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Indigenous technologies and the production of early colonial ceramics in Dominican Republic

Carmen Ting[a,*], Jorge Ulloa Hung[b], Corinne L. Hofman[c], Patrick Degryse[d]

[a] Archaeological Resear Unit, University of Cyprus, 12 Gladstone Street, 1095 Nicosia, Cyprus
[b] Instituto Tecnológico de Santo Domingo del Hombre Dominicano and Museo del Hombre Dominicano, Av. de Los Próceres 49, Santo Domingo 10602, Dominican Republic
[c] Faculty of Archaeology, Leiden University, Einsteinsweg 2, 2333 CC Leiden, The Netherlands
[d] Department of Environmental and Earth Sciences, KU Leuven, Celestijnenlaan 200E, B-3001 Leuven-Heverlee, Belgium

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ABSTRACT

This study sought to investigate the extent and processes through which indigenous technologies were passed on in the production of indigenous pottery in the Greater Antilles, the Caribbean, during the early colonial period in the late 15th and early 16th centuries AD. We examined a selection of black wares and red wares recovered from an early colonial archaeological site of Pueblo Viejo de Cotuí, Dominican Republic. We devised an integrated approach, which combined anthropological theory of cultural transmission and archaeological science. Thin-section petrography was used to characterise five main aspects of the production of the ceramic assemblage, including raw materials selection, paste preparation, forming, surface finish, and firing methods. We then compared the results with the analyses we had previously conducted on the production of pre-colonial Meillacoid and Chicoid ceramics, which allowed us to delineate the extent and processes of technology transmission. Our findings reveal that indigenous technologies were neither fully replicated nor discontinued in the production of black wares and red wares at Cotuí during the early colonial period. Instead, the producers of both black wares and red wares continued to use certain aspects of indigenous technologies, but each with varying extents. The black wares largely followed the local indigenous ways as expressed in the selection of local raw materials, low level of standardisation in paste preparation, the use of coiling and low firing temperatures. As for the red wares, it is certain that their production continued with the use of local raw materials and low firing temperatures, whereas it is possible that the use of grog temper and red slips also represents the transmission of indigenous technologies that were linked to roots other than the Meillac and Chican ceramics.

1. Introduction

The arrival of Christopher Columbus and the Spaniards in the Greater Antilles in the late 15th century AD had a fundamental impact not only in shaping the historical developments and socio-political and cultural landscapes of the region, but also on the production and representation of material culture (Hofman et al., 2017; Ulloa Hung, 2014). Acculturation has long been argued to be the primary force dictating the production of early colonial material culture. In the acculturation model, the dominant colonising 'donor' culture is said to have transformed the more passive indigenous 'recipient' culture of the host community with assimilation being the main mechanism behind such transformation (Foster, 1960; Quimby and Spoehr, 1951; Stein 2005: 16). The depiction of such unidirectional interaction between indigenous populations and European colonisers was largely derived from written sources such as imperial records and travellers' diaries, which are often biased in narration.

This conventional interpretation has become increasingly challenged by scholars, following the discovery of more archaeological sites dating to the early colonial period, as well as the re-examination of material evidence (cf. Deagan, 1987, 1988, 1995, 1996; Deagan and Cruxent, 2002; Ewen, 2001; García Arévalo, 1978; Vander Veen, 2006; Valcárcel Rojas et al., 2011). All these called for a more balanced representation with specific emphasis on the roles played by indigenous actors in shaping early colonial material culture. Since then, scholars have advocated the transculturation model, which highlights the bi-directional or multidirectional processes that were involved in the formation of diasporic cultures with entirely new and composite identities (Cusick, 1998; Deagan, 1998, 2004; Hofman and van Duijvenbode, 2011; Lightfoot, 1995; Valcárcel Rojas et al., 2013).

* Corresponding author.
E-mail addresses: ting.carmen@ucy.ac.cy (C. Ting), c.l.hofman@arch.leidenuniv.nl (C.L. Hofman), patrick.degryse@ees.kuleuven.be (P. Degryse).

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Pottery is often cited as evidence that reflects the occurrence of the process and outcome of transculturation between indigenous populations and European colonisers. Such conclusion was largely drawn from the stylistic analysis of early colonial ceramic assemblages (cf. Deagan, 2002a, 2002b; Domínguez, 1980; García Arévalo, 1991; Ortega and Fondeur, 1978; Ortega et al., 2004; Smith, 1995; Woodward, 2006), as well as from the parallel examples of the technological studies of colonial ceramics from the Lesser Antilles (cf. Hofman and Bright, 2004) and Central America (cf. Hernández Sánchez, 2011; Iñañez et al., 2010; Liebmann, 2013; Rodríguez-Alegría et al., 2003, 2013). Thus, it is still not very clear which aspects of and how indigenous technologies, in this case those related to pottery manufacture, were passed on during the formative years of the colonial encounters in the Greater Antilles. Indigenous technologies, here, refer to the pottery manufacturing technologies used by pre-colonial producers in the Greater Antilles before the arrival of the Spaniards.

Against this background, this study sought to explore the extent and processes through which indigenous technologies were transmitted in the context of colonial encounters in the Greater Antilles as reflected in indigenous ceramic production. The early colonial indigenous ceramics recovered from the archaeological site of Pueblo Viejo de Cotuí, Dominican Republic (Olsen Bogaert et al., 2011), are ideally suited to address our research objective because it was one of the first colonial conclaves that were established by Europeans in the Greater Antilles, and indeed in the Caribbean. We have devised an integrated approach, one that combines anthropological theory of cultural transmission and archaeological science, to examine the ceramic assemblage. Cultural transmission theory (CT) provides the framework enabling us to determine the process through which indigenous technologies were transmitted. Thin-section petrography was used to characterise the compositional and technological traits of the assemblage, which were useful in identifying the technological choices involved in the production of the early colonial indigenous ceramics. The results were then compared with the analysis that we have previously conducted on the pre-colonial ceramic assemblages from Dominican Republic (Ting et al., 2016), allowing us to highlight which aspects of early colonial indigenous ceramic production continued or deviated from its pre-colonial counterparts.

2. Towards the cultural transmission of indigenous technologies

Cultural transmission studies are concerned with the movement of knowledge, ideas, skills, practices, norms and values between individuals or groups via non-genetic mechanisms such as individual experimentation and social learning across the socio-cultural landscapes (Eerkens and Lipo, 2007 for overview of the cultural transmission theory; see also Cohen, 2010: S194; Ellen and Fischer, 2013: 2; Mesoudi, 2013: 131 for definition). In archaeology, such studies have often focused on tracing the evolution of individual traits of material culture over time, which serve as proxies to test hypotheses about the modes of knowledge transmission (e.g. apprenticeship contexts) and any broader social constraints (e.g. prestige) that may affect which cultural or technological traits are transmitted to the next generation. By generating specific and testable hypotheses to measure the degree of similarity of criteria such as the morphological and technological features of artefacts, cultural transmission theory has proven to be a useful framework to explain the variation and relatedness in artefact (Eerkens and Lipo, 2005; Roux, 2008: 82; Schiffer and Skibo, 1997; Stark et al., 2008: 1). Cultural transmission theory has informed previous studies on the change of technologies in the production of material culture in the context of colonial encounters in the Americas. Among the notable examples are the production of metal artefacts from the site of El Chorro de Maíta, Cuba (Martinón-Torres et al., 2012), the mining technology at the site of Pueblo of Paa-ko, New Mexico (Thomas, 2007), and food procurement, preparation and consumption in Zuni Pueblo (Mills, 2008).

In this study, we wanted to approach cultural transmission by establishing the similarities and differences between the manufacturing technologies of early colonial indigenous and pre-colonial ceramics. The cultural traits we used to assess the degree of similarity were five main aspects of pottery production – namely raw materials selection, paste preparation, forming, surface finish, and firing methods (Hofman and Bright, 2004; Roux, 2011) – all of which were characterised by using petrographic analysis. The resultant patterns were used to test hypotheses formulated to determine the possible processes through which indigenous technologies were transferred. Noteworthy is that the hypotheses are not mutually exclusive and it is possible that more than one hypothesis may at the same time explain the transmission of technological knowledge in making pottery during the early colonial period. The hypotheses are described as follows:

Hypothesis 1. Early colonial pottery making was a continuation of pre-colonial tradition (Henrich, 2001: 997–998; Tehrani and Collard, 2013: 149; Zent, 2013: 215–216). In this case, we expect that the five aspects of early colonial pottery production were exactly the same as their pre-colonial counterparts.

Hypothesis 2. There was some continuity in technological knowledge from before. Depending on which aspects of production that had changed and the extent of change, we suggest two possible implications for the partial continuation of the use of indigenous technologies. It may represent modification of local indigenous technologies, or hybridisation with other indigenous influence and perhaps even with incoming European technologies (Deagan, 2013; Van Dommelen, 2005: 117). In this case, petrographic data would have shown that only certain aspects of early colonial pottery production display similar traits as their pre-colonial counterparts.

Hypothesis 3. Early colonial pottery making discontinued from the pre-colonial tradition and thus represented the occurrence of innovation (O'Brien and Bentley, 2011; Schiffer, 2010; Schiffer and Sikbo, 1987). Innovation in technologies could be due to intrinsic factors (e.g. active decisions on the part of the potters) or external ones (e.g. coercion by Europeans). Such drastic change would suggest that the producers derive from a different line of knowledge transmission, i.e. pottery from a different tradition of learning, whether they were Europeans or indigenous. Either way, a separate study on contemporaneous examples of European pottery manufacturing techniques in the Caribbean is warranted for comparative purposes. In this case, the petrographic data reveal that the five aspects of early colonial pottery production were entirely different from their pre-colonial counterparts.

We acknowledge that there are limitations in our power to test these hypotheses. Firstly, rather than tracking the diachronic development of indigenous technologies within one group or assemblage, our analysis was based on three different assemblages in which the early colonial indigenous ceramics from Cotuí was compared with pre-colonial ceramic assemblages from two other sites. Our justification of including pre-colonial assemblages from other sites was due to the lack of recovery of ceramics dating to the pre-colonial period from the colonial context of the mining camp at Cotuí, even though pre-colonial ceramics were recovered in the nearby cave sites. Secondly, we are not able to address aspects such as the rate and direction (e.g. horizontal, vertical and oblique) of technology transfer in our hypotheses at this stage, owing to the small sample size of early colonial indigenous ceramics included in this study.

3. Background

3.1. Early colonial indigenous ceramics

Two types of early colonial indigenous ceramics, namely the black wares and red wares, are the focus of this study. Stylistic analysis of the