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Moving: Hunter-gatherers and the cultural geography of South America

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ABSTRACT

The conditions under which the process of human colonization of South America took place are discussed. The modes of acquisition of environmental knowledge, as a way to construct a cultural geography, are also considered. An example concerning the peopling of the forests, particularly in Northwest South America, and the role of plants in the early stages of colonization is also offered. Finally the significance of non-utilitarian items, exchange, and empty lands for our understanding of the process of peopling is discussed.

1. Introduction

Even when there is no consensus about when and how the process of peopling of South America started, the available evidence indicates that ecologically disparate regions of the continent were already occupied around 10,000 BP (Politis, 1999; Dillehay, 2000; Aceituno et al., 2013). This was a process that surely involved generalist hunter-gatherers with the necessary flexibility to exploit different niches. There is archaeological evidence of diverse lithic industries, use of large and small terrestrial and marine vertebrates, and intense exploitation of plant resources (Stahl, 1996; Dillehay, 2000; Ranere and López, 2007). At the same time, the existence of this variety of adaptations requires a long previous history of peopling. No matter how fast was the process of human peopling, several generations of people interacting with the environments, and with the local climates, would be needed to be successful in so many regions. These people have to understand the new environment and then transform it as a result of its exploitation.

The variety of habitats exploited ca. 10,000 BP also suggests that the history of the human expansion into South America was not simple, and that a number of theoretical and practical issues should be considered. The situation is of course similar to that of the colonization of other regions of the world. From a theoretical point of view what is implied is that the "net diffusion through time was simple a by-product of how people lived in landscapes" (Denham et al., 2009: 29), in other words an exaptation (see Gamble, 1994). If this explanation is valid, then there is no requirement of major migrations, be it fast or slow, to explain the displacement of people. On the other hand, practical issues fall within the purview of what can be called a taphonomic approach to the archaeology of peopling. In the first place it includes what I call "Regional taphonomy", that is a concern for the distribution of preservational pockets in the landscape and the study of the mechanisms that accumulate and preserve materials (Borrero, 2001). The construction of a continental scale taphonomy is a difficult task, one that can only be delineated at this time. The basic idea is to apply this approach at the same geographical scale at which archaeological projects work. The goal is a better definition of the archaeological problems implicated in the processes of exploration and colonization. A first distinction is between large environmental patches, as can be defined for the Late Pleistocene (Clapperton, 1993), and a relatively sharp definition of the relevant habitats for the first inhabitants within those patches. These can be defined on the basis of paleoecological research, particularly the paleodistribution of corridors and other biogeographic features. Variation along a number of taphonomically relevant properties can be examined. Among other measures, the proportion of space covered by different classes of soils constitute a first approximation to understand differences in bone preservation among patches, while charts of the impact of erosion mark differences in the feasibility of burial and general visibility of the archaeological record. A ranking of past habitats in terms of archaeologically relevant properties should be the main result. For example, the evidence showing that large parts of the Pacific coast of South America were affected by the action of tsunamis is relevant for our assessment of the early exploration of the coastal habitats (López-Castaño and Cano-Echeverría, 2012: 49).

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The amount of knowledge of the environment available to the early colonizers can be inferred from the archaeological record. For example, after examining the evidence from early coastal sites in Peru, Dan Sandweiss was able to conclude that "people knew how to exploit the sea when they first arrived in Western South America, or shortly thereafter" (Sandweiss, 2008: 153). Information to discuss this at the continental scale is not available, but some cases can be explored. The first product of this approach is a re-reading of the archaeological record in terms of evidences of knowledge of the environment by the first inhabitants. Only a very crude approximation to these issues can be considered here, where we will specifically discuss issues related with the archaeology of tropical forests, of empty lands and the importance of non-utilitarian items.

2. Exploration

An ecological model of this process may be useful in selecting the relevant data. I have previously used such a model to organize the archaeological information from Fuego-Patagonia (Borrero, 1989–1990, 1989). This model contemplates the human exploration of new lands, sometimes followed by colonization and effective occupation. The reason to call one stage of this process "colonization" is that it is difficult to view a group of explorers as cut off from their original population (Rogers, 1990). The biological viability of those explorers that will allow them to be colonizers is based on the fact that ties with their mother group are not shut off. One of the main properties of this model is that it does not require constant southward movement, but only a slow multidirectional flow of people. In some way, this is convergent with results of human morphological studies that indicate that the peopling process was "probably the result of multiple discrete expansions of highly variable founder populations" (Delgado-Burbano, 2012: 35). Discussing the early archaeology of North America, Hofman wrote that many times the repeated use of specific high-quality lithic sources led to believe that "their long-term pattern of land use should have resulted in lithic distributional patterns suggesting one-way movement, even if people moved in complex patterns" (Hofman, 2003: 234).

The mechanisms behind movement probably included the gradual extension of hunting ranges, the fission of bands, the search for high quality raw material sources, and perhaps also starvation, curiosity, and other causes, principal among them the simple act of living within a variable home range (Anderson and Gillam, 2000; Belovsky, 1987; McGhee, 1997: 125–126). Problems in the home territory may also be a cause for movement, as recorded in the classic ethnographic example of the 19th Century Inuit migration (Mary-Rousselière, 2008 [1980]). In general terms, Kelly described the situation of expansion as one of "giving up a known environment for an unknown environment" (Kelly, 1999: 124). It is true that hunter-gatherers surely bring with them a variety of strategies and technologies useful for a number of circumstances, but this does not implies that "people never enter unknown territory" (Randall and Hollenbach, 2007: 220).

The availability of hierarchically ordered space, and the structure of critical resources should have directed people in different directions, not necessarily filling all ground behind. Places with fauna that lack anti-predatory behaviors were probably initially favored, even when most published studies suggest that these behaviors were probably rapidly learned (Berger et al., 2001). A strong negative impact on the success of explorers could be the result of the prey increasing vigilance or improving its escape abilities.

For this and other reasons, the resulting distribution of people should be discontinuous, leaving many empty zones and with some differences between "settling-in" and "on-the-move" places. The visibility of those places should be very different, and it can be maintained that most of the discovered early archaeological sites correspond to the first class. The usual trend toward the study of large sites goes against chances of finding sites related with an exploration stage.

The criteria to find and recognize the first stages in the process of exploration and colonization of any region are not completely understood. Generally speaking, archaeological markers that signal lack of local knowledge are useful, because they are indicative of partial familiarity with the local geography. In another level, they also mark the possibility of maladaptations, suggesting that local extinctions (extirpations) and cultural failures may happen. A recent review of the limited evidence for the earlier human remains in America showed that earlier people were living a life with "a significant amount of risk", and that "stress on Paleoamerican females makes it unlikely that the population of the first Americans could have grown rapidly" (Chatters, 2010: 67). The result at a supra-regional scale should be spatial discontinuity of the human settlement (Butzer, 1988). Similar situations are modeled by the "point and arrow pattern" proposed by Rockman, in which there is "movement in which colonizers "stream" from known areas to new areas, leaving the areas in between uncolonized" (Rockman, 2003: 9). I have reiteratively sustained that early settlers need not have a perfect adjustment to their environments. For example, the cases of the Holocene sites Túnel and Imiwaia in Tierra del Fuego (Fig. 1) are good examples of places where the knowledge of the local resources appear not to be high for the first inhabitants (Piana et al., 2012), a situation that contrasts with later occupations that indicate a detailed knowledge of the local resources (Orquera and Piana, 2009).

The potential markers of the degree of familiarity with the local resources are varied, including evidences of sub-optimal use of the available resources (Muscio, 2001). Exploration refers to the initial radiation of humans to new empty land (see Borrero, 1994-1995). Less resistance routes are usually implicated and most of the settling-in places are probably widely separated. Undoubtedlly, the visibility of relevant materials should be low, since sub-optimal places probably were not reoccupied. The basic criteria to recognize these sites include chronological precedence, in other words the older sites or older archaeological strata within a region are candidates. Application of this criterion is in no way restricted to the Late Pleistocene, but to the older evidence in any given habitat or region. The presence of few remains should testify to exploration stage occupations, many times at sub-optimal locations. Identification of the substrate on which the older occupation rests is also informative. For example in large sections of northeast Tierra del Fuego, the older substratum is slightly older than 4000 radiocarbon years. Any occupation around that age which is resting on that substratum is a candidate for an exploration stage representative. Similar situations with dates immediately after deglaciation exist along the Andean Cordillera.

More specifically, limited redundancy in the early occupations and the existence of occupational gaps indicating discontinuity in human installation, with cases of alternate use by carnivores and humans, are also expected. Trans-generational time frames should be usually implicated. Other expectations include use of abundant local raw materials, independently of its quality. Moreover, Franco studied the criteria to recognize an exploration stage using lithic artifacts. She expects tools not to be broken, as they should be expediently made on local rocks. Long-cutting edges should be dominant and the few cases of exotic rocks are to be understood in the context of personal gear (Civalero and Franco, 2003; Franco, 2003). All these expectations were met in her analysis of the early Patagonian assemblages. Importantly, she concluded that versatility (sensu Nelson, 1991) is adequate for the task, particularly bifacial tools with high transportability (Kelly, 1988). A number of