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Toward an alternative perspective on the foraging and low-level food production on the coast of China

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ABSTRACT

The coast of China's early Neolithic economy has been interpreted in different ways and terminologies. Most early Neolithic societies in coastal China were involved in some kinds of food production activities, but they were mostly subsidiary to foraging, and in some island communities, foraging marine resources was the primary subsistence pattern. This kind of economic pattern had a great impact on the prehistoric process in this region, affecting its population density, the pace of social complexity process, and other cultural dynamics.

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1. Introduction

Despite the fact that today's China is widely recognized as the original centers for the earliest domestication of a number of crops in the world, the “Neolithization” process was a much complex procedure in this vast land. There are tremendous regional differences in terms of scope and pace in the Neolithization process. Hunter–gatherers continued to live in many areas outside the rather limited “centers” until mid-Holocene. Their interactions with the “Neolithic” neighbors and their eventual acceptance of farming deserve much more academic attentions than they have received so far.

Among many of these peripheral regions, the archaeological records of early–middle Holocene coastal China have been a challenge to orthodox theoretical perspectives on the Neolithic economy which regards farming as the core marker. On the one hand, starting from 7000 to 8000 BP, most coastal communities produced sophisticated pottery and polished stone tools, living in sedentary villages. To most Chinese archaeologists, these traits alone suffice to label them as “Neolithic” societies. On the other hand, their subsistence pattern was still primarily hunting–gathering–fishing, only engaging in minimal degree of or in some cases lacking any kind of food production activities. Therefore, to those who believe farming is the core element of the Neolithic, these coastal communities are still hunter–gatherers.

As an attempt to highlight the uniqueness of coastal Neolithic China, Chang (1987) employed the term “affluent foragers” to

describe their subsistence pattern. Chang defined “affluent foragers” in its broadest scope, including both the late Palaeolithic hunter–gatherers and the Neolithic cultures such as Hemudu, Dapenken (TPK), as well as what he called “Longshanoid cultures” across the middle Neolithic Taiwan Strait. Chang maintained that despite the fact that the Neolithic cultures in these coastal regions had certain level of agriculture, their primary subsistence patterns were still foraging. Chang argued the reason for the persistence of foraging dominant role was that these coastal people had much more (affluent) natural resources at their disposal than their inland contemporaries, and the abundance of resources determined their subsistence patterns were distinctively more foraging than farming. Higham (1996) further elaborated Chang's “affluent forager” model, arguing that both the early and middle Neolithic people in south and southeast China were affluent foragers until 2800 BC when the first farmers appeared. More recently, Zhang and Hung (2012) replaced the “affluent forager” with “hunters–gatherers”, arguing that coastal early and middle Neolithic hunters–gatherers in southeast and southern China did not engage in any farming.

These different interpretations are subject to the changes of both theoretical understanding of the meaning of each concept and the ever increasing new archaeological findings. Indeed, over the past decade, because of the remarkable employment of new technologies and approaches, both the quality and quantity of archaeological information from coastal China have been dramatically improved. These new archaeological records, like other areas in the world, have challenged many traditional “universal” concepts which are increasingly viewed by many as inefficient for a better

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understanding of the specifics of each regional development trajectory (Smith, 2006). In light of these progress as well as decade-long investigations in east and southeast coastal China, I propose an alternative perspective to interpret the economy of early Neolithic coastal China. The data demonstrate that the coast of China's early Neolithic economy was characterized by a combination of foraging and low-level food production. Most early Neolithic societies in coastal China involved in some kinds of food production activities, but they were mostly subsidiary to foraging, and in some island communities, foraging marine resources was the primary subsistence pattern. This kind of economic pattern had a great impact on the prehistoric process in this region, affecting its population density, the pace of social complexity process, and the scale of population movements.

In this paper, I will focus on two coastal regions in China: Shandong Peninsula and the coast of southern Zhejiang and Fujian Provinces. Both regions have been relatively under intensive field investigations and laboratory analysis over the past two decades, and I have been involved in most of these studies. Although there are still blank areas, we have a good array of data to understand their subsistence and cultural dynamics. Moreover, Shandong Peninsula is adjacent to the core area of the earliest millet agriculture, whereas Fujian coast is a periphery to the earliest center of rice farming. Each region represents a different case scenario of how coastal foragers interacted with their farming neighbors, offering an opportunity for comparative analysis and interpretation.

2. Foraging vs. Low-level food production

The different interpretations of early Neolithic coastal China's subsistence stem from scholars' different conceptual frameworks. At the stake is how to define "foragers", "hunter-gatherers", "agriculture", and eventually the meaning of "Neolithic". Numerous literature have been published on the definitions of these concepts, but over the past two decades, there has been an increasing recognition that no single definition of a concept has a global or universal applicability (Smith, 2006). This situation is further complicated by the fact that there has been a lack of uniform definition of most of these concepts. It is particularly true in regard to the partition and boundary of many of these terms. As a result, many scholars are forced to repeatedly define the usage of their terms. It is understandable that a meaningful concept has to be able to explain the complexity of the archaeological data in a specific regional scale, yet too many definitions will inevitably create confusion that will militate against clear thinking about the phenomena one investigates. The fact that China's coastal societies primarily relied on foraging until 5000 BP or even later in some areas no doubt demands a more dynamic conceptual framework to explain, but this phenomenon is not out of any ordinary. One thing is for sure: a static or clear-cut dichotomy "either-or" concept such as "hunter-gatherers" and "farmers" simply cannot reflect the complicated situation of this region.

K. C. Chang attempted to use "affluent forager" to highlight the significance of foraging in coastal southeast China's prehistoric subsistence pattern. However, this term still blurs the difference between societies who exclusively relied on hunting-gathering-fishing and those who had food production. In comparison, Smith's (2001, 2006) concept of "Low-Level Food Production" is probably more effective to describe the economy of most early and middle Neolithic societies in coastal China. Instead of viewing foraging and farming as mutually incompatible ways of life, the concept of low-level food production attempts to bridge these two subsistence patterns. By highlighting the production component of the economy, it offers an alternative perspective to view the transition process from hunting-gathering to farming.

Smith (2001) argues that the societies with a low-level food production are distinctively and qualitatively different from pre-Holocene hunter-gatherers who exclusively rely on foraging and the fully developed agriculturalists. To Smith, as long as people started to intervene the life cycle of plants or animals, regardless of whether these plants or animals have domesticated features, this kind of subsistence was food production. Therefore, Smith's low-level food production societies can be divided into two categories: those without domesticates and those with domesticates. To Smith, the quantitative boundary between the "low-level food production" economy and a fully farming economy is that the domesticated food only accounts for less than 30–50% of their annual caloric intake in the former. On the basis of this definition, Smith discovered that the time span of this low-level food production period was rather long in most areas of the world. He maintained that it lasted for more than 3000 years in the Near East, 5500 years in Oaxaca, and in eastern North America, the time span was about 4000 years. The long process, according to Smith, demonstrates that the economic pattern of these "middle-ground" societies cannot be simply regarded as a transitional phase from hunting-gathering to agriculture. Rather they represent a diverse and rich array of successful solutions to various social-economic situations. Therefore, they should be recognized and studied in their own rights.

It is evident that "low-level food production" concept recognizes foraging plays significant important role in the early Neolithic societies while recognizing the presence of food production. In this regard, it overlaps with the "affluent forager" hypothesis. However, "low-level food production" concept highlights the progress in the evolution of human economic patterns by separating foraging from production. Therefore, in the case of China's coastal early and middle Neolithic societies, "low-level food production" can provide a more effective interpretative framework to understand the economic pattern and the associated social and cultural changes. Over the past several years, I have attempted to use this concept to interpret southeast China's early and middle Neolithic economy and its impacts on the regional social and cultural changes (Jiao, 2009). Interestingly, similar concept was also used by Crawford (2006) to explain the early and middle Holocene economies in northern China, Korea and Japan. Although Crawford called these societies "low-level food-resource producers", his definition of this concept was very similar to Smith's "low-level food production".

3. Shandong Peninsula

3.1. Geographic setting

The Shandong Peninsula is also known as Jiaodong Peninsula. Located between the Yellow Sea and Bohai Sea, it is the largest peninsula in China, covering an area of more than 39,000 km² (Fig. 1). The dominant topographic features are low hills and small alluvial plains. The coastline is highly irregular, including many large-mouthed bays, narrow plains, sandbars, as well as barren bedrock cliffs. The windward northern shore has an exposed sandy coast, making it suitable for people to live. The southern shore has many lagoon-sandbars and estuarine plains, all good for human settlement. A number of rivers such as Dagu River, Dagou River and Wulong River originated in the central highland of the peninsula, flowing separately into Yellow Sea and Baihai Bay. Alluvial plains are mostly found on the banks and estuaries of these rivers.

The peninsula is separated from the inland area by the Jiaolai Plain about 60 km wide. Geological studies indicate that during the early and middle Holocene, the Jiaolai Plain was dotted by many lakes. Jiaolai River cut through most of the plain and flooded repeatedly over time, inundating this region into a hazardous land when it happened. This watery area apparently served as a

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