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SHORT-RANGE SEASONAL MOBILITY: AN ADAPTIVE PATTERN ON OPEN PLATEAUX IN A CLOSED MOUNTAINOUS REGION

ABSTRACT — *The issue of Seasonal mobility is discussed in numerous ethnographic and late prehistoric studies from the Upper Palaeolithic on. Less so for Middle Palaeolithic groups, and only rarely concerning Lower Palaeolithic ones. Furthermore, in most studies mobility ranges are taken to have extended over different regions covering considerable distances. This paper presents a different adaptive pattern whereby short-range seasonal mobility was practiced. The Late Acheulian groups inhabiting (c. 250,000 — 150,000 BP) the open basaltic plateaux lived in a rather closed mountainous region. Both difficulties of recurring movements outside the region and the environmental and economic advantages within it induced a repeated small-scale mobility pattern. Climatic conditions were mainly responsible for the abandonment of summer locations on the open plateau summits, shifting to the more wooded and protected slopes and valleys for the winter. The data emanating from the archaeological research of the Yiron and Baram Plateaux serve as the basis for the short-range mobility model suggested here.*

KEY WORDS: *Adaptation — Seasonal mobility — Acheulian — Upper Galilee — Israel.*

INTRODUCTION

Mobility in general, and seasonal mobility in particular, is a common topic in hunter-gatherer studies. Yet, most of these studies relate to ethnographic, or to late prehistoric groups from the Upper Palaeolithic on (e.g., Yellen 1977; Upham 1984; Parkington 1972; Clark, G. 1977; Andersen et al. 1981; Binford 1982; Bahn 1983). Less frequently has seasonal mobility been studied in detail and in-depth for the Middle Palaeolithic, and only rarely for the Lower Palaeolithic (Speth and Davis 1976; Davis 1978).

The traditional notion that variability seen in spatial locations, settlement patterns, and/or lithic assemblages is indicative of group uniqueness, often

even culturally idiosyncratic, is still a rather widespread apprehension with regard to Lower Palaeolithic occurrences. Even in studies where seasonal mobility is mentioned (e.g., Clark, J. D. 1967, 1968, 1969; Kleindienst 1961; Hansen and Keller 1971; Bordes 1972; Lumley 1969a, 1969b — but see Villa 1983; and see also Gamble 1986), mostly the seasonal counterparts for the sites under discussion are not suggested. Namely, if a site uncovered is interpreted, for instance, as a summer location — then where and which was exactly the winter location, or vice versa?

There is of course quite an “objective” reason for this lacuna. The remoter in time, the lesser credible archaeological visibility. In turn, data are more often than not insufficient for a plausible, detailed reconstruction of the primary dynamic contexts of which palaeoenvironmental settings and early man behaviours form main constituents (cf.

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Jelinek 1977; Isaac 1981; Klein 1983; Foley 1984; Toth and Schick 1986). Needless to stress, however, that seasonal mobility was practiced in many cases, at the very least, also during the Lower Palaeolithic (cf. Leakey and Lewin 1977: 133).

What is more, seasonal mobility has been traditionally suggested in most studies of hunter-gatherers, past and present, to overrun near-regional limits. That is to say, groups were taken to have moved, seasonally, relatively long distances, sometimes over several hundreds of kilometers (e.g., Clark, G. 1977: 40, 146, 329, 361; Gamble 1978; Binford 1980: Table 1; Tanaka 1980: 79; Silberbauer 1981: Fig. 16; Bailey 1983; chapters in Straus 1986). Such travels could have been undertaken through fairly travelable terrain, or when no other alternative for subsistence could be found in near vicinities. But, what about the events of small groups residing within closed mountainous ranges where natural barriers formed virtual obstacles for repeated moves back and forth? Would have such groups risked long-range, seasonal mobility, particularly when survival could be maintained by short-distance repeated locational shifts?

The question immediately to arise would certainly be: Then why move at all? Just stay foot and dare some wider forays when needed. However, in certain microenvironments, as in our following example, this could simply not have been done.

This paper intends a) to add one case-study to the existing rare ones on seasonal mobility in the Lower Palaeolithic, and b) to show that under specific environmental conditions, a pattern of short-range locational shift, by season, could have worked as an adaptive solution for small Acheulian groups, c. 250,000–150,000 years ago.

SETTLEMENTS, ENVIRONMENT, SUBSISTENCE – AND THE PROBLEM

On Yiron Plateau's summit in the Upper Galilee of Israel (Fig. 1) two bicompartiment sites (Y27/28 and Y51/53) are situated at a distance of about 2 km from each other (Fig. 2). Two additional sites (Y13 and Y18) lie, the former somewhat lower in elevation than the latter, on the northern, relatively mild slope of the Plateau. Another two sites (A43 and A63) are placed on the opposite, lower part of the southern slope of Mt. Avivim, straight across the narrow Aviv Valley. A large, well-bounded locality (Y25) containing seven separate artifact concentrations in clear association with nine basaltic stone formations (Ohel 1986) occupies part of the eastern edge of the Plateau summit.

The spatial configuration on the neighboring Baram Plateau is a totally different story in terms of archaeological visibility. The areas of occupation

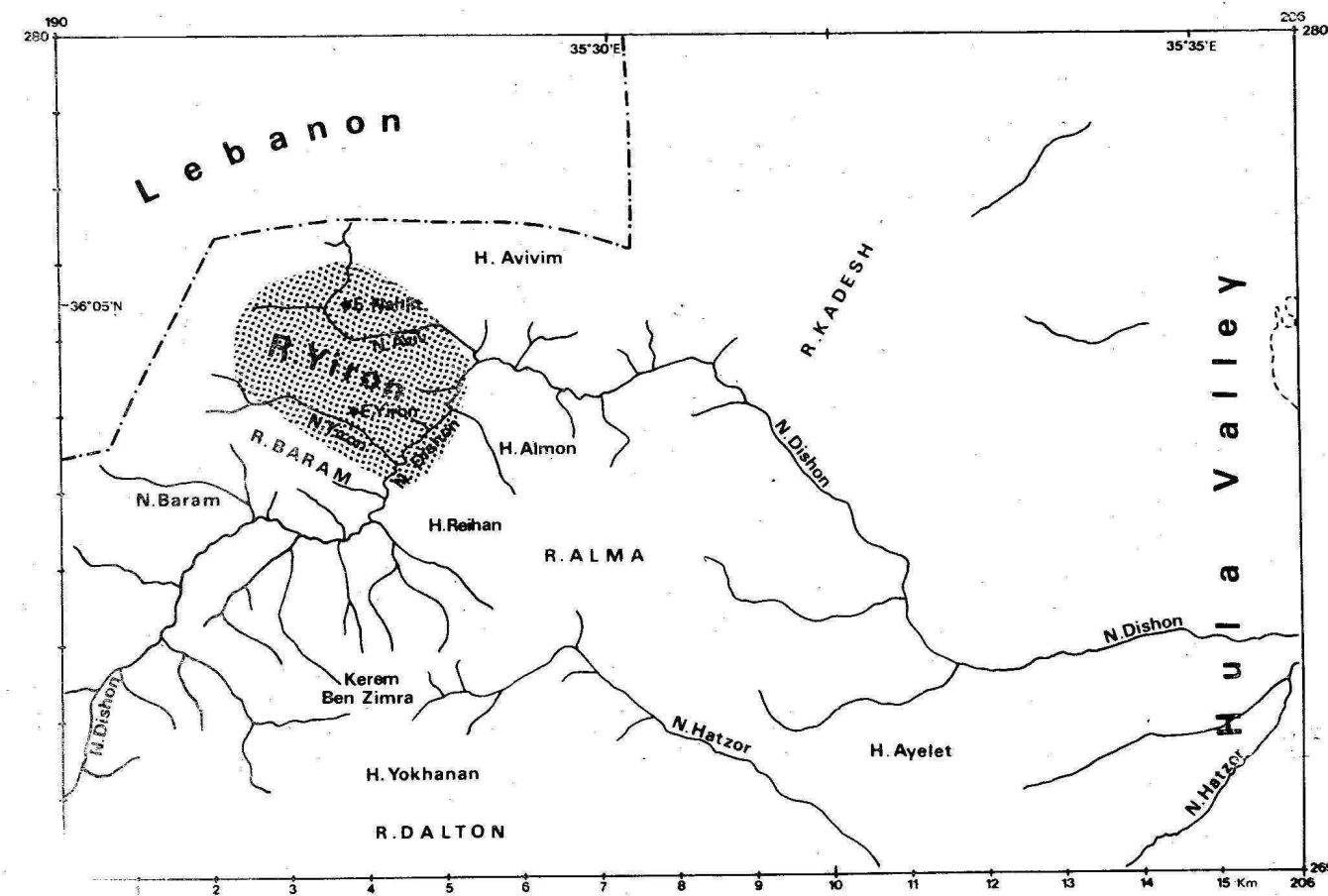


FIGURE 1. Nahal Dishon's basin in the northern Upper Galilee. Yiron Plateau is shaded; Baram Plateau is next to it to the southwest. R = ramat = plateau; N = nahal = stream; E = ein = spring; H = har = mountain.

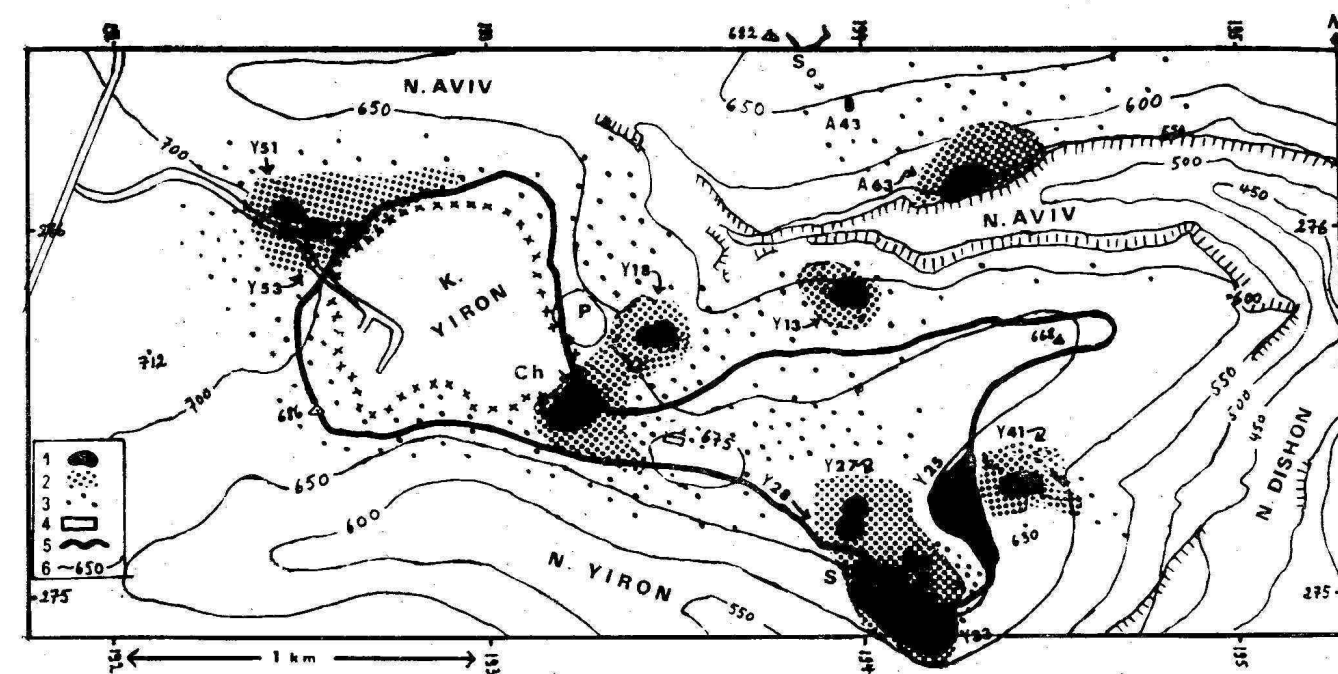


FIGURE 2. Yiron Plateau showing location of sites, flint densities, etc. Inset: 1, site (A = Avivim; Y = Yiron); 2, higher density of natural flint and artifacts; 3, lower density of same; 4, absence of same; 5, basalt boundary; 6, meters above sea level. Additional letter codes: S = spring; P = natural pool; K = Kibbutz; Ch = Chalcolithic site.

here have suffered heavy disturbances by modern fruit-plant cultivation. Plowing, field clearance, and other mechanical operations have displaced artifactual material to the extent that no site limits can be identified. Despite these massive interventions, meticulous surveying and systematic test-furrows resulted in the obvious recognition of what were called "artifact zones." Two such zones were distinguished on the Baram Plateau's summit: one on the banks of the Fara Lake, the other around the Fara Pond. A fairly bounded site, called the Bustan Site was detected within a saddle-like depression, about 350 m northwest of the Fara Pond. This site lies at the end of a long, gentle slope, and on the edge of what forms now the steep cliffwall of the Yiron Stream. The site was most likely related to the Pond's artifact zone as evidenced by the clearcut "path" of strewn artifacts connecting the two locales, and the great resemblance of the artifacts throughout.

Both plateaux, at an altitude of 600–700 m above sea level, are tightly encircled by higher rocky, rugged, hard-limestone mountain chains, deeply incised by narrow, meandering stream valleys. The ridges of these mountains reach heights well over 1000 m, the plateaux and their near surroundings thus forming kind of *cul-de-sac*. Although in Acheulian times the stream beds were not yet so profoundly incised as now, the general geomorphological outline was nearly the same (Brosh and Ohel 1981; Ohel 1986 with references). Repeated movement by foot out of the enclosure and back into it, could not but have posed most serious difficulties for small Acheulian groups. Furthermore, no Acheulian occurrences, chronologically or technologically correlated to those on the plateaux, have thus far been encountered on the coastal plain (some 30 km to the west), and no

Acheulian was ever uncovered in the Hula Valley (about the same distance to the east). In short, both reason and evidence do not seem to suggest a long-range recurring mobility pattern by the Acheulian plateaux groups.

Yet, it is almost obvious that these groups could not have stayed on the plateau summits the year round. Season differences are, as they also were 200,000 years ago, quite extreme. Summers on the summits are regularly very pleasant: warm (the hottest month, August, with a minimum/maximum daily average of 18–30 °C), refreshingly breezy from late morning to late afternoon, cooler at nights, low humidity, no rains, easy to wander about on the open grassy landscape, and most comfortable under some shade while sitting. Winters, on the other hand, are practically unbearable: cold (in January, the coldest month, daily average of 5–10 °C) with stingy, freezing winds, especially the eastern frequent ones (often reaching a velocity of about 100 km/h), ferocious rainstorms, and snowy for several days almost every winter. Movement on the summits following showers – even nowadays when provided with all necessary dress and equipment – is nearly impossible by foot or by any machine (except on paved roads) owing to the sticky mud. Fogs are common, particularly in the mornings, and dreary, depressing weather is the rule more often than not. Even the pasturing cows seek some sheltering on the slopes.

Unless the protection by built shelters can be secured, as is the case in modern times, it is hard to imagine staying on the summits during winters. Chalcolithic settlements (e.g., Y33, see Fig. 2) preferred downslopes while living in solid structures. Shepherds in Byzantine and Roman times, as well as

monks later, occupied caves in the cliffwalls, not yet exposed in more ancient periods. Many Arab stone constructions are encountered on the descending slopes of the plateaux. In short, it seems inconceivable that Acheulian people remained on the summits for the winters.

According to our calculations (Brosh and Ohel 1981; Ohel 1986) subsistence resources were varied and sufficient throughout the seasons, provided the groups were few and small at a time. It is conjectured that not more than 2–4 groups inhabited at one and the same time the Yiron Plateau while 1–2 groups that of Baram. The contemporaneous population on both plateaux could have never exceeded 20–50 people. Within this presumed size-range, the plateaux and their immediate surroundings were quite able to supply adequate nutrition extracted from hunted game and collected edible plants. Potable water was always closeby, and need not have posed problems, only perhaps after a long succession of draughts (which could have caused total abandonment of the area for a shorter or longer period).

Thus, in sum, the problem we were faced with was the following. Given, on the one hand, that repeated, seasonal movement outside the region was doubtlessly a most risky venture, for a small population in particular; and given that subsistence within the region for the size of such a population was no threat to survival, while, on the other hand, the groups could not have conceivably endured winters on the plateau summits (their favorite summer accommodation) — where, then, did they move for the winters?

THE HYPOTHESIS AND THE DATA

The hypothesis consequently postulated was that the Acheulian groups of the plateau summits practiced a recurring short-range mobility pattern. In order to accept this assumption as a working model, the resolution of two major issues had to be sought. One, the availability of winter sheltering at close distance. And two, the sociocultural affiliations, temporally bounded, of the different sites. In other words, the sites should not be representations of idiosyncratic entities separated either in temporal or social terms, but rather indications of a few, firmly associated groups, repeatedly changing residential locations.

The detailed data, their analyses, and testing, cannot be presented here; they may be found elsewhere (Ohel 1986 with references). Only the interpretative aspects of the results follow.

Whereas, as emphasized earlier, the open, flat summits are extremely menacing in winter, descending just a little down the slope, particularly the northern one, changes the situation dramatically (see the note about the cows above). Although not protected much when shower falls heavily, the freezing, fast wind passes over the head. Only a dozen meters may separate one from the "table's" edge to render the feeling that one transfers to another

weather. Clearly, the cold is there and the sloppy soil as well, yet one's breath can be regained and one can function again, albeit the remaining hardships. One has to plainly experience the shift, as I have many times, or as everybody from the Kibbutzes of Yiron and Baram will testify, to realize the great difference.

The further one descends the slope, the better one feels. Now, it is essential to mention that during Acheulian times the slopes and valleys were not so bare as they are now (here and there patches of pines occur, but these were planted in the last decades). Actually, the slopes and valleys were of a woody nature. Thus protection from winter elements could be found more readily then than now. Many animals, locally based, would have resorted to lower altitudes as men had. They do it now and there is no reason to suppose that they behaved differently then, especially when slope and valley sheltering was more inviting. As mentioned before, two sites are situated on the northern slope of the Yiron Plateau, and another two just opposite them, on the lower part of the southern slope of Mt. Avivim; the Bustan Site on the Baram Plateau parallels the situation of the former two on Yiron's, also on the northern slope.

At this juncture it is worthy to point out that the artifact zone on the Fara Lake's bank has no counterpart on any of the slopes. This extraordinary phenomenon does not, in my view, violate the rule, but, on the contrary, asserts it. The Fara Lake lies in a natural depression, ideally protected (in comparative terms) from the harsh winds blowing around it upon the higher ground. The group there was presumably not stressed, or had no incentive, so as to evacuate its location. It stayed foot, therefore no corresponding site has been encountered elsewhere. (Another hypothesis which assumes summer visits only, by an Acheulian expeditionary group from the Yiron residential sites to the Fara Lake, must yet be tested; this is out of the scope of the present discussion.)

Turning to the second issue, we are faced with a serious impairment. Strict time-boundary control for the sites has not yet been achieved. We must meanwhile rely on other aspects of data, namely technological properties and artifact-assemblage compositions. Particularized analyses of the artifacts under 29 qualitative and quantitative attributes, with all variables tested statistically, have shown that in all basic production processes, the technology is shared by all sites. In fact it appears obvious that the people of the summits were responsible for the manufacture of the artifacts, from core to shaped tool, of the slope sites as well. To such a degree is the correspondence persuading, that where the foundations of the Acheulian technology are somewhat different, as for instance, between the Yiron sites (poor use of the Levallois technique) and the Fara Pond complex (proliferating in Levallois elements; apparently of a later age than the Yiron Acheulian), the paralleling similarity is clearly kept in each one of the separate cases.

However, assemblage composition differs between

the sites in each complex. The Avivim assemblages (predicted as of winter locations) are poorer in form variety than those of the Yiron Plateau summit. For instance, the former lack handaxes, and the proportion of knives is significantly higher in them than in the summit assemblages, where drills predominate. These and other divergencies in assemblage composition within a basically similar technological mode are suggested to display function-seasonal differential tasks and necessities. The same is true for the Fara Pond artifact zone and its corresponding Bustan Site.

Furthermore, there is considerable dissimilarity apparent between the summit and slope assemblages in the standard of tool production. Briefly stated, while on the summit (where summer residences are presumed) the intensity of raw material utilization and the comparatively high efficiency of final tool shaping are paramount, the modes of material exploitation and of tool finish are significantly more opportunistic and casual at the slope sites. It is very tempting to surmise that these differences stem from the diverse microenvironmental conditions. Namely, when residing on the summits during the summer, far more time and patience could be invested into attentive, careful tool manufacture. Not so in the course of winter upon the slopes: people there just produced in the quickest manner possible what was most vital for them to overcome the harsh season.

The assemblage analyses of the two slope sites on Yiron Plateau's slope (Y13 and Y18) have shown them to hold in many attribute states an intermediary position between the summit and Avivim sites. Located, as these two sites are, at the very margin of the natural flint provenience, about half way between the summit and Avivim sites, they are taken to represent transitory campings. The people stayed there for rather short durations, mainly for the purpose of preparing blanks and preforms while on the way to the winter sites on the opposite slope of Mt. Avivim.

The multiconcentration locale of Y25, mentioned earlier, was identified on various converging lines

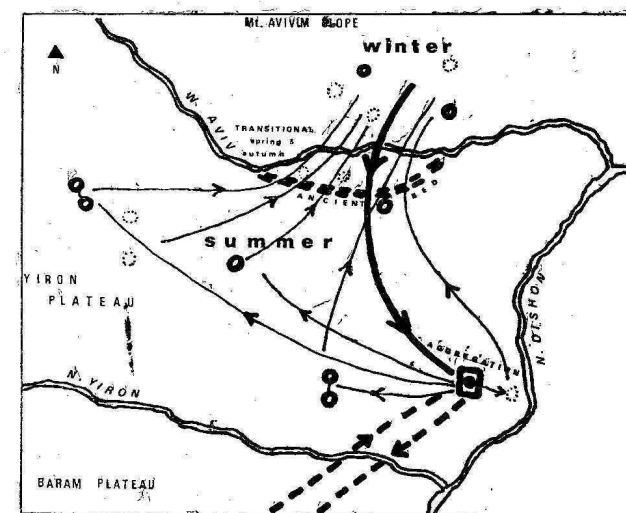


FIGURE 3. Settlement and mobility model (not to scale).

of evidence as an aggregation locality (the first to be ever recognized for the Acheulian period). The groups assembled in this place apparently once a year, in the spring, to exploit a short-enduring, fast-passing subsistence resource in the form of migratory avifauna and several species of small game (Ohel 1986). The annual aggregation event at Y25 (Mitzpeh Yiron) lent the opportunity of meeting other groups from neighboring plateaux within the region. Information exchange, social interaction, mating, promotion of kin ties, ritualistic practices, festivities, games, etc. (Wobst 1976: 54–55) — all these and the like took place during a short period every spring while congregating at Y25.

The settlement and mobility model suggested for the Yiron and Baram Plateaux (Fig. 3) seems reasonably to resolve also the demoeconomic constraint. Whereas carrying capacity would have certainly been short of answering the needs of a dozen or more contemporaneous groups, it was readily sufficient for less than half this number of small groups practicing seasonal shifts.

CONCLUSION

There is not the slightest intention here to replace on a universal scale the long-range mobility pattern by a short-range one. Rather, it is argued that under very specific conditions, as is the case with our enclosed region, the latter mode was preferred as a plausible adaptive means. To substantiate this claim, both negative and positive lines of evidence were advanced.

From a negative point of view the following was considered: a) the enclosed, rugged and risky mountainous region deterred recurring movement outside it; b) there is no evidence of any contemporaneous Acheulian in the remote regions more suited for habitation during winter; and c) the enclosed region could not but have supported a few, small groups at a time.

From the positive angle: a) fairly adequate protection from the harsh winter elements could be obtained by short-range shifts within the enclosed local environment; b) the lithic technology of the different assemblages is basically the same, yet the variability in assemblage composition and production efficiency point to a function-seasonal representation; and c) the short-range shifts offer a reasonable demoeconomic solution which is inconceivable were all sites recovered inhabited at one and the same time.

In sum, under the specific circumstances, the short-range mobility mode practiced by the Acheulian groups of the Yiron and Baram Plateaux, appears to have worked as a successful adaptive pattern.

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