

Town Planning in the Neolithic — is 'Ayn Ghazāl "Normal?"

The Neolithic period, especially the early aspects of it, represents people's first successful attempt at sedentary village life. Although scholars have long debated semantic differences between terms such as "towns," "villages," or "cities," the fact remains that during the aceramic (pre-pottery) Neolithic, a common settlement type consisted of clusters of substantial buildings that presumably were occupied year round by at least some of the population. In some areas, by the time of the late, or ceramic Neolithic, a substantial decrease in settlement size can be observed. In this paper, I examine, on a broad level, some of the aceramic Neolithic settlements that have recently been investigated in Jordan. These reflect early attempts at town planning that differed substantially from contemporary developments elsewhere in the Near East. Observations in this contribution are restricted to generalizations and are admittedly somewhat speculative. Specific details and exceptions are not addressed here; rather the primary intention is to provoke discussion and suggest possible directions for future research.

One of the first major Neolithic settlements ever excavated was Jericho (Kenyon 1957). This huge *tall* consists of substantial levels of both aceramic and ceramic Neolithic materials. There appears little doubt that the aceramic levels (divided into Pre-Pottery Neolithic A and B phases) represented a substantial settlement covering some 10 acres and including some sort of town wall. Although the significance of Jericho cannot be underestimated, some researchers felt that an unfortunate historic precedence had been established resulting in the perception that all Neolithic settlements were large towns, such as Jericho. Subsequent research over much of the Levant, and the Near East in general, demonstrated, however, that perhaps Jericho was in fact the aberrant settlement type and that a more modest town or village was the norm. This was exemplified by sites such as Bayḍa or Nahal Oren, for example. Additionally, it has been shown that several small, non-architectural aceramic Neolithic sites also were a common site type (Sim-

mons 1980).

The result of this more contemporary research was a better balanced view of settlement types for the Neolithic (e.g. Moore 1985). It was realized that a wide range of site types characterized the Neolithic, and that huge sites such as Jericho were perhaps not "typical" or "normal." This perspective, however, now is in need of serious revision with the recent excavations of major, and large, settlements in Jordan that have occurred over the past 10 or so years.

What this research has done is to demonstrate that even Jericho was small by comparison to some of the Jordanian sites. The Jordanian sites that stand out most are 'Ayn Ghazāl, Baṣṭa, Wādī Shu'ayb, Abū Ṣuwwān, and Kharaysin, although few have been thoroughly investigated. The intent of this paper is not to discuss these sites individually or in great detail; numerous preliminary reports are available (e.g. Edwards and Thorpe 1986; Gebel *et al.* 1988; Rollefson and Simmons 1988; Simmons *et al.* 1988a; 1988b; 1989). Rather, the implications of the distinct settlement type represented by such sites will be examined. Can they be considered as "normal" Neolithic communities?

First, it is necessary to characterize these large sites. None have been excavated with as much vigor as was Jericho, but a substantial body of well-controlled data does exist. Most information is available from 'Ayn Ghazāl; Baṣṭa also has been intensively sampled. Much of the following discussion is based on our research at 'Ayn Ghazāl, although the other sites appear to exhibit similar patterns. All of these sites share the following general characteristics:

1. They all are large. 'Ayn Ghazāl, for example, covers over 30 acres, making it three times the size of Neolithic Jericho. Wādī Shu'ayb and Baṣṭa also exceed Jericho's horizontal dimensions.
2. Although these sites are huge, they are not "*tells*" in the proper sense. They do not appear to contain deposits as thick as Jericho's, although test excavations at Wādī Shu'ayb have demonstrated a depth in excess

- of eight meters.
3. The Jordanian sites do not appear to contain early phases of the aceramic Neolithic. That is, there is no Pre-Pottery Neolithic A present, and even the PPNB deposits date from the middle to late range of that phase.
 4. Unlike Jericho, these sites all appear to be abandoned after the Neolithic period.
 5. Unlike Jericho, massive architectural features do not characterize the Jordanian sites. This does not mean that these were "substandard" or impoverished towns, however; the material culture at the sites is extraordinarily rich. For example, nothing in the Near East has paralleled the exquisite 'Ayn Ghazāl statues.

These are some of the major characteristics of the Jordanian sites. They differ substantially from coastal Levantine sites, as well as from those located further inland. What are some possible explanations to account for these major distinctions in settlement type over a relatively restricted geographic range? The remainder of this paper presents some general observations that may aid in the explanation of this phenomenon.

It would appear that the initial development of most Neolithic communities occurred in the better watered areas of the Levant; that is, the Levantine coastal region up to the natural divide formed by the Jordan River. Although a range of ecological zones were inhabited during the aceramic Neolithic, the majority of principal sites are situated in regions with relatively easy access to water. Even Jericho, which today might be considered in a marginal environment, was located in an oasis area and within relatively easy travelling distance to more hospitable environmental zones, especially to the west. This latter observation is significant, as it allowed access to wider catchment regions within the relatively restricted micro-environments that characterize the Levant.

There is a different pattern in the large Jordanian sites, however. The largest of these, 'Ayn Ghazāl, is located in a somewhat precious ecological setting, despite its proximity to a major river (Wādī az-Zarqā'). In terms of rainfall, for example, 'Ayn Ghazāl is situated at the minimum (250 mm) isoheyt for non-irrigation agriculture. This is a crucial factor for peoples who subsisted to a large degree on domesticated plants. From 'Ayn Ghazāl eastward, severe desert environment is rapidly encountered.

Generally similar patterns can be observed at the other large Neolithic sites in Jordan. The location of each site, of course, obviously allowed access to a selected region of microhabitats, but in the "big picture," they tend to be located in marginal zones. Why is this?

It would appear that the key may be found in both the chronology and later history of these sites. As noted earlier, the Jordanian sites are relatively late developments

in the aceramic Neolithic sequence. That is, PPNA sites are not present, nor, usually, are early PPNB manifestations. Sites such as 'Ayn Ghazāl were occupied from c. 7500 BC until 5000 BC; this time span covers the mid and late ranges of the Neolithic Period (both aceramic and ceramic phases). Unlike sites to the west, at least some of the Jordanian sites (e.g. 'Ayn Ghazāl and Wādī Shu'ayb) contain a transitional phase (the "Pre-Pottery Neolithic C") between the aceramic and ceramic Neolithic. To the west, many researchers have posited a chronological hiatus between these two phases (e.g. Perot 1967; 1968; Mellaart 1975: 67). Furthermore, available evidence indicates that after the Neolithic, the Jordanian sites were abandoned (e.g. Simmons *et al.* 1988b: 39; Simmons and Kafafi 1988: 38). This is a different pattern from what can be seen at some of the western sites, including Jericho. Finally, although this may be a function of inadequate survey rather than cultural reality, the smaller "village" types of aceramic Neolithic sites so common in the more western reaches of the Levant are rarer in Jordan.

As an explanatory model, the following interpretative scenario may be considered. If initial Levantine Neolithic development occurred in the western Levant, the natural population increase associated with Neolithic economies could ultimately have depleted local micro-environments and stretched carrying capacities to their maximum. A subsequent adaptive response may have been to expand further east, to the edges of where a "traditional" Neolithic economy could still be practiced. This does not mean the western Levant was abandoned; clearly it was not. But a partial population reshifting could have eased pressure in the western region. The "gap" between aceramic and ceramic Neolithic phases that is seen in the west may have been a reflection of this event, representing a re-adjustment to new economic parameters. Large sites such as 'Ayn Ghazāl may have served as population "magnets" from places like Jericho. The consequence of this was that the former expanded at the expense of the latter, perhaps resulting in temporary abandonments at some of the western sites.

A move to the east was not without difficulties, however. Such regions were more environmentally precarious. One adaptation to this ecological constraint may have been the consolidation of populations into larger villages, or towns, such as 'Ayn Ghazāl or Baṣṭa. This could have allowed for scarce resources to be pooled. Thus it may be that later Neolithic groups were forced into population aggradation. Such a situation would have created social organization pressures previously unfelt, but also may have had the advantage of forcing more cooperation and the development of more efficient exploitation technologies and land use patterns.

The generally marginal Jordanian Plateau and ad-

adjacent areas may not have allowed for the luxury of both smaller villages and larger towns spread throughout the region. The Neolithic groups were faced with a decision: either live in smaller communities or congregate into larger towns such as 'Ayn Ghazāl. Either response could have been taken, with perhaps different outcomes. The suggestion here is that the decision was to aggregate into larger settlements.

For arguments' sake, one can assume that this was the case. This could have resulted in the development of large, spread out settlements like 'Ayn Ghazāl. Massive defensive structures would not have been necessary, since previous smaller social groups had by now aggregated into a large unit, thereby lessening the chance of inter-community conflict.

Initially, this pattern was adaptive, although it required a modification of existing subsistence strategy. For example, throughout 'Ayn Ghazāl's aceramic development, there is a remarkably wide range of resources being exploited, both domestic and wild. This could be a reflection of a more efficient economic strategy.

But something happened to change this. By the end of the aceramic Neolithic, there are dramatic economic and, presumably, social shifts. During the Ceramic Neolithic, 'Ayn Ghazāl's economy was much more focused, and principal economic resources were restricted to but a few species, with an emphasis on sheep/goat. Although farming still occurred, a new emphasis on pastoralism developed. As has been detailed elsewhere (e.g. Kohler-Rollefson 1988; 1992; Rollefson and Kohler-Rollefson 1989), what had started out as mutually compatible economic systems of agriculture and animal husbandry turned into a mutually exclusive system. No longer could the already marginal environment, stretched to its limits by large aggregated groups of humans, allow for both strategies to be viable in the same locality. This situation was exacerbated by climatic conditions leading to a steady increase of arid conditions (cf. Davis *et al.* 1990). Thus the previously under-exploited desert areas were now more intensively occupied by Neolithic pastoralists, while the better watered, but still marginal, core area maintained an agricultural focus.

A response was for the evolution of two economic strategies during the Ceramic Neolithic, one based on farming and the other on pastoralism. This is essentially the development of the classic Near Eastern dichotomy of the "desert and the sown." This clearly had substantial impacts on settlement structure. Sites such as 'Ayn Ghazāl continued to be large, but we can see a deterioration in the organizational structure previously extant. Ultimately, as aridity increased and agriculture became even more difficult, the pastoralists may have had the adaptive edge. This resulted in the eventual abandonment of the large Neolithic towns. Subsequent cultural

evolution during the Chalcolithic and later periods witnessed a new type of adaption and settlement type.

The scenario described above is offered as one explanatory model to account for the presence and ultimate demise of the large Jordanian Neolithic towns. It is fully realized that this is a simplistic model that requires substantial refinement to either verify or refute it. It does, however, offer one explanation to account for observed patterns in the archaeological record. Thus the question "is 'Ayn Ghazāl normal?" can be answered in the affirmative, in that it represented an adaptation that was successful for over 2000 years. Phenomena such as 'Ayn Ghazāl were one adaptive response to destabilizing conditions brought about by both human mismanagement and climatic deterioration.

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