises and lower  $\delta^{15}N$  and  $\delta^{13}C$  values, that receive differential mortuary treatment both in terms of spatial distribution (buried at the north end of the funerary area) and number of grave goods (lower concentration and variability of objects). To a lesser extent, Groups 1 and 3 are also reinforced through death by gathering respectively lower and higher numbers of grave objects. The isotopic outliers that constitute Group 4, however, do not have their differences reinforced in the funerary ritual, being completely integrated to the rest of the sample.

The fact that bodily differences sustained in life and death are observed with the same configuration in the earlier and later chronological moments strengthen the inferences made and suggests that they were materializing deeply-rooted social norms, persistently reproduced throughout the 1500 years of site occupation. Nevertheless, their contents or forms of differentiation show fluidity, as we can observe Group 3 changing diets in the later period and gathering different assemblages of grave objects (cf. Oppitz 2015).

At Armação do Sul, difference was cultivated through other categories than sex and independently from reproductive capability. This statement, however, does not mean that we should completely disregard pelvic anatomical information. In fact, isotopic and mortuary data from the site indicate that reproductive capability did matter in the production of identities to a certain extent, since at times there is some level of correlation between isotopic signatures, mortuary treatment, and the size of pelvis. To matter, though, is not to determine, and does not imply the existence of only two forms of differentiation with regard to reproduction, nor that the physical and social persons made in this process would be the equivalent of the modern-colonial binary normative of men and woman. Moreover, reproduction capability was clearly not the only neither the main form of differentiation: other realms of the socio-material life, ordinary and ritualistic, like dietary and mortuary practices, were also taking part in the performativity of identitarian norms.

The move is to trigger the body, taking pelvic anatomy not as denotative of sex, but as bodily differences that might or might not participate in the formation of the subject, a single variable among countless other variables. This move is analogous to the one necessary to escape the paradigm of complexity and its resultant ceramic/non-ceramic dichotomy that pervades Brazilian coastal archaeology: a non-hierarchical approach to pottery, taken as a variable among others (Oppitz, 2015). It is about going beyond dichotomic categories that bind the production of knowledge to pretentiously transhistorical narratives that can only be reified along the lines of the dichotomy, precluding the emergence of histories and ontologies otherwise. At times it is male/ female, sex/gender, material/discursive, and at times it is ceramist/non-ceramist, agriculture/hunter-gathering, and so on. Dimorphism is for identity as binding as pottery is for social change research and the same analytical move of embracing multidimensionality in time, space, and strands of evidence, employed from a decolonial perspective to escape the latter (Oppitz, 2015), can be used to escape the former from a feminist standpoint, since it allows change and difference to emerge in more nuanced configurations. It was within diachrony and in the crosscutting of anatomical, isotopic, and mortuary information, in tandem with the archaeologist own positionality, that four groups of bodies and identities produced at Armação do Sul contingently emerged.



Finally, although we are dealing with three coherent groups of bodies and identities, I do not engage with third gender or third sex narratives, since they ultimately reify modern-colonial binary stereotypes by flagging the "third" in contrast to an expected standard. "The search for difference must go beyond isolating deviance in the interstices of a binary normative" (Ghisleni, Jordan & Fioccoprile, 2016, p. 780), particularly because the "norms" are highly variable in time and space and discerning the "interstices" is tricky and not intuitive at all. Not all variation from a statistical norm means transgression of the social norm (Voss, 2005, pp. 66-67).

This same stance can be taken with regard to the isotopic outliers that constitute Group 4. For instance, skeleton Id. 37 was the first person to be buried at the site on 2900 years BP and skeleton Id. 2 is the only in the site to present a marker of interpersonal violence, besides being an outlier in relation to strontium isotopes (Sr<sup>87</sup>/ Sr<sup>86</sup>) as well, and so was probably born in another region of the central coast of Santa Catarina (Lessa & Scherer, 2008; Oppitz, 2015). Accordingly, there is an increase in the variation of Sr<sup>87</sup>/Sr<sup>86</sup> ratios in the later period of site occupation (CVp passes from 0,028% to 0,046%), suggesting the arrival of non-locals from other parts of the central coast (Oppitz, 2015). Therefore, Group 4 do represent bodies that are individually different with regard to their  $\delta^{15}N$  and  $\delta^{13}C$  constitutions, but these differences might be explained by their origins and participation in other communities of practice and not necessarily mean deviance from the social norm. This possibility is supported by the fact that these outliers are completely integrated to the larger sample when it comes to the mortuary practices.

Instead of thirds in the case of Group 2 or an assemblage of multiple deviants in the case of Group 4, I am suggesting intersectionality in the interpretation of difference, pointing to a multiplicity of bodies and identities being produced in the intersection of several axes of identification, such as age, race, ethnicity, sexuality, kinship, or gender.

# 8. Conclusion: towards a feminist and decolonial bioarchaeology

Since the 1980s, feminist archaeologists have been advocating for reflexive epistemological change in archaeological practice (Conkey & Spector, 1984; Gero, 1985; Wylie, 1989). Indeed, by questioning our assumptions, avoiding hierarchizations, and playing with scale and multiple lines of evidence –a shift in the apparatus– androcentric and binary binds can be challenged and give difference more colorful shades.

This paper was a first step in the destabilization of

normative binary grounds and acknowledgement of intersectionality in the archaeology of sambaquis of the southern coast of Brazil, showing that bodies and identities at Armação do Sul were multiple, fluid, and not determined by anatomical dimorphism. Ideally, the next step would be to add many more strands of data pertained to the body to the inquiry process (e.g. other isotopic markers, qualitative analysis of grave objects, entheseal alterations, paleopathological and paleogenetic markers) and undertake multivariate statistical analysis to either confirm or challenge the bodies and identities that emerged in the isotopicanatomical-mortuary intersection. Each strand of data confirming a specific configuration of bodily differences is the archaeological outcome of identity performativity acting at different realms of people's socio-material

After identifying difference, the subsequent move would be to qualify it, trying to assign value to specific dietary and mortuary patterns to understand the relationship between different bodies and identities, a somewhat challenging and dangerous endeavor in the absence of ethnohistorical or ethnographical information. It also would involve attending to Bennett's (2010) claim and investigating what exactly food does once it is assembled to our bodies. What do bodily differences mean at the experiential level of personal relationships and relative social status? What does consuming marine resources of higher or lower trophic level mean? What about being buried among the children at the north end of the funerary area or gathering a lower concentration of grave objects? What does specific food or mortuary treatment afford to the physical and social person? This movement towards the more subtle realm of emic relationships and value judgements can be pursued, for instance, by complementing isotopic dietary data with zooarchaeological information at the level of species and catchment techniques, going beyond trophic level or marine/terrestrial, protein/carbs interpretations; by identifying the effects of the consumption of certain kinds of food through paleopathological analysis; or, by finding -other than funerary- contexts of use of specific grave objects.

Whatever the questions and methods applied to achieve a deeper qualitative understanding of the differences archaeologically identified, the point is to refrain from rushing to ill-informed interpretations that may lead to presentist, androcentric, heterosexual, and colonial assumptions. For instance, the combination of the patriarchy with the modern-colonial overestimation of meat, reflected in Brazil's devastating agribusiness and largest cattle population in the world, can easily lead to the assumption that people eating more protein



are higher status, normative men. In the same vein, the capitalist exaltation of all sorts of accumulation –stuff, land, souls– might drive to the assumption that the greatest the number of grave objects, the higher the social status. Hence the importance of deconstructing these binds, one by one.

The impetus in archaeological practice is usually to find inequality rather than difference; that is, inequality in the hierarchical and/or antagonistic sense, where some are above and others below, some own the means of production and others simply produce. This is a common angle in the archaeological search for complexity, but second wave feminist archaeology has also fomented inequality narratives in its search for the origins of the patriarchy. Once captured by inequality, difference is lost. Marx and Engels might have a special place in some of our hearts and historical materialism remains a powerful framework to think the capitalist world and its resulting inequalities, but they were also European white men and their thought contingently modern, western, and colonial. Difference is not converted into authoritarian hierarchy and/or antagonism everywhere in time and space, especially in the indigenous lowlands of Latin America (Clastres, 1977). In fact, archaeological evidence gathered so far suggests that the communities linked to the sambaquis from the southern coast of Brazil were organized in heterarchical political-economic systems rather than hierarchical (DeBlasis et al., 2021).

María Lugones's (1987) piece on "Playfulness, "World"-Travelling, and Loving Perception" is quite inspiring when it comes to think this relationship between feminism and decoloniality. She begins by acknowledging that "[...] much of our travelling is done unwilfully to hostile White/Anglo 'worlds'. The hostility of these 'worlds' and the compulsory nature of the 'travelling' have obscured for us the enormous value of this aspect ['world'-travelling] of our living and its connection to loving" (p. 3). Later on, she adds: "notice that given the [western man] agonistic attitude one cannot travel across 'worlds', though one can kill other 'worlds' with it" (p. 16). Lugones is referring to "world"traveling as a way to know the world of women of different colors, origins, classes. The metaphor speaks to women as well as to historical and ontological differences. In short, to do archaeology as a feminist in the lowlands of Latin America requires a whole lot of decoloniality and to do decolonial archaeology, anywhere in the world, requires a whole lot of feminism.

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