

## **Some Thoughts Regarding The Research On The Natufian After The 2000 Annual Meeting Of The Society For American Archaeology**

### **I. Introduction**

Every year, in the Spring, takes place for four days the Society for American Archaeology (SAA) Annual Meeting. Since years these meetings have grown beyond the scope of the American archaeology. Thus they attract a wide range of foreign scholars who go there either to organize specific sessions on the Old World or to present individual papers regarding their own research. As such, a session on the Upper Palaeolithic of the Near East was organized by Nigel Goring-Morris and Anna Belfer-Cohen. Conversely it appeared quite usual to encounter five individual papers on the Natufian, which were spread over three separate sessions. Since a decade, this period seems to have lost some interest to the benefit of the Neolithic and the origins of animal and plant domestication. Therefore it seemed interesting to note their presence, but also to go beyond this point and try to recognize through these papers some of the current trends of the research on the Natufian.

Out of these five papers, the one by Joseph Beaver is concerned with a new Natufian site identified in Southern Jordan: J614. This rockshelter was discovered during a recent survey led by Donald Henry. Several archaeological layers have been recognized, of which the lowest one (Unit 3) has been dated to the Late Natufian. The remains, rather limited, include chipped stone products, some faunal bones and some shells (dentalium). Another paper by K. Renee Barlow and Melissa D. Heck rests also upon the recent discovery of another Natufian site from Southern Jordan: Wadi Mataha 2. Yet their paper goes beyond the exceptional interest of this site for the regional prehistory. It focuses rather on Natufian subsistence patterns. These scholars tried to document the advantages and drawbacks, in terms of costs and benefits, of procuring and processing cereals and acorn. Their research is aimed at shedding light on the origins of the domestication process in the Near East. In the same way, Natalie Munro tried to interpret the patterns of exploitation of animal resources, instead of plants, in the Natufian. Her data tend to show an intensification of hunting activities related to a greater demographic pressure, as well as a clear change of focus on the species exploited. This trend would be connected with modifications in the use of hunting techniques and gear. The last two papers are of a more general level of interpretation about the Natufian. The one by Ofer Bar-Yosef presents the latest available information which allows him to draw a picture of this period always more detailed. The novelty of his paper concerns, according to us, his viewpoint

about the level of social complexity of these communities. So far, Bar-Yosef had rarely envisioned the Natufian as a society of "complex" hunter-gatherers. During this meeting, he seems to have taken definitely position in that direction. Finally, we offered some thoughts on the social and cultural transformations which concern the organization of the hunting and gathering communities of Northern Israel at the transition between the Geometric Kebaran and the Early Natufian.

## II. Discussion

In order to better assess the nature and the implications of the papers presented at this meeting, it seems essential to put them in the context of current research (1990-2000) on the Natufian. Thus we are going to develop the following topics:

- . Fieldwork in the '90s
- . Origin of the Natufian: One or Two Centers?
- . Natufian Economy: Importance of Cereals or Acorn?
- . The Natufian, a "Broad Spectrum Revolution"? Example of the Fauna
- . Debate Regarding the Level of Natufian Social Complexity
- . A New Paradigm for the Levantine Epipalaeolithic?

### *Fieldwork in the '90s*

Numerous sites dated to the Natufian period (or Late Epipalaeolithic) have been discovered these last years, in relation with surveys conducted all over Southwest Asia. In Israel, the Antiquities Authority identified two new Natufian sites in the Golan Heights (pers. comm., O. Marder, 1996). Another site (Sha'ar Ephraim South), dated to the Final Natufian, has also been recognized in the Coastal Plain (Barkai 1998). Lately, came out a publication where the results of surveys conducted since 1978 in South-East Mount Carmel, in the Menashe Hills, were presented (Winter 1997). This paper mentions three Natufian sites: Khirbet el-Mite, Iraq el-Hamra A et Wadi Abu el-Loz (Winter 1997: 112, fig. 6). Finally, in Ha'ela Cave, located on the Northern slope of Nahal Bezet (Western Galilee), a test pit revealed the presence of a Natufian layer, overlying Middle and Upper Paleolithic levels (E. Hovers, pers. comm.). In Syria, a Japanese team discovered several caves. In one of them called Dederiyeh, various soundings have revealed Natufian and Mousterian layers (Akazawa et al. 1995: 79). In Jordan, A. Betts and her team identified several surface sites with lunates, dated to the Late Natufian: Khirbat al-Khan, Rujm as-Suwwan, Wadi al-Ajib Site 18, Wadi al-Ajib Site 24 (Betts et al. 1995: 151). Moreover, another surface site (Site 70), dated to the Early Natufian, was recorded during surveys carried out in Wadi az-Zarqa (Palumbo et al. 1996: 384). After many excavation seasons in the region de Pella, Ph. Edwards was invited to conduct some surveys in Wadi Hisban, located North-East of the Dead Sea. Numerous prehistoric sites were discovered there in the early '90s. Among these sites one was dated to the Natufian: Wadi Hisban 6 (see Egan and Bikai 1998: 581-582). In the Azraq basin, a Neolithic site (Bawwab al-Ghazal), dated to the PPNB, also yielded a small Early Natufian occupation (see Egan and Bikai 1999: 492). In the Petra area, an American team began, since 1997, to conduct new surveys. Consequently, various archaeological sites were identified. At Wadi Mataha 2, remains of a circular house were unearthed, as well as several mortars dug in the bedrock, basalt pestles, art objects and dentalia (see Egan and Bikai

1998: 578, Johnson et al. 1999). Further South in Wadi Arava, Donald Henry and his team found a new site dated to the Late Natufian: J614 (see Beaver 2000).

Besides the numerous surveys, several excavations were carried out during this last decade, generally on sites already known, which would 1) concentrate on Natufian layers or 2) reveal new aspects of Natufian occupations, within scientific programs concerned with the whole stratigraphic sequence of a specific site. Regarding the former category, recent research was conducted at 'Eynan (Valla et Khalaily 1998, Valla et al. 1999), Upper Besor 6 (N. Goring-Morris, pers. comm., see Wolff 1998: 762), Hilazon Tachtit Cave (L. Grosman, pers. comm.), el-Wad (Weinstein-Evron 1997, 1998) and Tabaqa (see Egan and Bikai 1998: 580). Regarding the second category, examples come from Öküzini (Otte et al. 1995, Yalçinkaya et al. 1995) and Kara'in (Albrecht et al. 1992), in Turkey; Hayonim Cave (Bar-Yosef 1994, Bar-Yosef et al. 1997, see Wolff 1998: 761), in Israel; Tor at-Tariq/WHS 1065 (Neeley et al. 1997, 1998, Schuldenrein and Clark 1994: 36-39) and Yutil al-Hasa/WHS 784 (Clark et al. 1992, Olszewski et al. 1994, see Egan and Bikai 1999: 490) in Jordan.

The papers by Barlow and Heck about Wadi Mataha 2 and by Beaver about J614 provide therefore new data in this context.

#### *Origin of the Natufian: One or Two Centers?*

Following these latter authors' papers we can introduce various other topics important in the interpretation of the origin and the evolution of the Natufian. These topics concern the original geographic distribution of the Natufian and the concept of "center of development".

With the first generation of scholars (D. Garrod, R. Neuville, F. Turville-Petre, M. Stekelis), working in the Near East in the '20s-'30s, research on the Natufian became concentrated on a few sites in the Judean Desert and Mount Carmel. The general view of its geographical distribution was then completely modified after the Second World War by discoveries and excavations, all over Southwest Asia, of numerous new sites, named "Natufian" (based on the presence lunates as common fingerprints). Nevertheless the research could not deny the initial viewpoint by Garrod and Neuville, i.e., the diversity and wealth of archaeological remains on some sites in Mount Carmel and the Galilee. Further research revealed also that these features were only characteristic of this region. In this context, O. Bar-Yosef (1970, 1975) was the first to make some sense of these data by establishing a hierarchy between the sites with lunates and by using all of the categories of remains. By comparing the general features of many sites, he noticed a great variability between small occupations which included a limited toolkit, some light structures and a few shells (short-term sites), and major sites which yielded remains of architecture, burials, grinding stones, a rich lithic and osseous industry, and so on (base camps) (Bar-Yosef 1970: 172-175, 1975: 369-370, see Bar-Yosef et Martin 1981: 189). The short-term sites, when located in the Mediterranean vegetational belt, would correspond to specialized-activity sites, which would be related to some base camps, in a complex settlement system. Conversely, semi-arid and desertic areas would generally reveal only sites where the toolkit is limited and homogeneous and the archaeological deposits are relatively thin. According to this model, the Early Natufian originates and grows to a full stage in the region of Mount Carmel, the Galilee and the Upper Jordan Valley. In the Late Natufian, the occupations in the Mediterranean belt seem to lose some of the

wealth and abundance of their material culture. The development of new ways in the techno-economic organization allows for the adaptation to more arid environments. Thereafter the Natufian can be found over a wide geographical area, which spreads from the Negev to the Euphrates (Bar-Yosef 1975: 370, 1996: 71).

According to D. Henry (1995b: 331), the data provided by current research in Southern Jordan help modify this interpretation of the Natufian. Besides the site of Beidha which is known since the '60s, new sites dated to the Early Natufian were discovered in the '80s (i.e., Wadi Judayid J2, Sabra I, Tabaqa) and more recently (i.e., WHS Site 1021, Yutil al-Hasa). Wadi Mataha 2 is the last site to date to be identified in this region (for this phase of the Natufian). Southern Jordan would therefore have been relatively inhabited during this transitional period. D. Henry thinks that several features lead to recognize another "center of evolution" in this part of Jordan, which would be contemporaneous with the Carmel-Galilee "core area". In the one hand, some elements of continuity, notably in the lithic industry, are present between Late-Final Hamrian groups and Early Natufian groups. In the other hand, absolute radiocarbon dates available for two of these sites (i.e., Beidha and Wadi Judayid J2) confirm the antiquity of the Early Natufian, ca. 12,800-12,500 BP.

Yet, based on data available for Southern Jordan, it seemed difficult to recognize a cultural ensemble comparable to that of Northern Israel. Let us for instance take the case of Wadi Judayid J2. D. Lieberman's seasonality study (1995: 396-398) revealed the permanent occupation of this site all year round. Nevertheless, the very specialized lithic toolkit (e.g., abundance of geometric microliths) did not seem to support this interpretation. Finally D. Henry was able to reasonably interpret the function of the site as a multi-season occupation, visited at numerous occasions during the annual cycle, based on the thickness of the archaeological deposits, the lithics density, and particularly the specific features of the toolkit. Overall the characteristics of the sites located in Southern Jordan seemed to reflect settlement patterns and patterns of natural resources exploitation rather different than those of Northern Israel. Yet the discoveries of the on-going project at Wadi Mataha 2 suggest clearly that the sequence of evolution between the Hamrian and the Natufian is much more complex in this region as well. As available data are still preliminary, it is still early to say whether this area shows a history similar to that provided by the transition from Neve David to El Wad, in Mount Carmel.

#### *Natufian Economy: Importance of Cereals or Acorn?*

The paper by R. Barlow and M. Heck allows us to introduce some very controversial discussions on the nature of the Natufian economy. Let us consider first of all the viewpoint in favor of the collect of wild cereals by the Natufian groups of the Carmel-Galilee region. O. Bar-Yosef and his colleagues suggest a complex model to explain this economic specialization (Bar-Yosef and Belfer-Cohen 1992: 24, see Bar-Yosef and Meadow 1995: 69). In a first stage, the new "broad spectrum" economy which appears among the first Natufian communities reflects a more efficient management and especially an intensification in the exploitation of vegetal and animal resources. This economy will allow some groups to find stability in space and time. In a second stage, these communities will concentrate their attention on some specific species of legumes and wild

cereals, which will lead toward the first attempts to domesticate cereals. Moreover, these scholars do not think that acorn may have constituted the main dietary intake of the Natufian groups, but rather a complementary resource in the case of famine (Bar-Yosef and Meadow 1995: 69). This model rests upon hypotheses which are still difficult to test. This situation is due to the extreme scarcity of botanical remains on Natufian sites, notably in the Mediterranean area. Several reasons can be offered in order to explain it. First, numerous sites were excavated before the introduction of modern techniques of flotation and sediment sieving. Second, it would appear that poor conditions of preservation are responsible for this lack of botanical remains: in the Mediterranean zone, *terra rosa* soils are the results of conditions of season alternation which greatly destroy perishable materials (Bar-Yosef and Meadow 1995: 59). Third, N. Miller (1996, 1997) has recently offered a new hypothesis. Seeds are generally recovered in the shape of carbonized remains on archaeological sites. This scholar suggests that, in the Mediterranean area where the forest is dominant, the resource the most available as fuel material would be wood. Conversely, in steppic and desertic regions (e.g., around Abu Hureyra), gazelle dung would be primarily used as fuel. Implications of this hypothesis are important: in the Mediterranean zone, carbonized remains would be mainly charcoals (see Lev-Yadun and Weinstein-Evron 1993, 1994, as well as Vernet's identifications for 'Eynan, in Bouchud 1987: 91, note 10). Therefore the small quantity of plant remains (notably of seed grasses) does not imply that these plants were not exploited the prehistoric communities of this region. Also the discovery of large quantities of carbonized plant remains at Abu Hureyra (see Hillman *et al.* 1989, 1997) would not reflect the intentional exploitation by the site inhabitants, but rather the large quantity of seeds in the gazelle dung used preferably to feed the hearths (Miller 1996: 527, 1997).

Nevertheless, various scholars argue that these suggestions do not account accurately for the scarcity of botanical remains. According to them (see Moore 1991: 290, Olszewski 1993: 426) this situation would be rather the consequence of the lack of interest for cereals by the Natufian groups of the Mediterranean belt zone. These people would have focused instead on the collect and consumption of acorn. More precisely, A. Moore contests the idea that the Mediterranean vegetation is favorable to the growth of wild cereals. According to him, the climatic conditions would have created a denser Mediterranean forest, preventing the spread of cereals in this zone. This author goes on with his analysis and concludes that the Natufian groups of the Mediterranean Belt were collecting, storing and consuming mainly acorn, a very abundant resource in this type of environment (Moore 1983: 96, see Olszewski 1993: 426). Nevertheless, acorn remains, as cereal ones, are rare or absent from Natufian sites (McCorriston 1994: 98). Several indirect considerations have been put forward in order to confirm the hypothesis of a use of acorn by Natufian groups: first, the grinding stone tools; then, the comparison between oak trees of the Mediterranean-type forest of California and the one of Southern Levant; and finally, the ethnographic reference to California Native Americans, regarding the collect and processing of acorn. Grinding stone tools, including deep mortars, would be better adapted for the processing of this type de resource. B. Schroeder (1991: 72) seems to offer some observations in this direction based on the presence and nature of some deep mortars from Saaidé II (Lebanon). Based on an ethno-archaeological model using

California Native Americans, J. McCorriston (1994, 1995) has suggested various hypotheses regarding the implications (large population density, important stress of these communities) of a possible exploitation of acorn, which still have to be confirmed. S. Mason has seriously criticized the analogical method used by McCorriston and the various points of comparison she addresses (Mason 1995). The paper by R. Barlow and M. Heck suggests a new approach in order to contribute to this debate. These authors have offered to analyze the energetic values and the costs of cereal and acorn procurement and processing. Their results seem to indicate that acorn has also great techno-economic and dietary advantages compared to cereals.

Finally another position has also been offered, which tries to reach a compromise between these two subsistence models (Campana and Crabtree 1990: 235-236). These scholars suggest that a new organization in the exploitation of natural resources appears with the Natufian, which would be characterized by collective hunting of animals using nets and also collective collecting of plants. The communal hunting activities would have taken place in connection with two other moments of the annual subsistence cycle: the harvesting of cereals in Late Spring and the collect of acorn and nuts in the Fall.

*The Natufian, a "Broad Spectrum Revolution"?: The Fauna Case Study*

The paper by N. Munro gives us the opportunity to introduce another main debate for the understanding of the Natufian, i.e. the importance of a "broad spectrum" subsistence economy.

Recent excavations of Natufian sites, using sophisticated sieving and flotation techniques, were able to recover a wide range of animal and vegetal remains. Nevertheless, several models are competing to account for the Natufian economy. Various scholars have put forward an explanation which is in favor of an economic specialization focusing on a unique animal (i.e., gazelle) or vegetal (i.e., cereals) species. If we consider the animal world, some authors, such as D. Henry (1989: 214-215), argue that most of the meat intake comes from the gazelle, even though a wide range of small and large animals are also hunted and collected (e.g., gazelle, tortoise, snake, birds, fish, etc.). E. Tchernov takes an even more extreme position, when he considers the gazelle as the large game the most often hunted, and this would be the case whatever the natural availability around the sites (Tchernov 1993: 143, 1995: 57). In opposition against this interpretation, various scholars suggest that the hypothesis of cultural preferences based on gazelle remains does not hold with current available data (Cauvin 1989: 6-7, 1994: 37-38). The Natufian economy would depend mostly upon the potential of natural resources around each site (see Bar-Yosef and Meadow 1995: 59, Belfer-Cohen 1991: 171-172, Cauvin 1989: 6-7, 1994: 37-38, Henry 1995b: 327-328, McCorriston and Hole 1991: 57). Nevertheless, several authors are in favor of a "broad spectrum" economy. According to this model, suggested by K. Flannery (1969), the new economy, which appears some time during the Upper Palaeolithic, is crucial for the threshold toward sedentism and ultimately the domestication process. O. Bar-Yosef and his colleagues argue that such an economic and dietary basis would be made possible by the new localization of the major Natufian sites at the edge of several biotopes (Bar-Yosef and Belfer-Cohen 1992: 24, Bar-Yosef and Meadow 1995: 69). D. Campana and P. Crabtree (1990: 234-235) change the sequence of this model. They suggest that the Natufian mixed economy is nothing

more than a consequence of the use of collective net hunting targeted toward gazelle, fox and hare; the other species would then be only secondary products.

For many scholars, the patterns of settlement system and exploitation of natural resources, which appear with the Natufian, constitute a "relative novelty" for Levantine prehistory (see Cauvin 1994: 37, Henry 1989: 180, McCorriston and Hole 1991: 57, Tchernov 1993, 1995). Ph. Edwards (1989), among others, has been opposed to these interpretations, arguing that this broad spectrum economy can no longer be considered as a completely new phenomenon, which appears with the Natufian. A detailed analysis of the fauna from the Geometric Kebaran site of Neve David did not demonstrate any significant difference between the two periods, even though the authors warn us that available data can often be partial and contradictory (Bar-Oz *et al.* 1999). Moreover, the human diet at the site of Ohalo II (19000 BP) is also based on a wide range of plants, as well as fish, birds, gazelle, etc. (see Kislev *et al.* 1992, Simmons and Nadel 1998). Going back to earlier periods, already in the Middle Palaeolithic, Hayonim Cave (Stiner and Tchernov 1998, Stiner *et al.* 1999) and Kebara Cave (J. Speth, pers. comm., see Speth and Tchernov 1998) yielded, besides the abundant remains of large mammals, small game, which reflect the important collect of tortoise. In order to account for this complex evolution and the place of the Natufian in this sequence, several models, which slightly differ, have recently been offered. According to E. Tchernov (1993, 1995), Natufian sedentism is the principal cause responsible for major modifications in the human relation to the environment and in the exploitation of natural resources, notably fauna. This decrease in mobility will quickly lead to an overexploitation of the environment surrounding the villages, pushing the human communities to exploit their environment in a more intensified and diversified manner. Two consequences will come out of this new situation: the specialized hunting focusing on gazelles and an intensified exploitation of small game, which includes mainly birds and hare. In a different way, M. Stiner and her team have suggested that the novelty of the Upper Palaeolithic and especially the Epipalaeolithic lies less in the threshold toward a broad spectrum economy (which is already present in the Middle Palaeolithic) than in the transition from an economy partially based on the hunting of slow-moving small game (e.g., tortoise) to another one where hunting is oriented more toward agile and quick animals (i.e., birds, lagomorphs). More intensive hunting practices and an overexploitation of slow-moving game, caused by an increase in human population, would have forced Natufian communities to exploit other resources, although more agile, such as partridges and hares (Stiner 2001, Stiner and Tchernov 1998, Stiner *et al.* 1999: 192-193, 2000). Recent data put forward by N. Munro, regarding the middle of the Natufian sequence at Hayonim Cave (Locus 8), reveal that among the faunal remains, the small game is dominant compared to ungulates (see Munro 1999). These new patterns of animal resource exploitation were made possible by the use of new technological means such as hunting nets, traps, and so on. N. Munro tried to address this topic in the paper she gave at this meeting.

#### *Debate Regarding the Level of Natufian Social Complexity*

Our paper and some of Ofer Bar-Yosef's positions in his paper allow us to introduce the concept of social complexity as applied to the Natufian communities.

The terms of "complex" and "non-complex" societies, suggested notably by D. Price and J. Brown (1985), have showed a great potential in the analysis of social

structures and the historical evolution of hunter-gatherer communities, particularly in the field of prehistory. Many times in the last two decades, the Natufian culture has been used as an example to illustrate this approach (see Ames 1999, Henry 1985, 1989, 1991, Hayden 1990, 1993, Olszewski 1991). Based on available data, most of the scholars agree that the Natufian is not a "simple" or "non-complex" society. D. Henry (1985) was among the first (see also Wright 1978) to define the Natufian as a complex entity, based on the wealth and diversity of material culture, as well as its novelty compared to earlier periods. Henry considered the Natufian as a large size population, living in fixed and better defined territories, exploiting intensively their natural environment, and with a hierarchical social organization of matrilineal type. Recently, B. Hayden (1993: 204, 226) and K. Ames (1999) have written about the Natufian in similar terms, i.e., of social hierarchy, of competition and prestige between individuals, of private ownership. These scholars' viewpoint regarding this culture is relatively unique (and maybe extreme). Moreover, some of their discourse can be ambiguous and lead to criticism. J. Arnold (1996) made an important terminological and conceptual effort to clarify the notion of "complex society". In her paper, she offers some precise definitions of social complexity, in organizational and structural terms, and no more in terms of wealth and diversity of material remains. She gives the following characteristics to define it: the specific control of labor by non-related individuals, the institutionalization and legitimation of social hierarchy, the stability of an hereditary and centralized power. Using these criteria, she went on to discuss various archaeological and ethnographic cases. Finally she refused to consider as "complex societies" several communities of past and present hunter-gatherers. Among these she included the Natufian culture (Arnold 1996: 89-91).

In this controversial debate, it appears clear that the various opinions expressed go beyond differences of terms. They reflect the difficult task to document social structures and distinctive behaviors. It seems therefore that terminological variations on this topic correspond primarily to major differences in the interpretation of material culture. The rise of communities, which bear witness of possible modifications in settlement system and in the exploitation of natural resources, as well as in the diversity and wealth of their material aspects, reflects some social and political transformations. Burials, architecture, art objects, etc., are among the best fingerprints of this evolution. Yet their significance is difficult to assess precisely and can raise various debates. The Natufian archaeological record is not clear enough to indicate a "complex" organization and reproduction (e.g., stable authorities, hereditary hierarchy, specific labor control) of the communities in Northern Israel. Therefore, we follow J. Arnold (1996) and D. Olszewski (1991) (see also Flannery 1993: 110-111) and argue that the data available for the Natufian culture do not allow it to be considered as a "complex society", which has so often been argued for by Henry, Hayden and Ames. According to J. Arnold, the appearance of artistic manifestations, the diversification of mortuary practices, the investment in building activities, and so on, could reflect at the most new and more elaborate behaviors.

We have been very much interested by the arguments Arnold offers. Her definition of "complex society" (Arnold 1996) could correspond to a large number of hunter-gatherer communities, either ethnographic and ethnohistoric or archaeological ones. Nevertheless, this definition leaves aside a vast majority of

societies, which she lumps together under the heading of "non-complex" entities. This group is in fact not very homogeneous. Besides societies clearly "non-complex", of egalitarian structure, most anthropologists have been able to identify groups with more elaborate activities (see Hastorf 1990: 132, Saitta and Keene 1990: 312). Therefore, it would seem possible to recognize another type of societies, called "semi-complex" or "intermediate", which would present the following features: sedentary or semi-sedentary habitats, with a population size larger than before, which often include burials and various domestic structures; division of labor not only between gender and generations, but also according to the performed activities; simple forms of social hierarchy; often intensive exchange of exotic objects and raw materials between neighboring groups; more elaborate ceremonial life and mortuary practices. The Natufian culture would be then too elaborate to be lumped together with "non-complex" societies, but at the same time would not be sophisticated enough to be interpreted as a "complex" society. It could be considered as a good example of the "intermediate" type. Some features could thus be more complex, whereas others would be residues of the previous "traditional" stage.

*A New Paradigm for the Levantine Epipalaeolithic?*

In the last decades archaeological research has been through numerous theoretical trends, from the "New Archaeology" to the various "post-processual" currents. Prehistorians working in the Near East have been opened to the problematic of the New Archaeology, but newer trends seem to have had little impact. Nevertheless during this last decade, the progressive opening to new models seems to be noticeable. Notably, the influence of British contextual and symbolic archaeology took place in some recent work on the process toward food production (see Boyd 1992, 1995, Hodder 1990, Watkins 1990, 1992). J. Cauvin's work (1994, 2000a, 2000b) reveals some interesting similarities with this approach. Yet his work is the result of independent and original thoughts, which have partially inspired Ian Hodder and Trevor Watkins. In the same way, François Valla tried to apply a structuralist approach to the interpretation of the Natufian symbolic thought and to the mortuary behaviors connected with some complex burials in Northern Israel (Valla 1990, 1995).

Yet, it appears relatively surprising that applications of Evolutionary Anthropology (or Human Behavioral Ecology, hereafter HBE) (see Smith 1988, Winterhalder 2001, Winterhalder and Smith 2000, and articles *in* Smith and Winterhalder 1992 eds. and Winterhalder and Smith 1981 eds.) are not more common in Near-Eastern Prehistory. This current is not new anymore in social sciences. It was transferred from ecology and adapted to anthropology at the end of the '70s. HBE tries to combine the potential and results of ecology, Neo-Darwinist evolutionary theory and models of neo-classic economy (see Bettinger 1991: 83-111, Kelly 1995: 52-62, 73-110, Smith 1988: 223). Analyses of this kind rest upon some implicit principles of natural selection and competition between individuals of a same human group and between different groups. Specific models, such as the optimal forager, have thus been offered in order to apply these principles in a more operational manner. In that sense was put forward the hypothesis that natural selection is aimed at promoting through time more human efficiency and a better adaptation in food procurement strategies, in the time spent to pursue the game, and so on. In each decision-making process, an individual,

considered as an autonomous agent, will try to minimize the costs and maximize the profits. Goals of this theory are aimed at predicting, within some external circumstances, notably specific environmental conditions, the behaviors of the optimal forager and the evolution of strategic decisions. The predictions of the model or the hypotheses put forward are confronted with empirical observations (archaeological or ethnographic case studies), and the discrepancies encountered sometimes between the theory and the facts help to improve the structure of these principles.

The application of HBE in archaeology was relatively slow and prudent. But during the last decade, it became the dominant paradigm in the understanding of past human behaviors and of human evolution. If we take the example of the Pleistocene/Holocene transition, HBE has recently been interested to document, on a theoretical level and in different parts of the world, the more intensive exploitation of natural resources and the first attempts toward plant and animal domestication (see Gremillion 1996, Layton *et al.* 1991, Piperno and Pearsall 1998, Winterhalder and Goland 1993, 1997). Regarding the Near East, more publications (see Henry 1995a, 1995c, Hillman and Davies 1990, Holl and Levy 1995, Russell 1988, Simms and Russell 1997, Wright 1994) illustrate the recent influence of evolutionary anthropology and/or of formalist models of economic anthropology. The papers by Barlow and Heck and by Munro are clearly part of this new trend. Finally it seems to us that the potential of the HBE current, with its theoretical models particularly well structured and the preferential use of statistics, should become soon predominant also within Near-Eastern prehistory.

### III. Conclusion

Research on the Natufian during this last decade has revealed a great dynamism as much in the field with the discovery and the excavation of numerous sites as in the laboratory with the detailed analysis of the numerous remains recovered. The papers presented at this meeting, by their abundance and quality, belong to this trend, revealing at the same time that the interest in the Natufian culture is still alive. Even though current research on the Natufian concerns a wide range of aspects or topics, these papers were dealing less with informative considerations than theoretical ones such as the interpretation of the data. Thus these papers bear witness to the strong potential that the Natufian culture offers for the understanding of 1) processes of hunter-gatherer cultural transformation and 2) their specific patterns of natural resources exploitation, in relation with a more sedentary use of domestic and regional space<sup>1</sup>.

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